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By
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Contribution from the
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BERKELEY, CALIFORNIA
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REPRESENTATIVE SONG SPARROWS OF CALIFORNIA

1. *Melospiza melodia cleonensis*
2. *Melospiza melodia samuelis*
3. *Melospiza melodia pusillula*
4. *Melospiza melodia clementae*
5. *Melospiza melodia fisherella*
6. *Melospiza melodia maxillaris*
7. *Melospiza melodia heermanni*
8. *Melospiza melodia saltonis*

NOTE

The publications of the Cooper Ornithological Club consist of two series—*The Condor*, which is the bi-monthly official organ, and the *Pacific Coast Avifauna*, for the accommodation of papers whose length prohibits their appearance in *The Condor*. The present publication is the twenty-seventh in the *Avifauna* series.

For information as to either of the above series, address the Club's Business Manager, W. Lee Chambers, Robinson Road, Topanga, California.

CONTENTS

INTRODUCTION

For sixty years the study of the distribution of birds in California has been the interest of an active company of western ornithologists. The present accounting seeks to embrace a large body of evidence accumulated by them. Of necessity it is a digest of their seemingly numberless observations and collections. In the course of time, repeated efforts to assimilate this information have led us to a kind of synopsis of distribution which stresses the habitat requirements of individual species—the critical factors of the environment which have direct bearing on their existence, and these in turn as cause for the patterns of occurrence in space which may be witnessed. Diversity of terrain and environment in the state of California not only account for the great number of avian species in the area and for the many locally endemic subspecies of them, but it leads to complicated outlines of range which in their intricacies reveal some of the causes for spatial limitation. All these matters must be judged against a background knowledge of the life history of the species. This information on life history is not related in this work, but it has constantly been used in shaping our statements about occurrence and habitat.

Lest the uninitiated reader be led to believe that the problems of distribution of the birds of California are in the main solved and fully presented in this work, may we quickly disillusion him. Efforts along the lines above indicated diluted over 400-odd species are not to be expected to produce many definitive results. Habitats for some species can with justification be discussed at length and with a semblance of finality but for others only a single phrase of but general character can be offered. Also, the simple matters of dates, places of occurrence, and identification, the skeletal information of distributional study, are startlingly incomplete for many species. One good result of such a compendium as this should be inducement to others to bring to light unpublished or unnoticed information. This means ever-continuing activity of critical sort, much of it, to be trustworthy, based on further collecting of specimens.

It has been the authors' aim to deal with systematics and nomenclature only sufficiently to insure that the reader know what concept of species or subspecies is under consideration. However the net result of much systematic study in the past four years, and also precedingly, especially with the collection of the Museum of Vertebrate Zoology, is registered in the names advocated and in the explanatory notes on taxonomy. The latest American Ornithologists' Union Check-list (1931) and current work in the revision (see Auk, 61, 1944:441-464) of it has raised many questions of usage. We deplore uncritical adherence to a check-list standard. Efforts to stabilize nomenclature through the work of a check-list committee are most worthy and lead to progress, but

only that. To assume that majority decisions therein reached are correct and final is the worst scientific folly. We have each participated in such committee efforts and have become aware of the advantages and frailties of them. In the present work, therefore, we shall not hesitate to depart from the taxonomy of the A.O.U. Check-list where there seem to be substantial reasons, and we shall attempt to point out briefly the basis for our departure. Also, in the matter of order of species within family groups we occasionally have departed from the Check-list where improvement seems possible; in several instances Peter's (Birds of the World) sequence has been adopted, as with the shore birds. However, the reader will not find a great proportion of our work at variance with the Check-list and with respect to general practices relating to scientific names and in adherence to the A.O.U. code of nomenclature he will find us in full accord.

So many species of western birds occur at some season in some part of California that we have been called upon to consider a large proportion of the taxonomic issues relating to western North America. One may remark parenthetically that probably a majority of the taxonomic problems for North America seem to center in the western half of the continent, again because of diversity of terrain in this section basically caused by its many mountain systems. Progress in their solution is likely to be most effectively pursued by those who have opportunity to work in the field in these western sections.

Vernacular names for birds have been widely discussed, and with some fervor, by American ornithologists. There is no fixed code governing them, which is perhaps a fortunate circumstance. The way is thus open for progress with this system of names along logical lines. But also, "absence" of a law of priority has actually resulted in a stability of some categories of vernacular names in contrast with their Latin counterparts. Some may dismiss vernacular names as unimportant, and so they may be in many fields of biology, but whether we like it or not, most people are going to use them, at least part of the time, for birds. Therefore, we may as well work toward a planned and meaningful system. New generations of ornithologists will thank us for putting our house in order. They will quite as readily learn the revised names we offer; they at least will have no old names to discard from their vocabularies.

In the opinion of the junior author, vernacular names should be used for full species only. Subspecies are the nearly exclusive province of the person with specimens in hand, and he, in this refinement of taxonomic study, may just as well confine himself to use of Latin names for these subdivisions. However, many amateurs have incorporated vernacular subspecific names into their vocabularies and thinking, often unwittingly, and if they are to readjust their practices to deal in the vernacular only with species, some aid in the transition is desirable. With this as a main objective, we have supplied full name combinations for each subspecies in every instance, including always in the name, as the next to the last element, the *species* name we think best applicable to the whole group of subspecies. The plan may readily be perceived by inspection of the check-list of species and subspecies, pp. 13 to 34. It serves to emphasize and keep clear the important species units.

People may choose to employ various parts of these full names, in course of casual reference, and they will do no harm thereby; we seldom address people by their full names. Thus, the Gambel White-crowned Sparrow may, according to taste and meaning, be referred to as Gambel Sparrow, White-crowned Sparrow, or even just Crowned Sparrow. But the person should be aware of the full name and its connotations of specific affinity. The full name should be a matter of legal registry, so to speak, in any such complete work as the present one aims to be; at least this should be so if any subspecific vernaculars are to be used by our readers.

Further, we would remark that a person has no right to use the first name of the vernacular combination unless he has positive evidence, and this usually means specimen-evidence, that he actually is dealing with the subspecies denoted. It is the impossibility of such racial identification in almost all field observation, except by gratuitous assumption based on the findings or writings of other persons, that leads us to plead strongly for use of species names alone in these circumstances. In time we may establish this ideal practice which is simple and above all fully honest and hence scientific.

In providing a logical system of vernacular names, innovations have been inevitable. In deciding upon names we have been guided by the following principles: (1) Wherever possible employ a species name now in use or one that has had usage in the past. (2) See that a species has a name that will not be confused with any other species occurring in areas where English is the prevailing language. (Some long-standing usages that are different from those in England have been retained; for example, the American use of the name Robin. On the other hand, some English usages as set forth in the Handbook of British Birds (Witherby, *et al.*, 1938-1941) have afforded helpful suggestions for logical species names for birds occurring in North America.) (3) Whenever a subspecies name, particularly that of the original race, has gained some measure of acceptance for the whole species or is particularly apt, take this name for the species name if need be and coin an additional name for the subspecies; this is preferable to reserving it for the subspecies and creating a wholly new species name. (4) Avoid the use of the ambiguous word "common" in so far as seems at all possible. (There are a few species for which this name is already firmly established.)

Some of the species names herein proposed, despite our best efforts, may not be the most fortunate. They may stimulate better suggestions which in time will "take." This will lead to the desired end result in any event if the basic plan of emphasis on distinctive species names is adhered to.

PARTICIPATION OF THE AUTHORS

The preparation of the manuscript for this book was actively begun in 1934 by Grinnell. Prior to that there had been substantial effort directed by him toward establishing the plan for the work (Condor, 36, 1934:237-241) and the whole endeavor was an outgrowth of his earlier paper, "A Distributional List of the Birds of California" (Pac. Coast Avif. No. 11, 1915), which needed to be amplified and reworked. By 1939

Grinnell had written the accounts of half of the forms (up to the *Empidonax* flycatchers in the A.O.U. order) and in the most recently written accounts had established a pattern of treatment which represented his final ideas on style. The first half of the body of the work was thus in typescript, but beyond, as far as the wrens, were a number of other accounts in hand writing.

In 1940, in the year following Grinnell's death, Miller undertook the completion of the work and prepared the accounts for the last half. He then began revision of the first half of the work to bring it in line reasonably well with the style set in 1939 and to bring up-to-date, to January 1, 1944, the reference material, distributional data, and taxonomy for the whole report. This entailed, as with the last section of the list, a review of specimens in the Museum of Vertebrate Zoology and a less complete scanning of much of the material in the California Academy of Sciences. Final decisions on taxonomy, on identification, and on lesser matters of style, and the preparation of the introductory parts have of necessity been the responsibility of the junior author as also the final editing and the checking of proofs. Every effort has been made to ascertain and weigh the opinions that Grinnell may have held on aspects of the work not actually dealt with by him. Even so, a great many matters have been disposed of without benefit of his judgment and the responsibility for defects and errors must be borne by Miller.

ACKNOWLEDGMENTS

Both authors are deeply indebted to Annie M. Alexander, founder of the Museum of Vertebrate Zoology, for the support of field and museum activities which over the years has led to the accumulation at the Museum of the wealth of factual data that supports a large share of the present writing. Constantly she has encouraged our endeavor and urged and supported special trips which have enriched the experience of the authors and yielded critical information. Further, the colored frontispiece has been made possible through her generosity.

Many have aided in the preparation of this volume, but none more diligently and effectively than Hilda W. Grinnell. In the last five years she has continued the system of bibliographic entries under species names which Joseph Grinnell instituted in 1900; this record is the indispensable foundation for the review and citation of records. Also she has assembled the lists of vernacular names appearing in the paragraph on synonyms, has checked catalogue entries for nests and eggs, and, with the junior author, has read copy and proofs throughout. But further than this she has been a ready consultant in seeking to ascertain and incorporate the views of Joseph Grinnell on matters which had not been registered by him in the manuscript.

Much aid has been gained from study of specimens in other collections. All material at the California Academy of Sciences has been put at our disposal most freely, by the late James Moffitt and by Robert T. Orr, and Ralph Ellis has similarly granted use of his collection, now on deposit at the Museum of Vertebrate Zoology. Other collections from which information has been drawn, less extensively only by reason of remoteness

from our center of study, are those of the Los Angeles Museum, through George Willett, the Dickey Collection, through A. J. van Rossem, and the Loye Miller collection. Also to these persons we are indebted for many points of advice.

The preparation of the distributional maps has been largely the work of Margaret W. Wythe, whose experience and aid in such matters have been of great value.

Among manuscript notes which have been most extensively used and cited are those of the following observers: H. L. Cogswell, C. A. Harwell, Harold Michener, J. G. Peterson and C. P. Streator. Many others at the Museum and elsewhere have helped with special problems, have supplied information, or have aided in preparation and checking of copy. Among those who have assisted extensively, or furnished particular aid in bringing this work to completion we mention with gratitude: Maxine Buffington, Harvey I. Fisher, Nan Hendricks, Virginia D. Miller, Ruth Woodman Petersen, Robert W. Storer, and Mary Tappe.

PLAN OF WORK

The use of this book may be facilitated if the plan of its construction is understood by the reader. The synonymies we supply consist only of names that have been used with reference to California. Names are listed in order of date, the oldest first, again on the basis solely of usage in reference to California. The sequence has been less closely checked for the vernacular names than for the scientific names. The designation "part" is added wherever the name has been used additionally for some other kind of bird in California. Minor variations in spellings of scientific names usually have not been entered and we do not list any synonyms that are of secondary nature. For example, vernacular names given by Dawson (Birds Calif., 1923 [=1924]) in his paragraphs on "Synonyms" are omitted, for he included names applied to eastern species or races, names from literary sources, and even, we suspect, names summoned out of his own imagination. Nor are names listed that have been employed exclusively by sportsmen in informal fashion.

The description of status of each kind of bird includes comment on seasonal occurrence, migration, relative numbers, and any definite changes in numbers and range recorded in historic times. By the word resident is meant fixed in areal occurrence throughout the year. Sometimes where vagrancy seems particularly lacking or of short range, this circumstance is emphasized by the qualification "permanent resident." A summer resident is a species which is in residence and breeding in the spring and summer periods in contrast to a summer visitant which is present but not so far as known in breeding residence. The term straggler best refers to a laggard behind the migrant mass of its species, this in contrast to a vagrant that has drifted from normal migration routes or from areas of residence and also to a pioneer which represents dispersal with possibility of some form of resident establishment in the new area. The diversity in altitude in California and the great latitudinal span of the State result in much variability in status according to section. The seasonal occurrence may thus be of several different sorts in the different parts of California. This circumstance particularly com-

plicates formulation of statements about times of migration. In the main, where months of arrival and departure are given, these are for the mass of the population of the species in question, not the extremely early or late dates for the vanguard or for stragglers. Usually these dates must be adjusted at least a week or two one way or the other for extreme southern and northern ends of the State.

We are acutely aware of the inadequacies of the terms here used of necessity in denoting abundance of a species. In a survey of this kind there is nothing better to turn to. Four designations normally are employed: abundant, common, fairly common, and rare. Although these adjectives are supposed to reflect numbers, the judgment of observers in applying them is influenced by conspicuousness of the species, whether in flocking, in exposure to view, or in song behavior, and by ease of access to its habitat. In the same area at one time, one observer may detect one species "commonly" and another may report it infrequently. It may be said that abundant species are those which can be observed in quantity in their habitat any day in the proper season without any special search; a common species is one of which some representative could at least be noted daily in appropriate habitat; a fairly common species in order to be detected regularly might require search for a specially favorable locality with resulting discovery of but scattered pairs or isolated small colonies; a rare species would be one that could not be encountered except by chance in any one day of search or at best by very special search of a locality where previously known to be established, as with nesting sites of Ospreys at the present time. "Sparse population" is also a frequent characterization used in species approaching the status of rare. "Casual" denotes occasional unpredictable appearances, "sporadic" a definitely noted irregularity from one year to another or from one season to another. So-called "accidentals" are best thought of and designated as "vagrants" or definitely as "pioneers," thus as elements in the normal trial process of range expansion (see Grinnell, Auk, 39, 1922:373ff.).

In describing the ranges of birds we have sought to present a picture of the principal range and of the center of abundance without undue stress on marginal vagrants even though these are recorded. Ranges frequently must be separately stated for winter and summer in so far as information permits. Zonal occurrence has been entered as a descriptive aid. Upon consultation of previously published maps of the life-zones of the State (Pac. Coast Avif. No. 11, 1915, pl. I; Joseph Grinnell's Philosophy of Nature, Univ. Calif. Press, 1943, opp. p. 232) the student may further visualize the distributional pattern for the species in question provided zonal limitation is relatively narrow. The related matter of altitudinal range usually is indicated for resident and summer resident species. The plan of describing range has been deliberately kept flexible so as to avoid a stereotyped formula difficult of adaptation to the problem in hand.

Documentation of details of range and selections for citation of literature significant as source material on habitats and natural history has involved sifting of references that commonly run into the hundreds for each species. The selection is, as a rule, made on purely biological grounds, not personal. Thus, it does not matter who first discovered the occurrence of a species, or its breeding, in an area; the facts are the important thing,

and if a later observer has put the same facts on record in better fashion, then only his published contribution will be cited. Priority of record is not a matter given attention in this compendium. Personal names are used only as key words, to enable future students to "run down" the literature. Initials of authors, incidentally, are entered only where necessary with this idea in view: they have been used where two persons of the same name have contributed considerably to the literature for the State and also for all women authors, unless in coauthor relation. Citation of a museum or collection indicates a study specimen therein that has been checked, but in the case of the Museum of Vertebrate Zoology it may also refer to manuscript notes and to data accompanying nests and eggs.

In preparing the distributional maps precise outlines of ranges have been marked out even though we have many misgivings about such a practice, which inevitably is arbitrary and in many details is bound to be at least slightly inaccurate. Nonetheless it affords a useful expression of the main truth about the occurrence of a form; it conceals, most notably, intergrading zones and discontinuities within the range. To balance this aspect of the maps we have plotted locality stations of specimens of most birds in the Museum of Vertebrate Zoology and of many stations reported in the literature where there is reasonable certainty with respect to identity. These localities, it should be realized, represent the assured factual material embodied in the maps. We have not tried to make the spotting of localities complete in the way one might in a revisionary monograph of a group; collections from the State are too widely scattered and locality ascriptions often too uncertain to permit of this. With but a few exceptions we have mapped those species that have more than one subspecies breeding in the State; only breeding localities or those of permanent residence are shown (for occasional exception, see legends).

In the "Distributional List of the Birds of California," of 1915, the faunal districts of the State were classified and outlined (map, pl. III). With minor modifications this mapping has useful application today as indicating the main truth about avifaunal groupings within the area. Review of these units and critical compilation of lists pertaining to them could well be undertaken with the more advanced condition of our knowledge of ranges of forms as set forth in the present book. In so doing several topics would need extensive treatment. Some of these are: differentiation centers for races (vastly more complicated than in the peninsula of Lower California; see Grinnell, Univ. Calif. Publ. Zool., 32, 1928:5-13); intrusions of faunas from adjoining continental areas; limits of ranges of species as supplementary information to data based on limits of ranges of endemic racial forms; faunal groupings related to biotic associations; influences of specific barriers. No record of detailed consideration of these problems was left by Grinnell. This circumstance and the length to which their proper exposition would run has yielded a decision to present them later in a separate work.

BASIS FOR INCLUSION OF SPECIES

Only those species and subspecies are included in the main list that are proved to have occurred naturally in the wild and within historic times in the State and of which at least one specimen has been preserved or verified as to identity by some ornithologist. This excludes therefore species known only as fossils, those that have been introduced accidentally or otherwise by man, whether established or not, and those, as the English Sparrow and Starling, which although not introduced in California have spread to this state following an introduction elsewhere in North America. Excluded also are some species seen a number of times, and with scarcely any doubt correctly identified, but as yet not collected or examined in hand; a case in point would be the Reddish Egret. In a few instances, as in this example, exclusion seems unreasonable, but in the main this type of exclusion has proved best and some fixed limits have had to be set. All modern species that are excluded from the main list, if in any way reported from the State, are to be found mentioned in the supplementary list. Exclusively fossil birds, as also all modern birds occurring as fossils, are covered in a recent compilation by Loye Miller and Ida DeMay (Univ. Calif. Publ. Zool., 47, 1942:47-142).

Limited in this way, the main list of the native birds of California now totals 427 species (644 species and subspecies); 84 of these species are represented by more than one race: 38 with two races; 21 with 3; 11 with 4; 3 with 5; 3 with 6; 3 with 7; and one each with 8, 10, 13, 15 and 18 races. It is more significant, however, to summarize those polytypic species which have more than one race in breeding residence within the area: 26 species have 2 races; 18, 3 races; 8 (*Lophortyx californica, Bubo virginianus, Dryobatus villosus, Aphelocoma californica, Psaltriparus minimus, Chamaea fasciata, Passerculus sandwichensis, Amphispiza belli*), 4 races; 1 (*Lanius ludovicianus*), 5 races; 4 (*Parus inornatus, Pipilo maculatus, Pipilo fuscus, Passerella iliaca*), 6 races; 2 (*Otus asio, Agelaius phoenicius*), 7 races; 1 (*Otocoris alpestris*), 8 races; 1 (*Thryomanes bewickii*), 9 races; 1 (*Melospiza melodia*), 14 races. This contrasts with 211 species that have but one race breeding within the State. Thus there is a total of 273 species breeding in the State (423 species and subspecies).

ALDEN H. MILLER.

December 18, 1944.

SYSTEMATIC LIST OF SPECIES AND SUBSPECIES

Class AVES Birds
Subclass *NEORNITHES* True Birds
Superorder *NEOGNATHAE* Non-struthious Birds

Order GAVIIFORMES Loons

Family **GAVIIDAE** Loons

Gavia immer (Brünnich). Common Loon.
Gavia arctica (Linnaeus). Arctic Loon.
  Gavia arctica pacifica (Lawrence). Pacific Arctic Loon.
Gavia stellata (Pontoppidan). Red-throated Loon.

Order COLYMBIFORMES Grebes

Family **COLYMBIDAE** Grebes

Colymbus grisegena Boddaert. Red-necked Grebe.
  Colymbus grisegena holböllii (Reinhardt). Holböll Red-necked Grebe.
Colymbus auritus Linnaeus. Horned Grebe.
Colymbus nigricollis (Brehm). Eared Grebe.
  Colymbus nigricollis californicus (Heermann). American Eared Grebe.
Aechmophorus occidentalis (Lawrence). Western Grebe.
Podilymbus podiceps (Linnaeus). Pied-billed Grebe.
  Podilymbus podiceps podiceps (Linnaeus). Northern Pied-billed Grebe.

Order PROCELLARIIFORMES Petrel-like Birds

Family **DIOMEDEIDAE** Albatrosses

Diomedea nigripes Audubon. Black-footed Albatross.
Diomedea albatrus Pallas. Short-tailed Albatross.
Diomedea immutabilis Rothschild. Laysan Albatross.

Family **PROCELLARIIDAE** Shearwaters and Fulmars

Daption capensis (Linnaeus). Cape Pigeon.
Fulmarus glacialis (Linnaeus). Fulmar.
  Fulmarus glacialis rodgersii Cassin. Pacific Fulmar.
Adamastor cinereus (Gmelin). Black-tailed Shearwater.
Puffinus creatopus Coues. Pink-footed Shearwater.
Puffinus carneipes Gould. Flesh-footed Shearwater.
Puffinus bulleri Salvin. Gray-backed Shearwater.
Puffinus griseus (Gmelin). Sooty Shearwater.
Puffinus tenuirostris (Temminck). Slender-billed Shearwater.
Puffinus opisthomelas Coues. Black-vented Shearwater.

Family **HYDROBATIDAE** Storm Petrels

Halocyptena microsoma Coues. Least Petrel.

Oceanodroma furcata (Gmelin). Fork-tailed Petrel.

Oceanodroma furcata plumbea (Peale). Southern Fork-tailed Petrel.

Oceanodroma leucorhoa (Vieillot). Leach Petrel.

Oceanodroma leucorhoa beali Emerson. Beal Leach Petrel.

Oceanodroma leucorhoa willetti van Rossem. Coronados Leach Petrel.

Oceanodroma leucorhoa socorroensis C. H. Townsend. Socorro Leach Petrel.

Oceanodroma homochroa (Coues). Ashy Petrel.

Loomelania melania (Bonaparte). Black Petrel.

Oceanites oceanicus (Kuhl). Wilson Petrel.

Oceanites oceanicus chilensis Murphy. Fuegian Wilson Petrel.

Order PELECANIFORMES Pelican-like Birds

Family **PHAËTHONTIDAE** Tropic-birds

Phaëthon aethereus Linnaeus. Red-billed Tropic-bird.

Phaëthon aethereus mesonauta Peters. Caribbean Red-billed Tropic-bird.

Family **PELECANIDAE** Pelicans

Pelecanus erythrorhynchos Gmelin. White Pelican.

Pelecanus occidentalis Linnaeus. Brown Pelican.

Pelecanus occidentalis californicus Ridgway. California Brown Pelican.

Family **SULIDAE** Boobies

Sula nebouxii Milne-Edwards. Blue-footed Booby.

Family **PHALACROCORACIDAE** Cormorants

Phalacrocorax auritus (Lesson). Double-crested Cormorant.

Phalacrocorax auritus albociliatus Ridgway. Farallon Double-crested Cormorant.

Phalacrocorax penicillatus (Brandt). Brandt Cormorant.

Phalacrocorax pelagicus Pallas. Pelagic Cormorant.

Phalacrocorax pelagicus resplendens Audubon. Baird Pelagic Cormorant.

Family **FREGATIDAE** Man-o'-war-birds

Fregata magnificens Mathews. Man-o'-war-bird.

Fregata magnificens rothschildi Mathews. Caribbean Man-o'-war-bird.

Order CICONIIFORMES Stork-like Birds

Family **ARDEIDAE** Herons and Bitterns

Ardea herodias Linnaeus. Great Blue Heron.

Ardea herodias treganzai Court. Pallid Great Blue Heron.

Ardea herodias hyperonca Oberholser. California Great Blue Heron.

Butorides virescens (Linnaeus). Green Heron.

Butorides virescens anthonyi (Mearns). Anthony Green Heron.

Casmerodius albus (Linnaeus). Common Egret.
Casmerodius albus egretta (Gmelin). American Common Egret.
Leucophoyx thula (Molina). Snowy Egret.
Leucophoyx thula brewsteri (Thayer and Bangs). Western Snowy Egret.
Hydranassa tricolor (P. L. S. Müller). Red-necked Heron.
Hydranassa tricolor ruficollis (Gosse). Louisiana Red-necked Heron.
Nycticorax nycticorax (Linnaeus). Black-crowned Night Heron.
Nycticorax nycticorax hoactli (Gmelin). American Black-crowned Night Heron.
Ixobrychus exilis (Gmelin). Least Bittern.
Ixobrychus exilis hesperis Dickey and van Rossem. Western Least Bittern.
Botaurus lentiginosus (Montagu). American Bittern.
Botaurus lentiginosus peeti Brodkorb. Western American Bittern.

Family **CICONIIDAE** Storks and Wood Ibises

Mycteria americana Linnaeus. Wood Ibis.

Family **THRESKIORNITHIDAE** Ibises

Plegadis guarauna (Linnaeus). White-faced Glossy Ibis.
Guara alba (Linnaeus). White Ibis.
Ajaia ajaja (Linnaeus). Roseate Spoonbill.

Order ANSERIFORMES Goose-like Birds

Family **ANATIDAE** Ducks, Geese and Swans

Cygnus columbianus (Ord). Whistling Swan.
Cygnus buccinator Richardson. Trumpeter Swan.
Branta canadensis (Linnaeus). Canada Goose.
Branta canadensis canadensis (Linnaeus). Honker Canada Goose.
Branta canadensis occidentalis (Baird). Western Canada Goose.
Branta canadensis leucopareia (Brandt). Lesser Canada Goose.
Branta canadensis minima Ridgway. Cackling Canada Goose.
Branta bernicla (Linnaeus). Brant.
Branta bernicla hrota (O. F. Müller). Light-bellied Brant.
Branta bernicla nigricans (Lawrence). Black Brant.
Philacte canagica (Sevastianoff). Emperor Goose.
Anser albifrons (Scopoli). White-fronted Goose.
Anser albifrons albifrons (Scopoli). Common White-fronted Goose.
Anser albifrons gambelli Hartlaub. Tule White-fronted Goose.
Chen rossii (Cassin). Ross Goose.
Chen hyperborea (Pallas). Snow Goose.
Chen hyperborea hyperborea (Pallas). Lesser Snow Goose.
Chen caerulescens (Linnaeus). Blue Goose.
Dendrocygna autumnalis (Linnaeus). Black-bellied Tree-duck.
Dendrocygna autumnalis autumnalis (Linnaeus). Mexican Black-bellied Tree-duck.
Dendrocygna bicolor (Vieillot). Fulvous Tree-duck.
Dendrocygna bicolor helva Wetmore and Peters. Northern Fulvous Tree-duck.
Anas platyrhynchos Linnaeus. Mallard.
Anas platyrhynchos platyrhynchos Linnaeus. Common Mallard.

Anas cyanoptera Vieillot. Cinnamon Teal.
Anas discors Linnaeus. Blue-winged Teal.
Anas carolinensis Gmelin. Green-winged Teal.
Anas acuta Linnaeus. Pintail.
Anas acuta tzitzihoa Vieillot. American Pintail.
Mareca penelope (Linnaeus). European Widgeon.
Mareca americana (Gmelin). Baldpate.
Chaulelasmus streperus (Linnaeus). Gadwall.
Spatula clypeata (Linnaeus). Shoveller.
Aix sponsa (Linnaeus). Wood Duck.
Nyroca valisineria (Wilson). Canvas-back Duck.
Nyroca americana (Eyton). Redhead Duck.
Nyroca collaris (Donovan). Ring-necked Duck.
Nyroca marila (Linnaeus). Greater Scaup Duck.
Nyroca marila nearctica (Stejneger). American Greater Scaup Duck.
Nyroca affinis (Eyton). Lesser Scaup Duck.
Glaucionetta clangula (Linnaeus). Common Golden-eye.
Glaucionetta clangula americana (Bonaparte). American Common Golden-eye.
Glaucionetta islandica (Gmelin). Barrow Golden-eye.
Charitonetta albeola (Linnaeus). Buffle-head Duck.
Clangula hyemalis (Linnaeus). Old-squaw Duck.
Histrionicus histrionicus (Linnaeus). Harlequin Duck.
Histrionicus histrionicus pacificus W. S. Brooks. Western Harlequin Duck.
Somateria spectabilis (Linnaeus). King Eider
Arctonetta fischeri (Brandt). Spectacled Eider.
Melanitta fusca (Linnaeus). White-winged Scoter.
Melanitta fusca deglandi (Bonaparte). American White-winged Scoter.
Melanitta perspicillata (Linnaeus). Surf Scoter.
Oidemia nigra (Linnaeus). Black Scoter.
Oidemia nigra americana Swainson. American Black Scoter.
Erismatura jamaicensis (Gmelin). Ruddy Duck.
Erismatura jamaicensis rubida (Wilson). Northern Ruddy Duck.
Lophodytes cucullatus (Linnaeus). Hooded Merganser.
Mergus merganser Linnaeus. Common Merganser.
Mergus merganser americanus Cassin. American Common Merganser.
Mergus serrator Linnaeus. Red-breasted Merganser.

Order FALCONIFORMES Hawk-like Birds

Family **CATHARTIDAE** New World Vultures

Cathartes aura (Linnaeus). Turkey Vulture.
Cathartes aura teter Friedmann. Western Turkey Vulture.
Gymnogyps californianus (Shaw and Nodder). California Condor.

Family **ACCIPITRIDAE** Kites, Hawks and Eagles

Elanus leucurus (Vieillot). White-tailed Kite.
Elanus leucurus majusculus Bangs and Penard. North American White-tailed Kite.
Ictinia misisippiensis (Wilson). Mississippi Kite.
Accipiter gentilis (Linnaeus). Goshawk.
Accipiter gentilis atricapillus (Wilson). American Goshawk.
Accipiter cooperii (Bonaparte). Cooper Hawk.
Accipiter striatus Vieillot. Sharp-shinned Hawk.
Accipiter striatus velox (Wilson). Northern Sharp-shinned Hawk.
Buteo jamaicensis (Gmelin). Red-tailed Hawk.
Buteo jamaicensis calurus Cassin. Western Red-tailed Hawk.
Buteo jamaicensis harlani (Audubon). Harlan Red-tailed Hawk.
Buteo lineatus (Gmelin). Red-shouldered Hawk.
Buteo lineatus elegans Cassin. Red-bellied Red-shouldered Hawk.
Buteo swainsoni Bonaparte. Swainson Hawk.
Buteo albonotatus Kaup. Zone-tailed Hawk.
Buteo lagopus (Pontoppidan). Common Rough-legged Hawk.
Buteo lagopus s. johannis (Gmelin). American Common Rough-legged Hawk.
Buteo regalis (Gray). Ferruginous Rough-legged Hawk.
Parabuteo unicinctus (Temminck). Harris Hawk.
Parabuteo unicinctus superior van Rossem. Sonora Harris Hawk.
Aquila chrysaëtos (Linnaeus). Golden Eagle.
Aquila chrysaëtos canadensis (Linnaeus). American Golden Eagle.
Haliaeetus leucocephalus (Linnaeus). Bald Eagle.
Haliaeetus leucocephalus leucocephalus (Linnaeus). Southern Bald Eagle.
Circus cyaneus (Linnaeus). Marsh Hawk.
Circus cyaneus hudsonius (Linnaeus). American Marsh Hawk.

Family **PANDIONIDAE** Ospreys

Pandion haliaetus (Linnaeus). Osprey.
Pandion haliaetus carolinensis (Gmelin). American Osprey.

Family **FALCONIDAE** Falcons and Caracaras

Falco mexicanus Schlegel. Prairie Falcon.
Falco peregrinus Tunstall. Duck Hawk.
Falco peregrinus pealei Ridgway. Peale Duck Hawk.
Falco peregrinus anatum Bonaparte. American Duck Hawk.
Falco columbarius Linnaeus. Pigeon Hawk.
Falco columbarius richardsonii Ridgway. Richardson Pigeon Hawk.
Falco columbarius bendirei Swann. Western Pigeon Hawk.
Falco columbarius suckleyi Ridgway. Black Pigeon Hawk.
Falco sparverius Linnaeus. Sparrow Hawk.
Falco sparverius sparverius Linnaeus. North American Sparrow Hawk.

Order GALLIFORMES Fowl-like Birds

Family **TETRAONIDAE** Grouse

Dendragapus fuliginosus (Ridgway). Sooty Grouse.
- **Dendragapus fuliginosus fuliginosus** (Ridgway). Oregon Sooty Grouse.
- **Dendragapus fuliginosus sierrae** Chapman. Sierra Sooty Grouse.
- **Dendragapus fuliginosus howardi** Dickey and van Rossem. Mount Pinos Sooty Grouse.

Bonasa umbellus (Linnaeus). Ruffed Grouse.
- **Bonasa umbellus sabini** (Douglas). Oregon Ruffed Grouse.

Pedioecetes phasianellus (Linnaeus). Sharp-tailed Grouse.
- **Pedioecetes phasianellus columbianus** (Ord). Columbian Sharp-tailed Grouse.

Centrocercus urophasianus (Bonaparte). Sage Grouse.

Family **PHASIANIDAE** Quail and Pheasants

Oreortyx picta (Douglas). Mountain Quail.
- **Oreortyx picta palmeri** Oberholser. Coast Mountain Quail.
- **Oreortyx picta picta** (Douglas). Sierran Mountain Quail.
- **Oreortyx picta eremophila** van Rossem. Southern California Mountain Quail.

Lophortyx californica (Shaw and Nodder). California Quail.
- **Lophortyx californica californica** (Shaw and Nodder). Valley California Quail.
- **Lophortyx californica brunnescens** Ridgway. Coast California Quail.
- **Lophortyx californica canfieldae** van Rossem. Inyo California Quail.
- **Lophortyx californica catalinensis** Grinnell. Catalina California Quail.

Lophortyx gambelii Gambel. Gambel Quail.
- **Lophortyx gambelii gambelii** Gambel. Southern Gambel Quail.

Order GRUIFORMES Crane-like Birds

Family **GRUIDAE** Cranes

Grus canadensis (Linnaeus). Sandhill Crane.
- **Grus canadensis canadensis** (Linnaeus). Lesser Sandhill Crane.
- **Grus canadensis tabida** (Peters). Greater Sandhill Crane.

Family **RALLIDAE** Rails

Rallus longirostris Boddaert. Clapper Rail.
- **Rallus longirostris obsoletus** Ridgway. California Clapper Rail.
- **Rallus longirostris levipes** Bangs. Light-footed Clapper Rail.
- **Rallus longirostris yumanensis** Dickey. Yuma Clapper Rail.

Rallus limicola Vieillot. Virginia Rail.
- **Rallus limicola limicola** Vieillot. Northern Virginia Rail.

Porzana carolina (Linnaeus). Sora Rail.

Laterallus jamaicensis (Gmelin). Black Rail.
- **Laterallus jamaicensis coturniculus** (Ridgway). California Black Rail.

Coturnicops noveboracensis (Gmelin). Yellow Rail.
- **Coturnicops noveboracensis noveboracensis** (Gmelin). Northern Yellow Rail.

Gallinula chloropus (Linnaeus). Black Gallinule.
- **Gallinula chloropus cachinnans** Bangs. North American Black Gallinule.

Fulica americana Gmelin. American Coot.
- **Fulica americana americana** Gmelin. North American Coot.

Order CHARADRIIFORMES Plover-like Birds

Family **HAEMATOPODIDAE** Oyster-catchers

Haematopus ostralegus Linnaeus. Pied Oyster-catcher.
Haematopus ostralegus frazari Brewster. Frazar Pied Oyster-catcher.
Haematopus bachmanii Audubon. Black Oyster-catcher.

Family **CHARADRIIDAE** Plovers

Squatarola squatarola (Linnaeus). Black-bellied Plover.
Pluvialis dominica (P. L. S. Müller). Golden Plover.
Pluvialis dominica dominica (P. L. S. Müller). American Golden Plover.
Pluvialis dominica fulva (Gmelin). Pacific Golden Plover.
Charadrius semipalmatus Bonaparte. Semipalmated Plover.
Charadrius nivosus (Cassin). Snowy Plover.
Charadrius nivosus nivosus (Cassin). Western Snowy Plover.
Charadrius wilsonia Ord. Wilson Plover.
Charadrius wilsonia beldingi (Ridgway). Belding Wilson Plover.
Oxyechus vociferus (Linnaeus). Killdeer.
Oxyechus vociferus vociferus (Linnaeus). Northern Killdeer.
Eupoda montana (J. K. Townsend). Mountain Plover.

Family **SCOLOPACIDAE** Snipe, Sandpipers, etc.

Bartramia longicauda (Bechstein). Upland Plover.
Numenius hudsonicus Latham. Hudsonian Curlew.
Numenius americanus Bechstein. Long-billed Curlew.
Limosa fedoa (Linnaeus). Marbled Godwit.
Totanus flavipes (Gmelin). Lesser Yellow-legs.
Totanus melanoleucus (Gmelin). Greater Yellow-legs.
Tringa solitaria Wilson. Solitary Sandpiper.
Tringa solitaria cinnamomea (Brewster). Western Solitary Sandpiper.
Actitis macularia (Linnaeus). Spotted Sandpiper.
Catoptrophorus semipalmatus (Gmelin). Willet.
Catoptrophorus semipalmatus inornatus (Brewster). Western Willett.
Heteroscelus incanus (Gmelin). Wandering Tattler.
Aphriza virgata (Gmelin). Surf-bird.
Arenaria interpres (Linnaeus). Ruddy Turnstone.
Arenaria interpres morinella (Linnaeus). American Ruddy Turnstone.
Arenaria melanocephala (Vigors). Black Turnstone.
Limnodromus griseus (Gmelin). Dowitcher.
Limnodromus griseus scolopaceus (Say). Long-billed Dowitcher.
Limnodromus griseus griseus (Gmelin). Eastern Dowitcher.
Capella delicata (Ord). Wilson Snipe.
Lymnocryptes minima (Brünnich). European Jack Snipe.
Calidris canutus (Linnaeus). Red Knot.
Calidris canutus rufus (Wilson). American Red Knot.

Crocethia alba (Pallas). Sanderling.
Ereunetes mauri Cabanis. Western Sandpiper.
Erolia minutilla (Vieillot). Least Sandpiper.
Erolia bairdii (Coues). Baird Sandpiper.
Erolia melanotos (Vieillot). Pectoral Sandpiper.
Erolia acuminata (Horsfield). Sharp-tailed Sandpiper.
Erolia ptilocnemis (Coues). Rock Sandpiper.
Erolia ptilocnemis couesi (Ridgway). Aleutian Rock Sandpiper.
Erolia alpina (Linnaeus). Red-backed Sandpiper.
Erolia alpina pacifica (Coues). American Red-backed Sandpiper.
Micropalama himantopus (Bonaparte). Stilt Sandpiper.
Tryngites subruficollis (Vieillot). Buff-breasted Sandpiper.

Family **RECURVIROSTRIDAE** Avocets and Stilts

Himantopus mexicanus (P. L. S. Müller). Black-necked Stilt.
Recurvirostra americana Gmelin. American Avocet.

Family **PHALAROPODIDAE** Phalaropes

Phalaropus fulicarius (Linnaeus). Red Phalarope.
Steganopus tricolor Vieillot. Wilson Phalarope.
Lobipes lobatus (Linnaeus). Northern Phalarope.

Family **STERCORARIIDAE** Skuas and Jaegers

Catharacta skua Brünnich. Skua.
Catharacta skua chilensis (Bonaparte). Chilean Skua.
Stercorarius pomarinus (Temminck). Pomarine Jaeger.
Stercorarius parasiticus (Linnaeus). Parasitic Jaeger.
Stercorarius longicaudus Vieillot. Long-tailed Jaeger.

Family **LARIDAE** Gulls and Terns

Larus heermanni Cassin. Heermann Gull.
Larus delawarensis Ord. Ring-billed Gull.
Larus canus Linnaeus. Mew Gull.
Larus canus brachyrhynchus Richardson. Short-billed Mew Gull.
Larus argentatus Pontoppidan. Herring Gull.
Larus argentatus thayeri W. S. Brooks. Thayer Herring Gull.
Larus argentatus smithsonianus Coues. American Herring Gull.
Larus californicus Lawrence. California Gull.
Larus occidentalis Audubon. Western Gull.
Larus occidentalis occidentalis Audubon. Northern Western Gull.
Larus occidentalis wymani Dickey and van Rossem. Southern Western Gull.
Larus occidentalis livens Dwight. Yellow-footed Western Gull.

Larus glaucescens Naumann. Glaucous-winged Gull.
Larus hyperboreus Gunnerus. Glaucous Gull.
Larus atricilla Linnaeus. Laughing Gull.
Larus pipixcan Wagler. Franklin Gull.
Larus philadelphia (Ord). Bonaparte Gull.
Rissa tridactyla (Linnaeus). Black-legged Kittiwake.
Rissa tridactyla pollicaris Ridgway. Pacific Black-legged Kittiwake.
Xema sabini (Sabine). Sabine Gull.
Chlidonias nigra (Linnaeus). Black Tern.
Chlidonias nigra surinamensis (Gmelin). American Black Tern.
Gelochelidon nilotica (Gmelin). Gull-billed Tern.
Gelochelidon nilotica aranea (Wilson). American Gull-billed Tern.
Hydroprogne caspia (Pallas). Caspian Tern.
Hydroprogne caspia caspia (Pallas). Holarctic Caspian Tern.
Sterna hirundo Linnaeus. Common Tern.
Sterna hirundo hirundo Linnaeus. Linnaean Common Tern.
Sterna paradisaea Pontoppidan. Arctic Tern.
Sterna forsteri Nuttall. Forster Tern.
Sterna albifrons Pallas. Least Tern.
Sterna albifrons browni Mearns. California Least Tern.
Thalasseus maximus (Boddaert). Royal Tern.
Thalasseus maximus maximus (Boddaert). American Royal Tern.
Thalasseus elegans (Gambel). Elegant Tern.

Family **ALCIDAE** Auks, Murres, etc.

Uria aalge (Pontoppidan). Common Murre.
Uria aalge californica (H. Bryant). California Common Murre.
Cepphus columba Pallas. Pigeon Guillemot.
Cepphus columba columba. American Pigeon Guillemot.
Brachyramphus marmoratus (Gmelin). Marbled Murrelet.
Brachyramphus marmoratus marmoratus Gmelin. American Marbled Murrelet.
Endomychura hypoleuca (Xantus). Xantus Murrelet.
Endomychura hypoleuca scrippsi Green and Arnold. Northern Xantus Murrelet.
Endomychura hypoleuca hypoleuca (Xantus). Guadalupe Xantus Murrelet.
Endomychura craveri (Salvadori). Craveri Murrelet.
Synthliboramphus antiquus (Gmelin). Ancient Murrelet.
Ptychoramphus aleuticus (Pallas). Cassin Auklet.
Ptychoramphus aleuticus aleuticus (Pallas). Northern Cassin Auklet.
Cyclorrynchus psittacula (Pallas). Paroquet Auklet.
Cerorhinca monocerata (Pallas). Rhinoceros Auklet.
Fratercula corniculata (Naumann). Horned Puffin.
Lunda cirrhata (Pallas). Tufted Puffin.

Order COLUMBIFORMES Pigeon-like Birds

Family **COLUMBIDAE** Pigeons and Doves

Columba fasciata Say. Band-tailed Pigeon.
- **Columba fasciata monilis** Vigors. Pacific Band-tailed Pigeon.

Zenaidura macroura (Linnaeus). Mourning Dove.
- **Zenaidura macroura marginella** (Woodhouse). Western Mourning Dove.

Zenaida asiatica (Linnaeus). White-winged Dove.
- **Zenaida asiatica mearnsi** (Ridgway). Western White-winged Dove.

Columbigallina passerina (Linnaeus). Ground Dove.
- **Columbigallina passerina pallescens** (Baird). Mexican Ground Dove.

Order CUCULIFORMES Cuckoo-like Birds

Family **CUCULIDAE** Cuckoos, Road-runners, etc.

Coccyzus americanus (Linnaeus). Yellow-billed Cuckoo.
- **Coccyzus americanus occidentalis** Ridgway. Western Yellow-billed Cuckoo.

Geococcyx californianus (Lesson). California Road-runner.

Order STRIGIFORMES Owls

Family **TYTONIDAE** Barn Owls

Tyto alba (Scopoli). Barn Owl.
- **Tyto alba pratincola** (Bonaparte). North American Barn Owl.

Family **STRIGIDAE** Horned Owls, etc.

Otus flammeolus Kaup. Flammulated Owl.

Otus asio (Linnaeus). Screech Owl.
- **Otus asio macfarlanei** (Brewster). MacFarlane Screech Owl.
- **Otus asio brewsteri** Ridgway. Brewster Screech Owl.
- **Otus asio bendirei** (Brewster). California Coast Screech Owl.
- **Otus asio quercinus** Grinnell. Southern California Screech Owl.
- **Otus asio inyoensis** Grinnell. Inyo Screech Owl.
- **Otus asio cineraceus** (Ridgway). Mexican Screech Owl.
- **Otus asio gilmani** Swarth. Sahuaro Screech Owl.

Bubo virginianus (Gmelin). Horned Owl.
- **Bubo virginianus occidentalis** Stone. Rocky Mountain Horned Owl.
- **Bubo virginianus pacificus** Cassin. Pacific Horned Owl.
- **Bubo virginianus saturatus** Ridgway. Dusky Horned Owl.
- **Bubo virginianus pallescens** Stone. Pallid Horned Owl.

Nyctea scandiaca (Linnaeus). Snowy Owl.

Glaucidium gnoma Wagler. Pigmy Owl.
- **Glaucidium gnoma pinicola** Nelson. Rocky Mountain Pigmy Owl.
- **Glaucidium gnoma californicum** Sclater. California Pigmy Owl.
- **Glaucidium gnoma grinnelli** Ridgway. Coast Pigmy Owl.

Micropallas whitneyi (J. G. Cooper). Elf Owl.
- **Micropallas whitneyi whitneyi** (J. G. Cooper). Arizona Elf Owl.

Speotyto cunicularia (Molina). Burrowing Owl.
- **Speotyto cunicularia hypugaea** (Bonaparte). Western Burrowing Owl.

Strix occidentalis (Xantus). Spotted Owl.
Strix occidentalis caurina (Merriam). Northern Spotted Owl.
Strix occidentalis occidentalis (Xantus). California Spotted Owl.
Strix nebulosa Forster. Great Gray Owl.
Strix nebulosa nebulosa Forster. American Great Gray Owl.
Asio wilsonianus (Lesson). American Long-eared Owl.
Asio flammeus (Pontoppidan). Short-eared Owl.
Asio flammeus flammeus (Pontoppidan). Northern Short-eared Owl.
Cryptoglaux acadica (Gmelin). Saw-whet Owl.
Cryptoglaux acadica acadica (Gmelin). Nearctic Saw-whet Owl.

Order CAPRIMULGIFORMES Goatsucker-like Birds

Family **CAPRIMULGIDAE** Goatsuckers

Chordeiles acutipennis (Boddaert). Trilling Nighthawk.
Chordeiles acutipennis texensis Lawrence. Texas Trilling Nighthawk.
Chordeiles minor (Forster). Booming Nighthawk.
Chordeiles minor hesperis Grinnell. Pacific Booming Nighthawk.
Phalaenoptilus nuttallii (Audubon). Poor-will.
Phalaenoptilus nuttallii nuttallii (Audubon). Nuttall Poor-will.
Phalaenoptilus nuttallii californicus Ridgway. Dusky Poor-will.
Phalaenoptilus nuttallii hueyi Dickey. Desert Poor-will.

Order MICROPODIFORMES Swifts and Hummingbirds

Family **MICROPODIDAE** Swifts

Chaetura vauxi (J. K. Townsend). Vaux Swift.
Nephoecetes niger (Gmelin). Black Swift.
Nephoecetes niger borealis (Kennerly). Northern Black Swift.
Aëronautes saxatalis (Woodhouse). White-throated Swift.
Aëronautes saxatalis saxatalis (Woodhouse). Western White-throated Swift.

Family **TROCHILIDAE** Hummingbirds

Archilochus alexandri (Bourcier and Mulsant). Black-chinned Hummingbird.
Calypte costae (Bourcier). Costa Hummingbird.
Calypte anna (Lesson). Anna Hummingbird.
Selasphorus platycercus (Swainson). Broad-tailed Hummingbird.
Selasphorus platycercus platycercus (Swainson). Northern Broad-tailed Hummingbird.
Selasphorus rufus (Gmelin). Rufous Hummingbird.
Selasphorus sasin (Lesson). Allen Hummingbird.
Selasphorus sasin sasin (Lesson). Migratory Allen Hummingbird.
Selasphorus sasin sedentarius Grinnell. Non-migratory Allen Hummingbird.
Stellula calliope (Gould). Calliope Hummingbird.

Order CORACIIFORMES Roller-like Birds

Family **ALCEDINIDAE** Kingfishers

Megaceryle alcyon (Linnaeus). Belted Kingfisher.
Megaceryle alcyon caurina (Grinnell). Western Belted Kingfisher.

Order PICIFORMES Woodpecker-like Birds

Family **PICIDAE** Woodpeckers

Colaptes auratus (Linnaeus). Yellow-shafted Flicker.
- **Colaptes auratus borealis** Ridgway. Boreal Yellow-shafted Flicker.

Colaptes cafer (Gmelin). Red-shafted Flicker.
- **Colaptes cafer cafer** (Gmelin). Northwestern Red-shafted Flicker.
- **Colaptes cafer collaris** Vigors. Monterey Red-shafted Flicker.

Colaptes chrysoides (Malherbe). Gilded Flicker.
- **Colaptes chrysoides mearnsi** Ridgway. Mearns Gilded Flicker.

Ceophloeus pileatus (Linnaeus). Pileated Woodpecker.
- **Ceophloeus pileatus picinus** (Bangs). Western Pileated Woodpecker.

Centurus uropygialis Baird. Gila Woodpecker.
- **Centurus uropygialis albescens** van Rossem. Colorado River Gila Woodpecker.

Balanosphyra formicivora (Swainson). Acorn Woodpecker.
- **Balanosphyra formicivora bairdi** (Ridgway). California Acorn Woodpecker.

Asyndesmus lewis (Gray). Lewis Woodpecker.

Sphyrapicus varius (Linnaeus). Yellow-bellied Sapsucker.
- **Sphyrapicus varius nuchalis** Baird. Red-naped Yellow-bellied Sapsucker.
- **Sphyrapicus varius daggetti** Grinnell. Sierra Yellow-bellied Sapsucker.

Sphyrapicus thyroideus (Cassin). Williamson Sapsucker.
- **Sphyrapicus thyroideus nataliae** (Malherbe). Rocky Mountain Williamson Sapsucker.
- **Sphyrapicus thyroideus thyroideus** (Cassin). Pacific Williamson Sapsucker.

Dryobates villosus (Linnaeus). Hairy Woodpecker.
- **Dryobates villosus orius** Oberholser. Modoc Hairy Woodpecker.
- **Dryobates villosus hyloscopus** Cabanis and Heine. Cabanis Hairy Woodpecker.
- **Dryobates villosus harrisi** (Audubon). Harris Hairy Woodpecker.
- **Dryobates villosus leucothorectis** Oberholser. White-breasted Hairy Woodpecker.

Dryobates pubescens (Linnaeus). Downy Woodpecker.
- **Dryobates pubescens leucurus** (Hartlaub). Rocky Mountain Downy Woodpecker.
- **Dryobates pubescens turati** (Malherbe). Willow Downy Woodpecker.
- **Dryobates pubescens gairdnerii** (Audubon). Gairdner Downy Woodpecker.

Dryobates scalaris (Wagler). Ladder-backed Woodpecker.
- **Dryobates scalaris cactophilus** Oberholser. Cactus Ladder-backed Woodpecker.

Dryobates nuttallii (Gambel). Nuttall Woodpecker.

Dryobates albolarvatus (Cassin). White-headed Woodpecker.
- **Dryobates albolarvatus albolarvatus** (Cassin). Northern White-headed Woodpecker.
- **Dryobates albolarvatus gravirostris** (Grinnell). Southern White-headed Woodpecker.

Picoides arcticus (Swainson). Arctic Three-toed Woodpecker.

Order PASSERIFORMES Perching Birds

Family **TYRANNIDAE** Tyrant Flycatchers

Tyrannus tyrannus (Linnaeus). Eastern Kingbird.

Tyrannus verticalis Say. Western Kingbird.

Tyrannus vociferans Swainson. Cassin Kingbird.
- **Tyrannus vociferans vociferans.** Northern Cassin Kingbird.

Muscivora forficata (Gmelin). Scissor-tailed Flycatcher.

Myiarchus tyrannulus (P. L. S. Müller). Crested Flycatcher.
- **Myiarchus tyrannulus magister** Ridgway. Arizona Crested Flycatcher.

Myiarchus cinerascens (Lawrence). Ash-throated Flycatcher.
Myiarchus cinerascens cinerascens (Lawrence). Northern Ash-throated Flycatcher.
Sayornis phoebe (Latham). Eastern Phoebe.
Sayornis nigricans (Swainson). Black Phoebe.
Sayornis nigricans semiatra (Vigors). California Black Phoebe.
Sayornis saya (Bonaparte). Say Phoebe.
Sayornis saya saya (Bonaparte). Rocky Mountain Say Phoebe.
Sayornis saya quiescens Grinnell. San Jose Say Phoebe.
Empidonax traillii (Audubon). Traill Flycatcher.
Empidonax traillii brewsteri Oberholser. Western Traill Flycatcher.
Empidonax hammondii (Xantus). Hammond Flycatcher.
Empidonax wrightii Baird. Wright Flycatcher.
Empidonax griseus Brewster. Gray Flycatcher.
Empidonax difficilis Baird. Western Flycatcher.
Empidonax difficilis difficilis Baird. Northern Western Flycatcher.
Myiochanes richardsonii (Swainson). Wood Pewee.
Myiochanes richardsonii richardsonii (Swainson). Western Wood Pewee.
Nuttallornis borealis (Swainson). Olive-sided Flycatcher.
Pyrocephalus rubinus (Boddaert). Vermilion Flycatcher.
Pyrocephalus rubinus flammeus van Rossem. Northwestern Vermilion Flycatcher.

Family **ALAUDIDAE** Larks

Otocoris alpestris (Linnaeus). Horned Lark.
Otocoris alpestris arcticola Oberholser. Pallid Horned Lark.
Otocoris alpestris enthymia Oberholser. Saskatchewan Horned Lark.
Otocoris alpestris leucolaema (Coues). Desert Horned Lark.
Otocoris alpestris utahensis Behle. Salt Lake Horned Lark.
Otocoris alpestris lamprochroma Oberholser. Warner Horned Lark.
Otocoris alpestris merrilli Dwight. Dusky Horned Lark.
Otocoris alpestris sierrae Oberholser. Sierra Horned Lark.
Otocoris alpestris strigata Henshaw. Streaked Horned Lark.
Otocoris alpestris insularis C. H. Townsend. Island Horned Lark.
Otocoris alpestris rubea Henshaw. Ruddy Horned Lark.
Otocoris alpestris actia Oberholser. California Horned Lark.
Otocoris alpestris ammophila Oberholser. Mohave Horned Lark.
Otocoris alpestris leucansiptila Oberholser. Yuma Horned Lark.

Family **HIRUNDINIDAE** Swallows

Tachycineta thalassina (Swainson). Violet-green Swallow.
Tachycineta thalassina lepida Mearns. Northern Violet-green Swallow.
Iridoprocne bicolor (Vieillot). Tree Swallow.
Riparia riparia (Linnaeus). Bank Swallow.
Riparia riparia riparia (Linnaeus). Common Bank Swallow.
Stelgidopteryx ruficollis (Vieillot). Rough-winged Swallow.
Stelgidopteryx ruficollis serripennis (Audubon). Northern Rough-winged Swallow.
Stelgidopteryx ruficollis psammochrous Griscom. Sonora Rough-winged Swallow.
Hirundo rustica Linnaeus. Barn Swallow.
Hirundo rustica erythrogaster Boddaert. American Barn Swallow.

Petrochelidon albifrons (Rafinesque). Cliff Swallow.
Petrochelidon albifrons albifrons (Rafinesque). Common Cliff Swallow.
Petrochelidon albifrons hypopolia Oberholser. Greater Cliff Swallow.
Progne subis (Linnaeus). Purple Martin.
Progne subis subis (Linnaeus). Northern Purple Martin.

Family **CORVIDAE** Jays, Magpies and Crows

Perisoreus canadensis (Linnaeus). Canada Jay.
Perisoreus canadensis griseus Ridgway. Gray Canada Jay.
Perisoreus canadensis obscurus Ridgway. Southwestern Canada Jay.
Cyanocitta stelleri (Gmelin). Steller Jay.
Cyanocitta stelleri frontalis (Ridgway). Blue-fronted Steller Jay.
Cyanocitta stelleri carbonacea Grinnell. Coast Steller Jay.
Cyanocitta stelleri diademata (Bonaparte). Long-crested Steller Jay.
Aphelocoma californica (Vigors). California Jay.
Aphelocoma californica superciliosa (Strickland). Interior California Jay.
Aphelocoma californica oocleptica Swarth. Northwestern California Jay.
Aphelocoma californica californica (Vigors). Southern California Jay.
Aphelocoma californica woodhouseii (Baird). Woodhouse California Jay.
Aphelocoma insularis Henshaw. Santa Cruz Island Jay.
Pica pica (Linnaeus). Black-billed Magpie.
Pica pica hudsonia (Sabine). American Black-billed Magpie.
Pica nuttallii (Audubon). Yellow-billed Magpie.
Corvus corax Linnaeus. Holarctic Raven.
Corvus corax sinuatus Wagler. American Holarctic Raven.
Corvus brachyrhynchos Brehm. American Crow.
Corvus brachyrhynchos hesperis Ridgway. Western American Crow.
Cyanocephalus cyanocephalus (Wied). Piñon Jay.
Nucifraga columbiana (Wilson). Clark Nutcracker.

Family **PARIDAE** Tits

Parus atricapillus Linnaeus. Black-capped Chickadee.
Parus atricapillus occidentalis Baird. Oregon Black-capped Chickadee.
Parus gambeli Ridgway. Mountain Chickadee.
Parus gambeli abbreviatus (Grinnell). Short-tailed Mountain Chickadee.
Parus gambeli inyoensis (Grinnell). Inyo Mountain Chickadee.
Parus gambeli baileyae Grinnell. Bailey Mountain Chickadee.
Parus rufescens J. K. Townsend. Chestnut-backed Chickadee.
Parus rufescens rufescens J. K. Townsend. Northern Chestnut-backed Chickadee.
Parus rufescens neglectus Ridgway. Marin Chestnut-backed Chickadee.
Parus rufescens barlowi Grinnell. Santa Cruz Chestnut-backed Chickadee.
Parus inornatus Gambel. Plain Titmouse.
Parus inornatus zaleptus (Oberholser). Warner Plain Titmouse.
Parus inornatus ridgwayi Richmond. Gray Plain Titmouse.
Parus inornatus sequestratus (Grinnell and Swarth). Oregon Plain Titmouse.
Parus inornatus inornatus Gambel. California Plain Titmouse.
Parus inornatus kernensis (Grinnell and Behle). Kern Plain Titmouse.
Parus inornatus transpositus (Grinnell). San Diego Plain Titmouse.
Auriparus flaviceps (Sundevall). Verdin.
Auriparus flaviceps acaciarum Grinnell. California Verdin.

Psaltriparus minimus (J. K. Townsend). Bush-tit.
Psaltriparus minimus plumbeus (Baird). Lead-colored Bush-tit.
Psaltriparus minimus providentialis Arvey. Providence Mountains Bush-tit.
Psaltriparus minimus californicus Ridgway. California Bush-tit.
Psaltriparus minimus minimus (J. K. Townsend). Coast Bush-tit.

Family **SITTIDAE** Nuthatches

Sitta carolinensis Latham. White-breasted Nuthatch.
Sitta carolinensis nelsoni Mearns. Rocky Mountain White-breasted Nuthatch.
Sitta carolinensis aculeata Cassin. Slender-billed White-breasted Nuthatch.
Sitta carolinensis tenuissima Grinnell. Inyo White-breasted Nuthatch.
Sitta canadensis Linnaeus. Red-breasted Nuthatch.
Sitta pygmaea Vigors. Pigmy Nuthatch.
Sitta pygmaea melanotis van Rossem. Black-eared Pigmy Nuthatch.
Sitta pygmaea pygmaea Vigors. Monterey Pigmy Nuthatch.
Sitta pygmaea leuconucha Anthony. White-naped Pigmy Nuthatch.

Family **CERTHIIDAE** Creepers

Certhia familiaris Linnaeus. Brown Creeper.
Certhia familiaris montana Ridgway. Rocky Mountain Brown Creeper.
Certhia familiaris zelotes Osgood. Sierra Nevada Brown Creeper.
Certhia familiaris occidentalis Ridgway. Tawny Brown Creeper.

Family **CHAMAEIDAE** Wren-tits

Chamaea fasciata (Gambel). Wren-tit.
Chamaea fasciata henshawi Ridgway. Pallid Wren-tit.
Chamaea fasciata rufula Ridgway. Ruddy Wren-tit.
Chamaea fasciata intermedia Grinnell. Intermediate Wren-tit.
Chamaea fasciata fasciata (Gambel). Monterey Wren-tit.

Family **CINCLIDAE** Dippers

Cinclus mexicanus Swainson. American Dipper.
Cinclus mexicanus unicolor Bonaparte. Northern American Dipper.

Family **TROGLODYTIDAE** Wrens

Troglodytes aëdon Vieillot. House Wren.
Troglodytes aëdon parkmanii Audubon. Western House Wren.
Troglodytes troglodytes (Linnaeus). Winter Wren.
Troglodytes troglodytes pacificus Baird. Western Winter Wren.
Thyromanes bewickii (Audubon). Bewick Wren.
Thryomanes bewickii atrestus Oberholser. Warner Bewick Wren.
Thryomanes bewickii eremophilus Oberholser. Desert Bewick Wren.
Thryomanes bewickii calophonus Oberholser. Seattle Bewick Wren.
Thryomanes bewickii marinensis Grinnell. Nicasio Bewick Wren.
Thryomanes bewickii spilurus (Vigors). Vigors Bewick Wren.
Thryomanes bewickii drymoecus Oberholser. San Joaquin Bewick Wren.
Thryomanes bewickii correctus Grinnell. San Diego Bewick Wren.
Thryomanes bewickii nesophilus Oberholser. Santa Cruz Island Bewick Wren.
Thryomanes bewickii catalinae Grinnell. Catalina Bewick Wren.
Thryomanes bewickii leucophrys (Anthony). San Clemente Bewick Wren.

Heleodytes brunneicapillus (Lafresnaye). Cactus Wren.
Heleodytes brunneicapillus couesi (Sharpe). Northern Cactus Wren.

Telmatodytes palustris (Wilson). Long-billed Marsh Wren.
Telmatodytes palustris plesius (Oberholser). Western Long-billed Marsh Wren.
Telmatodytes palustris paludicola (Baird). Tule Long-billed Marsh Wren.
Telmatodytes palustris aestuarinus Swarth. Suisun Long-billed Marsh Wren.

Catherpes mexicanus (Swainson). Canyon Wren.
Catherpes mexicanus conspersus Ridgway. Dotted Canyon Wren.

Salpinctes obsoletus (Say). Rock Wren.
Salpinctes obsoletus obsoletus (Say). Northern Rock Wren.

Family **MIMIDAE** Mockingbirds and Thrashers

Mimus polyglottos (Linnaeus). Mockingbird.
Mimus polyglottos leucopterus (Vigors). Western Mockingbird.

Dumetella carolinensis (Linnaeus). Catbird.

Oreoscoptes montanus (J. K. Townsend). Sage Thrasher.

Toxostoma rufum (Linnaeus). Brown Thrasher.

Toxostoma bendirei (Coues). Bendire Thrasher.

Toxostoma curvirostre (Swainson). Curve-billed Thrasher.
Toxostoma curvirostre palmeri (Coues). Palmer Curve-billed Thrasher.

Toxostoma lecontei Lawrence. LeConte Thrasher.
Toxostoma lecontei lecontei Lawrence. Gila LeConte Thrasher.

Toxostoma redivivum (Gambel). California Thrasher.
Toxostoma redivivum sonomae Grinnell. Northern California Thrasher.
Toxostoma redivivum redivivum (Gambel). Southern California Thrasher.

Toxostoma dorsale Henry. Crissal Thrasher.
Toxostoma dorsale dorsale Henry. Arizona Crissal Thrasher.

Family **TURDIDAE** Thrushes

Turdus migratorius Linnaeus. Robin.
Turdus migratorius caurinus (Grinnell). Northwestern Robin.
Turdus migratorius propinquus (Ridgway). Western Robin.

Ixoreus naevius (Gmelin). Varied Thrush.
Ixoreus naevius meruloides (Swainson). Northern Varied Thrush.
Ixoreus naevius naevius (Gmelin). Coast Varied Thrush.

Hylocichla guttata (Pallas). Hermit Thrush.
Hylocichla guttata guttata (Pallas). Alaska Hermit Thrush.
Hylocichla guttata nanus (Audubon). Dwarf Hermit Thrush.
Hylocichla guttata slevini Grinnell. Monterey Hermit Thrush.
Hylocichla guttata sequoiensis (Belding). Sierra Hermit Thrush.
Hylocichla guttata polionota Grinnell. Great Basin Hermit Thrush.

Hylocichla ustulata (Nuttall). Swainson Thrush.
Hylocichla ustulata almae Oberholser. Rocky Mountain Swainson Thrush.
Hylocichla ustulata ustulata (Nuttall). Russet-backed Swainson Thrush.

Sialia mexicana Swainson. Mexican Bluebird.
Sialia mexicana occidentalis J. K. Townsend. Western Mexican Bluebird.
Sialia mexicana bairdi Ridgway. Chestnut-backed Mexican Bluebird.

Sialia currucoides (Bechstein). Mountain Bluebird.

Myadestes townsendi (Audubon). Townsend Solitaire.
Myadestes townsendi townsendi (Audubon). Northern Townsend Solitaire.

Family **SYLVIIDAE** Old-World Warblers, Gnatcatchers, Kinglets

Polioptila caerulea (Linnaeus). Blue-gray Gnatcatcher.
Polioptila caerulea amoenissima Grinnell. Western Blue-gray Gnatcatcher.

Polioptila melanura Lawrence. Black-tailed Gnatcatcher.
Polioptila melanura lucida van Rossem. Sonora Black-tailed Gnatcatcher.
Polioptila melanura californica Brewster. California Black-tailed Gnatcatcher.

Regulus satrapa Lichtenstein. Golden-crowned Kinglet.
Regulus satrapa olivaceus Baird. Western Golden-crowned Kinglet.

Regulus calendula (Linnaeus). Ruby-crowned Kinglet.
Regulus calendula grinnelli Palmer. Sitka Ruby-crowned Kinglet.
Regulus calendula cineraceus Grinnell. Western Ruby-crowned Kinglet.

Family **MOTACILLIDAE** Wagtails

Anthus spinoletta (Linnaeus). Water Pipit.
Anthus spinoletta alticola Todd. Rocky Mountain Water Pipit.
Anthus spinoletta pacificus Todd. Western Water Pipit.

Family **BOMBYCILLIDAE** Waxwings

Bombycilla garrula (Linnaeus). Bohemian Waxwing.
Bombycilla garrula pallidiceps Reichenow. American Bohemian Waxwing.

Bombycilla cedrorum Vieillot. Cedar Waxwing.

Family **PTILOGONATIDAE** Silky Flycatchers

Phainopepla nitens (Swainson). Phainopepla.
Phainopepla nitens lepida Van Tyne. Northern Phainopepla.

Family **LANIIDAE** Shrikes

Lanius excubitor Linnaeus. Boreal Shrike.
Lanius excubitor invictus Grinnell. Western Boreal Shrike.

Lanius ludovicianus Linnaeus. Loggerhead Shrike.
Lanius ludovicianus gambeli Ridgway. California Loggerhead Shrike.
Lanius ludovicianus nevadensis A. H. Miller. Nevada Loggerhead Shrike.
Lanius ludovicianus sonoriensis A. H. Miller. Sonora Loggerhead Shrike.
Lanius ludovicianus anthonyi Mearns. Island Loggerhead Shrike.
Lanius ludovicianus mearnsi Ridgway. San Clemente Loggerhead Shrike.

Family **VIREONIDAE** Vireos

Vireo huttoni Cassin. Hutton Vireo.
Vireo huttoni huttoni Cassin. California Hutton Vireo.

Vireo bellii Audubon. Bell Vireo.
Vireo bellii pusillus Coues. Least Bell Vireo.
Vireo bellii arizonae Ridgway. Arizona Bell Vireo.

Vireo vicinior Coues. Gray Vireo.

Vireo solitarius (Wilson). Solitary Vireo.
Vireo solitarius cassinii Xantus. Cassin Solitary Vireo.

Vireo flavoviridis (Cassin). Yellow-green Vireo.
Vireo flavoviridis flavoviridis (Cassin). Northern Yellow-green Vireo.
Vireo olivaceus (Linnaeus). Red-eyed Vireo.
Vireo gilvus (Vieillot). Warbling Vireo.
Vireo gilvus leucopolius (Oberholser). Great Basin Warbling Vireo.
Vireo gilvus swainsonii Baird. Western Warbling Vireo.

Family **COMPSOTHLYPIDAE** Wood Warblers

Mniotilta varia (Linnaeus). Black-and-white Warbler.
Vermivora peregrina (Wilson). Tennessee Warbler.
Vermivora celata (Say). Orange-crowned Warbler.
Vermivora celata celata (Say). Eastern Orange-crowned Warbler.
Vermivora celata orestera Oberholser. Rocky Mountain Orange-crowned Warbler.
Vermivora celata lutescens (Ridgway). Lutescent Orange-crowned Warbler.
Vermivora celata sordida (C. H. Townsend). Dusky Orange-crowned Warbler.
Vermivora ruficapilla (Wilson). Nashville Warbler.
Vermivora ruficapilla ridgwayi van Rossem. Calaveras Nashville Warbler.
Vermivora virginiae (Baird). Virginia Warbler.
Vermivora luciae (J. G. Cooper). Lucy Warbler.
Dendroica aestiva (Gmelin). Yellow Warbler.
Dendroica aestiva rubiginosa (Pallas). Alaska Yellow Warbler.
Dendroica aestiva brewsteri Grinnell. California Yellow Warbler.
Dendroica aestiva morcomi Coale. Rocky Mountain Yellow Warbler.
Dendroica aestiva sonorana Brewster. Sonora Yellow Warbler.
Dendroica magnolia (Wilson). Magnolia Warbler.
Dendroica tigrina (Gmelin). Cape May Warbler.
Dendroica caerulescens (Gmelin). Black-throated Blue Warbler.
Dendroica caerulescens caerulescens (Gmelin). Canadian Black-throated Blue Warbler.
Dendroica coronata (Linnaeus). Myrtle Warbler.
Dendroica coronata hooveri McGregor. Alaska Myrtle Warbler.
Dendroica auduboni (J. K. Townsend). Audubon Warbler.
Dendroica auduboni auduboni (J. K. Townsend). Pacific Audubon Warbler.
Dendroica nigrescens (J. K. Townsend). Black-throated Gray Warbler.
Dendroica townsendi (J. K. Townsend). Townsend Warbler.
Dendroica virens (Gmelin). Black-throated Green Warbler.
Dendroica virens virens (Gmelin). Northern Black-throated Green Warbler.
Dendroica occidentalis (J. K. Townsend). Hermit Warbler.
Dendroica pensylvanica (Linnaeus). Chestnut-sided Warbler.
Dendroica palmarum (Gmelin). Palm Warbler.
Dendroica palmarum palmarum (Gmelin). Western Palm Warbler.
Seiurus aurocapillus (Linnaeus). Oven-bird.
Seiurus aurocapillus aurocapillus (Linnaeus). Eastern Oven-bird.
Seiurus noveboracensis (Gmelin). Northern Water-thrush.
Seiurus noveboracensis limnaeus McCabe and Miller. British Columbian Northern Water-thrush.
Seiurus motacilla (Vieillot). Louisiana Water-thrush.
Oporornis tolmiei (J. K. Townsend). Tolmie Warbler.
Geothlypis trichas (Linnaeus). Yellow-throat.
Geothlypis trichas occidentalis Brewster. Western Yellow-throat.

Geothlypis trichas sinuosa Grinnell. San Francisco Yellow-throat.
Geothlypis trichas scirpicola Grinnell. Tule Yellow-throat.

Icteria virens (Linnaeus). Chat.
Icteria virens auricollis (Lichtenstein). Long-tailed Chat.

Wilsonia pusilla (Wilson). Pileolated Warbler.
Wilsonia pusilla pileolata (Pallas). Northern Pileolated Warbler.
Wilsonia pusilla chryseola Ridgway. Golden Pileolated Warbler.

Setophaga ruticilla (Linnaeus). American Redstart.

Setophaga picta Swainson. Painted Redstart.
Setophaga picta picta Swainson. Northern Painted Redstart.

Family **ICTERIDAE** American Orioles and Blackbirds

Dolichonyx oryzivorus (Linnaeus). Bobolink.

Sturnella neglecta Audubon. Western Meadowlark.

Xanthocephalus xanthocephalus (Bonaparte). Yellow-headed Blackbird.

Agelaius phoeniceus (Linnaeus). Red-winged Blackbird.
Agelaius phoeniceus nevadensis Grinnell. Nevada Red-winged Blackbird.
Agelaius phoeniceus caurinus Ridgway. Northwestern Red-winged Blackbird.
Agelaius phoeniceus mailliardorum van Rossem. San Francisco Red-winged Blackbird.
Agelaius phoeniceus californicus Nelson. California Red-winged Blackbird.
Agelaius phoeniceus aciculatus Mailliard. Kern Red-winged Blackbird.
Agelaius phoeniceus neutralis Ridgway. San Diego Red-winged Blackbird.
Agelaius phoeniceus sonoriensis Ridgway. Sonora Red-winged Blackbird.

Agelaius tricolor (Audubon). Tricolored Blackbird.

Icterus spurius (Linnaeus). Orchard Oriole.

Icterus cucullatus Swainson. Hooded Oriole.
Icterus cucullatus californicus (Lesson). California Hooded Oriole.

Icterus pustulatus (Wagler). Scarlet-headed Oriole.
Icterus pustulatus microstictus Griscom. Western Scarlet-headed Oriole.

Icterus parisorum Bonaparte. Scott Oriole.

Icterus bullockii (Swainson). Bullock Oriole.

Euphagus carolinus (P. L. S. Müller). Rusty Blackbird.

Euphagus cyanocephalus (Wagler). Brewer Blackbird.

Molothrus ater (Boddaert). Brown-headed Cowbird.
Molothrus ater artemisiae Grinnell. Nevada Brown-headed Cowbird.
Molothrus ater obscurus (Gmelin). Dwarf Brown-headed Cowbird.

Family **THRAUPIDAE** Tanagers

Piranga ludoviciana (Wilson). Western Tanager.

Piranga olivacea (Gmelin). Scarlet Tanager.

Piranga rubra (Linnaeus). Summer Tanager.
Piranga rubra rubra (Linnaeus). Eastern Summer Tanager.
Piranga rubra cooperi Ridgway. Cooper Summer Tanager.

Family **FRINGILLIDAE**

Hedymeles ludovicianus (Linnaeus). Rose-breasted Grosbeak.

Hedymeles melanocephalus (Swainson). Black-headed Grosbeak.
- **Hedymeles melanocephalus melanocephalus** (Swainson). Rocky Mountain Black-headed Grosbeak.
- **Hedymeles melanocephalus maculatus** (Audubon). Pacific Black-headed Grosbeak.

Guiraca caerulea (Linnaeus). Blue Grosbeak.
- **Guiraca caerulea interfusa** Dwight and Griscom. Arizona Blue Grosbeak.
- **Guiraca caerulea salicarius** Grinnell. California Blue Grosbeak.

Passerina amoena (Say). Lazuli Bunting.

Passerina versicolor (Bonaparte). Varied Bunting.
- **Passerina versicolor dickeyae** van Rossem. Sonora Varied Bunting.

Hesperiphona vespertina (W. Cooper). Evening Grosbeak.
- **Hesperiphona vespertina brooksi** Grinnell. Western Evening Grosbeak.

Carpodacus purpureus (Gmelin). Purple Finch.
- **Carpodacus purpureus californicus** Baird. California Purple Finch.

Carpodacus cassinii Baird. Cassin Finch.

Carpodacus mexicanus (P. L. S. Müller). House Finch.
- **Carpodacus mexicanus frontalis** (Say). Common House Finch.
- **Carpodacus mexicanus clementis** Mearns. San Clemente House Finch.

Pinicola enucleator (Linneaus). Pine Grosbeak.
- **Pinicola enucleator californica** Price. California Pine Grosbeak.

Leucosticte tephrocotis (Swainson). Gray-crowned Rosy Finch.
- **Leucosticte tephrocotis tephrocotis** (Swainson). Swainson Gray-crowned Rosy Finch.
- **Leucosticte tephrocotis littoralis** Baird. Hepburn Gray-crowned Rosy Finch.
- **Leucosticte tephrocotis dawsoni** Grinnell. Sierra Nevada Gray-crowned Rosy Finch.

Leucosticte atrata Ridgway. Black Rosy Finch.

Acanthis flammea (Linnaeus). Redpoll.
- **Acanthis flammea flammea** (Linnaeus). Common Redpoll.

Spinus pinus (Wilson). Pine Siskin.
- **Spinus pinus pinus** (Wilson). Northern Pine Siskin.

Spinus tristis (Linnaeus). American Goldfinch.
- **Spinus tristis salicamans** Grinnell. Willow American Goldfinch.

Spinus psaltria (Say). Arkansas Goldfinch.
- **Spinus psaltria hesperophilus** (Oberholser). Green-backed Arkansas Goldfinch.

Spinus lawrencei (Cassin). Lawrence Goldfinch.

Loxia curvirostra Linnaeus. Red Crossbill.
- **Loxia curvirostra sitkensis** Grinnell. Sitka Red Crossbill.
- **Loxia curvirostra bendirei** Ridgway. Bendire Red Crossbill.
- **Loxia curvirostra grinnelli** Griscom. Sierra Red Crossbill.
- **Loxia curvirostra benti** Griscom. Rocky Mountain Red Crossbill.
- **Loxia curvirostra stricklandi** Ridgway. Mexican Red Crossbill.

Oberholseria chlorura (Audubon). Green-tailed Towhee.

Pipilo maculatus Swainson. Spotted Towhee.
- **Pipilo maculatus curtatus** Grinnell. Nevada Spotted Towhee.
- **Pipilo maculatus montanus** Swarth. Rocky Mountain Spotted Towhee.
- **Pipilo maculatus falcinellus** Swarth. Sacramento Spotted Towhee.
- **Pipilo maculatus oregonus** Bell. Oregon Spotted Towhee.
- **Pipilo maculatus falcifer** McGregor. San Francisco Spotted Towhee.
- **Pipilo maculatus megalonyx** Baird. San Diego Spotted Towhee.
- **Pipilo maculatus clementae** Grinnell. San Clemente Spotted Towhee.

Pipilo fuscus Swainson. Brown Towhee.
- **Pipilo fuscus bullatus** Grinnell and Swarth. Oregon Brown Towhee.
- **Pipilo fuscus carolae** McGregor. Sacramento Brown Towhee.
- **Pipilo fuscus kernensis** Grinnell and Behle. Kern Brown Towhee.
- **Pipilo fuscus eremophilus** van Rossem. Inyo Brown Towhee.
- **Pipilo fuscus petulans** Grinnell and Swarth. San Francisco Brown Towhee.
- **Pipilo fuscus crissalis** (Vigors). California Brown Towhee.

Pipilo aberti Baird. Abert Towhee.

Calamospiza melanocorys Stejneger. Lark Bunting.

Passerculus sandwichensis (Gmelin). Savannah Sparrow.
- **Passerculus sandwichensis alaudinus** Bonaparte. Western Savannah Sparrow.
- **Passerculus sandwichensis sandwichensis** (Gmelin). Aleutian Savannah Sparrow.
- **Passerculus sandwichensis anthinus** Bonaparte. Kodiak Savannah Sparrow.
- **Passerculus sandwichensis nevadensis** Grinnell. Nevada Savannah Sparrow.
- **Passerculus sandwichensis brooksi** Bishop. Dwarf Savannah Sparrow.
- **Passerculus sandwichensis bryanti** Ridgway. Bryant Savannah Sparrow.
- **Passerculus sandwichensis beldingi** Ridgway. Belding Savannah Sparrow.
- **Passerculus sandwichensis rostratus** (Cassin). Large-billed Savannah Sparrow.

Ammodramus savannarum (Gmelin). Grasshopper Sparrow.
- **Ammodramus savannarum perpallidus** (Coues). Western Grasshopper Sparrow.

Ammospiza caudacuta (Gmelin). Sharp-tailed Sparrow.
- **Ammospiza caudacuta nelsoni** (J .A. Allen). Nelson Sharp-tailed Sparrow.

Pooecetes gramineus (Gmelin). Vesper Sparrow.
- **Pooecetes gramineus affinis** (G. S. Miller). Oregon Vesper Sparrow.
- **Pooecetes gramineus confinis** (Baird). Western Vesper Sparrow.

Chondestes grammacus (Say). Lark Sparrow.
- **Chondestes grammacus strigatus** Swainson. Western Lark Sparrow.

Aimophila ruficeps (Cassin). Rufous-crowned Sparrow.
- **Aimophila ruficeps ruficeps** (Cassin). California Rufous-crowned Sparrow.
- **Aimophila ruficeps canescens** Todd. Ashy Rufous-crowned Sparrow.
- **Aimophila ruficeps obscura** Dickey and van Rossem. Santa Cruz Island Rufous-crowned Sparrow.

Amphispiza bilineata (Cassin). Black-throated Sparrow.
- **Amphispiza bilineata deserticola** Ridgway. Desert Black-throated Sparrow.

Amphispiza belli (Cassin). Bell Sparrow.
- **Amphispiza belli nevadensis** (Ridgway). Nevada Bell Sparrow.
- **Amphispiza belli canescens** Grinnell. Intermediate Bell Sparrow.
- **Amphispiza belli belli** (Cassin). California Bell Sparrow.
- **Amphispiza belli clementeae** Ridgway. San Clemente Bell Sparrow.

Junco hyemalis (Linnaeus). Slate-colored Junco.
- **Junco hyemalis hyemalis** (Linnaeus). Boreal Slate-colored Junco.
- **Junco hyemalis cismontanus** Dwight. Cassiar Slate-colored Junco.

Junco oreganus (J. K. Townsend). Oregon Junco.
- **Junco oreganus mearnsi** Ridgway. Pink-sided Oregon Junco.
- **Junco oreganus montanus** Ridgway. Interior Oregon Junco.
- **Junco oreganus oreganus** (J. K. Townsend). Northwestern Oregon Junco.
- **Junco oreganus shufeldti** Coale. Shufeldt Oregon Junco.
- **Junco oreganus thurberi** Anthony. Sierra Nevada Oregon Junco.
- **Junco oreganus pinosus** Loomis. Point Pinos Oregon Junco.

Junco caniceps (Woodhouse). Gray-headed Junco.
- **Junco caniceps caniceps** (Woodhouse). Northern Gray-headed Junco.

Spizella arborea (Wilson). Tree Sparrow.
- **Spizella arborea ochracea** Brewster. Western Tree Sparrow.

Spizella passerina (Bechstein). Chipping Sparrow.
- **Spizella passerina arizonae** Coues. Western Chipping Sparrow.

Spizella breweri Cassin. Brewer Sparrow.
Spizella breweri breweri Cassin. Southern Brewer Sparrow.
Spizella atrogularis (Cabanis). Black-chinned Sparrow.
Spizella atrogularis evura Coues. Arizona Black-chinned Sparrow.
Spizella atrogularis cana Coues. California Black-chinned Sparrow.
Spizella atrogularis caurina A. H. Miller. San Francisco Black-chinned Sparrow.
Zonotrichia querula (Nuttall). Harris Sparrow.
Zonotrichia leucophrys (Forster). White-crowned Sparrow.
Zonotrichia leucophrys gambelii (Nuttall). Gambel White-crowned Sparrow.
Zonotrichia leucophrys oriantha Oberholser. Mountain White-crowned Sparrow.
Zonotrichia leucophrys pugetensis Grinnell. Puget Sound White-crowned Sparrow.
Zonotrichia leucophrys nuttalli Ridgway. Nuttall White-crowned Sparrow.
Zonotrichia coronata (Pallas). Golden-crowned Sparrow.
Zonotrichia albicollis (Gmelin). White-throated Sparrow.
Passerella iliaca (Merrem). Fox Sparrow.
Passerella iliaca iliaca (Merrem). Eastern Fox Sparrow.
Passerella iliaca altivagans Riley. Alberta Fox Sparrow.
Passerella iliaca unalaschcensis (Gmelin). Shumagin Fox Sparrow.
Passerella iliaca insularis Ridgway. Kodiak Fox Sparrow.
Passerella iliaca sinuosa Grinnell. Valdez Fox Sparrow.
Passerella iliaca meruloides (Vigors). Yakutat Fox Sparrow.
Passerella iliaca townsendi (Audubon). Townsend Fox Sparrow.
Passerella iliaca fuliginosa Ridgway. Sooty Fox Sparrow.
Passerella iliaca schistacea Baird. Slate-colored Fox Sparrow.
Passerella iliaca fulva Swarth. Warner Fox Sparrow.
Passerella iliaca megarhynchus Baird. Yosemite Fox Sparrow.
Passerella iliaca brevicauda Mailliard. Yolla Bolly Fox Sparrow.
Passerella iliaca monoensis Grinnell and Storer. Mono Fox Sparrow.
Passerella iliaca canescens Swarth. White Mountains Fox Sparrow.
Passerella iliaca stephensi Anthony. Stephens Fox Sparrow.
Melospiza lincolnii (Audubon). Lincoln Sparrow.
Melospiza lincolnii lincolnii (Audubon). Northern Lincoln Sparrow.
Melospiza lincolnii gracilis (Kittlitz). Northwestern Lincoln Sparrow.
Melospiza lincolnii alticola (Miller and McCabe). Montane Lincoln Sparrow.
Melospiza georgiana (Latham). Swamp Sparrow.
Melospiza georgiana ericrypta Oberholser. Western Swamp Sparrow.
Melospiza melodia (Wilson). Song Sparrow.
Melospiza melodia montana Henshaw. Mountain Song Sparrow.
Melospiza melodia fisherella Oberholser. Modoc Song Sparrow.
Melospiza melodia merrilli Brewster. Merrill Song Sparrow.
Melospiza melodia caurina Ridgway. Yakutat Song Sparrow.
Melospiza melodia morphna Oberholser. Rusty Song Sparrow.
Melospiza melodia cleonensis McGregor. Mendocino Song Sparrow.
Melospiza melodia gouldii Baird. Marin Song Sparrow.
Melospiza melodia samuelis (Baird). Samuels Song Sparrow.
Melospiza melodia pusillula Ridgway. Alameda Song Sparrow.
Melospiza melodia santaecrucis Grinnell. Santa Cruz Song Sparrow.
Melospiza melodia maxillaris Grinnell. Suisun Song Sparrow.
Melospiza melodia mailliardi Grinnell. Modesto Song Sparrow.
Melospiza melodia heermanni Baird. Heermann Song Sparrow.
Melospiza melodia cooperi Ridgway. San Diego Song Sparrow.
Melospiza melodia micronyx Grinnell. San Miguel Song Sparrow.
Melospiza melodia graminea C. H. Townsend. Santa Barbara Island Song Sparrow.
Melospiza melodia clementae C. H. Townsend. San Clemente Song Sparrow.
Melospiza melodia saltonis Grinnell. Desert Song Sparrow.
Calcarius lapponicus (Linnaeus). Lapland Longspur.
Calcarius lapponicus alascensis Ridgway. Alaska Lapland Longspur.
Calcarius ornatus (J. K. Townsend). Chestnut-collared Longspur.

Gavia immer (Brünnich)
Common Loon

Synonyms—Colymbus glacialis; *Colymbus torquatus*; *Urinator immer*; *Urinator imber*; *Gavia imber*; *Gavia immer elasson*; *Gavia immer immer*; Ring-necked Loon; Great Northern Diver; Lesser Black-billed Loon; Lesser Loon.

Status—Winter visitant, October through April; occasional through summer. Common coastwise, of less regular occurrence on larger bodies of water inland. Also occurs sparingly, or did formerly, as a breeding species on lakes in northeastern plateau region.

Geographic range—In fall, winter and spring, and, sporadically, in summer, ocean and bays along entire length of coast; at same seasons, individuals reported from various interior localities, among which are: Yreka, Siskiyou County (Mus. Vert. Zool.); Goose Lake, Modoc County (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. L, 1879 [1880]:333); Lake Tahoe (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. M, 1877:1322); Glen Ellen, Sonoma County, and Topaz Lake, Mono County (Moffitt, Condor, 40, 1938:261); San Timoteo Canyon, near Redlands (Hill, Condor, 40, 1938: 91); Twentynine Palms, San Bernardino County (F. Carter, Condor, 39, 1937:212); Colorado River near Ehrenberg (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:113); Salton Sea (Grinnell, Condor, 10, 1908:186). The only definitely known breeding places have been certain lakes above 5000 feet in altitude, east of Lassen Peak, in Shasta and Lassen counties in the Boreal Life-zone: "Glassy" [= present day Horseshoe], Snaggy, Butte and Eagle lakes (Townsend, Proc. U. S. Nat. Mus., 10, 1887:190; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:154). Other selected references: behavior (W. E. Allen, Ecology, 1, 1920:309; Anthony, Auk, 38, 1921: 269ff.; Orr, Amer. Midl. Nat., 27, 1942:290); seasonal occurrence (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:36; Willett, *ibid.*, No. 21, 1933:11); in general, Bent (U. S. Nat. Mus., Bull. 107, 1919:47ff.).

Habitat—Bodies of water regularly frequented are extensive, at least fairly deep, and productive of an abundance of good-sized fishes.

Note—Common Loons breeding in the interior of the continent tend to be smaller than those from elsewhere and have been given the name *G. i. elasson* Bishop (Auk, 38, 1921:367). Small individuals occur in California, but until the range in measurements displayed by various breeding populations in North America is more accurately determined, it does not seem practical to employ subspecific names (see Willett, *loc. cit.*).

Gavia arctica pacifica (Lawrence)
Pacific Arctic Loon

Synonyms—Colymbus pacificus; *Colymbus arcticus* var. *pacificus*; *Gavia arctica*; *Gavia pacifica*; *Urinator pacificus*; *Gavia stellata*, part; Pacific Diver; Black-throated Diver; Pacific Loon.

Status—Winter visitant, September to May; casual (possibly crippled or decrepit birds) through summer. Common to abundant, according to degree of congregation on favorable waters or at migration time.

Geographic range—Open ocean and larger bays along whole length of State. Reported as a vagrant in Yosemite Valley, Mariposa County, where seen by Harwell and Kennard, December 6-10 (Harwell, Yosemite Nature Notes, 15, 1936:79) and in Death Valley, Inyo County (M. F. Gilman MS), but unfortunately no inland occurrence has been substantiated by a specimen. Representative accounts: Humboldt Bay, Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:191); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:37; Moffitt, Condor, 40, 1938: 261); Santa Cruz, Santa Cruz County, July 7 (C. P. Streator MS); Monterey Bay (Loomis, Proc. Calif. Acad. Sci., ser. 3, Zool., 2, 1900:317; Beck, *ibid.*, ser. 4, 3, 1910: 58); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:41); Channel Islands (Howell, Pac. Coast Avif. No. 12, 1917:18; Willett, *ibid.*, No. 21, 1933:11); San Diego area (Sefton, Condor, 28, 1926:244); in general (Bent, U. S. Nat. Mus., Bull. 107, 1919:67ff.).

Habitat—Normally limited to salt water; most abundant well offshore (Moffitt, *loc. cit.*), especially in waters around Santa Barbara Islands.

Gavia stellata (Pontoppidan)
Red-throated Loon

Synonyms—Colymbus septentrionalis; *Urinator lumme*; *Gavia lumme*; Red-throated Diver.

Status—Winter visitant, September to April or early May; casual in late May and June. Common to abundant in varying degrees; especially noticeable when concentrated at times of migration.

Geographic range—Open ocean and bays along the entire length of our seacoast. (While this general statement is undoubtedly correct, actual records are yet wanting from any point north of Tomales Bay, Marin County!) But one interior record supported by a specimen (not seen by us): near Fort Crook, Shasta County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:191). Some accounts of occurrence: Tomales Bay, Marin County, May 22, June 13, 21 (Moffitt, Condor, 40, 1938:261; Pitelka, *ibid.*, 43, 1941:294); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:37); Monterey Bay (Loomis, Proc. Calif. Acad. Sci., ser. 3, Zool., 2, 1900:355; Beck, *ibid.*, ser. 4, 3, 1910:59); Point Lobos, Monterey County, June 22 (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:41); Santa Cruz Island (Dawson, Condor, 17, 1915:203); Santa Barbara, Santa Barbara County (Dawson, Birds Calif., 4, 1924:2036); coast of southern California (Willett, Pac. Coast Avif. No. 21, 1933:11); San Diego Bay, behavior (Sefton, Condor, 32, 1930:261); in general (Bent, U. S. Nat. Mus., Bull. 107, 1919:72).

Habitat—Limited normally to salt water, showing liking for inshore areas and enclosed bays in contrast to preference of Arctic Loon.

Colymbus grisegena holböllii (Reinhardt)
Holböll Red-necked Grebe

Synonyms—Podiceps cristatus; *Podiceps cooperi*; *Podiceps affinis*; *Colymbus holboelli*; *Podicipes holboelli*; *Colymbus grisegena*; Crested Grebe; Cooper Grebe; Holboell Grebe.

Status—Winter visitant, October to April, exceptionally to May 10. In midwinter,

along central California seacoast, fairly common; apparently rare south of Monterey County.

Geographic range—Principally bays and harbors of central coast; recorded rarely from interior points. Southernmost station: Elsinore Lake, Riverside County (Nordhoff, Auk, 19, 1902:212; see also Willett, Pac. Coast Avif. No. 21, 1933:12). Interiormost station: Lake Tahoe (Belding MS, *in* Grinnell, Pac. Coast Avif. No. 11, 1915:15), but record not now verifiable. Additional references: San Francisco Bay, Oakland, etc. (Kobbé, Auk, 18, 1901:270; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:35); Monterey Bay, as late as May 10 (Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:58, and Condor, 9, 1907:58; Calif. Acad. Sci.); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:42).

Habitat—Chiefly ocean waters close inshore, or those of larger bays. Also bodies of fresh water adjacent to seacoast; for example, in the San Francisco Bay region, Stow Lake in Golden Gate Park.

Colymbus auritus Linnaeus
Horned Grebe

Synonyms—Podiceps cornutus; *Dytes auritus.*

Status—Winter visitant, late October to April, exceptionally to May 20. Varyingly rare to fairly common, according to year and locality; most commonly reported toward spring.

Geographic range—The entire seacoast, south to San Diego Bay. Occurs also, rarely, on inland waters; verified occurrences: Los Baños, Merced County, April 12, 1912 (Mus. Vert. Zool.); Salton Sea, Imperial Valley, March 23, 1942, bird in hand (C. A. Harwell MS). Representative reports from coast: Humboldt Bay (Townsend, Proc. U. S. Nat. Mus., 10, 1887:190); Bolinas Bay, Marin County, and Suisun Bay, Oakland, and Redwood City, in San Francisco Bay region, to May 20 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:36); Monterey Bay (Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896: 14); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:42); Santa Cruz and Santa Catalina islands (Dawson, Condor, 17, 1915:204; Dickey and van Rossem, Condor, 25, 1923:126); southern coast to San Diego Bay (Willett, Pac. Coast Avif. No. 21, 1933:12); in general (Bent, U. S. Nat. Mus., Bull. 107, 1919:20; Dawson, Birds Calif., 4, 1924:2048).

Habitat—While wintering in California, almost exclusively salt water of open coast, bays and harbors.

Note—Confusion of this species in winter plumage with the Eared Grebe has led to some faulty records; for example, the one from Mono Lake (W. K. Fisher, Condor, 4, 1902:47), and a bird reported from Paicines, San Benito County, October 14, 1900 (Mailliard and Mailliard, Condor, 3, 1901:120), which proves to be *Colymbus nigricollis californicus* (Calif. Acad. Sci.).

Colymbus nigricollis californicus (Heermann)
American Eared Grebe

Synonyms—Podiceps californicus; *Podiceps auritus californicus*; *Proctopus californicus*; *Dytes auritus* var. *californicus*; *Dytes nigricollis californicus*; *Podicipes californicus*; *Colymbus nigricollis*; *Colymbus californicus*; *Colymbus auritus*, part; California Grebe; Horned Grebe, part; Eared Grebe.

Status—Resident throughout year within the State, but seasonal status variable locally; in general, for the summer season congregates to breed on fresh-water bodies interiorly, especially on the elevated lakes along the east side of the main Sierran axis; in winter the population largely shifts to the ocean coastwise, with some of the birds tarrying on fresh-water bodies at lower elevations; occurs most widely in the fall, individuals appearing often then on the smallest ponds or reservoirs. Wintering birds reach the seacoast, as on Monterey Bay, as early as the first of August. The numbers in the aggregate are great; hundreds of pairs may breed in close association on a single favorable lake; and in winter scores of individuals may be seen at one time on the waters of coastal bays. The disappearance of old-time breeding "colonies," with the drainage or drying up of lakes, has been partly compensated for by the establishment of breeding groups on certain large reservoirs. This is especially true in the southern end of the State (see Willett, Pac. Coast Avif. No. 21, 1933:12).

Geographic range—Breeds on appropriate waters almost the entire length of the State, from northern end east of Cascade axis, on lakes of Siskiyou County, to southern end on western drainage as far as Cuyamaca Lake, San Diego County (Willett, *loc. cit.*). In west-central California, breeding instances have been few and far-scattered, well-nigh sporadic, for example: Los Baños, Merced County (Dawson, Birds Calif., 4, 1924: 2051); Riverdale, Fresno County (Tyler, Condor, 18, 1916:195). There is none from the area west of the Sierra-Cascade axis and north of about latitude 38°. East of the Sierra, breeds south to Mono County. Life-zones, Lower Sonoran, Upper Sonoran and Transition. Altitudes of known breeding stations extend from within 150 feet of sea level, in Merced County, up to 6600 feet, at Bear Lake, San Bernardino County. Definite late-summer, fall and winter records extend from Humboldt Bay to San Diego Bay, with many also from the waters about the Santa Barbara Islands (Howell, Pac. Coast Avif. No. 12, 1917:17). Altitudes of record of individual birds extend from —250 feet, on Salton Sea, Imperial County, up to 12,000 feet near Mount Lyell, Yosemite National Park (Harwell, Yosemite Nature Notes, 12, 1933:25). Other selected references: Eagle Lake and Red Rock P. O., Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:155); Lake Tahoe (Coleman, Calif. Fish and Game, 13, 1927:147); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:36); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:42); Death Valley and Owens Valley, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:12); Bear and Baldwin lakes, San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:51; Pierce, Condor, 18, 1916:177); La Jolla (diving) and San Diego (predation), San Diego County (W. E. Allen, Condor, 25, 1923:28; Sefton, Condor, 36, 1934:83); in general (Bent, U. S. Nat. Mus., Bull. 107, 1919:27); Dawson, Birds Calif., 4, 1924:2051).

Habitat—When breeding, typically fresh-water lakes with shallow margins grown, though more or less thinly, to aquatic vegetation such as cattails and tules. At other seasons, lives in waters that are salty or strongly alkaline as well as more or less fresh, just so they furnish sufficient food in the way of small crustaceans and the larvae of certain insects (see Wetmore, U. S. Dept. Agr., Dept. Bull. 1196, 1924:15).

Aechmophorus occidentalis (Lawrence)
Western Grebe

Synonyms—Podiceps occidentalis; *Podiceps clarkii*; *Aechmophorus clarkii*; *Aechmophorus occidentalis clarkii*; Clark Grebe.

Status—Resident within the State throughout the year, once place or another. From September to April chiefly confined to and locally common on the ocean, larger bays, and near-by inland bodies of water. In summer, save for occasional stragglers left on wintering grounds, congregates to breed in "colonies" on certain lakes, chiefly at higher altitudes in northeastern plateau region. Careers of breeding "colonies" naturally controlled by careers of appropriate lakes; general trend is toward decrease in number of birds breeding within the State, although wintering population appears to be holding its own.

Geographic range—In summer, most of the larger fresh-water lakes north of 35° latitude, on some of which are, or have been, nesting colonies, although not every year on any one of them; from southern California there are but two nesting records. Life-zones, Lower Sonoran to Transition. Altitudes of nesting places extend from near sea level up to nearly 6000 feet, in Mono County (J. B. Dixon, Oologist, 57, 1940:137). Definitely known nesting localities have been: Lower Klamath and Tule lakes, Siskiyou County, formerly (V. Bailey, Condor, 4, 1902:63; Bent, U. S. Nat. Mus., Bull. 107, 1919:4-6; *et al.*); Clear Lake, Modoc County (Finley, Bird-Lore, 13, 1911:348); Eagle and Honey lakes, Lassen County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:190; Mus. Vert. Zool.); Topaz Lake, Mono County (Moffitt, Condor, 40, 1938:262); Clear Lake, Lake County (Mus. Vert. Zool., specimens and MS); Sutter Basin, Sutter County, and Stockton, San Joaquin County, formerly or sporadically (Grinnell, Pac. Coast Avif. No. 11, 1915:15; Mus. Vert. Zool.); Lake Merced, San Francisco County, sporadically (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:35); Los Baños, Merced County, sporadically (Moffitt, *loc. cit.*); Buena Vista Lake, Kern County (Lamb, Condor, 24, 1922:184; *et al.*); Mystic [= San Jacinto] Lake, Riverside County, single instance (Nokes, Condor, 19: 1917:24); Salton Sea, Imperial County (L. C. Goldman in H. M. Hill MS). Definite winter records extend from Crescent City, Del Norte County, south to the Santa Barbara Islands, San Diego Bay and Salton Sea. Some additional references pertaining chiefly to non-breeding occurrences: Del Norte County (Ferry, Condor, 10, 1908:38); Sutter Basin, Sacramento Valley, February (C. A. Harwell MS); Morro Bay, San Luis Obispo County (Grinnell and Hunt, Condor, 31, 1929:62); Santa Barbara, Santa Barbara County (Torrey, Condor, 12, 1910:204; Dawson, Birds Calif., 4, 1924:2039); Channel Islands (Howell, Pac. Coast Avif. No. 12, 1917:17); southern coast (Willett, Pac. Coast Avif. No. 21, 1933:13); Salton Sea (van Rossem, Condor, 13, 1911:130); food (Wetmore, U. S. Dept. Agr., Dept. Bull. No. 1196, 1924:5, 6).

Habitat—Lakes on which the species has nested in numbers are characterized by a fair depth of open water, by an adequate fish fauna, and by bordering growths of rushes or tules. Favorable waters for wintering may be salt, brackish or fresh, just so fishes of small size be present. The greatest number of the birds is then seen along the sea-coast in protected bays and sloughs.

Podilymbus podiceps podiceps (Linnaeus)

Northern Pied-billed Grebe

Synonyms—Podilymbus lineatus; *Podilymbus podiceps*; *Podilymbus carolinensis*; *Podilymbus podicipes*; Common Grebe; Lineated Diver; Pied-billed Grebe; Thick-billed Grebe.

Status—Widely resident, although breeding stations of necessity scattered; locally common. Leaves higher, northeastern corner of the State for the winter, and at migra-

tion time appears at oases on southeastern deserts. In winter to be noted on shallow lowland ponds anywhere, as also on seacoast harbors and bays.

Geographic range—Metropolis of breeding range lies in the Sacramento-San Joaquin basin; recorded nesting stations occur more sparsely north to Eagle Lake, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:157; *et al.*), west to Golden Gate Park, San Francisco (Hansen and Squires, Condor, 19, 1917:58; *et al.*), and south to Escondido, San Diego County (Sharp, Condor, 9, 1907:86), and Mohave River bottom east of Daggett, San Bernardino County (Lamb, Condor, 14, 1912:33). In altitude these range from sea level up to 6000 feet as at Manzanita Lake, Shasta County (Vogt, Condor, 43, 1941:161); life-zones, Lower Sonoran to Transition. Non-breeding records extend northwest to Crescent City, Del Norte County (Ferry, Condor, 10, 1908:38), north to Tule Lake region, Siskiyou County (Bond, Condor, 41, 1939:58), southeast to Death Valley, Inyo County (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:54) and to the Colorado River in Imperial County (Arnold, Condor, 44, 1942:184), and south through San Diego County. Also stragglers have reached certain of the Channel Islands, even to San Clemente (Howell, Pac. Coast Avif. No. 12, 1917:17). Further references of natural history import: small young, March 3, October 5 (Cogswell, Aud. Mag., 44, June suppl., 1942:15; Linsdale, *ibid.*, Apr. suppl.: 15); behavior (Bent, U. S. Nat. Mus., Bull. 107, 1919:39; Bancroft, Condor, 22, 1920: 206; Dawson, Birds Calif., 4, 1924:2057).

Habitat—Typically, small fresh-water ponds providing food in the way of insects, crustaceans or small fishes and at least in part bordered by dense palustrine vegetation; but also, in winter season, larger bodies of open water, salt as well as fresh, even such bays as Bodega, Tomales, San Francisco, and Morro.

Diomedea nigripes Audubon

Black-footed Albatross

Synonyms—Diomedea fuliginosa; *Phoebetria fuliginosa*; *Diomedea chinensis*; *Phoebastria nigripes*; Sooty Albatross, part; Brown Gooney.

Status—Fairly common on the ocean well offshore. Seasonal rhythm of occurrence not fully established. Present throughout the year, but apparently more common in summer months. Consensus of opinion is to the effect that the numbers have greatly decreased since the beginning of the century but that there has been noticeable recovery in the last fifteen years (Anthony, Condor, 26, 1924:33; Willett, Pac. Coast Avif. No. 21, 1933:13; L. Miller, Condor, 38, 1936:11).

Geographic range—Open ocean, especially along the edge of the continental shelf throughout the length of the State. Stragglers sometimes reach the larger bays, and remains of birds are sometimes found on outer beaches. Some selected inshore records of occurrence: Humboldt Bay, in summer of 1917 (Dawson, Birds Calif., 4, 1924:1985); San Francisco Bay, May 14, 1931 (Swarth, Condor, 33, 1931:215); Monterey Bay, April to August, 1907, and January, 1908 (Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910: 64); San Diego Bay (Anthony, *loc. cit.*). Other references bearing on distribution and habits: Sefton (Condor, 36, 1934:242); Willett (Condor, 39, 1937:226); L. Miller (Condor, 42, 1940:229, and *ibid.*, 44, 1942:3); G. Emerson (Bird-Lore, 42, 1940:339).

Habitat—Cool pelagic waters of relatively high turbulence which are rich in nutrient salts and plankton.

Diomedea albatrus Pallas
Short-tailed Albatross

Synonyms—Diomedea brachyura; *Diomedea albatros*; *Phoebastria albatrus*; Steller Albatross.

Status—Formerly fairly common at sea, irrespective of season. Now rarely, if at all, noted—the species possibly extinct. The last positively identified specimen of certain date was taken at San Pedro, Los Angeles County, April 3, 1898 (Willett, Pac. Coast Avif. No. 21, 1933:14; Peters, Condor, 40, 1938:90). That this was at one time probably the commonest albatross inshore along our coast is indicated by predominance of its bones in certain shellmounds, for example, at Point Mugu, Ventura County (Howard and Dodson, Condor, 35, 1933:235).

Geographic range—The open ocean off, probably, the entire length of the State. Some important records are: Monterey Bay and vicinity (Loomis, Proc. Calif. Acad, Sci., ser. 4, 2, 1918:74); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:45); Catalina, San Nicolas (part) and San Clemente islands (Howell, Pac. Coast Avif. No. 12, 1917:30); occurrences along southern coast reviewed (Willett, *loc. cit.*).

Habitat—Pelagic, including warmer channel waters of southern California.

Diomedea immutabilis Rothschild
Laysan Albatross

Synonyms—Diomedea melanophrys; *Diomedea albatrus*, part; Spectacled Albatross; Short-tailed Albatross, part.

Status—Rare or casual visitant. Center of distribution in the north Pacific Ocean in the vicinity of the Hawaiian Islands.

Occurrences—But one definite record: specimen obtained by C. B. Linton, April 5, 1909, on San Nicolas Island (formerly recorded as *Diomedea albatrus*, see Peters, Condor, 40, 1938:90). Also reported from points far offshore, beyond the continental seas that adjoin the State: an individual "seen" at a distance, "about 1060 miles west of Cape Mendocino," October 31, 1880 (Bean, Proc. U. S. Nat. Mus., 5, 1882:170); two individuals seen, April 8, 1913, 750 to 600 miles "southwesterly from San Francisco" (Willett, Condor, 15, 1913:158); one shot November 14, 1906, in lat. 33° 7′ N, long. 134° W, thus about 700 miles southwest of San Francisco, and others seen up to November 24, nearer, to within about 500 miles of San Francisco (Loomis, Proc. Calif. Acad. Sci., ser. 4, 2, 1918:83).

Daption capensis (Linnaeus)
Cape Pigeon

Synonyms—Procellaria capensis; *Daption capense*; *Petrella capensis*; *Daption capense australis*; Pintado Petrel; Cape Fulmar; Cape Petrel.

Status—Rare visitant northward from Antarctic waters. But one record: a specimen obtained "from the coast of California, opposite Monterey," some time before 1853 (G. N. Lawrence, Ann. Lyc. Nat. Hist. New York, 6, 1853:7). According to Loomis (Proc. Calif. Acad. Sci., ser. 4, 2, 1918:91), the specimen in question is still extant, being no. 45965 in the American Museum of Natural History.

Fulmarus glacialis rodgersii Cassin
Pacific Fulmar

Synonyms—Fulmarus pacificus; *Fulmarus glacialis glupischa*; *Fulmarus glacialis columba*; *Fulmarus glupischa*; *Fulmarus glacialis*; *Fulmaris rodgersi*; Glupisch; Pigeon Fulmar; Rodgers Fulmar.

Status—Irregularly common winter visitant. Arrives ordinarily in October, departing northward in April. A few individuals, possibly "out of health," loiter through the summer in some years.

Geographic range—Offshore probably the entire length of the State; but the very many published records to date are for only more southern localities, from the latitude of the Farallon Islands south to that of San Diego. Has occurred casually on San Francisco Bay (Kobbé, *in* Bailey, Handbook Birds Western U. S., 1902:xlix; Littlejohn, Condor, 14, 1912:41). Selected references: vicinity of Farallon Islands and San Francisco (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:45; Ashcraft, Condor, 42, 1940:218 [barnacles on feathers]); off Monterey (Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:26, and *ibid.*, ser. 4, 2, 1918:87; Beck, *ibid.*, 3, 1910:65); Santa Barbara (Dawson, Birds Calif., 4, 1924:1992); about Channel Islands (Howell, Pac. Coast Avif. No. 12, 1917:30); southwestern coast (Willett, Pac. Coast Avif. No. 21, 1933:15); off San Diego (Anthony, Auk, 12, 1895:100ff.; Sefton, Condor, 28, 1926:244); in general (Bent, U. S. Nat. Mus., Bull. 121, 1922:38; Grinnell, Condor, 30, 1928:121).

Habitat—The open ocean well offshore, frequently in scattering association with shearwaters.

Adamastor cinereus (Gmelin)
Black-tailed Shearwater

Synonyms—Procellaria haesitata; *Puffinus cinereus*; *Puffinus melanurus*; *Priofinus melanurus*; *Priofinus cinereus*; Cinereous Petrel; Great Grey Shearwater; Pediunker.

Status—Rare or casual visitant from sub-Antarctic seas.

Occurrences—But one definite record: specimen obtained by or for N. Pike, Esq., prior to 1853, "off the coast of California near Monterey" (G. N. Lawrence, Ann. Lyc. Nat. Hist. New York, 6, 1853:6; see also Baird, Brewer and Ridgway, Water Birds N. Amer., 2, 1884:375). According to Loomis (Proc. Calif. Acad. Sci., ser. 4, 2, 1918:108), this specimen is still extant, being no. 45967 in the American Museum of Natural History. There is another record, dubious: second day out from San Francisco, on way to Panama (Kneeland, Amer. Nat., 5, 1871:312).

Puffinus creatopus Coues
Pink-footed Shearwater

Synonyms—Ardenna creatopus; Red-footed Puffin; Red-footed Shearwater; Flesh-footed Shearwater, part; Coues Shearwater; Cooper Shearwater.

Status—Common during spring, summer and fall as a transequatorial visitant from southeastern Pacific breeding stations. Also stragglers have been noted at intervals through all the winter months.

Geographic range—Records are nearly all from waters south of the latitude of San Francisco; the northernmost off our coast to date is Point Arena, Mendocino County (Loomis, Proc. Calif. Acad. Sci., ser. 4, 2, 1918:110), yet the species has been noted otherwise north to southern Alaska. Most of our references pertain to Monterey Bay and vicinity (for example, Loomis, *op. cit.*:109ff.; Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:65). Further ones: among Santa Barbara Islands (Howell, Pac. Coast Avif. No. 12, 1917:30); off San Diego and southern California generally (Anthony, Auk, 12, 1895:100; Willett, Pac. Coast Avif. No. 21, 1933:15; L. Miller, Condor, 38, 1936:12). One record of a vagrant inland: bird picked up under telegraph wires between Irvington and Hayward, Alameda County, July 7, 1906 (W. O. Emerson, Condor, 9, 1907:60). For world status, see Murphy (Oceanic Birds S. Amer., 1936:653).

Habitat—Open ocean, usually well offshore.

Puffinus carneipes Gould
Flesh-footed Shearwater

Synonyms—Hemipuffinus carneipes; *Ardenna carneipes*; *Hemipuffinus carneipes hullianus*; Pale-footed Shearwater; Fleshy-footed Shearwater.

Status—Rare, though possibly regular, visitant in spring, summer and autumn. Seen singly, not in flocks.

Occurrences—All so far reported are from the waters off Monterey, whence a total of 14 specimens has been taken by R. H. Beck. Dates of capture of these: in 1903, November 23; in 1904, November 24; in 1907, February 27, April 29, June 25, August 27, September 2, November 4; in 1910, September 7 and 23, November 1. Additionally a few individuals were seen within the span of the extremes of these dates. (See Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:66; Grinnell, Pac. Coast Avif. No. 11, 1915:27; Loomis, Proc. Calif. Acad. Sci., ser. 4, 2, 1918:129ff.).

Habitat—The open ocean, where it cruises about in association with other kinds of shearwaters, some of which also hail from Australian seas.

Puffinus bulleri Salvin
Gray-backed Shearwater

Synonyms—Thyellodroma bulleri; *Thyellodroma pacifica bulleri*; Buller Shearwater; Ashy-back Shearwater; New Zealand Shearwater.

Status—Rare but possibly regular fall visitant. Definite dates range from September 2 to November 8. Breeds in the vicinity of New Zealand, but routes of migration unknown, save that waters off the west coast of South America are also visited.

Occurrences—A total of sixteen specimens has been taken, and other individuals seen, in the years 1896, 1907, 1909, and 1910, all on the ocean off Monterey. (See Loomis, Proc. Calif. Acad. Sci., ser. 3, zool., 2, 1900:319; Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:66; Grinnell, Pac. Coast Avif. No. 11, 1915:27; Loomis, Proc. Calif. Acad, Sci., ser. 4, 2, 1918:146.)

Habitat—The open ocean, in scattering association with other shearwaters.

Puffinus griseus (Gmelin)

Sooty Shearwater

Synonyms—Puffinus fuliginosus; *Nectris fuliginosus*; *Puffinus stricklandi*; *Neonectris griseus*; *Paranectris griseus chilensis*; Sooty Puffin; Dark-bodied Shearwater; Chilian Sombre Shearwater.

Status—Present throughout the year, but numbers greatest from April to November. Within this period there are apparently two peaks of abundance, in May-June and in September. At times, exceedingly numerous; then to be estimated by the thousands as in sight at one moment from a single lookout.

Geographic range—Offshore waters the whole length of the State; flocks frequently come close inshore, and occasionally small numbers enter San Francisco Bay, reaching the neighborhoods of Angel and Alcatraz islands. Among the many references to this species, some important locality ascriptions are: San Francisco Bay (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:45; Moffitt, Condor, 41, 1939:32); coast of San Mateo County (Parmenter, Condor, 39, 1937:253); for Monterey Bay and vicinity (Loomis, Proc. Calif. Acad. Sci., ser. 2, 5, 1895:177ff., *ibid.*, 6, 1896:1ff., and *ibid.*, ser. 4, 2, 1918:132ff.); vicinity of Santa Barbara (Dawson, Birds Calif., 4, 1924:2001 ff.); Hermosa Beach, Los Angeles County (Wales, Condor, 29, 1927:119); San Clemente Island (L. Miller, Condor, 38, 1936:11); in general (Bent, U. S. Nat. Mus., Bull. 121, 1922:85ff.; Murphy, Oceanic Birds S. Amer., 1936:666ff.). The species breeds on islands in south-temperate waters.

Habitat—Open ocean and communicating channels.

Puffinus tenuirostris (Temminck)

Slender-billed Shearwater

Synonyms—Neonectris tenuirostris; Short-tailed Shearwater.

Status—Irregular late fall and early winter transient southward; recorded from mid-September to end of January, with greatest frequency of observation in November and December. "April 10," of record, is an error. Numbers reported in different years vary greatly, from none at all to "great numbers," possibly as to whether there be observers on the watch at the right time. According to one theory, the individuals reaching our coast are merely strays from the main concourse of this species, which takes its way down the Asiatic side of the Pacific to the breeding grounds in Australian seas (see Murphy, Oceanic Birds S. Amer., 1936:674).

Geographic range—Coastal waters the entire length of the State. Most records happen to be from off Monterey and the San Diego coast. Principal references: mouth of Humboldt Bay, Humboldt County, September 12 (J. M. Davis, Condor, 42, 1940: 222); vicinity of Monterey, Monterey County (Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:28; Mailliard, Auk, 15, 1898:197; Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910: 65); Santa Monica and Hyperion, Los Angeles County [washed up on beaches] (L. Miller, Condor, 16, 1914:41; Wyman, Condor, 18, 1916:203); off La Jolla and San Diego, San Diego County (Anthony, Auk, 13, 1896:171; Kenyon, Condor, 44, 1942: 232 and *ibid.*, 45, 1943:77).

Habitat—The open ocean, foraging and migrating usually in association with the Sooty Shearwater.

Puffinus opisthomelas Coues
Black-vented Shearwater

Synonyms—Puffinus gavia; *Puffinus couesi*; *Puffinus puffinus opisthomelas*; Black-vented Manx Shearwater.

Status—Varyingly common all through the year; least numerous in the period of nesting, which takes place on islands in Lower Californian waters from March to June. Most abundant in the Santa Barbara and San Pedro channels in July, August and September. An old record of nesting (in 1873) north of the Mexican line, on Santa Barbara Island, has been discredited (Howell, Pac. Coast Avif. No. 12, 1917:31).

Geographic range—Ocean waters north from the Mexican line to Monterey Bay. While there are records of the species from as far north as the coast of British Columbia, there is as yet none from the Californian coast north of Santa Cruz, whence came the type specimen of *Puffinus couesi* Mathews (Nov. Zool., 39, 1934:179). Some accounts describing occurrences in this State: off San Diego (Anthony, Auk, 13, 1896:223ff.); vicinity of Monterey (Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:1ff., and *ibid.*, ser. 4, 2, 1918:114); vicinity of Santa Barbara Islands (Howell, *loc. cit.*; Ross, Condor, 28, 1926:241); off San Pedro (Willett, Pac. Coast Avif. No. 21, 1933:14).

Habitat—The open ocean.

Halocyptena microsoma Coues
Least Petrel

Synonym—Least Storm Petrel.

Status—Late summer or early fall vagrant.

Occurrences—Four, in extreme southern waters: specimen (in coll. San Diego Soc. Nat. Hist.) taken off Point Loma, San Diego County, September 9, 1926 (Sefton, Condor, 29, 1927:72); specimen (Dickey Coll.) taken "a short distance north of Mexican boundary (lat. 32° 33′)," July 19, 1927 (Willett, Pac. Coast Avif. No. 21, 1933:17); specimen (in coll. L. Miller) taken 25 miles "WNW of Point Loma on a direct line from the southern end of San Clemente Island," August 31, 1935 (L. Miller, Condor, 38, 1936:13) and another taken 15 miles west of Point Loma, September 2, 1936 (L. Miller, Condor, 39, 1937:44; coll. L. Miller).

Habitat—Forages over the open ocean.

Oceanodroma furcata plumbea (Peale)
Southern Fork-tailed Petrel

Synonyms—Oceanodroma furcata; Fork-tailed Petrel; Grey Fork-tailed Petrel.

Status—Resident in general, but seasonal status irregular locally. Non-breeding birds found to be "common" or "plentiful" off Point Reyes in August, and on Monterey Bay in June and November, as well as scatteringly in the latter neighborhood in other months.

Geographic range—Known breeding stations: islets near Crescent City, Del Norte County, and islets near Trinidad, Humboldt County (Clay, Condor, 18, 1916:205; Howell, Condor, 22, 1920:42; Dawson, Birds Calif., 4, 1924:2010ff.; Clay, Condor, 27, 1925:175). Records of birds found dead on sea-beaches are numerous, indicating dispersal southward from breeding areas; the three southernmost of these are: Sunset Beach, Orange County, May 15 to June 1 (Wyman, Condor, 19, 1917:141); Cardiff, June 9, 1939, and Ocean Beach, December 23, 1918, San Diego County (Huey, Condor, 41, 1939:215; Stephens, Condor, 21, 1919:87). Winter record for breeding range: Humboldt Bay, February, 1887 (Palmer, Proc. Calif. Acad. Sci., ser. 2, 2, 1889:88). An important summary of occurrences in central California is: Loomis, Proc. Calif. Acad. Sci., ser. 4, 2, 1918:177. Some subsequent records: El Cerrito, Contra Costa County, August 31, 1937 (A. H. Miller, Condor, 40, 1938:45); San Francisco, August and September, 1941, July 15, 1942 (A. B. Stephens, Gull, 23, 1941:35; Mus. Vert. Zool.), and Berkeley, Alameda County, September 13, 14, 1941 ([Nichols and Nichols] Gull, 23, 1941:40); Carmel, Monterey County, July 1, 1941 (Linsdale, Audubon Mag., 43, 1941:579).

Habitat—Forages over the open ocean, usually well offshore. For nesting, small offshore islets providing nesting crannies beneath rocks or sod for burrowing.

Note—For nomenclature, see Grinnell and Test, Condor, 41, 1939:170.

Oceanodroma leucorhoa beali Emerson

Beal Leach Petrel

Synonyms—Oceanites oceanicus, part (?); *Thalassidroma leachi*; *Cymochorea leucorhoa*; *Oceanodroma leucorhoa*; *Oceanodroma kaedingi*, part; *Oceanodroma beldingi*; *Cymochorea leucorhoa socorroensis*, part; Wilson Stormy Petrel (?); Stormy Petrel (?); Leach Petrel; Kaeding Petrel, part; Belding Fork-tailed Petrel; Koeding (*sic*) Storm Petrel; Beal Petrel.

Status—Summer resident; locally common.

Geographic range—Breeds south at least as far as latitude of San Francisco. Definite breeding stations are: islets near Crescent City, Del Norte County (Clay, Condor, 18, 1916:205, and *ibid.*, 19, 1917:71; Howell, Condor, 22, 1920:41; Clay, Condor, 27, 1925:175); islets near Trinidad, Humboldt County (Clay, Condor, 18, 1916:205; Dawson, Birds Calif., 4, 1924:2012); Farallon Islands (Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:359; Dawson, Condor, 13, 1911:176). Doubtless in spring and fall this species is widely scattered over the ocean the whole length of the State; petrels with white rumps have been recorded as "seen" at many points. But places, other than breeding grounds, whence recorded on basis of specimens actually examined are only: Año Nuevo Island, May 12, 1898, and Pigeon Point Light, May 7, 1899—both localities on seacoast of San Mateo County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:46).

Habitat—Forages over surface of open ocean. Nesting colonies are established on small islands which normally provide turf for digging of nest burrows. Nest sites less commonly consist of rock crannies.

Note—The Pacific races of the Leach Petrel have been much discussed from a systematic standpoint; some references: Oberholser, Proc. U. S. Nat. Mus., 54, 1917:168; Grinnell, Condor, 20, 1918:46; Loomis, Proc. Calif. Acad. Sci., ser. 4, 2, 1918:160ff.; Bent, U. S. Nat. Mus., Bull. 121, 1922:147; van Rossem, Proc. Biol. Soc. Wash., 55, 1942:9.

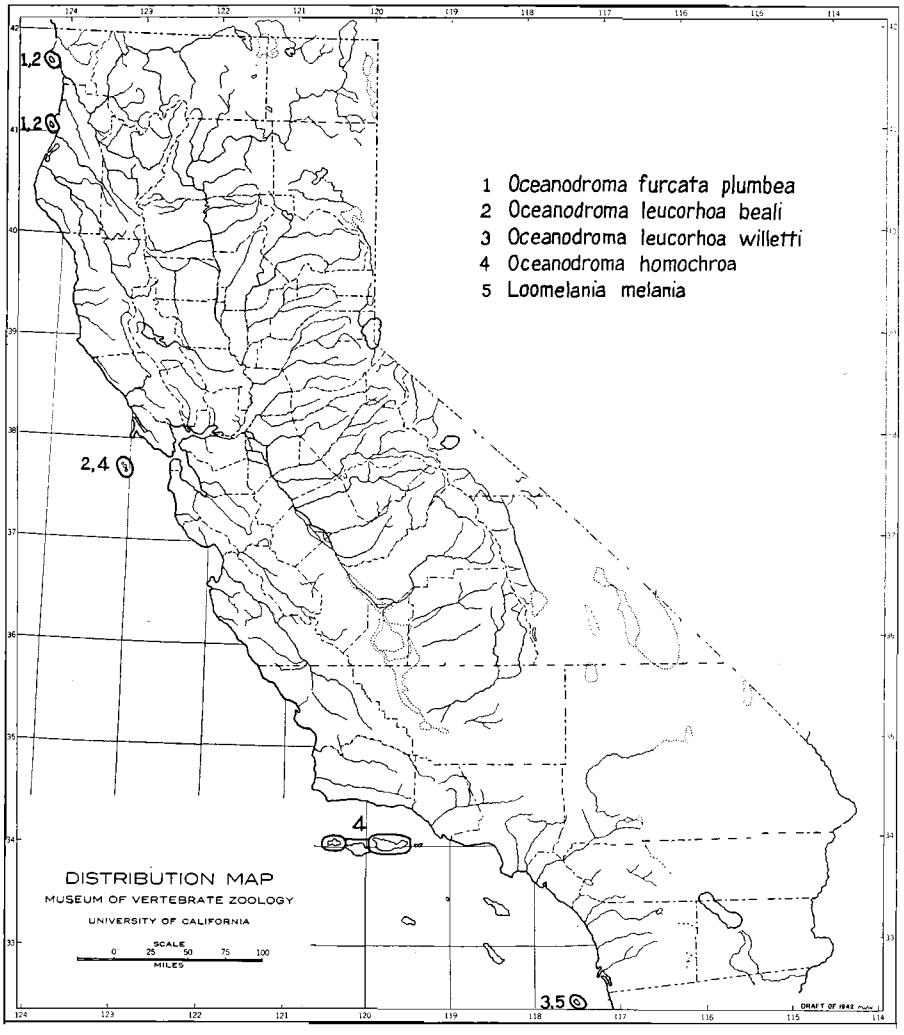

Fig. 1. Breeding places of the species and races of storm petrels, genera *Oceanodroma* and *Loomelania*, along the coast of California (including Los Coronados Islands, Mexico). Numbers indicate forms occupying each known station.

Oceanodroma leucorhoa willetti van Rossem
Coronados Leach Petrel

Synonyms—Oceanodroma socorroensis; *Oceanodroma monorhis*; *Oceanodroma monorhis socorroensis*; *Oceanodroma leucorhoa socorroensis*, part; Socorro Petrel; Swinhoe Fork-tailed Petrel.

Status—Sporadic summer visitant from Lower Californian waters. At times probably common.

Occurrences—Only one verifiable record: off San Diego, during April and May, 1895, "a small series" taken (Anthony, Auk, 12, 1895:387). This form probably seen,

August 12, 1934, between Catalina and San Clemente islands (Sefton, Condor, 36, 1934:243).

Habitat—Forages over ocean surface.

Note—The systematic status of this petrel has been the subject of much controversy (see particularly Howell, Pac. Coast Avif. No. 12, 1917:35; Loomis, Proc. Calif. Acad. Sci., ser. 4, 2, 1918: 160ff.; van Rossem, Proc. Biol. Soc. Wash., 55, 1942:9ff.).

Oceanodroma leucorhoa socorroensis C. H. Townsend
Socorro Leach Petrel

Synonyms—Oceanodroma kaedingi, part; *Oceanodroma leucorhoa kaedingi*; *Cymochorea leucorhoa kaedingi*; Kaeding Petrel, part.

Status—Sporadic visitor from the south; probably fairly common in late summer.

Geographic range—Open ocean from Mexican boundary north to vicinity of San Miguel Island. Definite records: one specimen from open ocean (lat. 32° 32′ N) between San Clemente Island and San Diego, taken March 22, 1904 (L. Miller, Condor, 20, 1918:211); three birds taken in early September, 1936, in same area (L. Miller, Condor, 39, 1937:44; coll. L. Miller); five taken 60 to 75 miles west-southwest of San Nicolas Island, July 24, 1941 (coll. L. Miller); one taken 15 miles southwest of San Miguel Island, August 20, 1938 (coll. L. Miller, now in Mus. Vert. Zool.).

Habitat—Forages over ocean surface, principally in areas of cool water far offshore.

Note—These birds by reason of small size are referable to *socorroensis* which breeds on Guadalupe Island rather than to *O. l. willetti* which nests on the near-by Coronados Islands. For nomenclatural treatment, see van Rossem, Proc. Biol. Soc. Wash., 55, 1942:9ff.

Oceanodroma homochroa (Coues)
Ashy Petrel

Synonyms—Cymochorea homochroa; *Cymochorea monorhis homochroa*; *Oceanodroma socorroensis*, part; Black Petrel, part; Lesser Black Petrel; Ashy Fork-tailed Petrel; Coues Petrel.

Status—Fairly common in spring and summer, at least locally. Earliest and latest records seasonally are April 8 and November 16, so there is a chance that the species occurs off our coast throughout the year.

Geographic range—Centers off middle California. Known breeding stations are: Farallon Islands (very many records, these in large part summarized by Bent, U. S. Nat. Mus., Bull. 121, 1922:159; Orr, Condor, 46, 1944:125); San Miguel Island (Henshaw, Ann. Rept. Geog. Survey. . . . Wheeler, App. JJ, 1876:277); Santa Cruz Island (Wright and Snyder, Condor, 15, 1913:89, 229; Howell, Pac. Coast Avif. No. 12, 1917:34). There are numbers of records for Monterey Bay (Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:67) and for the sea in vicinity of Santa Barbara Islands (Howell, *loc cit.*). Northernmost station for the species: a bird (Calif. Acad. Sci.) picked up dead on beach near Point Reyes, Marin County (Grinnell, Pac. Coast Avif. No. 11, 1915:28); southernmost for California: Smuggler's Cove, San Clemente Island and pick-up from beach near Coronado, San Diego County (L. Miller, Condor, 38, 1936:13; Huey, Con-

dor, 27, 1925:72). Waifs have reached interiorly to San Francisco Bay near Redwood City, November 9 and 16, 1911 (Littlejohn, Condor, 14, 1912:41).

Habitat—Forages over the open ocean. Nest sites on islands are in crevices beneath loosely piled rocks or driftwood, or in caves.

Loomelania melania (Bonaparte)
Black Petrel

Synonyms—Procellaria melania; *Thalassidroma melania*; *Cymochorea melania*; *Oceanodroma melania*; *Oceanodroma townsendi*; *Cymochorea melania melania*; Black Stormy Petrel; Townsend Petrel; Black Fork-tail Petrel.

Status—Common, locally, through the summer season, yet not known to breed north of Lower California; present through the winter also, in lesser numbers, off southern California.

Geographic range—In California, north from latitude of Mexican boundary to about latitude of San Francisco. Northernmost record station to date: many seen and some taken, August 10 to 12, 1903, fifteen to twenty-five miles west of Point Reyes, Marin County (Loomis, Proc. Calif. Acad. Sci., ser. 4, 2, 1918:174ff.). Records for points from Monterey Bay southward are numerous; selected accounts: off Point Pinos, Monterey County, May to September (Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:67); about Channel Islands (Howell, Pac. Coast Avif. No. 12, 1917:32); off San Pedro, Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:16); off San Diego (Anthony, Auk, 11, 1894:321); in general (Bent, U. S. Nat. Mus., Bull. 121, 1922:156).

Habitat—Forages over the open ocean, usually in channel waters, but also far offshore; seen scatteringly, or sometimes in "rafts" (see L. Miller, Condor, 38, 1936:12).

Note—For evidence of generic distinctness of *Loomelania* from *Oceanodroma*, see Murphy, Oceanic Birds S. Amer., 1936:743.

Oceanites oceanicus chilensis Murphy
Fuegian Wilson Petrel

Synonyms—Oceanites oceanicus; *Oceanites oceanicus exasperatus*; Wilson Petrel; Yellow-webbed Storm Petrel.

Status—Rare or casual late-summer visitant.

Occurrences—Two: male specimen (Mus. Vert. Zool. no. 18742) taken by R. H. Beck on Monterey Bay, August 24, 1910 (Grinnell, Pac. Coast Avif. No. 11, 1915:29); female (?) specimen (in coll. L. Miller) taken by Loye Miller 25 miles west-northwest of Point Loma, San Diego County, August 31, 1935 (L. Miller, Condor, 38, 1936:13). Mathews (Nov. Zool., 39, 1934:191) says "Monterey to San Francisco"; but this appears to be an error.

Habitat—The open ocean.

Note—The racial identification of these California specimens is problematical. In size they fall in the range of overlap between *Oceanites oceanicus oceanicus* and *O. o. chilensis* (Murphy, Oceanic Birds S. Amer., 1936:754). They are not large enough for the race of the New Zealand seas, *O. o. exasperatus* Mathews (Birds Australia, 2, 1912:11). The birds seem best referred to *chilensis* on geographic grounds.

Phaëthon aethereus mesonauta Peters
Caribbean Red-billed Tropic-bird

Synonyms—Phaëthon aethereus; Red-billed Tropic Bird.

Status—Sparse postbreeding vagrant from the south.

Occurrences—Two specimen-backed records: a bird was "taken in the San Pedro Channel about midway between" Long Beach and Santa Catalina Island, in August, 1916 (Law, Condor, 21, 1919:88); it was mounted and at last accounts was on exhibition in the Long Beach Chamber of Commerce. An immature male (no. 18778 Los Angeles Mus.) was taken at latitude 32° 50′ N, longitude 119° W, about 30 miles west of San Clemente Island on June 27, 1937 (Willett, Condor, 39, 1937:226). Additionally, birds seen in July and August, 1935, off San Diego (L. Miller, Condor, 38, 1936: 13), and on other occasions in channel waters (L. Miller, Condor, 42, 1940:234); one seen, October 3, 1937, 5 miles west of Point Loma (Sefton, Condor, 40, 1938:40) and one noted in same area on September 22 and 29, 1940 (Abbott, Condor, 43, 1941:77). There is an old record, of a skull from the "coast of Marin County" (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 2, 1889:86), but it remains unconfirmed (see Grinnell, Pac. Coast Avif. No. 11, 1915:176).

Habitat—Open ocean, well offshore.

Pelecanus erythrorhynchos Gmelin
White Pelican

Synonyms—Pelecanus trachyrhynchus; *Pelecanus americanus*; *Pelecanus molinae*; Rough-billed Pelican; American White Pelican; American Pelican.

Status—Taking the State as a whole, resident; varyingly common. Trends latterly have been toward much reduced aggregate numbers and reduction in number of breeding stations (for full account, see Thompson, Occas. Paper No. 1, Wild Life Div., National Park Service, 1933:8-23).

Geographic range—In breeding season, usually concentrated at interior lakes. In winter, widely distributed over southern and west-central parts of State; in migration, to be seen in flight almost anywhere, as over deserts and mountain summits; but not reported from northwest coast belt north of Bodega Bay and west of upper Sacramento River. Recorded breeding places are as follows: Tule Lake, Modoc County, up at least to 1905 (V. Bailey, Condor, 4, 1902:63; Finley, Condor, 9, 1907:35); Clear Lake, Modoc County, since about 1910 up to 1935 (Willett, Condor, 21, 1919:197; Lincoln, Condor, 35, 1933:238; Thompson, *op. cit.*:12; A. M. Bailey, Bird-Lore, 37, 1935:333); Goose Lake, Modoc County, prior to 1879 (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. L, 1879:329); Eagle Lake, Lassen County, probably to 1931 (Henshaw, *loc. cit.*; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:157; Thompson, *loc. cit.*; *et al.*); among sloughs of lower Sacramento Valley, formerly, to 1910 (Neale, Calif. Fish and Game, 2, 1916:161, fig. 58; *ibid.*, 18, 1932:340); Tulare Lake, Kings County, possibly to 1912, then subsequently when conditions permitted, as in 1939 and 1941 (Goldman, Condor, 10, 1908:201; Dawson, Birds Calif., 4, 1924:1968; Thompson, *op. cit.*:19; Mrs. T. E. Reynolds MS); Buena Vista Lake, Kern County, up to 1923 (Linton, Condor, 10, 1908:196; Thompson, *loc. cit.*; Mus. Vert. Zool.);

islands in Salton Sea, Imperial County, 1907 to 1932 (Grinnell, Condor, 10, 1908:187; Pemberton, Condor, 29, 1927:253; Thompson, *op. cit.*:17). Thus in 1932 only two nesting colonies of the White Pelican existed in California. Other references selected for bearing on dispersal and natural history: San Francisco Bay area (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:48; Linsdale, Audubon Mag., 43, 1941:479); Morro Bay, San Luis Obispo County (Grinnell and Hunt, Condor, 31, 1929:65); localities in Great Valley (Linsdale, Calif. Fish and Game, 24, 1938:25); southern California in general (Willett, Pac. Coast Avif. No. 21, 1933:18); swallowing striped bass (England, Calif. Fish and Game, 15, 1929:284); speed of flight (Ross, Condor, 35, 1933:70); recovery in Mexico of bird banded at Clear Lake, Modoc County (Lincoln, Bird-Banding, 7, 1936:139).

Habitat—Typically, fresh-water lakes affording fishes of relatively large size and safe roosting and breeding places in the form of well-sequestered islets; also, at non-breeding times frequents river sloughs and seacoast bays of similar food resource.

Pelecanus occidentalis californicus Ridgway
California Brown Pelican

Synonyms—Pelecanus fuscus; *Pelecanus californicus*; *Pelecanus occidentalis*; Brown Pelican; Gray Pelican.

Status—Present throughout the year along our whole seacoast, but not known to breed north of Monterey County. Numbers vary, seasonally and locally; usually abundant south from Monterey Bay.

Geographic range—Very closely restricted to near vicinity of seashore. Instances of vagrancy interiorly beyond the inner reaches of bays and estuaries are rare; one is: Rancho Dos Rios, on San Joaquin River, Stanislaus County, September 19, 1913, three birds (Mailliard, Condor, 15, 1913:228). The breeding metropolis of the species lies south of the Mexican line. There is but one large nesting colony situated north of the line, fairly permanent within historic times: on Anacapa Island, Ventura County (Cooper, *in* Baird, Brewer and Ridgway, Water Birds N. Amer., 2, 1884:141; and other records summarized by Willett, Pac. Coast Avif. No. 21, 1933:18, and Bond, Condor, 44, 1942:116). Small and more or less evanescent colonies have been recorded from Santa Barbara, Santa Cruz and San Miguel islands (citations given by Willett, *loc. cit.*) and from Bird Island, near Point Lobos, Monterey County (Williams, Condor, 29, 1927:246ff. and *ibid.*, 33, 1931:66-69; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:43). The latter is the northernmost known breeding station for the species. From among numerous accounts of behavior and distribution, these additional items may be specially cited: Crescent City, Del Norte County (Ferry, Condor, 10, 1908:38); shore of Santa Cruz County (Orr, Amer. Midl. Nat., 27, 1942:291); Morro Bay, San Luis Obispo County (Grinnell and Hunt, Condor, 31, 1929:65); speed of flight (C. R. Smith, Gull, 6, 1924: Sept. [p. 3]); dispersal from Anacapa Island (Bond, *loc. cit.*); perching behavior, etc. (W. E. Allen, Condor, 24, 1922:213, *ibid.*, 25, 1923: 107, and Bird-Lore, 29, 1927:263); fishing (Sefton, Condor, 29, 1927:163); flight (Woodward, Condor, 23, 1921:137); in general (Howell, Pac. Coast Avif. No. 12, 1917:40; Bent, U. S. Nat. Mus., Bull. 121, 1922:301; Dawson, Birds Calif., 4, 1924: 1970ff.).

Habitat—Typically, the ocean littoral, just outside the surf-line. Rarely strays either inland or far offshore. For nesting, coastal islands of small or moderate size where immunity from attacks of ground-dwelling predators is afforded.

Sula nebouxii Milne-Edwards
Blue-footed Booby

Status—Rare vagrant to southern section. The three recorded instances have been for late autumn. Nearest breeding stations are on islands in the Gulf of California.

Occurrences—Specimen (now in collection of San Bernardino Junior College) taken on Big Bear Lake, San Bernardino Mountains, San Bernardino County, November 1, 1933 (Edge, Condor, 36, 1934:88). Individual photographed at Salton Sea Salt Works, on Salton Sea, Riverside County, November 1, 1929, and seen for about ten days following (B. L. Clary, Condor, 32, 1930:160, fig. 58). A booby, thought most likely to be of this species, seen between Anaheim Landing and Sunset Beach, Orange County, October 25, 1921 (van Rossem, Condor, 24, 1922:28). (See also under *Sula leucogaster brewsteri* and *S. dactylatra californica*, in supplementary list.)

Habitat—Normally, the open sea not far offshore.

Phalacrocorax auritus albociliatus Ridgway
Farallon Double-crested Cormorant

Synonyms—Carbo dilophus; *Graculus townsendii*; *Graculus dilophus*; *Carbo townsendi*; *Phalacrocorax townsendii*; *Graculus dilophus floridanus*; *Phalacrocorax dilophus albociliatus*; *Phalacrocorax dilophus*; *Phalacrocorax dilophus cincinatus*; *Phalacrocorax cincinatus*; *Phalacrocorax auritus*; *Phalacrocorax auritus cincinatus*; Double-crested Cormorant; Lesser White-crested Cormorant; Townsend Cormorant; Gray Double-crested Cormorant; White-crested Cormorant; Farallon Cormorant; Lesser White-tufted Cormorant.

Status—Resident, and locally common, as regards the State as a whole. More or less migratory from the elevated northeastern section; commonly moves about locally with the season. Marked reduction in numbers of individuals and breeding colonies noted of late years, interiorly.

Geographic range—Both the ocean coastwise, and lakes, sloughs, and larger rivers inland. In spring and fall, individuals or small groups visit almost any body of water that looks as though it would afford food. Coastally, the northernmost known breeding station is near Bear Valley, Marin County (Bolander and Bryant, Condor, 32, 1930:70); the southernmost at La Jolla, San Diego County (C. W. Michael, Condor, 37, 1935:36). Other recorded coastal breeding stations, more or less well known, are: Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:39; Dawson, Condor, 13, 1911: 177; C. F. Smith, Condor, 36, 1934:172); Seal Rocks, San Francisco (Squires, Condor, 19, 1917:186); San Miguel, Santa Cruz, Anacapa, Santa Barbara and Santa Catalina islands—in most cases on islets adjacent to these larger islands (Howell, Pac. Coast Avif. No. 12, 1917:37). Interiorly, the northernmost breeding places are (or have been): Tule Lake (Finley, Condor, 9, 1907:36) and Clear Lake (Willett, Condor, 21, 1919: 197), Modoc County; Eagle Lake, Lassen County (history summarized by Grinnell,

Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:160ff.); and Clear Lake, Lake County (Chamberlin, Nidiologist, 3, 1895:29). Southernmost breeding stations interiorly are: Salton Sea, Imperial County (Grinnell, Condor, 10, 1908:186; Dawson, Birds Calif., 4, 1924:1943ff.); Lake Henshaw, San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:19). Former nesting places in Sacramento and San Joaquin valleys included Butte Creek, Sutter County (Moffitt, Condor, 41, 1939:33) and Tulare and Buena Vista lakes (Goldman, Condor, 10, 1908:201; Linton, *ibid.*:196; Lamb and Howell, Condor, 15, 1913:116). Some accounts of occurrence and behavior other than at breeding colonies: Mad River near Humboldt Bay, Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:192); Susanville, Lassen County, in small pools (McLaughlin, Condor, 34, 1932:45); roosting and feeding in San Francisco Bay (Bartholomew, Condor, 44, 1942:13ff. and *ibid.*, 45, 1943:3ff., 186ff.); Death Valley, Inyo County (M. F. Gilman MS); Yuma district, Imperial County (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:114; L. W. Arnold, Condor, 44, 1942:184).

Habitat—Fresh, brackish and salt waters, just so these provide food in the form of fishes of appropriate caliber. Roosting places both for daytime and night must be within easy cruising radius to permit periodic drying of plumage; hence along the ocean coast birds do not wander far from land. Breeding requirements are sequestered islets or else tall trees at lake margins, where colonial nesting is possible. Ground nests usually are on sloping surfaces.

Note—There is no good basis known to us for considering the Alaska-breeding race, *P. a. cincinatus*, a winter visitant to California. For discussion of races of Double-crested Cormorants, see Behle, Condor, 43, 1941:286.

Phalacrocorax penicillatus (Brandt)
Brandt Cormorant

Synonyms—Carbo penicillatus; *Graculus penicillatus*; Green Cormorant; Plumed Cormorant.

Status—Resident throughout the year; abundant.

Geographic range—The inshore belt of water and islets along our entire seacoast, inclusive of the larger bays, and around all the islands. No record from any interior locality. Reported breeding stations are many and some of the nesting colonies are large and, within history, permanent. Some of more general accounts of this species and the better reported nesting localities are: Trinidad, Humboldt County (Clay, Condor, 13, 1911:138); Tomales Point (Moffitt, Condor, 41, 1939:33), census in winter on Tomales Bay (Moffitt, Calif. Fish and Game, 19, 1933:255), Point Reyes (C. A. Allen, Ornith. and Ool., 6, 1881:18; Williams, Condor, 44, 1942:85ff.), near Bear Valley (Bolander and Bryant, Condor, 32, 1930:70)—localities all in Marin County; Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1885:40; Ray, Auk, 21, 1904:437; Dawson, Birds Calif., 4, 1924:1948ff.); Seal Rocks, San Francisco (Squires, Condor, 17, 1919:186); behavior in winter on San Francisco Bay (Bartholomew, Condor, 45, 1943:16ff.); Pacific Grove to Point Lobos, Monterey County (Loomis, Proc. Calif. Acad. Sci., ser. 2, 5, 1895:217ff.; Townsend, Condor, 27, 1925:92; Williams, *loc. cit.*; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:47); near Port Harford, San Luis Obispo County (Willett, Condor, 11, 1909:186); occurrences on Santa Barbara islands, including San Nicolas (Howell, Pac. Coast Avif. No. 12, 1917:38); La Jolla, San Diego County (C. W. Michael, Condor, 37, 1935:36; Williams, *loc. cit.*).

Habitat—Exclusively salt water, where it seeks fishes of relatively large size in rather shallow water, usually close within or just outside of the surf. Roosting and nesting places are on tops of offshore islets or on sequestered shelves of the steepest mainland cliffs. Flat or moderately sloping ground is preferred for nest sites.

Phalacrocorax pelagicus resplendens Audubon
Baird Pelagic Cormorant

Synonyms—Graculus violaceus; *Phalacrocorax resplendens*; *Graculus bairdii*; *Graculus violaceus* var. *bairdii*; *Phalacrocorax violaceus resplendens*; *Phalacrocorax violaceus*; *Phalacrocorax pelagicus robustus*; *Phalacrocorax pelagicus*; Violet-green Cormorant; White-patch Cormorant; Baird Cormorant; Pelagic Cormorant.

Status—Permanently resident. Common off those portions of the seacoast and islands which are most exposed and precipitous; occurs elsewhere sparingly, at nonbreeding times.

Geographic range—The outer seacoast, the entire length of the State. Known to breed south in California only to Santa Barbara Island, but nests on Los Coronados Islands, Mexico. Enters even the larger bays only occasionally; no authentic inland record. Reported breeding places are as follows: island near Crescent City, Del Norte County (Clay, Condor, 19, 1917:71); Tomales Point, Marin County (Moffitt, Condor, 41, 1939:33), Point Reyes (C. A. Allen, Ornith. and Ool., 6, 1881:18), and near Bear Valley (Bolander and Bryant, Condor, 32, 1930:70), Marin County; Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:41; Ray, Auk, 21, 1904:438, and many other writers); Santa Cruz, Santa Cruz County (Skirm, Ornith. and Ool., 9, 1884:150); Point Lobos, Monterey County (Loomis, Proc. Calif. Acad. Sci., ser. 2, 5, 1895:221; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:48); islets and mainland cliffs within 15 miles northwest of Port Harford, San Luis Obispo County (Willett, Condor, 11, 1909:186); San Miguel, Santa Cruz, Anacapa and Santa Barbara islands (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:276; Grinnell, Pasadena Acad. Sci., publ. 1, 1897:26; and others, summarized by Howell, Pac. Coast Avif. No. 12, 1917:39, and Willett, Pac. Coast Avif. No. 21, 1933:19).

Habitat—Exclusively salt water, where it seeks the medium-sized fishes well offshore, at least in rather deep water (see Clay, Condor, 13, 1911:138). Nesting and roosting places are chosen on steep sides of islands or, occasionally, on the faces of mainland sea-cliffs.

Fregata magnificens rothschildi Mathews
Caribbean Man-o'-war-bird

Synonyms—Tachypetes aquilus; *Fregata aquila*; *Fregata magnificens*; *Fregata minor palmerstoni*, part (?); Frigate Pelican; Frigate-bird, part; Man-o'-war Bird; Pacific Man-o'-war-bird, part (?).

Status—Not infrequent, but irregular, visitant from the south; nearest breeding grounds on west coast of southern Lower California. As shown by the list of records below, there is, in California, little or no correlation of occurrence with season. [More people visit the seashore in summer than in winter!]

Occurrences—Definite ones: Humboldt Bay, specimen, October 5, 1888 (Palmer, Proc. Calif. Acad. Sci., ser. 2, 2, 1889:88); Farallon Islands, skull found (Cooper, Proc. Calif. Acad. Sci., 4, 1868:12); San Pablo Bay, Marin County, specimen, June 20, 1905 (Gifford, Auk, 22, 1905:408); "Santa Clara, San Francisco," specimen, no date (Ogilvie-Grant, Cat. Birds British Mus., 26, 1898:447); 5 miles west of Gaviota, Santa Barbara County, one seen, July 11, 1941 (Bond, Condor, 43, 1941:249); vicinity of Santa Barbara, seen, August 12 and 24, 1912 (Dawson, Birds Calif., 4, 1924:1983); Hueneme, Ventura County, one shot "in 1915," and between Ventura and Hueneme, one seen, July 29, 1925 (Hoffmann, Condor, 28, 1926:102); Santa Monica, Long Beach, and near Los Angeles, in last locality three seen "overhead" in December, 1897 (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:10); North Pasadena, specimen, "about August, 1892" (Lawrence, Auk, 10, 1893:362); Catalina Island, seen, June 29, 1913 (Howell, Pac. Coast Avif. No. 12, 1917:41); Long Beach, two "caught with hook and line" June 13, 1911 (Linton, Condor, 13, 1911:168); Redondo, Los Angeles County, specimen, July 30, 1928, Alamitos Bay, same county, specimen, June 17, 1906, and Huntington Beach, Orange County, specimen, "in early September, 1925" (Willett, Pac. Coast Avif. No. 21, 1933:20); Carlsbad, San Diego County, roosting site in use July 9 to July 13, 1940 (Abbott, Condor, 43, 1941:77); La Jolla, same county, two seen in August, 1935, and two seen, July 26, 1940 (L. Miller, Condor, 38, 1936:14; Abbott, *loc. cit.*); off San Diego, specimen, June 27, 1927 (Abbott, Condor, 29, 1927:272).

Habitat—The open ocean, but also littoral; great powers of flight carry individuals sometimes far over the land.

Ardea herodias treganzai Court

Pallid Great Blue Heron

Synonyms—Ardea herodias, part; Great Blue Heron, part; Treganza Blue Heron; Pallid Blue Heron; Treganza Heron.

Status—Within its breeding range, permanently resident and locally abundant; elsewhere vagrant.

Geographic range—In general, the Colorado Desert and Great Basin districts. Breeds along the Colorado River, between Needles, San Bernardino County, and the Mexican line, and on Salton Sea (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:116; Rowley, Condor, 38, 1936:219; Grinnell, Condor, 10, 1908:190). Occurs elsewhere, as summer-time vagrants or winter immigrants, north to Death Valley, Inyo County, Mono Lake, Mono County, and Tuolumne Meadows, Tuolumne County (Gilman, Condor, 37, 1935:239; Grinnell and Storer, Animal Life Yosemite, 1924:256), and west casually to the Sacramento Valley and near San Diego, San Diego County (specimens identified as of race *treganzai* by Oberholser, Proc. U. S. Nat. Mus., 43, 1912:547).

Habitat—For permanent presence, fish-producing waters are requisite; other types of animal-food resource hold individual herons but temporarily. Tall trees, rock pinnacles, and islets afford nesting sites.

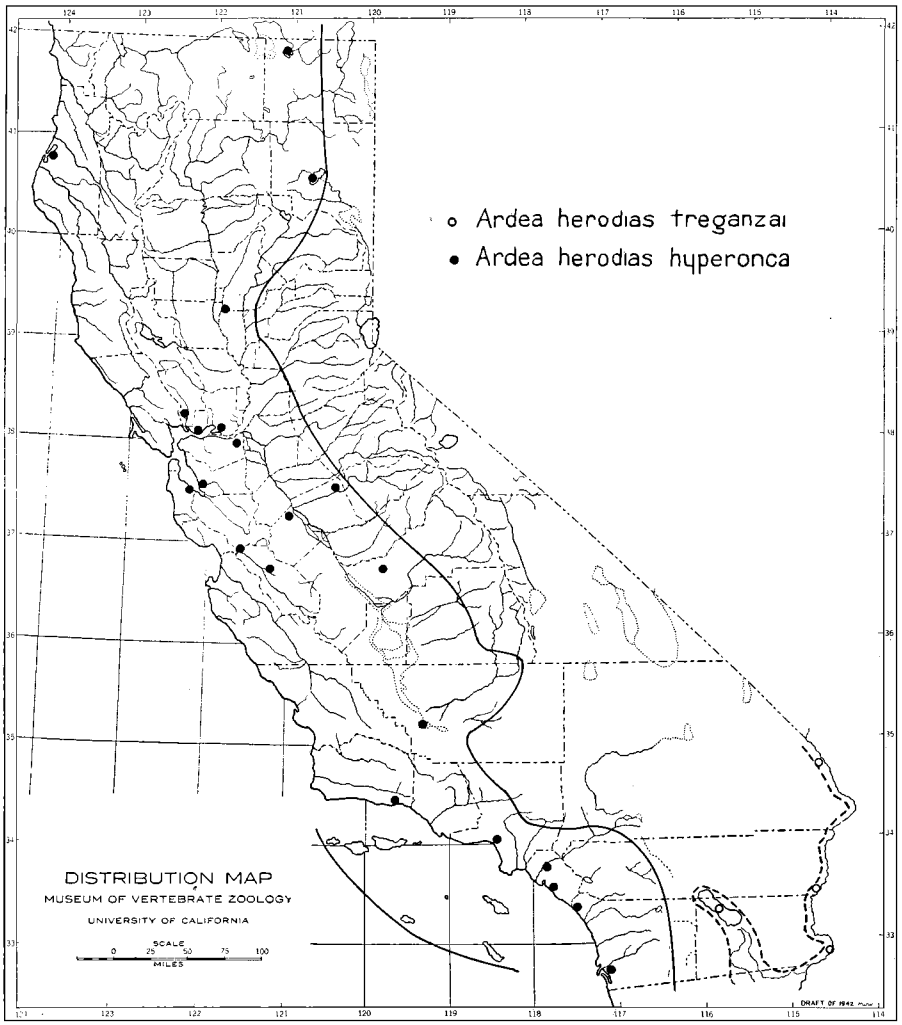

Fig. 2. Breeding stations of Great Blue Herons, *Ardea herodias*, in California.

Ardea herodias hyperonca Oberholser
California Great Blue Heron

Synonyms—Ardea herodias, part; *Ardea herodias herodias*; *Ardea herodias oligista*; Great Blue Crane; Great Blue Heron, part; Blue Heron; California Heron.

Status—Permanently resident, widespread at one season or another, and locally abundant. Reduction in numbers noted in recent years, especially in the southern part of the State.

Geographic range—The entire length of the State, both coastwise and interiorly, except in the Colorado Desert and Great Basin districts. Also present in fair numbers around all islands of the Santa Barbara archipelago (Howell, Pac. Coast Avif. No. 12,

1917:43). Some of the known breeding stations, though not all of them now occupied, are as follows: Clear Lake, Modoc County (Willett, Condor, 21, 1919:200); Eagle Lake, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930: 165); Eureka, Humboldt County (Mus. Vert. Zool.); Sanborn Slough, Sutter County (Moffitt, Condor, 41, 1939:81); Cosumnes River, Sacramento County (Mus. Vert. Zool.); Suisun Marshes and Benicia, Solano County (Moffitt, *loc. cit.*; Stoner, Bird-Lore, 33, 1931:397); near Brentwood, Contra Costa County (Mus. Vert. Zool.); near Napa, Napa County, Alvarado, Alameda County, marshes near Redwood City, San Mateo County, and Sargents, Santa Clara County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:61; Carriger and Pemberton, Condor, 10, 1908:78; Dawson, Birds Calif., 4, 1924:1895); Paicines, San Benito County (Mailliard and Mailliard, Condor, 3, 1901:121); Gustine and Snelling, Merced County (H. M. Gladding, Condor, 44, 1942:226, Grinnell and Storer, Animal Life Yosemite, 1924:256); several localities in Fresno district, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:21); near Buena Vista Lake, Kern County (Linton, Condor, 10, 1908:197); near Santa Barbara, Santa Barbara County, Santa Monica and Chatsworth Lake, Los Angeles County, near Santa Ana and near Laguna Beach, Orange County, near San Onofre and San Diego, San Diego County, and on "certain" of the Santa Barbara Islands—status reviewed (Willett, Pac. Coast Avif. No. 21, 1933:21; H. L. Cogswell MS). Selected references of natural history import: food and foraging behavior (Vestal, Condor, 41, 1939:123; Moffitt, *ibid.*:81; Bond, *ibid.*:54; C. W. Michael, Condor, 36, 1934:215); returns of birds banded at Clear Lake, Modoc County, from Fallon, Nevada, and Sinaloa (M. T. Cooke, Bird-Banding, 9, 1938:80; Lincoln, *ibid.*, 7, 1936:141); taxonomy (Oberholser, Proc. U. S. Nat. Mus., 43, 1912:550; Swarth, Condor, 15, 1913:50; Howell, Pac. Coast Avif. No. 12, 1917:43); in general (Dawson, *loc. cit.*; Bent, U. S. Nat. Mus., Bull. 135, 1926:127ff.).

Habitat—Forage beat includes swamps, lake margins, tide-flats, kelp-beds on the ocean often well off-shore, rivers and streams to the smaller tributaries high in the mountains (as vagrants to 8600 feet altitude in a known instance), irrigation ditches and damp meadowlands. Nesting sites, chosen for safety, include tall trees, cliffsides, and sequestered spots on marshes, both salt and fresh water.

Note—While specimens in hand of the Great Blue Heron from Eagle Lake, Lassen County, are definitely of the race *hyperonca*, question exists as to the subspecific characters of birds to be seen in extreme eastern Lassen and Modoc counties. These may belong to the race *treganzai* (see Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:287).

Butorides virescens anthonyi (Mearns)

Anthony Green Heron

Synonyms—Ardea virescens; *Butorides virescens*; *Ardea virescens frazari*; *Ardea virescens anthonyi*; Green Heron.

Status—Summer resident locally; migrant widely, especially in April and early May and in late August and September; individuals occasionally winter toward the south. As to numbers, in most favorable places common.

Geographic range—As breeding, lowlands of western and southern sections, chiefly in Great Valley and along larger streams of coastal districts. Common along Colorado River and in Imperial Valley. Northernmost recorded summer stations, Yreka, Siski-

you County, and Red Bluff, Tehama County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:197); in the coast belt north to Laytonville, Mendocino County (Calif. Acad. Sci.). Life-zones in summer, Lower Sonoran and Upper Sonoran; reported nesting stations are all well below 2000 feet. Wintering stations few, and for single individuals: northernmost, San Francisco (L. A. Stephens, Gull, 13, 1931: February [p. 1]), and Stockton (Belding MS); also, Santa Cruz County, November 10 (Mus. Vert. Zool.); Santa Barbara, Santa Barbara County (Dawson, Jour. Mus. Comp. Ool., 2, 1921: 44); Pasadena, Los Angeles County (C. W. Michael MS); San Bernardino (Feudge, Condor, 5, 1903:80); Lakeside, San Diego County (Huey, Condor, 30, 1928:251). Noteworthy accounts of nesting: Ross, Marin County (Long, Gull, 17, 1935: September [p. 2]); Lagrange, Stanislaus County (Grinnell and Storer, Animal Life Yosemite, 1924: 258); vicinity of Fresno (Tyler, Pac. Coast Avif. No. 9, 1913:21); Sespe River, Ventura County (Peyton, Condor, 13, 1911:35); vicinity of Los Angeles (Howsley, Condor, 38, 1936:39); Lake Elsinore, Riverside County, and near Redlands, San Bernardino County (Hill, Condor, 43, 1941:71); Lakeside, Bonita and National City, San Diego County (Huey, Condor, 17, 1915:59, and Condor, 28, 1926:94). Some records of vagrants and migrants: Big Lagoon, Humboldt County, September 21 (A. H. Miller MS); Yosemite Valley and Merced Lake, Mariposa County, August (C. W. Michael, Yosemite Nature Notes, 13, 1934:76); Santa Cruz Island (Howell, Pac. Coast Avif. No. 12, 1917:44); Death Valley, Inyo County, May 24 to April 7 (Gilman, Condor, 37, 1935:239); Twentynine Palms, San Bernardino County (F. Carter, Condor, 39, 1937:212); Cuyamaca Reservoir, San Diego County, April 24, May 5 (J. G. Peterson MS).

Habitat—Willow-bordered sloughs, slow-flowing streams, and lakes; closely restricted to freshwater. Both for roosting and foraging somewhat concealed and usually shaded situations are chosen. More commonly found on elevated perches than on the ground. Nests are placed in willows most frequently and often in fairly dense tangles of branches in the crowns of middle-aged trees. Pairs nest solitarily.

Casmerodius albus egretta (Gmelin)

American Common Egret

Synonyms—Ardea occidentalis; *Ardea egretta*; *Herodias egretta* var. *californica*; *Herodias egretta*; *Herodias alba egretta*; *Ardea egretta* var. *californica*; *Audubonia occidentalis*; *Casmerodias egretta*; *Casmerodius albus*; Great White Heron; White Heron; Great American Egret; Great White Egret; American Egret; Egret; American White Egret.

Status—Permanent resident within the State; the birds present in summer in the elevated northeastern section emigrate for the winter. Originally, prior to about 1880, widespread and common, locally abundant; then in the '80's and '90's, as a result of the feather trade, reduced to a condition of rarity, which continued to about 1911, when increase began to be noticed (Mailliard, Condor, 13, 1911:50; Tyler, Condor, 18, 1916: 196; *et al.*), until now (1943) the species may be considered common on the remaining suitable portions of its former range. Wanders extensively; even in breeding season seen far from nesting colonies.

Geographic range—The entire length of the State, except mountainous and dry desert areas; reaches to the seacoast in many places, but the metropolis is among the lakes on the northeastern plateau, in the Sacramento-San Joaquin Valley (Storer, Condor, 33, 1931:34), in the San Francisco Bay district (Stoner, Condor, 36, 1934:57),

in the San Diegan district (Willett, Pac. Coast Avif. No. 21, 1933:21), along the Colorado River (Dawson, Birds Calif., 4, 1924:1900), and at Salton Sea (Willett, *loc. cit.*). Since 1900 has bred at Clear Lake, Modoc County (Finley, Bird-Lore, 13, 1911:347); 3 miles below Ord on Sacramento River, Butte City and near Gridley, Butte County, and near Maxwell, Colusa County (Emlen, Gull, 20, 1938:41); near Crows Landing, Stanislaus County (H. C. Bryant, Calif. Fish and Game, 1, 1915:238); at Gustine and near Los Baños, Merced County (H. M. Gladding, Condor, 44, 1942:226; E. I. Dyer MS); Salton Sea, Imperial Valley (C. A. Harwell MS). Some other accounts indicative of dispersal, numbers and habits: Eel River and Humboldt Bay, Humboldt County, winter (Fraser, Condor, 33, 1931:34; A. H. Miller MS); Manzanita Lake, Lassen Park area (Vogt, Condor, 43, 1941:161); Sacramento Valley, generally (Wetmore, Condor, 21, 1919:73; Linsdale, Calif. Fish and Game, 24, 1938:25; Moffitt, Condor, 41, 1939: 81); Pescadero, San Mateo County (Orr, Amer. Midl. Nat., 27, 1942:293); mouth of Salinas River, Monterey County (Silliman and von Bloeker, Condor, 39, 1937:128); Yosemite Valley, Mariposa County, August 16 (Brockman, Yosemite Nature Notes, 22, 1943:79); Death Valley, Inyo County, April 18, November 8 (Gilman, Condor, 37, 1935:239); near Yermo, May 2, and Twentynine Palms, April 23, 24, San Bernardino County (Lamb, Condor, 14, 1912:35; F. Carter, *ibid.*, 39, 1937:212); Avalon, Catalina Island, May (Meadows, Condor, 36, 1934:40); Mission Bay and Point Loma, San Diego County (C. W. Michael, Condor, 36, 1934:215; Sefton, Condor, 38, 1936:118); Cuyamaca State Park, San Diego County, March 9, September 10 (J. G. Peterson MS).

Habitat—Marshes, tide-flats, irrigated lands, and margins of rivers and lakes. Roosts, partly at least, in trees; and, in California, nests in large trees.

Leucophoyx thula brewsteri (Thayer and Bangs)
Western Snowy Egret

Synonyms—Garzetta candidissima; *Ardea candidissima*; *Egretta candidissima brewsteri*; *Egretta candidissima*; *Egretta candidissima candidissima*; *Herodias candidissima*; *Egretta thula thula*; *Egretta thula brewsteri*; *Egretta thula*; Snowy Heron; Little White Egret; Lesser Egret; Snowy Egret; Common Snowy Heron; Brewster Egret.

Status—Present throughout the year in the southern three-fourths of the State below the 1000-foot level; elsewhere, in summer only, or vagrant. Formerly, prior to about 1880, locally common. Beginning in the '80's, nearly wiped out by plume hunters. In the early 1900's thought to have become extinct within this state; but by 1908 began to be recorded again, and now (1943) fairly common in favored places.

Geographic range—Chiefly the lower Sacramento Valley, the San Joaquin Valley, the Colorado River valley, and a coastwise strip from Marin County to San Diego. Before 1880, occurred in summer among the lakes of Modoc and Lassen counties (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. L, 1879:323); but no record from the north end of the State since that time. Northernmost station of record otherwise, Gray Lodge Refuge, Butte County (Linsdale, Calif. Fish and Game, 24, 1938:36). The one definitely known breeding place since 1910 is in vicinity of Los Baños, Merced County (Dawson, Condor, 17, 1915:97, and Birds Calif., 4, 1924:1902). Wanderers have reached such places as Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:42); Buck Meadow, 7000 feet, Sierra Nevada, Fresno County, August to September 16 (Ross, Condor, 36, 1934:113); Death Valley, Inyo County, August

to September 5 (Gilman, Condor, 38, 1936:40). Records from San Diegan district are summarized by Willett (Pac. Coast Avif. No. 21, 1933:22). Other references selected for bearing on numbers and behavior: Sacramento Valley (Moffitt, Condor, 41, 1939:82); Manzanita, Marin County (Swanton, Condor, 35, 1933:73); Pacific Grove, Monterey County (C. F. Smith, Condor, 34, 1932:231); Long Beach, Los Angeles County (Scofield, Calif. Fish and Game, 23, 1937:177); Bolsa Chica, Orange County (C. W. Michael, Condor, 38, 1936:168); Mission Bay, San Diego County (C. W. Michael, Condor, 36, 1934:216).

Habitat—Marshes, tide-flats, stream courses, and borders of lakes. Nesting sites are situated in sequestered, dense tule beds.

Hydranassa tricolor ruficollis (Gosse)

Louisiana Red-necked Heron

Synonym—Louisiana Heron.

Status—Casual winter visitant or vagrant from the south.

Occurrences—All, to date, at or near San Diego, as follows: specimen taken at south end of San Diego Bay, January 17, 1914 (Huey, Condor, 17, 1915:57); specimen taken on San Diego Bay at mouth of Sweetwater River, March 22, 1925 (Huey, Condor, 27, 1925:210); specimen taken on San Diego Bay near National City, December 20, 1932, and an individual seen on Mission Bay near Ocean Beach the last week of January, 1933 (Huey, Condor, 35, 1933:126); two individuals seen on Mission Bay, February 10, 1934 (Abbott, Condor, 36, 1934:117); one individual watched on Mission Bay [no date given] (C. W. Michael, Condor, 36, 1934:216); two individuals seen on San Diego Bay near Coronado, December 20, 1934 (Crouch, Condor, 37, 1935:87); two seen on Mission Bay, January 9, 1941 (R. H. Beck MS).

Habitat—Forages on open tidal mud-flats (see Michael, *loc. cit.*).

Nycticorax nycticorax hoactli (Gmelin)

American Black-crowned Night Heron

Synonyms—Nycticorax gardeni; *Nyctiardea gardeni*; *Nyctiardea grisea naevia*; *Nycticorax griseus naevius*; *Nycticorax nycticorax naevius*; *Nycticorax nycticorax*; *Nycticorax naevius*; Night Heron; American Night Heron; Black-crowned Night Heron.

Status—In summer, varyingly common almost throughout State; formerly abundant, now greatly depleted locally. In winter, present in lesser numbers.

Geographic range—In breeding season, both east and west of Sierran divides, the full length of the State, from near sea level up to 7000 feet. Life-zones, Lower Sonoran to Transition. Northernmost breeding stations, Goose Lake, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:287) and Eureka, Humboldt County (Mus. Vert. Zool.). In winter, restricted to areas south of latitude 40°, extending southeastward to Colorado River valley. Occurs most widely in migration. Some others of the numerous breeding places, past or present, are: Belvedere Island, Marin County (Moffitt, Condor, 41, 1939:82); Alameda, Alameda County (long history reviewed by E. L.

Sumner, Jr., Condor, 35, 1933:85); near Alvarado, Alameda County (Finley, Condor, 8, 1906:36ff.); Santa Cruz, Santa Cruz County (Baird, Brewer and Ridgway, Water Birds N. Amer., 1, 1884:58); Los Baños, Merced County (Dawson, Birds Calif., 4, 1924:1910ff.); near Fresno, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:22); Tulare Lake, Kings County (Goldman, Condor, 10, 1908:202); Buena Vista Lake, Kern County (Linton, Condor, 10, 1908:197; Rowley, Condor, 40, 1938:88); San Jacinto Lake, Riverside County, and other places in southern California (reviewed by Willett, Pac. Coast Avif. No. 21, 1933:24); Big Bear Valley, San Bernardino County (Hanna, Condor, 42, 1940:306). Northernmost wintering stations: Ukiah, Mendocino County (Elmore, Condor, 38, 1936:123) and Packer Lake, Glenn County (Linsdale, Calif. Fish and Game, 24, 1938:26). Stragglers have reached San Clemente and Santa Catalina islands (Willett, *loc. cit.*) and Death Valley (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:58). Other references: roosting (Soto, Calif. Fish and Game, 17, 1931:89; Nichols, Gull, 22, 1940:42; Gander, Condor, 32, 1930:64); bird from Los Baños captured in Michoacan, Mexico (M. T. Cooke, Bird-Banding, 9, 1938:84); feeding accident (Gyger, Calif. Fish and Game, 20, 1934:94); red phase (van Rossem, Auk, 43, 1936:322).

Habitat—Forages along margins of lakes and mud-bordered bays and in marshy places where there is standing or slow-running water. Roosts usually in dense foliage of trees, but not necessarily near marshy ground. Nests in colonies, usually in trees, occasionally in tule patches.

Ixobrychus exilis hesperis Dickey and van Rossem
Western Least Bittern

Synonyms—Ardea exilis; *Ardeola exilis*; *Ardetta exilis*; *Botaurus exilis*; *Ixobrychus exilis*; *Ixobrychus exilis exilis*; Minute Heron; Least Bittern; American Least Bittern.

Status—Summer resident; doubtless fairly common, but secretive habits veil relative abundance as also, probably, extent of distribution. Rarely remains through winter.

Geographic range—Chiefly Sacramento and San Joaquin valleys and southern coastal slope of State. Life-zones, Lower Sonoran and Upper Sonoran. Northernmost station of recorded occurrence, near Gridley, Butte County (Wetmore, Condor, 21, 1919:73); northernmost in coast belt, Golden Gate Park, San Francisco (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:60). Southernmost stations for actual breeding, San Luis Rey, San Diego County (Sharp, Condor, 9, 1907:91) and 8 miles northwest of Calipatria, Imperial County (Linsdale MS). Some other nesting records: Stockton, San Joaquin County (Grinnell, Pac. Coast Avif. No. 11, 1915:43); vicinity of Los Baños, Merced County (Dawson, Birds Calif., 4, 1924:1920); Buena Vista Lake, Kern County (Mus. Vert. Zool.); Nigger Slough, Los Angeles County (Willett, Pac. Coast Avif. No. 7, 1912:30); near Redlands, and Chino, San Bernardino County (Hill, Condor, 43, 1941:71); San Jacinto Lake, Riverside County (Willett and Jay, Condor, 13, 1911:159). Occurs to eastward, locally or casually, to Colorado River (Coues, Ibis, ser. 2, 2, 1866:263), to Death Valley, Inyo County, May 4 (Gilman, Condor, 37, 1935: 239) and northward as far as near Mono Lake, Mono County [possibly breeding] (Grinnell and Storer, Animal Life Yosemite, 1924:256). Records for midwinter: 6 miles west of Pennington, Sutter County, December 28 (Moffitt, Condor, 41, 1939:82); Sunset Beach, Orange County, December 10 (Willett, Condor, 32, 1930:64); National

City, San Diego County, December 22 (Huey, Condor, 40, 1938:90); near Fort Yuma, Imperial County, December 29 (Arnold, Condor, 44, 1942:183).

Habitat—Marshlands and borders of ponds or reservoirs where grown to tules or rushes, in which cover the birds remain unless disturbed at close range. Nests are placed low in tules, over the water.

Botaurus lentiginosus peeti Brodkorb
Western American Bittern

Synonyms—Botaurus minor; *Botaurus lentiginosus*; *Ardea minor*; American Bittern.

Status—Varyingly common, locally and according to season, from one end of State to other. Permanently resident west of Sierran divides; on northeastern plateau, present in summer only. Extent of distribution and numbers have been diminishing concurrently with effacement of appropriate habitat. Occurs most widely at times of migration; many more present in southern California in winter than in summer (Willett, Pac. Coast Avif. No. 21, 1933:24).

Geographic range—Metropolis lies at lower altitudes in west-central and southern portions of State; somewhat less well represented in northeastern lake region. Life-zones, Lower Sonoran to Canadian. Has been definitely reported to occur in summer north to Humboldt Bay, Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:196), Lower Klamath Lake, Siskiyou County (Ferry, Condor, 10, 1908:39), and Jess Valley, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:286). Has nested at Lake Tahoe, 6225 feet, Eldorado County (Ray, Condor, 20, 1918:75) and even as high as near June Lake, 7630 feet, Mono County (J. B. Dixon, Condor, 36, 1934:36). Southernmost recorded nesting stations, Alamitos Bay, Los Angeles County, and Sunset Beach, Orange County (H. Robertson, Bull. Cooper Ornith. Club, 1, 1899: 94; Willett, *loc. cit.*). Other accounts bearing on natural history and distribution: Gray Lodge Refuge, Butte County, winter (Linsdale, Calif. Fish and Game, 24, 1938:27); Lake Merced, San Francisco (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:60); Pescadero, San Mateo County (Orr, Amer. Midl. Nat., 27, 1942:294); incubation habits (Tyler, Condor, 35, 1933:188); Death Valley, Inyo County, migrants in April and September (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:57; Gilman, Condor, 39, 1937:91); Santa Barbara, Santa Barbara County (Dawson, Birds Calif., 4, 1924: 1916); near Chino, San Bernardino County (Hill, Condor, 43, 1941:71); Salton Sea, Imperial County, winter (H. M. Hill MS).

Habitat—Typically, fresh-water marshlands and lake margins where well grown to tules and rushes. Cover is almost continually utilized and with good effectiveness, even when sparse. Nest sites are afforded within sedge clumps and tule patches close to the surface of damp ground or of water.

Note—For characterization of *B. l. peeti*, see Brodkorb (Occas. Papers, Mus. Zool., Univ. Mich., no. 333, 1936:2).

Mycteria americana Linnaeus
Wood Ibis

Synonyms—Tantalus loculator; Colorado Turkey.

Status—Sporadically more or less common visitant from south in summer. Breeds far below Mexican boundary.

Occurrences—Now so many times recorded from coast region of San Diegan district north to Ventura County, and from Colorado River north to Needles, San Bernardino County, that enumeration of instances seems not necessary here. Main months of appearance are June, July and August, but records in San Diego County extend from March 17 to September 28 (Abbott, Condor, 33, 1931:29; Willett, Pac. Coast Avif. No. 21, 1933:25; Abbott, Condor, 37, 1935:35, *ibid.*, 40, 1938:257 and *ibid.*, 43, 1941: 77; *et al.*). Stragglers occur at extreme south also in winter: Mission Valley, San Diego County, January 14, 1921 (Grey, Condor, 27, 1925:37); Calexico, Imperial County, November 30, 1919 (Howell, Condor, 22, 1920:75). Some vagrants reach far to northward; some of most definite records: Buena Vista Lake, Kern County, May 11, 1922 (L. Miller Coll.); Salinas River, near Gonzales, Monterey County, June 29, 1930 (McLean, Condor, 38, 1936:16); San Francisco Bay and San Joaquin Valley [but not breeding there] (Cooper, Auk, 4, 1887:90); near Fresno, Fresno County, July 28, 1918 (Tyler, Condor, 21, 1919:127); reservoir near Canby, Modoc County, "in early August," 1931 (Moffitt, Condor, 33, 1931:256); Death Valley, Inyo and San Bernardino counties, in July and August, 1935 (Pemberton, Condor, 37, 1935:287; Gilman, Condor, 38, 1936:40).

Habitat—Forages in shallow, mud-bottomed waters, either fresh or salt, usually apart from any concealing vegetation; wont to make flights far aloft over land. (See account by Coues, Birds Northwest, 1874:513ff., for habits as observed by him in 1865 at Fort Yuma, Imperial County.)

Plegadis guarauna (Linnaeus)
White-faced Glossy Ibis

Synonyms—Falcinellus cayanensis; *Ibis mexicanus*; *Ibis ordii*; *Ibis thalassinus*; Glossy Ibis; American Ibis; Mexican Ibis; Bronzed Ibis.

Status—Chiefly summer resident, April to October; locally common. In some years a few have wintered. Trends in recent years have been toward rapid depletion of numbers, owing to wide disappearance of proper habitat.

Geographic range—Metropolis lies (or lay) in San Joaquin Valley, with smaller numbers summering in southern coast district and in lake region of northeastern corner of State; widely scattered at migration time. Life-zones, Lower Sonoran and Upper Sonoran. Recorded breeding stations are: Los Baños, and general neighborhood, Merced County, best known and persisting (Grinnell, Bryant and Storer, Game Birds Calif., 1913:270ff.); Buena Vista Lake, Kern County, in 1922 (Lamb, Condor, 24, 1922:184); San Jacinto Lake, Riverside County, up to 1917 (Willett and Jay, Condor, 13, 1911: 159; Willett, Pac. Coast Avif. No. 21, 1933:25); Guajome, San Diego County, in 1901 (Sharp, Condor, 9, 1907:91). Probably in early days bred numerously at lakes in northeastern California (see Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. L, 1879: 322). Some stations of migrant or vagrant occurrence: Needles, San Bernardino County, May 2 (Hollister, Auk, 25, 1908:457); Santa Catalina Island, "spring of 1927" (Meadows, Condor, 31, 1929:129); Tulare Lake, Tulare County, October 22, 1922, bird banded at mouth of Bear River, Utah, July 3, 1916 (Lincoln, U. S. Dept. Agr.,

Dept. Bull. 1268, 1924:27); Irvington, Alameda County, May 18 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:60); Farallon Islands, in "spring" (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:42); Stockton, San Joaquin County, May 5 to 7, northward flight (Belding, Condor, 7, 1905:112); Humboldt Bay, near Eureka, Humboldt County, December 10, 1925 (Clay, Condor, 28, 1926:98); Lower Klamath Lake, Siskiyou County, June 4, 1914 [with possibility of breeding there] (H. C. Bryant, Condor, 16, 1914:232); Red Rock, Lassen County, July 26, 1928 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:167); Bishop, Inyo County, May 21, 1919 (Dawson, Birds Calif., 4, 1924:1925); Death Valley, Inyo County, May 2 and 5, 1934 (Gilman, Condor, 37, 1935:239). Wintering stations: between Colusa and Williams, Colusa County (Harwell, Gull, 23, 1941:12); Stockton, San Joaquin County, Los Baños, Merced County, and Los Angeles County (Grinnell, Bryant and Storer, Game Birds Calif., 1918:270); near San Diego, San Diego County (Holterhoff, Auk, 2, 1885:312).

Habitat—Typically, fresh-water swampy areas, where stretches of rushes or tules are interspersed with areas of shallow water. Dense tule thickets are resorted to for nesting, the bent and matted stems providing support for the fairly bulky nest structures. The ibises forage in water in which they can wade or on muddy ground where they obtain animal food by probing.

Guara alba (Linnaeus)
White Ibis

Status—Rare vagrant from the south.

Occurrences—Two: one individual seen by John Hornung in March, 1914, in valley of Colorado River at Palo Verde, Imperial County (Lincoln, Condor, 25, 1923: 181); specimen (no. 17099 San Diego Soc. Nat. Hist.) taken by J. W. Sefton, Jr., on Point Loma, near San Diego, November 20, 1935 (Huey, Condor, 38, 1936:121).

Ajaia ajaja (Linnaeus)
Roseate Spoonbill

Synonyms—Platea mexicana; *Platalea ajaja*; *Ajaja rosea*; Rosy Spoonbill.

Status—Rare or sporadic visitant in summer-time; a post-breeding wanderer, coming from direction of Tropics.

Occurrences—Recorded as follows: small flocks stated to "have several times extended up the coast even as far as San Francisco" (Gambel, Jour. Acad. Nat. Sci. Phila., ser. 2, 1, 1849:222); individual seen by R. B. Herron about four miles south of San Bernardino on June 20, 1903, and one seen by H. E. Wilder flying overhead at Riverside in 1902 (F. Stephens, Condor, 6, 1904:139); rumors current of presence in Imperial Valley in summer of 1909, and more definite testimony, of L. Wiley, of presence along Colorado River in vicinity of Palo Verde, Imperial County, in summer of 1913 (Grinnell, Bryant and Storer, Game Birds Calif., 1918:263); an immature male shot by J. S. Rowley near southeast end of Salton Sea, Imperial County, May 22, 1927 [now no. 51702 Mus. Vert. Zool.] (Pemberton, Condor, 29, 1927:253).

Habitat—Forages in shallow water of margins of rivers, lakes and ponds, apparently quite in the open.

Cygnus columbianus (Ord)
Whistling Swan

Synonyms—Cygnus americanus; *Olor columbianus*; American Swan; Common Swan.

Status—Locally fairly common as midwinter visitant from north; present ordinarily, one place or another, from November to March. Numbers greatly reduced from original condition, until reaching lowest level about 1916; thereafter a gradual pick-up apparent.

Geographic range—Center of occurrence now Sacramento Valley, northern portion of San Joaquin Valley, and lake region of northeastern corner of State; but small numbers regularly reach also to coastal slope of southern California (see Willett, Pac. Coast Avif. No. 21, 1933:26). Some southern occurrences are: Sweetwater Reservoir, near San Diego, December 10, 1919 (Stephens, Condor, 22, 1920:77); Warner Springs, San Diego County, in December of several years (Willett, Condor, 21, 1919:126); Salton Sea, Imperial County, in December, 1930 (Hanna, Condor, 33, 1931:126); Death Valley, Inyo County, December 5, 1934 (J. S. Dixon, Condor, 37, 1935:212). Selected accounts of behavior and distribution: Del Norte and Humboldt counties and migratory movements in general (Moffitt, Condor, 41, 1939:93); Surprise Valley, Modoc County, through winter (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:286); Sacramento and San Joaquin valleys (Linsdale, Calif. Fish and Game, 24, 1938:27); Suisun Marshes, Solano County, food habits (Moffitt, Condor, 40, 1938:77); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:59); near Salinas, Monterey County (Silliman and von Bloeker, Condor, 39, 1937:128); Lake Eleanor, Yosemite National Park, winter (Eastman, Yosemite Nature Notes, 19, 1940:27); in general (Grinnell, Bryant and Storer, Game Birds Calif., 1918:256ff.; Kortright, Ducks, Geese, Swans N. Amer., 1942:69ff.).

Habitat—Usually, larger ponds and fresh-water lakes; also slow-flowing lower courses of rivers and, not infrequently, brackish or even salt-water heads of seacoast bays.

Cygnus buccinator Richardson
Trumpeter Swan

Synonym—Olor buccinator.

Status—Believed to have been of regular winter occurrence, formerly, though in smaller numbers than Whistling Swan, south through interior of State. Reported but once since 1900.

Records—Cooper (*in* Baird, Brewer and Ridgway, Water Birds N. Amer., 1, 1884: 431) states that in his day this species was found in small numbers in winter about freshwater lakes and ponds inland. Heermann (Pac. R. R. Rept., 10, 1859:68) states that he saw the species in the Suisun area and in the Sacramento Valley, as well as frequently in the San Francisco markets; but since the Whistling Swan is not listed by him at all, this record may properly be queried. Newberry (Pac. R. R. Rept., 6, 1857: 100) gives both swans from California, designating the Trumpeter as the least common.

Juvenal specimen from "California" listed as contained in British Museum (Salvadori, Cat. Birds British Mus., 27, 1895:35); this bird was taken prior to 1857; re-examination leaves doubt but that it may be a Whistling Swan (Fleming, Condor, 21, 1919: 124). Townsend (Proc. U. S. Nat. Mus., 10, 1887:196) records the Trumpeter Swan as "rare" in northern California. Evermann (Auk, 3, 1886:91) records it from Ventura County as a winter visitant, "more common" than the Whistling. Grinnell (Pasadena Acad. Sci., publ. 2, 1898:13) records two specimens as having been taken by A. M. Shields in Los Angeles County; but these were subsequently destroyed by fire and the identification cannot be confirmed (see Willett, Pac. Coast Avif. No. 7, 1912:110). Belding (MS) identified three individuals "by description" in the markets of Stockton some time previous to 1890. A "flock" reported seen on Buena Vista Lake, Kern County, December 22, 1893 (Grinnell, Bryant and Storer, Game Birds Calif., 1918:255). One observed at close range between Grasshopper Valley and Termo, Lassen County (McLean, Condor, 39, 1937:228). There are further, merely nominal ascriptions of *buccinator* to California. Actual specimens from California, unquestionably identified, do not appear to exist in any museum. Even so, and granting that some of the above records really apply to the Whistling Swan, it is hardly thinkable that every one of them is at fault.

Habitat—Inland fresh-water lakes and ponds (Cooper, *loc. cit.*).

Branta canadensis canadensis (Linnaeus)
Honker Canada Goose

Synonyms—Anser canadensis; *Bernicla canadensis*; *Branta canadensis*, part; *Bernicla canadensis occidentalis*; *Branta canadensis occidentalis*, part; *Branta occidentalis*; Common Goose; Canada Goose, part; Honker; White-cheeked Goose, part; Common Canada Goose.

Status—Summer resident, March to November, in elevated northeastern section of State, and to some degree permanently resident there; winter visitant, November to March, at lower levels west of Sierran divides. Varyingly numerous; common where conditions most favorable. After serious slump along about 1916, increase noted, until now (1943) much of former range well populated.

Geographic range—Breeding area rather sharply restricted to lake region of Siskiyou, Modoc, Lassen and parts of adjacent counties. Some known breeding stations farthest west and south: Meiss Lake, west of Macdoel, and near Big Spring, Shasta Valley, Siskiyou County (Moffitt, Condor, 41, 1939:95); near Burney, and Manzanita Lake, Shasta County, and Battle Creek Meadows, Tehama County (Moffitt, *loc. cit.*; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:168); Lake Almanor, and Sierra Valley, Plumas County (Moffitt, *loc. cit.*); Lake Tahoe, Eldorado County (Ray, Condor, 14, 1912:67; Moffitt, Calif. Fish and Game, 17, 1931:20ff.); vicinity of June Lake, Mono County (J. B. Dixon, Condor, 36, 1934:36). Once nested far outside normal breeding range, at Crystal Springs Reservoir, San Mateo County (Moffitt, 1939, *loc. cit.*). Life-zones in summer, Upper Sonoran to Canadian. Altitudes of nesting stations range from 4000 to 7600 feet. Metropolis of wintering territory, Sacramento Valley and northern San Joaquin Valley. Lesser numbers winter irregularly to southward, reaching even to San Diego. Varying numbers winter within breeding range. Rarely visits actual seacoast; not definitely recorded from northwest coast belt north of Bodega, Sonoma County (see Grinnell, Bryant and Storer, Game Birds Calif., 1918:

222ff.; Moffitt, 1939, *loc. cit.*). Other selected references: Clear Lake, Modoc County (Willett, Condor, 21, 1919:199); Honey Lake, Lassen County, banding (Moffitt, Condor, 33, 1931:229); Dow, Calif. Fish and Game, 29, 1943:3); Suisun Marshes, Solano County (Moffitt, Condor, 40, 1938:83); Lake Merritt, Oakland, Alameda County, killing of gull (McCabe, Condor, 37, 1935:79); taxonomy (Swarth, Univ. Calif. Publ. Zool., 12, 1913:1ff.).

Habitat—In winter, lakes and reservoirs for loafing purposes, out from which the birds may forage along lower creek channels and on to grasslands and grain fields in surrounding open country; in summer, large or small fresh-water lakes with swampy borders and wet meadows, such as afford requisite seclusion as well as near-by forage ground.

Note—Yet to be ascertained is the relation of the western Canada Geese of large size to *B. c. interior* (Todd, Auk, 55, 1938:662). For the present they are best retained under the familiar name *B. c. canadensis*.

Branta canadensis occidentalis (Baird)
Western Canada Goose

Synonyms—Brant canadensis, part; Canada Goose, part; White-cheeked Goose.

Status—Regular winter visitant in small numbers from late October to mid-April.

Geographic range—Extreme northwest coast belt, south to Cape Mendocino, Humboldt County. Two separate flocks are known: one of about 125 birds winters on and around Lake Earl, Del Norte County, and resorts to Castle Rock, off Crescent City, when persecuted by hunters; the other flock of about 225 birds winters on Centerville Slough at the mouth of Eel River, Humboldt County. Extreme dates, October 25 and April 14. For all available information to date on this race in California, see full account by Moffitt (Condor, 39, 1937:149ff.).

Habitat—Fresh-water marshes near seacoast where the birds roost in edges of ponds and forage in marshy ponds and on grassy flats and hill slopes. Refuge from disturbance is attained by moving to offshore rocks and by alighting on the ocean near shore.

Note—Nearly if not quite all of the records under the name *occidentalis* made prior to 1936 really belong under the subspecies *canadensis* (see Swarth, Univ. Calif. Publ. Zool., 12, 1913:9).

Branta canadensis leucopareia (Brandt)
Lesser Canada Goose

Synonyms—Anser hutchinsii; *Bernicla hutchinsii*; *Branta canadensis hutchinsii*; *Branta hutchinsi*; Hutchins Goose; Canada Goose, part; Hutchins Canada Goose.

Status—Winter visitant, principally from late November to early April. Formerly abundant and widespread, but now greatly reduced in aggregate numbers and restricted as to extent of occurrence.

Geographic range—Entire length of State; but present metropolis, when established for winter, in Sacramento and San Joaquin valleys, where it still is locally abundant. In migration commonly moves along Pit River valley and through plateau lake region of northeastern section. (See Grinnell, Bryant and Storer, Game Birds Calif.,

1918:230; Moffitt, Condor, 41, 1939:164). Some marginal stations of recorded occurrence: Arcata, Humboldt County (Moffitt, *loc. cit.*); Lone Pine and Death Valley, Inyo County [but subspecific identity not verifiable] (A. K. Fisher, N. Amer. Fauna No. 7, 1893:19; Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:57); Mecca, Riverside County [subspecies?] (van Rossem, Condor, 13, 1911:130); coastal slope of southern California, south to San Diego, "still occurs in some numbers, especially during migrations" (Willett, Pac. Coast Avif. No. 21, 1933:27); Santa Cruz Island [subspecies?] (Howell, Pac. Coast Avif. No. 12, 1917:102). Oddly, for a one-time abundant bird, very few exact references are contained in our literature. For systematic appraisal, see Swarth, Univ. Calif. Publ. Zool., 12, 1913:1ff.

Habitat—Typically, inland prairie, whether natural pasture or cultivated to grain; resorts to lakes, reservoirs and ponds for loafing purposes.

Branta canadensis minima Ridgway
Cackling Canada Goose

Synonyms—Branta hutchinsi var. *leucoparia*; *Bernicla canadensis leucoparia*; *Bernicla leucoparia*; *Branta minima*; *Branta canadensis*, part; White-necked Goose; White-cheeked Goose, part; Little Cackling Goose; Cackling Goose; Cackler.

Status—Winter visitant, usually from October to April. Formerly abundant in metropolis of wintering territory; now (1943) seriously reduced, though good-sized flocks still reported locally.

Geographic range—Notably restricted, in midwinter (late October to early April) chiefly to parts of Sacramento Valley and northern end of San Joaquin Valley, and in fall (August 30 to December 27) and spring migration chiefly to vicinity of Tule Lake, in Siskiyou and Modoc counties (Grinnell, Bryant and Storer, Game Birds Calif., 1918:234; Lincoln, Condor, 28, 1926:156; Moffitt, Condor, 41, 1939:166). Small numbers (formerly large) migrate down the coast to Eureka, Humboldt County, and thence inland along the Trinity and Eel river valleys (Moffitt, *loc. cit.*). Formerly occurred commonly also south on to coastal slope as far as San Diego County (Belding, Zoe, 3, 1892:101); "still met with occasionally" there (Willett, Pac. Coast Avif. No. 21, 1933: 27). No definite record east of Sierran divides south of Modoc County. Other references: San Francisco Bay region and Suisun Marshes, rarely (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:58; Moffitt, Condor, 40, 1938:84); description (Moffitt, Calif. Fish and Game, 17, 1931:417); comparative morphology (A. H. Miller, Univ. Calif. Publ. Zool., 42, 1937:6ff.).

Habitat—Inland prairie lands in vicinity of large rivers and fresh-water lakes.

Branta bernicla hrota (O. F. Müller)
Light-bellied Brant

Synonyms—Branta bernicla glaucogastra; *Branta bernicla bernicla*; Eastern Sea Brant; Brant; Eastern Brant; American Brant.

Status—Rare winter visitant, vagrant from eastern North America. Two definite records: adult male, now no. 24588 Mus. Vert. Zool., taken from a flock of Black

Brant on Arcata Bay near Bird Island, Humboldt County, January 30, 1914 (H. C. Bryant, Condor, 16, 1914:183; Grinnell, Bryant and Storer, Game Birds Calif., 1918: 242; Moffitt, Calif. Fish and Game, 18, 1932:308); adult male, in collection of Ed N. Harrison, shot from a flock of Cackling Canada Geese on Tule Lake Wildlife Refuge, Siskiyou County, on October 20, 1941 (Harrison, Condor, 44, 1942:130).

Branta bernicla nigricans (Lawrence)
Black Brant

Synonyms—Bernicla brenta; *Bernicla nigricans*; *Branta nigricans*; Brant Goose; Brent Goose.

Status—Winter visitant, October through April. Although doubtless somewhat more abundant originally than now, numbers have held up better than with any other species of goose; still abundant locally in spite of some recent depletion of the principal food plant.

Geographic range—Either in migration or as settled for the winter, our entire seacoast, from Oregon line to Mexican line. Bays regularly resorted to are: Humboldt, Bodega, Tomales, Drakes, Morro, Mission and San Diego; formerly also San Francisco and San Pedro bays. (See Grinnell, Bryant and Storer, Game Birds Calif., 1918: 237ff.; and annual census reports by Moffitt, Calif. Fish and Game, 17, 1931:396ff.; *ibid.*, 18, 1932:298ff.; *ibid.*, 19, 1933:255ff.; *ibid.*, 20, 1934:355ff.; *ibid.*, 21, 1935: 343ff.; *ibid.*, 22, 1936:295ff.; *ibid.*, 23, 1937:290ff.; *ibid.*, 24, 1938:341ff.; *ibid.*, 25, 1939:336ff.; *ibid.*, 26, 1940:381ff.; *ibid.*, 27, 1941:216ff.; *ibid.*, 29, 1943:19ff.) Although rather strictly maritime, strays have reached inland localities: Tule Lake, Siskiyou County, November 21, 1935 (Jewett, Murrelet, 17, 1936:19); Klamath River near Beswick, Siskiyou County [this record a bit dubious] (Ferry, Condor, 10, 1908: 39); Arbuckle, Colusa County, November 30, 1924 (Mus. Vert. Zool.); Los Baños, Merced County, January 3, 1912 (Grinnell, Pac. Coast Avif. No. 11, 1915:40). Reported once from Avalon, Santa Catalina Island (Meadows, Condor, 36, 1934:40). Occasional birds in poor condition remain through summer along the seacoast (Pitelka, Condor, 43, 1941:294). In two instances Black Brant apparently have remained to breed on Humboldt Bay (Moffitt, 1941, *loc. cit.*) although the evidence for this is still not wholly satisfactory. For comparative morphology and adaptation, see A. H. Miller, Univ. Calif. Publ. Zool., 42, 1937:6ff.

Habitat—Marine littoral; congregates on larger bays, especially where plentiful growths of eel grass are accessible for food. Most activity takes place on the water; the birds seldom venture far out on land, although they rest along shore lines as well as on the water.

Philacte canagica (Sevastianoff)
Emperor Goose

Status—Winter visitant, October to April. Numbers always small, and appearances irregular.

Geographic range—Northwest coastline and Great Valley south to Merced County. In the nature of the case, only a small portion of the total numbers of this goose shot by hunters can have come to formal notice of bird students. The days of market-hunting

naturally produced the bulk of our definite records. These are to date (1943) as follows, giving the localities from north to south: Humboldt Bay, Humboldt County, one shot in winter of 1884, "others seen at long intervals" (Townsend, Auk, 3, 1886:491); same locality, one bird, March 1, 1925 (Grinnell, Condor, 33, 1931:38); same locality, December 3, 1927, one specimen (Zerlang and Fraser, Condor, 33, 1931:74); same locality, one taken, April 26, 1925, and two taken, December 6, 1927 (J. M. Davis, Condor, 42, 1940:222); same locality, January 27, 1933 (Mus. Vert. Zool.); Pit River, near McArthur, Shasta County, one bird, January 20, 1930 (Grinnell, *loc. cit.*); Butte Creek, near Gridley, Butte County, specimen, November 1, 1895 (Loomis, Auk, 18, 1901:105); same neighborhood, week prior to November 1, 1915, one bird, also one shot in preceding year (Muller, Condor, 18, 1916:32); Willows, Glenn County, two birds, November 2, 1932, and December 20, 1933 (Beck, Condor, 36, 1934:114; Mus. Vert. Zool.); Norman, Glenn County, one killed in "fall of 1916" (Hunter, Calif. Fish and Game, 4, 1918:154); Colusa, Colusa County, specimen taken "in November, 1912" (H. C. Bryant, Condor, 16, 1914:92); Davis, Yolo County, one killed in December, 1906 (H. C. Bryant, Condor, 17, 1915:58); Dixon, Solano County, three killed, dates unknown (H. C. Bryant, 1914, *loc. cit.*); Rio Vista, Solano County, specimen, November 3, 1910 (Littlejohn, Condor, 14, 1912:41); same locality, one taken "about 1921" (Mus. Vert. Zool.); Limantour Bay, Marin County, December 13, 1928 (Orr, Condor, 46, 1944:90); bird in San Francisco market, source unknown, October 8, 1900 (Loomis, *loc. cit.*); near Modesto, Stanislaus County, bird taken, November 15, 1913 (H. C. Bryant, 1914, *loc. cit.*); Ingomar, Merced County, one killed "in December, 1912" (H. C. Bryant, *loc. cit.*). There are other reports, in popular magazines or newspapers.

Habitat—Occurrences here chiefly in fresh-water areas, and where also winter most of our other geese, those which are non-maritime. This is surprising, because the Emperor Goose in its main wintering area far to the northwest appears to be restricted almost exclusively to the salt-water littoral. However, a fair number has been reported from maritime habitat at Humboldt Bay.

Anser albifrons albifrons (Scopoli)
Common White-fronted Goose

Synonyms—Anser erythropus; *Anser albifrons*; *Anser gambeli*; *Bernicla gambeli*; *Anser albifrons gambeli*, part; White-fronted Goose, part; American White-fronted Goose, part.

Status—Winter visitant, September to April. Formerly abundant and widespread; now greatly reduced, though still numerous in restricted favorable localities, mostly within Sacramento Valley.

Geographic range—Formerly, suitable ground wherever such occurred through entire length of State; now mainly northeastern lake region and Great Valley south to Kings County. Of late years, "met with only occasionally" on Pacific slope of southern California (Willett, Pac. Coast Avif. No. 21, 1933:28). Has been found on Santa Rosa Island, "abundant" in November, 1907 (Linton, Condor, 10, 1908:126), and possibly also on Anacapa Island (Howell, Pac. Coast Avif. No. 12, 1917:43). Stragglers visit remote oases on the desert, such as Death Valley, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:18; Gilman, Condor, 39, 1937:90); also, Colorado River valley, as at Furgeson Lake, Imperial County (Monson, Condor, 46, 1944:19). Extreme

dates (Grinnell, Bryant and Storer, Game Birds Calif., 1918:218ff.; Bryant, *in* Dawson, Birds Calif., 4, 1924:1853ff.). Other accounts indicating occurrence and abundance: Surprise Valley, Modoc County, winter (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:285); numbers in Sacramento and San Joaquin valleys in 1936 (Linsdale, Calif. Fish and Game, 24, 1938:28); longevity (Moffitt, Calif. Fish and Game, 40, 1938:83); Suisun Marshes, Solano County (Moffitt, Condor, 28, 1926:241); Carmel, Monterey County (Linsdale, Aud. Mag., 44, section 2, April, 1942:15); bird banded at Hooper Bay, Alaska, taken at Sutter City, Sutter County (Lincoln, U. S. Dept. Agr., Tech. Bull. 32, 1927:30).

Habitat—Plains, fields and swampy lowlands; feeds in the open and resorts to marshy ground and sequestered ponds for loafing.

Anser albifrons gambelli Hartlaub
Tule White-fronted Goose

Synonyms—Anser albifrons gambeli, part; White-fronted Goose, part; American White-fronted Goose, part.

Status—Regular and formerly fairly common winter visitant.

Geographic range—Metropolis of wintering ground, as far as known, in vicinity of Butte Creek, Sutter County (Swarth and Bryant, Univ. Calif. Publ. Zool., 17, 1917: 209ff.; Kuroda, Condor, 31, 1929:173ff.); but occurs also south to vicinity of Suisun, Solano County (Moffitt, Condor, 28, 1926:241, and *ibid.*, 40, 1938:83). Occurrence probably wider than here indicated, because of confusion in identification with Common White-fronted Goose. At least, in migration, must traverse a route over northern California (see Kortright, Ducks, Geese, Swans N. Amer., 1942:123ff.).

Habitat—Marshes heavily grown to tule, cattail, or willow, formed by river overflow, especially where such marshlands are broken in continuity by small ponds; only rarely forages out on grain fields with other geese (see Moffitt, 1926, *op. cit.*:242).

Chen rossii (Cassin)
Ross Goose

Synonyms—Anser rossii; *Exanthemops rossii*; Ross Snow Goose.

Status—Winter visitant, October through March. Formerly abundant locally; now greatly reduced and to a dangerously low level (for history, see Grinnell, Bryant and Storer, Game Birds Calif., 1918:215ff.); Cahalane, *et al.*, Auk, 58, 1941:295).

Geographic range—When settled for winter, metropolis lies (or lay) in Sacramento Valley and northern portion of San Joaquin Valley. Wintered also in Los Angeles area; no report of occurrence there in recent years (Willett, Pac. Coast Avif. No. 21, 1933:29). Southernmost definite record station: Bolsa Chica Club, near Newport, Orange County, November 10, 1900 (Daggett, Condor, 3, 1901:15). Westernmost station in latitude of San Francisco Bay, Redwood City, San Mateo County, November 24, 1915, and October 27, 1917 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:57). One found dead at Point Pinos, Monterey County, December 29, 1936 (Silliman and von Bloeker,

Condor, 39, 1937:128). There is no good record for coast region north of San Francisco, and none for any locality east of Sierran divides though migration route must traverse northeastern section of State (see Lincoln, U. S. Dept. Agr., Circ. No. 363, 1935:48). Additional general references: Moffitt, Calif. Fish and Game, 17, 1931:415ff.; Kortright, Ducks, Geese, Swans N. Amer., 1942:144ff.

Habitat—Quite indistinguishable from that of Lesser Snow Goose, which see.

Chen hyperborea hyperborea (Pallas)
Lesser Snow Goose

Synonyms—Anser albatus; *Anser hyperboreus*; *Chen albatus*; *Chen hyperboreus*; *Chen hyperborea nivalis*; Snow Goose; White Brant.

Status—Winter visitant, October to April. Formerly extremely abundant and widespread. Now vastly reduced in numbers, although still plentiful, and when settled for winter, mainly restricted to central California.

Geographic range—Originally, entire length of State, reaching or crossing Mexican boundary in vicinity of San Diego (history summarized in Grinnell, Bryant and Storer, Game Birds Calif., 1918:210ff.). Extreme dates of occurrence for birds other than cripples, September 28 and May 1. Of wide occurrence at times of migration, then traversing lake region of northeastern plateau from, for example, Surprise Valley, Modoc County, south to Lake Tahoe (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:284; Henshaw, Ann. Rept. Geog. Surv.... Wheeler, App. NN, 1877:1321; *et al.*), and visiting, east of Sierran divides, Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:116). Large numbers have at times visited uplands of Santa Rosa and Santa Cruz islands (Dawson, Birds Calif., 4, 1924:1847, and Condor, 17, 1915:204). Still "occasionally seen" in migration over Los Angeles area (Willett, Pac. Coast Avif. No. 21, 1933:28). Metropolis now comprised in lower portions of Sacramento and San Joaquin valleys. Other references: numbers in Great Valley (Linsdale, Calif. Fish and Game, 24, 1938:28); longevity (Moffitt, Calif. Fish and Game, 20, 1934:292); Suisun Marshes, Solano County, feeding habits (Moffitt, Condor, 40, 1938:77).

Habitat—Forages principally on open grasslands and grain fields; resorts to marshy places or lakes for resting purposes, occasionally to bays of ocean.

Chen caerulescens (Linnaeus)
Blue Goose

Status—Rare winter visitant to San Joaquin-Sacramento Valley. Two occurrences have been definitely recorded: Two birds shot by market hunters near Stockton, "about February 1," 1892; parts of one of these birds were saved and submitted to Ridgway, who determined them as above (Belding, Zoe, 3, 1892:97; A. K. Fisher, Condor, 20, 1918:56); furthermore, some of these fragments, a head and left wing tied together, of a juvenal, are still in the U. S. National Museum, bearing number 125206 (examined by Grinnell, and identification confirmed, October 31, 1929). Specimen from vicinity of Gridley, Butte County, taken by a hunter, December 15, 1910, now no. 10/1446 in collection of Oakland Public Museum (Grinnell, Condor, 22, 1920:76).

Dendrocygna autumnalis autumnalis (Linnaeus)

Mexican Black-bellied Tree-duck

Synonyms—Dendrocygna autumnalis; Black-bellied Tree-duck.

Status—Rare vagrant or pioneer from south. One authentic instance of occurrence: a mounted specimen, at one time in possession of Vernon Shepherd of San Francisco, was retrieved from a sack of ducks taken by market hunters in Imperial Valley, Imperial County, in fall of 1912 (H. C. Bryant, Condor, 16, 1914:94; Grinnell, Bryant and Storer, Game Birds Calif., 1918:252). A previous record is of a specimen stated to have been procured prior to 1859 at Fort Tejon, Kern County, by J. Xantus, "who regarded it [the species] as of rare and unusual occurrence" (Baird, Brewer, and Ridgway, Water Birds N. Amer., 1, 1884:482); but there is doubt concerning this record (Grinnell, Pac. Coast Avif. No. 11, 1915:40).

Dendrocygna bicolor helva Wetmore and Peters

Northern Fulvous Tree-duck

Synonyms—Dendrocygna fulva; *Dendrocygna bicolor*; Brown Tree Duck; Fulvous Tree-duck; Fulvous-bellied Tree Duck.

Status—Summer resident, April to October. Common only in few places; elsewhere within general range, of rare or irregular appearance, chiefly at times of migration. (For general account, see Grinnell, Bryant and Storer, Game Birds Calif., 1918:246ff.)

Geographic range—Mainly parts of San Joaquin Valley and Pacific slope of southern California. Chief breeding ground, vicinity of Los Baños, Merced County (Shields, Bull. Cooper Ornith. Club, 1, 1899:9; Barnhart, Condor, 3, 1901:67; H. C. Bryant, Condor, 16, 1914:224; Dawson, Birds Calif., 4, 1924:1876ff.). Other known breeding stations: near Mountain View, Santa Clara County [probably sporadic] (Snyder, Calif. Fish and Game, 5, 1919:43); Buena Vista Lake, Kern County (Dickey and van Rossem, Condor, 25, 1923:39); Nigger Slough, Los Angeles County, formerly (Willett, Pac. Coast Avif. No. 7, 1912:28); San Luis Rey Valley, San Diego County, in 1931 (Willett, Pac. Coast Avif. No. 21, 1933:29); 8 miles northwest of Calipatria, Imperial County, 1936, 1937 (Linsdale MS). Northernmost stations of vagrant or migrant occurrence: Marin County [prior to 1895] (Mailliard, Condor, 6, 1904:15); Suisun Marshes, Solano County (Moffitt, Condor, 40, 1938:82); near Live Oak, Sutter County, October 12, 1918 (Wetmore, Condor, 21, 1919:73); Ash Creek [Monache] and Little "Owens" Lake, Inyo County, June 1 and May 8, 1891 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:19). A common transient in Imperial Valley where apparently it has only recently begun to breed. Recorded also from Colorado River valley, near Bard, Imperial County, October 5 (L. W. Arnold, Condor, 44, 1942:184). There are several records of individuals shot in the winter months; for example, near Newman and Gustine, Merced County (Newsome, Calif. Fish and Game, 6, 1920:88) and at Bolsa Chica, Orange County, January 31, 1900 (Mus. Vert. Zool.); it is possible that most of these birds were crippled or otherwise not normal.

Habitat—Typically, fresh-water marshes where grown interruptedly to tules or cattails.

Anas platyrhynchos platyrhynchos Linnaeus
Common Mallard

Synonyms—Anas boschas; *Anas platyrhynchos*; Mallard Duck; Mallard; Greenhead.

Status—Resident throughout the year, though populations at higher elevations tend to move to lowlands for winter; also resident population augmented in winter by birds from north. Formerly abundant and extremely widespread; still common locally.

Geographic range—Entire length of State, and from seacoast east, in suitable habitat, to Nevada and Arizona boundaries. Recorded breeding stations, very many, ranging from parks in coastal cities such as San Francisco up to considerable altitudes, as at Bear Valley, 6700 feet, San Bernardino County, and up to about 7500 feet in Yosemite National Park (J. A. Howard, Yosemite Nature Notes, 18, 1939:114). Life-zones, Lower Sonoran to Canadian. Still fairly common in winter on coastal slope of southern California, but few now remain there to nest (Willett, Pac. Coast Avif. No. 21, 1933: 31). While breeding south to San Diego on Pacific slope, not recorded east of Sierran divides south of Owens Valley, save as winter visitant or transient in Colorado River and Imperial valleys and occasionally at sequestered oases on desert. For general account, with summary of earlier literature pertaining to California, see Grinnell, Bryant and Storer, Game Birds Calif., 1918:92ff. Other later references of natural history import: nest three miles from water, Mount Shasta City, Siskiyou County (C. F. Smith, Condor, 59, 1942:304); Lassen district (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:171); abundance in Great Valley (Linsdale, Calif. Fish and Game, 24, 1938:28); Suisun Marshes, Solano County, ecology (Moffitt, Condor, 40, 1938:77); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:49); Yosemite sector (Grinnell and Storer, Animal Life Yosemite, 1924:253); banding returns (Robertson, Condor, 30, 1928:321); in general (Phillips, Nat. Hist. Ducks, 2, 1923:3ff.; Dawson, Birds Calif., 4, 1924:1751ff.; Kortright, Ducks, Geese, Swans N. Amer., 1942:149ff.).

Habitat—Typically, fresh-water ponds, rivers and marshes where there is bordering cover of tules and cattails. Foraging is conducted by the tilting method, by skimming, and by surface gleaning on shore lines. Irrigated territory proves decidedly attractive. Nest sites commonly are on damp ground in concealing cover, but also may be in general vicinity of water on dry land.

Anas cyanoptera Vieillot
Cinnamon Teal

Synonyms—Pterocyanea discors; *Pterocyanea coeruleata*; *Querquedula cyanoptera*; *Querquedula cyanoptera cyanoptera*; Blue-winged Teal, part; Common Blue-winged Teal; Western Blue-winged Teal; Red-breasted Teal; South American Teal.

Status—Occurs chiefly through the summer, March to October; common and widely distributed. Over-winters sparingly toward the south. Numbers appear to be holding up better than with most ducks.

Geographic range—In summer, entire length of State both east and west of Sierran divides, but rare if not completely absent from coast belt north of San Francisco Bay region. Most widespread at migration times, in March and April and in August and

September, then reaching remote desert oases, and irrigated farms almost anywhere. The scattering midwinter records are chiefly for the San Joaquin Valley and for the southern coastal district northwest to Santa Barbara. Recorded nesting stations are many and extend from Lower Klamath and Tule lakes in Siskiyou County south to Palo Verde, Imperial County, and Escondido, San Diego County (listed by Grinnell, Bryant and Storer, Game Birds Calif., 1918:126); altitudinally, they extend from near sea level, as around San Francisco Bay, up to Bear Valley, 6700 feet, San Bernardino Mountains; life-zones, Lower Sonoran and Upper Sonoran, less commonly Transition. Some northern wintering stations: Gray Lodge Refuge, Butte County, December 2, and near Princeton, Colusa County, November 28 (Linsdale, Calif. Fish and Game, 24, 1938:31); Vallejo, Solano County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:51); Suisun Marshes, Solano County, December, January (Stoner, Condor, 39, 1937:246); Alvarado, Alameda County, January 1 (coll. Ralph Ellis). Selected references from more recent literature: California birds recovered in Mexico (Lincoln, Bird-Banding, 7, 1936:143); Pescadero, San Mateo County (Orr, Amer. Midl. Nat., 27, 1942:295); Yosemite Valley, Mariposa County, August, January, March, April, May (Mowbray, Yosemite Nature Notes, 19, 1940:47); migration at Death Valley, Inyo County, February 25 to May 7, August, September (Gilman, Condor, 37, 1935:239, and *ibid.*, 39, 1937:90); Twentynine Palms, San Bernardino County, March 22 to April 16 (F. Carter, Condor, 39, 1937:212); food (Mabbott, U. S. Dept. Agr., Bull. No. 862, 1920:28); in general (Phillips, Nat. Hist. Ducks, 2, 1923:390ff.; Bent. U. S. Nat. Mus., Bull. 126, 1923:122; Dawson, Birds Calif., 4, 1924:1772ff.; Willett, Pac. Coast Avif. No. 21, 1933:32; Moffitt, Condor, 33, 1931:247; Kortright, Ducks, Geese, Swans N. Amer., 1942:210ff.).

Habitat—Vicinity of tule and grass-bordered ponds, sloughs, slow-flowing streams, reservoirs, and irrigation canals. Rather sharply restricted to fresh water. Nest sites may be in tules near the water surface or on dry land at some distance from water. Forages along mud banks, in grass, and by dabbling.

Anas discors Linnaeus
Blue-winged Teal

Synonym—Querquedula discors.

Status—Summer resident, May to October, and locally fairly common, in elevated northeastern portion of State. To southward and at lower altitudes, migrant and winter visitant, in general rather rare.

Geographic range—In summer, Modoc region, west to Tule Lake, Siskiyou County, and Payne Creek, Tehama County, and south to Honey Lake, Lassen County (Moffitt, Condor, 33, 1931:247; McLean MS; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:173); also farther south, east of Sierran divides: Long Valley, Mono County (J. B. Dixon, Condor, 36, 1934:35); Laws, Inyo County (Dawson, Birds Calif., 4, 1924:1770); near Lancaster, Los Angeles County (Moffitt, *loc. cit.*). One instance of nesting in lower Sacramento Valley, near Elk Grove (Freyschlag, Condor, 44, 1942:227). Life-zones, Lower Sonoran to Transition. In spring, winter and fall, present scatteringly in southern California, both at desert oases and on Pacific slope, and thence northwestwardly to San Francisco Bay region and lower Sacramento Valley; records too numerous to list here (but see Willett, Pac. Coast Avif. No. 21, 1933:31;

Grinnell, Bryant and Storer, Game Birds Calif., 1918:121). Northwesternmost record station coastwise, 2½ miles north of Arcata, Humboldt County, June 21 (Clay, Condor, 41, 1939:121). Other references: Buena Vista Lake, Kern County, May 21, breeding (?) (Lamb, Condor, 24, 1922:28); Drakes Bay, Marin County, pair, May 12, 1929 (Bolander and Bryant, Condor, 32, 1930:70); banding return (Lincoln, U. S. Dept. Agr., Tech. Bull. No. 32, 1927:26).

Habitat—Vicinity of fresh-water ponds and slow-flowing streams.

Anas carolinensis Gmelin
Green-winged Teal

Synonyms—Querquedula carolinensis; *Nettion carolinense*; American Green-winged Teal.

Status—Winter visitant, mostly September through March. Formerly abundant, and still common in especially favorable places. A few remain through summer and breed; but at least more southerly instances of this sort may be result of crippling preventing emigration northward in spring.

Geographic range—State-wide and, in midwinter at least, reaching to southeasternmost desert oases as well as to Mexican boundary in Imperial Valley and San Diego County. Definite records of nestings are: Davis Creek, Modoc County (Dawson, Birds Calif., 4, 1924:1767); 3 miles south of Eureka, Humboldt County (Mus. Vert. Zool.); Sierra Valley, Plumas County, in 1885 (Grinnell, Bryant and Storer, Game Birds Calif., 1918:116 *fide* Belding); Alvarado, Alameda County, in 1915 (Dirks, Calif. Fish and Game, 2, 1916:46); Tulare Lake, Kings County, in 1907 (Goldman, Condor, 10, 1908:201); San Luis Rey Valley, San Diego County, in 1931 (Willett, Pac. Coast Avif. No. 21, 1933:31). Selected references relating to distribution and natural history: numbers in Great Valley (Linsdale, Calif. Fish and Game, 24, 1938:31); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:50); Pescadero, San Mateo County (Orr, Amer. Midl. Nat., 27, 1942:295); Yosemite Valley, Mariposa County (Mowbray, Yosemite Nature Notes, 19, 1940:47); Fresno district, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:16); Death Valley, Inyo County (Gilman, Condor, 37, 1935:239); Morro Bay, San Luis Obispo County (Grinnell and Hunt, Condor, 31, 1929:65); Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:115); banding returns (Wetmore, U. S. Dept. Agr., Bull. 1145, 1923:6); in general (Bent, U. S. Nat. Mus., Bull. 126, 1923:102ff.; Phillips, Nat. Hist. Ducks, 2, 1923:231; Kortright, Ducks, Geese, Swans N. Amer., 1942:295ff.).

Habitat—Chiefly fresh-water marshes, ponds, rain pools, and irrigating ditches. Resorts to open water of lakes, and even the ocean inshore, for loafing or safety.

Anas acuta tzitzihoa Vieillot
American Pintail

Synonyms—Dafila caudacuta; *Dafila acuta*; *Anas acuta*; *Dafila acuta tzitzihoa*; Pintail Duck; Pintail; Sprigtail; Sprig; American Pintail Duck.

Status—Abundant widely as winter visitant, September (even August) to April; locally fairly common also in summer. Considerable reduction manifest in numbers

compared with early part of century, though still plentiful in most suitable places; recently has made substantial recovery.

Geographic range—In winter and during times of migration, entire length and breadth of State, wherever conditions favor. In summer, scatteringly, on northeastern plateau, in Sacramento-San Joaquin Valley, and in southern coast district. Life-zones in nesting season, Lower Sonoran to Transition; altitudinal range, from near sea level up to 6600 feet. A few of the definitely recorded breeding stations are: Jess and Surprise valleys, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:282); Red Rock Creek, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:172); Lake Tahoe, Eldorado County (Ray, Condor, 20, 1918:77); Deep Springs Valley, Inyo County (Webb, Condor, 41, 1939:36); Gridley, Butte County, and Pennington, Sutter County (H. C. Bryant, Condor, 16, 1914:223, 227); Hayward and Alvarado, Alameda County (Grinnell, Bryant and Storer, Game Birds Calif., 1918: 136); Los Baños, Merced County (Dawson, Birds Calif., 4, 1924:1793); Tulare Lake, Kings County (Goldman, Condor, 10, 1908:202); Buena Vista Lake, Kern County (Linton, Condor, 10, 1908:50, 197); vicinity of Los Angeles (Willett, Pac. Coast Avif. No. 21, 1933:31); Baldwin Lake, San Bernardino Mountains (Hill, Condor, 40, 1938: 40); Bolsa Chica, Orange County (H. L. Cogswell MS); Lake Henshaw, San Diego County (Abbott, Condor, 30, 1928:162). Further selections from the extensive literature on this species: abundance in Great Valley in 1936 (Linsdale, Calif. Fish and Game, 24, 1938:29, and Audubon Mag., 44, sec. 2, April, 1942:15); Suisun Marshes, Solano County, ecology (Stoner, Condor, 39, 1937:246; Moffitt, Condor, 40, 1938:77); Death Valley, Inyo County, August (Gilman, Condor, 39, 1937:90); Santa Catalina and San Clemente islands (Howell, Pac. Coast Avif. No. 12, 1917:42; Meadows, Condor, 31, 1929:129); Imperial Valley, Imperial County, feeding on barley (Kalmbach, Wilson Bull., 46, 1934:83); San Diego, San Diego County, migration in July (Pearson, Calif. Fish and Game, 14, 1928:320); results of banding (Lincoln, Condor, 26, 1924:88, U. S. Dept. Agr., Tech. Bull. 32, 1928:27, Bird-Banding, 4, 1933:23, and *ibid.*, 7, 1936: 142; E. L. Sumner, Jr., Calif. Fish and Game, 17, 1931:275; Ehmann, Gull, 23, 1941:19).

Habitat—Typically, fresh-water ponds and marshes, and adjacent grasslands. Forages by gleaning, dabbling and tilting methods. May repair to bodies of salt or alkali water, even to coastal bays, for loafing or refuge. Nest sites are situated usually on dry ground near ponds or lakes.

Mareca penelope (Linnaeus)
European Widgeon

Synonyms—Anas penelope; Widgeon, part; Common Widgeon.

Status—Winter visitant; fairly regular but rare. Continues to appear down to the present.

Occurrences—Normally west of Sierran divides, and mostly near seacoast. Definitely recorded ones, in north-south order, are: Tule Lake, Siskiyou County, specimen taken, December 13, 1941 (Harrison, Condor, 44, 1942:130); Humboldt Bay, Humboldt County, one in "winter of 1884" (Townsend, Auk, 3, 1886:491); same locality, two additional examples, one taken "about 1905," the other, October 20, 1911 (Grinnell, Bryant and Storer, Game Birds Calif., 1918:112); same locality, specimen taken De-

cember 20, 1925 (Mus. Vert. Zool.); Gray Lodge Refuge, Butte County, one reported, December 1, 1936 (Linsdale, Calif. Fish and Game, 24, 1938:29); Norman, Glenn County, one, December 19, 1917 (Mailliard, Condor, 20, 1918:122); Rio Vista, Solano County, one shot, January 25, 1884, and one "in February of the same year" (Belding MS); Grizzly Island, Solano County, one specimen, October 29, 1939 (Stoner, Condor, 42, 1940:219); markets of San Francisco, "several" (Cooper, Proc. Calif. Acad. Sci., 4, 1868:9); same source, specimen, February 17, 1882 (W. E. Bryant, Forest and Stream, 26, 1886:426); San Francisco Bay, specimen, November 24, 1890 (Palmer, Condor, 20, 1918:188); south San Francisco Bay, "frequently secured" in the '80's (Grinnell, Bryant and Storer, *loc. cit.*); Lake Merritt, Oakland, one or two individuals present [beginning in January, 1921] almost every winter down to date (Kibbe, Gull, 3, 1921: December [p. 3]; *et al.*); Los Baños, Merced County, specimen, December 5, 1908 (Mailliard, Condor, 23, 1921:29); Guadalupe, Santa Barbara County, one shot, January 14, 1921 (Colburn, Condor, 23, 1921:65); near Hollywood, Los Angeles County, one seen, January 12, 1921 (Willett, Pac. Coast Avif. No. 21, 1933: 31); Bixby, Los Angeles County, specimen taken February 16, 1904 (Grinnell, Auk, 21, 1904:383); same locality, one shot, February 5, 1905 (Palmer, *loc. cit.*); Brawley, Imperial County, "a pair" [= one] shot, about December 12, 1917 (Wyman, Condor, 20, 1918:192, and *ibid.*, 22, 1920:158). The above enumeration of "records" does not, of course, include repetitions.

Habitat—Fresh-water marshes and shallow bays; not distinguishable from that of Baldpate, which see.

Mareca americana (Gmelin)

Baldpate

Synonyms—Anas americana; *Mareca penelope*, part; American Widgeon; Widgeon, part.

Status—Winter visitant, October to early April. Formerly abundant and widespread; still common, and also less reduced as to extent of occurrence than most ducks.

Geographic range—Either when migrating, or when settled for winter, entire length and breadth of State. Rare or absent in midwinter from extreme northeastern counties and other elevated parts of State. While a few birds have been recorded in summertime to southward, such occurrences may have been due to crippling. However, the species normally summers in Modoc County, at least: Davis Creek and probably Surprise Valley, "breeding commonly" (Dawson, Condor, 18, 1916:24, and Birds Calif., 4, 1924:1761ff.). General accounts of the species: Grinnell, Bryant and Storer (Game Birds Calif., 1918:106); Bent (U. S. Nat. Mus., Bull. 126, 1923:89ff.); Phillips, Nat. Hist. Ducks, 2, 1923:189ff.). Stations of occurrence serving to indicate distribution in winter and in migration: Humboldt Bay, Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:194); Litchfield, Lassen County, December 27 (A. H. Miller MS); numbers in Great Valley in 1936 (Linsdale, Calif. Fish and Game, 24, 1938:29); Suisun Marshes, Solano County (Stoner, Condor, 39, 1937:246; Moffitt, Condor, 40, 1938:79); returns from birds banded at Lake Merritt, Oakland, Alameda County (Lincoln, Bird-Banding, 4, 1933:23); Mono Lake, Mono County, September 20 (Grinnell and Storer, Animal Life Yosemite, 1924:253); Death Valley, Inyo County, winter, and as late as April 20 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:54); coastal southern California in late September (Willett, Pac. Coast Avif. No. 21, 1933:30);

Colorado River valley at Ehrenberg (Stephens, Condor, 5, 1903:76). Examples of abnormal summer occurrences: mouth of Santa Clara River, Ventura County, June 25 (Hoffmann, Condor, 23, 1921:169); Bolsa Chica, Orange County, July 12 (H. L. Cogswell MS); 8 miles northwest of Calipatria, Imperial County, May 5 (Mus. Vert. Zool.); Imperial Dam, Colorado River, July 3 (Monson, Condor, 46, 1944:19).

Habitat—Chiefly fresh-water marshes, streams and lakes, especially where adjacent to grassland; prone to visit irrigated lands and desert oases. Also repairs, at least for day-time loafing purposes, to shoal waters of larger coastal bays.

Chaulelasmus streperus (Linnaeus)
Gadwall

Synonyms—Anas strepera; Gadwell Duck; Gray Duck; Gadwell.

Status—Permanent resident, fairly common locally. In winter, numbers augmented by birds from north; also then most widely distributed. Of late years reduced, but decreases not so apparent as with many other ducks.

Geographic range—At one season or another, entire length of State, chiefly west of the deserts. Main breeding area, Sacramento and San Joaquin valleys. Definitely recorded nesting stations, all in Lower and Upper Sonoran life-zones, are: Los Baños and Gadwall, Merced County (Grinnell, Bryant and Storer, Game Birds Calif., 1918: 105; Mus. Vert. Zool.); Chowchilla, Merced County (Mailliard, Condor, 6, 1904:15); vicinity of Los Angeles (Davie, Nests and Eggs, ed. 4, 1889:63); San Pedro, Los Angeles County (Cooper, *in* Baird, Brewer and Ridgway, Water Birds N. Amer., 1, 1884: 508); San Jacinto Lake, Riverside County (Willett, Pac. Coast Avif. No. 7, 1912:23). No recent nesting record south of central San Joaquin Valley. Has been recorded in winter south to San Diego County, as at Cuyamaca Lake, October 16, 1940 (J. G. Peterson MS) and to Death Valley, Inyo County (Gilman, Condor, 37, 1935:239) and Imperial Valley, Imperial County, October 11, 1924 (Mus. Vert. Zool.). Also winters north to Oregon line, as at Crescent City, Del Norte County (Mus. Vert. Zool.). Further references: Great Valley (Linsdale, Calif. Fish and Game, 24, 1938:29); birds banded in Utah recovered at Williams, Glenn County, and two from Oregon taken at Oxnard, Ventura County, and Needles, San Bernardino County (Lincoln, U. S. Dept. Agr., Tech. Bull. No. 32, 1927:25); Suisun Marshes, Solano County (Stoner, Condor, 39, 1937:246; Moffitt, Condor, 40, 1938:82); Los Baños, Merced County (H. C. Bryant, Condor, 16, 1914:222); in general (Bent, U. S. Nat. Mus., Bull. 126, 1923:77; Phillips, Nat. Hist. Ducks, 2, 1923:138ff.; Dawson, Birds Calif., 4, 1924:1758ff.).

Habitat—Rivers, ponds and fresh-water swamplands, especially latter where grown to patches of tules, with ponds here and there. Forages in fashion similar to Mallard.

Spatula clypeata Linnaeus
Shoveller

Synonyms—Rynchaspis clypeata; Shoveller Duck; Spoonbill Duck.

Status—Chiefly winter visitant, October to April; formerly abundant, now greatly reduced but still common locally. A few, and quite surely not all cripples, have remained through summer and nested.

Geographic range—In suitable habitat, entire length of State, both coastwise and interiorly. Appears most widely during migrations, most restrictedly in summer. Stations of breeding occurrence scattering; more definitely known ones are: Wheeler Island, Solano County (Grinnell, Bryant and Storer, Game Birds Calif., 1918:132); near Hayward and near Alvarado, Alameda County (Emerson, Condor, 3, 1901:116; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:51); Chowchilla, Merced County (Grinnell, Bryant and Storer, *loc. cit.*); Riverdale, Fresno County (Tyler, Condor, 18, 1916:167); Jamison, Fresno County (Grinnell, Bryant and Storer, *loc. cit.*); Tulare Lake, Kings County (Goldman, Condor, 10, 1908:202); Gorman, Los Angeles County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:17); vicinity of Los Angeles (Willett, Pac. Coast Avif. No. 21, 1933:32). Some accounts of distributional and seasonal significance: Humboldt Bay, Humboldt County, December (Townsend, Proc. U. S. Nat. Mus., 10, 1887:194); Honey Lake, Lassen County, December (A. H. Miller MS); Manzanita Lake, Shasta County, July 10 (Stebbins, Condor, 45, 1943:200); numbers in fall and winter in Great Valley (Linsdale, Calif. Fish and Game, 24, 1938:31); Suisun Marshes, Solano County, numbers, ecology (Stoner, Condor, 36, 1934:106; Moffitt, Condor, 40, 1938:79); Brawley and Salton Sea, Imperial County, winter, and May 2 (van Rossem, Condor, 13, 1911:130; Mus. Vert. Zool.). Other general references: Lincoln, U. S. Dept. Agr., Tech. Bull. No. 32, 1927:27 (banding returns); Dawson, Birds Calif., 4, 1924:1778ff.; Swarth, Condor, 17, 1915:115 (hybrid with teal); Kortright, Ducks, Geese, Swans N. Amer., 1942:215ff.

Habitat—Typically, shallow fresh-water or brackish ponds, sloughs and estuaries, and adjacent marshlands. Seeks open water of larger lakes, and even bays of seacoast, for loafing and safety. Nest sites usually are on dry ground in the vicinity of water.

Aix sponsa Linnaeus
Wood Duck

Synonyms—Aex sponsa; *Lampronessa sponsa*; Summer Duck.

Status—Essentially resident. Originally "abundant" (prior to about 1870) and widespread through lowlands west of Sierra Nevada; subsequently became reduced until, by 1915, considered "rather rare"; then increase was recorded, until now (1943) again common in certain of the still suitable places within former general range.

Geographic range—Metropolis formerly, lowlands of Sacramento and San Joaquin valleys; also lesser valleys among Coast Ranges centrally to westward. Breeding places definitely recorded are: Battle Creek, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:296); Oroville, Butte County (Mus. Vert. Zool.); ten miles north of Sacramento (Neale, Calif. Fish and Game, 1, 1915:191); Isleton, Sacramento County, and Lathrop, San Joaquin County (Grinnell, Bryant and Storer, Game Birds Calif., 1918:143); Forest Lake, San Joaquin County (W. B. Sampson, Condor, 3, 1901:95); Merced River bottom in vicinity of Snelling, Merced County (Dixon, Condor, 26, 1924:41ff.); Yosemite Valley, Mariposa County, 4000 feet (E. Michael, Yosemite Nature Notes, 21, 1942:31); Healdsburg area, Sonoma County, since 1937 (G. E. Nichols MS); Gallinas Creek, Marin County [in the '70's] (Grinnell, Bryant and Storer, *loc. cit.*); near Alpine Creek, San Mateo County, and Waddell Creek, Santa Cruz County, in 1941 (E. L. Sumner, Jr., MS and A. H. Miller MS *in* F. Carter, Condor, 44, 1942:44). Breeding records for Lake Tahoe and "Ventura

County" are dubious. Life-zones, Upper Sonoran to Transition. In fall and winter, by migration or non-breeding-season dispersal, individuals have occurred scatteringly south through southern coast district even to San Diego (instances listed by Willett, Pac. Coast Avif. No. 21, 1933:33); also southeastwardly to Death Valley, Inyo County (Gilman, Condor, 38, 1936:40) and Salton Sea near Mecca, Imperial County (van Rossem, Condor, 33, 1935:72). Occurrences northward are on record to Laytonville, Mendocino County (Grinnell, Bryant and Storer, *op. cit.*:144), and Lower McCloud River, Shasta County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:194). Other references: food (McLean, Calif. Fish and Game, 14, 1928:91; Stoner, Condor, 42, 1940: 170); numbers (Linsdale, Calif. Fish and Game, 24, 1938:32; Moffitt, Condor, 40, 1938:82); in general (Bent, U. S. Nat. Mus., Bull. 126, 1923:158ff.; Dawson, Birds Calif., 4, 1924:1796ff.; Moffitt, Calif. Fish and Game, 24, 1938:32; Kortright, Ducks, Geese, Swans N. Amer., 1942:221ff.).

Habitat—Exclusively fresh-water areas; preferably slow-moving, lower parts of rivers, and secluded bottomland sloughs and ponds, especially where screened by deciduous trees such as willows, cottonwoods and valley oaks. Acorns commonly are taken as food. Large trees in the riparian woodland afford the nesting cavities above ground required by this species.

Nyroca valisineria (Wilson)

Canvas-back Duck

Synonyms—Nyroca valisneria; *Aythya valisneriana*; *Aythya vallisneria*; *Nyroca vallisneria*; *Fuligula vallisneria*; *Aythya valisneria*; *Aethyia vallisneria*; *Aythya vallisneria*; *Marila valisineria*; *Marila vallisneria*; *Aristonetta valisineria*; Canvas-back.

Status—Winter visitant, October to March or early April. Fluctuates in numbers naturally from year to year; but general trend has been toward depletion. Formerly abundant; still fairly common on suitable waters, and possibly increasing.

Geographic range—Entire length of State; occurs chiefly coastwise, but numbers also at times reach larger bodies of water inland. Metropolis now seemingly lies from San Francisco Bay region northward. Some inland record stations are: near Alturas, Modoc County, October (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:283); Eagle Lake, Lassen County, October (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:176); Helm and Firebaugh, Fresno County, many in midwinter of 1913-14 (Tyler, Condor, 18, 1916:195); Death Valley, Inyo County, October 31 (Gilman, Condor, 39, 1937:90); Yosemite Valley, Mariposa County, September 25 (Fitzpatrick and Fitzpatrick, Yosemite Nature Notes, 16, 1937:22); Cuyamaca Lake, San Diego County, to April 6 (J. G. Peterson MS); Brawley, Imperial County, December (van Rossem, Condor, 13, 1911:130); Colorado River near Laguna Dam, Imperial County, January, "thousands" in some winters (Howell and van Rossem, Condor, 17, 1915:232). A record (Dawson, Birds Calif., 4, 1924:1804) of birds seen on Goose Lake, Modoc County, June 20, 1912, has been taken to mean breeding there; this and other recorded summer occurrences might have been of cripples. Accounts of general significance: Grinnell, Bryant and Storer, Game Birds Calif., 1918:150ff.; Bent, U. S. Nat. Mus., Bull. 126, 1923:189; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927: 52; Stoner, Condor, 39, 1937:246; Moffitt, Condor, 40, 1938:77; Kortright, Ducks, Geese, Swans N. Amer., 1942:241ff.

Habitat—Typically, shallow, salt or brackish coastal waters, and adjacent marshlands. The larger bays are resorted to not only for feeding by the diving method but also, farther from the shores, for daytime safety.

Nyroca americana (Eyton)
Redhead Duck

Synonyms—Nyroca ferina; *Aythya erythrocephala*; *Aythya americana*; *Nyroca erythrocephala*; *Fuligula ferina americana*; *Aethyia americana*; *Marila americana*; Pochard; Redhead; Red-headed Duck.

Status—Present throughout the year, but breeding population relatively small, this augmented in winter from north. In the aggregate, formerly common, but now greatly reduced at all seasons.

Geographic range—In winter, here and there over entire length and breadth of State. In summer, originally, lake region of northeastern plateau, lowlands of Sacramento-San Joaquin Valley, and southern coast district; now, metropolis at all seasons, remaining suitable parts of Great Central Valley and northeastern lake region. Recorded breeding stations are as follows: Lower Klamath and Tule lakes, Siskiyou County (H. C. Bryant, Condor, 16, 1914:229, 231); Sacramento (Ridgway, Auk, 3, 1886: 403); Sacramento Valley (Heermann, Pac. R. R. Rept., 10, 1859:70); Alvarado and Irvington, Alameda County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:52); near Castroville, Monterey County (Mus. Vert. Zool.); Los Baños and near Merced, Merced County (Dawson, Birds Calif., 4, 1924:1800; Mus. Vert. Zool.); Ventura County (Evermann, Auk, 3, 1886:89); Buena Vista Lake, Kern County (Linton, Condor, 10, 1908:197); Los Angeles (Davie, Nests and Eggs, ed. 4, 1889:68); Nigger Slough, Los Angeles County (Willett, Pac. Coast Avif. No. 7, 1912:24); San Jacinto Lake, Riverside County (Willett and Jay, Condor, 13, 1911:158); San Luis Rey Valley, San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:33); near Laguna Dam, Imperial County (Monson, Condor, 46, 1944:20). Sample records of migrant and winter occurrences: Humboldt Bay, Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:194); Honey Lake, Lassen County, midwinter (A. H. Miller MS); Suisun area, Solano County (Moffitt, Condor, 40, 1938:82); mouth of Salinas River, Monterey County (Silliman and von Bloeker, Condor, 39, 1937:128); Deep Springs Valley, Inyo County (Webb, Condor, 41, 1939:36); San Timoteo Canyon, Riverside County, October to March (Hill, Condor, 40, 1938:92); Salton Sea, Imperial County, May 19 (Mus. Vert. Zool.). Returns in California of birds banded in Utah (Lincoln, U. S. Dept. Agr., Tech. Bull. No. 32, 1927:28).

Habitat—Characteristically, fresh-water marshlands where grown in part to tules and cattails and where interrupted by extensive ponds. Visits lakes, and even salt water of coastal bays, for loafing and safety. For nesting frequently resorts to clumps of tules growing in the water, but also places nests on ground in dense cover near water.

Nyroca collaris (Donovan)
Ring-necked Duck

Synonyms—Fuligula collaris; *Fulix collaris*; *Aythya collaris*; *Marila collaris*; *Perissonetta collaris*; Ring-necked Scaup; Ring-bill Duck; Ring-neck.

Status—Winter visitant, October to April. Formerly fairly common, at least in favored localities; twenty years ago greatly reduced and generally considered rare, but now again moderately common. One substantiated record of breeding.

Geographic range—Occurs scatteringly over entire length of State; but not recorded in northwest coast region north of Marin County. A selection from record stations is as follows: northernmost, Clear Lake, Modoc County, April 6 (Willett, Condor, 21, 1919:199), and Eagle Lake, Lassen County, October 15 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:176); in southern coast district south to San Diego and Cuyamaca Lake, April 25, San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:34; J. G. Peterson MS); eastwardly as far as Deep Springs Valley, Inyo County (Webb, Condor, 41, 1939:36), Yermo, San Bernardino County (Lamb, Condor, 14, 1912:34), and San Timoteo Canyon and near Mecca, Riverside County (Hill, Condor, 40, 1938:92; van Rossem, Condor, 35, 1933:72). Altitudinally, has occurred from near sea level, in San Francisco Bay region, October 7 to March 7 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:53), up to 6225 feet, on Lake Tahoe, Eldorado County, "in fall" (Henshaw, Ann. Rept. Geog. Survey. . . . Wheeler, App. NN, 1877:1321). For general survey of status and mention of many record stations, see Moffitt, Gull, 22, 1940:13ff. The record of breeding at Eagle Lake has been queried (see Grinnell, Dixon and Linsdale, *loc. cit.*); but there is a juvenal specimen taken at Rowland's Marsh, Lake Tahoe, Eldorado County, August 24, 1926 (no. 58032 Calif. Acad. Sci.) which indicates breeding at this locality.

Habitat—Sloughs, lakes, ponds and reservoirs, particularly those affording deep, fresh water.

Nyroca marila nearctica (Stejneger)
American Greater Scaup Duck

Synonyms—Fuligula marila; *Fulix marila*; *Aythya marila nearctica*; *Aythya marila*; *Marila marila*; *Fulix marila nearctica*; Scaup Duck; Big Black-head; Greater Blackhead; Greater Scaup Duck; American Scaup Duck.

Status—Winter visitant, October to April. Probably fairly common north of latitude 37°, at least formerly; but actual degree of abundance impossible at this writing to judge.

Geographic range—Entire length of State, coastwise. Occurrence regular south at least to San Francisco Bay; thence south to San Diego, rare or "occasional" (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:53; Willett, Pac. Coast Avif. No. 21, 1933: 34; Grinnell, Bryant and Storer, Game Birds Calif., 1918:156ff.). Records away from near vicinity of sea are few; definite ones are: Clear Lake, Modoc County, in April (Willett, Condor, 21, 1919:199); Stockton, San Joaquin County, April 1, specimen (Belding, Proc. U. S. Nat. Mus., 1, 1879:446); Los Baños, Merced County, January 25, specimen (Mailliard, Condor, 23, 1921:29); Mendota, Fresno County, April 2, specimen (Tyler, Condor, 18, 1916:195).

Habitat—Ocean bays and salt-water estuaries and marshes. Seems to feed in deeper water than the Lesser Scaup Duck.

Nyroca affinis (Eyton)
Lesser Scaup Duck

Synonyms—Fuligula mariloides; *Fulix affinis*; *Aythya affinis*; *Fuligula affinis*; *Marila affinis*; Scaup Duck; Little Black-head; Blue-bill; Lesser Black-head.

Status—Winter visitant, October to April and even May. Formerly abundant; still (1943) common on larger bays and estuaries, but in general losing ground.

Geographic range—Entire length and breadth of State, but numbers greatest and most constant coastwise. Definite records from interior localities are mostly for spring months, when drift of movement is northward. A number of occurrences in summer have been recorded, probably results of crippling of birds. The instances of nesting in Golden Gate Park and on Lake Merced, San Francisco, and at Berkeley, probably originated in this way (Squires, Condor, 17, 1915:234; Mailliard, Condor, 17, 1915:235; Schussler, Condor, 18, 1916:35; Hansen and Squires, Condor, 19, 1917:59; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:53; Nichols, Gull, 22, 1940:37). Some interior records indicating extent of fall, winter or spring occurrence are: Clear Lake, Modoc County, in April (Willett, Condor, 21, 1919:199); Eagle Lake, Lassen County, October (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:175); Paicines, San Benito County, November 12 (Calif. Acad. Sci.); Yosemite Valley, Mariposa County, March 5 (Mowbray, Yosemite Nature Notes, 19, 1940:47); Los Baños, Merced County, November 2, April 2 (Calif. Acad. Sci.; Mus. Vert. Zool.); Death Valley, Inyo County, January 15 to April 9 (Gilman, Condor, 37, 1935:240); Colorado River, Riverside and Imperial counties, March 24 and April 4 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:115); Mecca, Riverside County, March 23 to April 25 (C. A. Harwell MS); Cuyamaca Lake, San Diego County, February 22 to April 30 (J. G. Peterson MS). For general accounts, see: Grinnell, Bryant and Storer, Game Birds Calif., 1918:159ff.; Bent, U. S. Nat. Mus., Bull. 126, 1923:217ff.; Dawson, Birds Calif., 4, 1924:1810ff.; Moffitt, Gull, 22, 1940:15; Kortright, Ducks, Geese, Swans N. Amer., 1942:252ff.

Habitat—In winter, chiefly salt-water bays and estuaries, and adjacent marshlands; otherwise, larger bodies of fresh water of at least moderate depth. Food is obtained in large measure beneath the surface, by diving.

Glaucionetta clangula americana (Bonaparte)
American Common Golden-eye

Synonyms—Clangula americana; *Bucephala americana*; *Bucephala clangula*; *Clangula glaucion americana*; *Clangula clangula americana*; *Bucephala clangula americana*; *Glaucionetta clangula*; Whistle-wing.

Status—Winter visitant. Fairly common south to Monterey Bay; thence southward, at least in late years, only occasional. Data at hand indicate but little reduction in numbers within history.

Geographic range—Entire length of State, chiefly along or near seacoast. Southernmost recent records, San Diego Bay, October to March (Willett, Pac. Coast Avif. No. 21, 1933:35). Interiorwards, recorded scatteringly, as follows: 8 miles northeast of Susanville, Lassen County, January (Mus. Vert. Zool.); Lower McCloud River, Shasta County, "fall and winter" (Townsend, Proc. U. S. Nat. Mus., 10, 1887:195);

vicinity of Colusa, Colusa County, February (C. A. Harwell MS); Lake Tahoe, Placer County, December 13, 19, 21, March 4, April 13 (Calif. Acad. Sci.); Stockton, San Joaquin County, a "rare winter visitant" (Belding, Proc. U. S. Nat. Mus., 1, 1879: 447); [Los Baños,] Merced County, January 11 (Calif. Acad. Sci.); Paicines, San Benito County, "several winter records" (Mailliard, Condor, 6, 1904:15); Yosemite Valley, Mariposa County, January 15 (Mowbray, Yosemite Nature Notes, 19, 1940: 47); Lone Pine, Inyo County, December (A. K. Fisher, N. Amer. Fauna No. 7, 1893: 18); Death Valley, Inyo County, April 24 (Gilman, Condor, 37, 1935:240); near Yermo, Mohave Desert, San Bernardino County, November 17 (Lamb, Condor, 14, 1912:34); Salton Sea, Imperial County, November and December (Clary and Clary, Condor, 37, 1935:80). For general accounts, see Grinnell, Bryant and Storer, Game Birds Calif., 1918:167ff.; Bent, U. S. Nat. Mus., Bull. 130, 1925:1ff.; Kortright, Ducks, Geese, Swans N. Amer., 1942:259ff.

Habitat—Typically, salt-water bays and estuaries; prefers open, quiet water of lesser depth. Much time is spent in diving beneath the surface where most of the food is obtained. Seldom seen on land.

Glaucionetta islandica (Gmelin)

Barrow Golden-eye

Synonyms—Bucephala islandica; *Clangula islandica.*

Status—Doubtless resident throughout the year within the State, but sharply demarked seasonally as to portion occupied: high central and northern Sierra in summer, chiefly central coast district in winter. Whether any of our wintering birds come from areas to northward of California is not known. Aggregate numbers, now and always, so small that "rare" is the term usually applied to this species.

Occurrences—In summer, in boreal life-zones: Butte Lake, 6050 feet, and adjacent small lakes east of Lassen Peak, in Lassen and Shasta counties, several adults and two broods of downy young, in June of 1926, 1928 and 1929 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:177; Mus. Vert. Zool.); small lake at 8300 feet, on Kibbie Ridge, in Cherry Creek drainage, Tuolumne County, breeding female, June 30, 1922 (McLean, Condor, 27, 1925:116); Smedberg Lake, 9223 feet, Yosemite Park, Tuolumne County, two adults with six young, August 25, 1919 (H. C. Bryant, Calif. Fish and Game, 6, 1920:37); Table Lake, 7000 feet, Yosemite Park, Tuolumne County, three adults and two young, July 24, 1934 (J. S. Dixon, Condor, 37, 1935:85); lakelet of "Grand Cirque [altitude 11,000 feet] in extreme northeastern Fresno County," one adult, June 30, 1919 (Dawson, Birds Calif., 4, 1924:1818). In winter: Gridley, Butte County, three or four, February 26, 1895 (Grinnell, Bryant and Storer, Game Birds Calif., 1918:175 [*fide* L. Belding]); Ross Landing, Marin County, and Point San Pedro, Marin County, several "in early spring" (Mailliard, Condor, 6, 1904:15); San Francisco markets, occasional (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:274 [*fide* F. Gruber]); San Francisco Bay, two specimens, November 16 and December 3 (Kobbé, *in* Bailey, Handbook Birds West. U. S., 1902:xlix); Redwood City salt marshes, San Mateo County, two specimens, November 19, 1908, and November 28, 1910 (Littlejohn, Condor, 14, 1912:41); Lake Merritt, Oakland, Alameda County, one, October 28 to December 16, 1930 (Hawkins, Condor, 33, 1931:75);

Newport, Orange County, specimen, January 5, 1901 (Willett, Pac. Coast Avif. No. 21, 1933:35).

Habitat—In breeding season, small timber-bordered lakes in high mountains. In winter, chiefly coastal bays and sloughs in salt marshes.

Charitonetta albeola (Linnaeus)
Buffle-head Duck

Synonyms—Fuligula albeola; *Clangula albeola*; *Bucephala albeola*; Spirit Duck; Butter-box Duck; Buffle-head; Butter-ball; Buffel-headed Duck.

Status—In general, winter visitant, October to April. Originally "abundant"; still fairly common, even "common" locally. Also the species exists in small numbers, in elevated northeastern area, in the rôle of summer visitant, breeding.

Geographic range—As a winter visitant, entire length of State, chiefly coastwise. Occurs south to San Diego (Cooper, *in* Baird, Brewer and Ridgway, Water Birds N. Amer., 2, 1884:49; *et al.*), and also on interior bodies of water to eastward; for example, near Palo Verde, Imperial County (Mus. Vert. Zool.); Salton Sea, in Imperial and Riverside counties, January and March, and May 5 (van Rossem, Condor, 13, 1911:130, 134; Mus. Vert. Zool.); Lone Pine, in Owens Valley, Inyo County, in December (A. K. Fisher, N. Amer. Fauna No. 7, 1893:18); Death Valley, Inyo County, November to April 20 (Gilman, Condor, 37, 1935:240); Honey Lake, Lassen County, January (A. H. Miller MS). Records for summer season are restricted to lakes of high northeastern plateau region in Transition Life-zone: Eagle Lake, 5200 feet, Lassen County, downy young and adults on several occasions in May and June, 1921 and 1925 (J. S. Dixon, Condor, 23, 1921:165, and Condor, 28, 1926:47; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:178); Wilson Lake, 5100 feet, Tehama County, four pairs adults, May 18 and 24, 1927, and Feather Lake, 5500 feet, Lassen County, female and downy young, June 23 and 24, 1929 (Grinnell, Dixon and Linsdale, *loc. cit.*); Lake Almanor, Plumas County (H. P. Davis, Condor, 43, 1941:294). Other selected references: Humboldt Bay, Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:195); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:54); Morro Bay, San Luis Obispo County (Grinnell and Hunt, Condor, 31, 1929:66); coastal southern section (Willett, Pac. Coast Avif. No. 21, 1933:35); identification of young (Linsdale, Condor, 35, 1933:38); in general (Grinnell, Bryant and Storer, Game Birds Calif., 1918:177ff.; Bent, U. S. Nat. Mus., Bull. 130, 1925:24ff.).

Habitat—In winter, chiefly coastal bays and salt-water sloughs; otherwise both fresh-water and alkali lakes and ponds in interior. Feeds beneath the surface, by diving. In summer, timber-bordered lakes in mountains.

Clangula hyemalis (Linnaeus)
Old-squaw Duck

Synonyms—Harelda glacialis; *Harelda hyemalis*; Long-tailed Duck; Old-squaw.

Status—Midwinter visitant, mostly November to January; recorded numbers so few and scattering as to justify terms "rare" and "irregular."

Geographic range—Coastal regions throughout length of State. Occurrences so few as to warrant listing of all definitely recorded ones, as follows: Humboldt Bay, Humboldt County, October 15 [?], 1888 (Palmer, Proc. Calif. Acad. Sci., ser. 2, 2, 1889:88); Point Reyes, Marin County, January 17, 1893 (W. E. Bryant, Zoe, 3, 1893:363); [Point Reyes Station,] Marin County, December 17, 1901 (J. Mailliard, Condor, 4, 1902:46; Calif. Acad. Sci.); Drakes Bay, Marin County, January 16, 1933, and male and several females noted, March 10, 1938 (Stephens and Pringle, Birds Marin Co., 1933:11; Orr, Condor, 40, 1938:183); Bolinas Bay, Marin County, November 11, 1926 (coll. Ralph Ellis); Tiburon, Marin County, May 9, 1907 (Calif. Acad. Sci.); San Rafael, Marin County, December 13, 1911 (J. Mailliard, Condor, 23, 1921:30); Suisun Marshes, Solano County, November 21, 1915 (J. W. Mailliard, Condor, 18, 1916:85); San Francisco, during severest winters (Newberry, Pac. R. R. Rept., 6, 1857:104); San Francisco, December 26, 1898 (Loomis, Auk, 18, 1901:105); Bay Farm Island, Alameda County, April, 1940 (A. H. Miller, Gull, 24, 1942:15); San Francisco Bay near Redwood City, December 17, 1909, and January 25, 1910 (Littlejohn, Condor, 14, 1912:41); San Francisco Bay near Palo Alto, November 11, 1908 (Mus. Vert. Zool.); Monterey Bay, December 23, 1904 (Beck, Condor, 9, 1907:58); Lake Yosemite, Merced County, December 24, 1939 (Beck, Condor, 46, 1944:129); Santa Barbara, June 9, 1875 [debilitated individual] (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:274); Santa Barbara, December 4, 1917 (Dawson, Bird-Lore, 20, 1918:50); "Los Angeles County in early 80's," two specimens (Willett, Pac. Coast Avif. No. 21, 1933:36); Alamitos Bay, Los Angeles County, February 11, 1939 (H. L. Cogswell MS); Newport, Orange County, November 28, 1900, "pair" (Daggett, Condor, 3, 1901:15); Mission Bay, near San Diego, January 4, 1920 (Stephens, Condor, 22, 1920:43); same locality, December 3, 1920, and November 2 and 19, 1921 (Anthony, Auk, 39, 1922:104); harbor of San Diego, January 13, 1896 (Anthony, Auk, 13, 1896:172); same locality, November 11, 1938 (Sefton, Condor, 41, 1939: 83); same locality, March 18-20, 1928, and June 20, 21, 1937 [evidently debilitated] (Helmuth, Condor, 41, 1939:167). On each of the dates given, unless indicated otherwise, only one bird was recorded.

Habitat—Coastal bays and estuaries. Probably also open sea.

Histrionicus histrionicus pacificus W. S. Brooks

Western Harlequin Duck

Synonyms—Histrionicus torquatus; *Histrionicus minutus*; *Histrionicus histrionicus*; *Bucephala histrionica*; *Cosmonetta histrionica*; Harlequin Duck; Pacific Harlequin Duck.

Status—Resident within the State; whether any individuals come in from north in winter, is now not certain. Records not numerous, for a duck; aggregate numbers thus probably small, the species to be considered uncommon.

Geographic range—Involves two separate areas very different in character: western slope of central Sierra Nevada for breeding, and central seacoast in winter, and also through summer on part of non-breeding individuals. Although the birds must pass back and forth between these areas, no instance of occurrence in the intervening territory is on record! Important breeding records are as follows, all in Transition and Boreal life-zones: Stanislaus and Tuolumne rivers, "from about 4000 feet upward"

(Belding, Zoe, 2, 1891:97, and *in* Grinnell, Bryant and Storer, Game Birds Calif., 1918:188ff.; Kaeding, Osprey, 2, 1898:77); Cherry River at 7500 feet, in upper Tuolumne basin, Tuolumne County (McLean, Condor, 27, 1925:116); Merced River in Yosemite Valley, March 30 to July 28 (Michael and Michael, Auk, 39, 1922:14ff.; Grinnell and Storer, Animal Life Yosemite, 1924:255; C. W. Michael, Condor, 27, 1925:10); South Fork of Merced River, Mariposa County (Newsome, Calif. Fish and Game, 1, 1915:237); Lake Ediza, 9300 feet, in headwaters of San Joaquin River, Madera County (W. F. Grinnell, Condor, 27, 1925:70). Winter and non-breeding records are: Humboldt Bay, no dates given (Grinnell, Bryant and Storer, *loc. cit.*); Bodega Bay, no date (Belding, *loc. cit.*); Point Reyes, Marin County, "flocks" in "June," 1880 (Mailliard, Condor, 6, 1904:15); Tomales Bay and Tomales Point, Marin County, "flocks" in "fall" of 1913, November 28, 1936, December 22, 1929 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:55; Calif. Acad. Sci.); same places, small numbers seen February 9 to March 1, in 1930 and 1931 (Stephens and Pringle, Birds Marin Co., 1933:9); in San Francisco Bay near Belvedere, Marin County, one bird, October 2, 1903 (Grinnell and Wythe, *loc. cit.*); near Monterey, one female in poor plumage, May 25, 1897 (Loomis, Proc. Calif. Acad. Sci., ser. 3, 2, 1900: 362); Point Pinos, Monterey County, "adult male," July 7, 1894 (Loomis, Proc. Calif. Acad. Sci., ser. 2, 5, 1895:222); Point Carmel [= Point Lobos], pair seen, May 29, 1903, and adult male, June 6, 1907 (Chapman, Camps and Cruises, 1908:268; Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:69); near Piedras Blancas, San Luis Obispo County, October 8 and 14, 1918, adult male and pair (Grinnell, Condor, 24, 1922:180); Santa Barbara, a "summer loafer," August 2, 1914 (Dawson, Birds Calif., 4, 1924: 1826). One fall record for the Sierra Nevada: near Wawona, Mariposa County, October 20, 1940, female seen (J. W. Kelly, Gull, 22, 1940:47). It would look as though adult males may leave the Sierra in advance of females and young-of-the-year.

Habitat—In summer, turbulent mountain streams; in winter, rough waters of exposed seacoast. Food is obtained by diving and by hunting along rocky shore lines. Exceptional ability to control movements on and beneath the surface of the water is manifest by this species.

Somateria spectabilis (Linnaeus)
King Eider

Status—Rare straggler in winter from far north.

Occurrences—Three definitely determined ones: Specimen taken in winter of 1879-80 "off Blackpoint, San Francisco"; this later in possession of D. S. Bryant (Henshaw, Bull. Nutt. Ornith. Club, 5, 1880:189). A female taken on Suisun Marshes, Solano County, in winter of 1902-03, between October 15 and February 1 [identified by L. M. Loomis] (Grinnell, Bryant and Storer, Game Birds Calif., 1918:193). Young female taken in channel at mouth of Tomales Bay, Marin County, December 16, 1933, and two other eiders seen with it (Moffitt, Condor, 42, 1940:305; no. 1659 in Moffitt Coll.). Only the specimen taken by Moffitt is now known to be extant.

Arctonetta fischeri (Brandt)
Spectacled Eider

Status—Rare straggler from far north.

Occurrence—One only: an adult male taken in February, 1893, by O. F. Sellick, on Bitterwater Lake, San Benito County; head preserved, now no. 57547 Calif. Acad. Sci. (Moffitt, Condor, 42, 1940:309).

Melanitta fusca deglandi (Bonaparte)
American White-winged Scoter

Synonyms—Oidemia fusca; *Melanetta velvetina*; *Oidemia deglandi*; *Oidemia deglandei*; *Œdemia carbo* (?); *Melanitta fusca dixoni*; *Oidemia deglandi dixoni*; *Melanitta deglandi*; *Melanitta fusca*; Velvet Duck; White-winged Coot; American Velvet Scoter; Velvet Scoter; White-winged Scoter; Dixon White-winged Scoter.

Status—Winter visitant, October (even September in some years) through April. Common to abundant, varying with locality and season. A few birds, non-breeders or "hold-overs," are present throughout summer season.

Geographic range—Entire length of State coastwise, including waters about all the islands. Only three instances of occurrence inland: specimen taken October 23, 1926, at Lake Tahoe (Calif. Acad. Sci.); "flock" on November 4, 1922, "seen on fresh-water lake in mountains of southwestern Ventura County" (Willett, Pac. Coast Avif. No. 21, 1933:36); one seen on reservoir at Redlands, San Bernardino County, November 8, 1937 (Moore and Moore, Condor, 43, 1941:249). Selected accounts of occurrence along coast: Humboldt Bay, Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:195); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:56; Aldrich, Bird-Lore, 40, 1938:110ff. [mortality from oil pollution]); coast of San Mateo and Santa Cruz counties, migrants, May 18 (Orr, Amer. Midl. Nat., 27, 1942:296); Morro Bay, San Luis Obispo County (Grinnell and Hunt, Condor, 31, 1929:66); Santa Barbara, Santa Barbara County (Torrey, Field-Days Calif., 1913: 28ff.); about Channel Islands (Howell, Pac. Coast Avif. No. 12, 1917:42); in general (Baird, Brewer and Ridgway, Water Birds N. Amer., 2, 1884:93; Grinnell, Bryant and Storer, Game Birds Calif., 1918:197ff.; Dawson, Birds Calif., 4, 1924:1831ff.; Bent, U. S. Nat. Mus., Bull. 130, 1925:131ff.; Phillips, Nat. Hist. Ducks, 4, 1926:43).

Habitat—Normally salt water, chiefly that of the outer ocean littoral and of the larger coastal bays. Forages by diving method; obtains much animal food by loosening it from submerged surfaces, as from those of pilings. Also forages along beaches at the water line and occasionally enters estuarine marshes.

Note—The White-winged Scoters of western North America seem not to be constantly enough differentiated from those of the eastern seaboard to warrant recognition by name (see Bent, *loc. cit.*; Phillips, *loc. cit.*).

Melanitta perspicillata (Linnaeus)
Surf Scoter

Synonyms—Oidemia perspicillata; *Pelionetta trowbridgii*; *Oedemia perspicillata* var. *trowbridgii*; *Pelionetta perspicillata*; Surf Duck; Sea Coot; Long-billed Scoter.

Status—Winter visitant, October through April. Continuingly abundant through all recorded history. Decrepit or non-breeding individuals often remain through summer season.

Geographic range—Entire length of State coastwise, including waters around all the islands. Occasional occurrences inland are probably of individuals that are storm-lost or else of migrating birds. Most definite of these inland records are: Cuyamaca Mountains at 4000 feet, near Julian, San Diego County, March 24, 1936, one (Harrison, Condor, 38, 1936:169); La Puerta Valley, 2100 feet, San Diego County, April 5, 1922, five individuals (Stephens, Condor, 24, 1922:134); Salton Sea near Mecca, Riverside County, October 27, 1934, "eight or ten," and December 25, 1934, specimen (Clary and Clary, Condor, 37, 1935:179). These data suggest an overland route of migration from the Gulf of California (where also abundant in winter) to the ocean along the coast of California (see Grinnell, Univ. Calif. Publ. Zool., 32, 1928:77). Selected references to occurrence along coast: Humboldt Bay, Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:195); coast of Mendocino County, flightless in summer molt (Moffitt, Gull, 21, 1939:64); Tomales Bay, Marin County (Moffitt, Calif. Fish and Game, 19, 1933:255); mortality from oil at Golden Gate, San Francisco (Aldrich, Bird-Lore, 40, 1938:110ff.; Moffitt and Orr, Calif. Fish and Game, 24, 1938:240); Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:42); near Pescadero, San Mateo County (Orr, Amer. Midl. Nat., 27, 1942:296); Santa Barbara, Santa Barbara County (Torrey, Field-Days Calif., 1913:29; Dawson, Birds Calif., 4, 1924:1838); Channel Islands (Howell, Pac. Coast Avif. No. 12, 1917:42); near Venice, Los Angeles County (F. M. Bailey, Condor, 18, 1916:108ff.); in general (Baird, Brewer and Ridgway, Water Birds N. Amer., 2, 1884:102; Grinnell, Bryant and Storer, Game Birds Calif., 1918:201ff.; Bent, U. S. Nat. Mus., Bull. 130, 1925:143ff.).

Habitat—Restrictedly salt water, of ocean surf-line and larger bays. Rests and dives for food in deeper waters, but forages extensively in breakers where wave action loosens and exposes animal food.

Oidemia nigra americana Swainson
American Black Scoter

Synonyms—Oidemia americana; Scoter Duck; American Scoter; Scoter.

Status—Winter visitant, November to April. Rather rare; also of irregular appearance from year to year.

Geographic range—Strictly the seacoast, southward as far as San Diego County. Occurrences aggregate so few as to warrant giving all definitely recorded ones, as follows: Arcata Bay, Humboldt County, February, 1914, and December 24, 1915, female taken, 1919, pick-up on beach (Grinnell, Bryant and Storer, Game Birds Calif., 1918: 195; Mus. Vert. Zool.); Bodega Bay, February 2, 1933, twelve seen, Tomales Bay, February 9, 1930, nine seen, and specimen, December 28, 1938, Drakes Bay, January 16, 1933, two seen, and March 10, 1938, female taken and six males seen, all in Marin County (Stephens and Pringle, Birds Marin Co., 1933:11; Orr, Condor, 40, 1938:183; Calif. Acad. Sci.); San Francisco Bay near Redwood City, San Mateo County, January 17, 1909, specimen taken (Littlejohn, Condor, 14, 1912:41); San Francisco Bay, off San Bruno, San Mateo County, December 30, 1922, specimen, and near Menlo Park, San Mateo County, December 11, 1911, specimen (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:55); Bay Farm Island, Alameda County, April 14, 1942, male seen (A. H. Miller, Gull, 24, 1942:15); Point Pinos, Monterey County, November 1 and 4, 1909, pair on each occasion, male of which taken, and November 12, 1940, one seen

(Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:69; Linsdale, Aud. Mag., 43, 1941:235); Morro Bay, San Luis Obispo County, "not very common" in November, 1891 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:18); San Luis Obispo, "spring, 1866" (Richmond, Condor, 18, 1916:83); Santa Barbara, seen "five times" (Dawson, Birds Calif., 4, 1924:1830); Playa Del Rey, Los Angeles County, February 1 to March 14, 1943 (H. L. Cogswell MS); Hyperion, same county, November 24, 1915, specimen taken (Wyman, Condor, 18, 1916:203; Bishop Coll.); Coronado, San Diego County, March 27 to April 18, pair observed (Helmuth, Condor, 41, 1939:167). Among the less explicit or more general statements is that of Cooper (*in* Baird, Brewer and Ridgway, Water Birds N. Amer., 2, 1884:91) who believed that this species occurred in his day "along the entire coast of California."

Habitat—Apparently as for the other scoters, which see.

Erismatura jamaicensis rubida (Wilson)
Northern Ruddy Duck

Synonyms—Erismatura rubida; *Erismatura jamaicensis*; *Erismatura dominicensis*; *Oxyura jamaicensis*; *Oxyura jamaicensis rubida*; Ruddy Duck.

Status—Resident. Originally widespread and abundant; now much reduced by reason of disappearance of appropriate breeding conditions, but still of common local occurrence.

Geographic range—In summer, on suitable waters entire length of State; but no record for summer season at hand for coast district north of Sonoma County, and no definite nesting record from territory east of western borders of Mohave and Colorado deserts. Northernmost breeding station: Tule Lake, Modoc County (H. C. Bryant, Condor, 16, 1914:230). Life-zones in summer, Lower Sonoran to Transition. Altitudinally, nests from near sea level, as in Golden Gate Park, San Francisco (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:56), up to 6674 feet, on Baldwin Lake, San Bernardino Mountains (Pierce, Condor, 35, 1933:202). In winter, entire State, but population is concentrated chiefly in lowlands south from upper Sacramento Valley to San Diego County (Grinnell, Bryant and Storer, Game Birds Calif., 1918:206; Willett, Pac. Coast Avif. No. 21, 1933:37). Some northern stations: Big Lagoon, Humboldt County, December (A. H. Miller MS); near Standish, Lassen County, December (A. H. Miller MS). Some southeastern stations: Death Valley, Inyo County, March 22 and May 5 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:18; Gilman, Condor, 37, 1935:240); Colorado River near Laguna Dam, Imperial County, April 23 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:116); Salton Sea, Imperial and Riverside counties, December and January (van Rossem, Condor, 13, 1911:130). Further references selected for distributional and natural history content: Manzanita Lake, Shasta County, June 27 (Stebbins, Condor, 45, 1943:200); Colusa County to Merced County, late fall and winter (Linsdale, Calif. Fish and Game, 24, 1938:33); molting, and mortality due to oil, San Francisco region (Orr, Condor, 40, 1938:87; Moffitt and Orr, Calif. Fish and Game, 24, 1938:244); Santa Cruz, Santa Cruz County, nesting (Ingersoll, Ornith. and Ool., 9, 1884:15); Los Baños, Merced County, nesting (H. C. Bryant, *op. cit.*:224); Fresno District, Fresno County, breeding (Tyler, Condor, 18, 1916:167); Tulare Lake, Kings County, young (Goldman, Condor, 10, 1908:202); Santa Barbara, Santa Barbara County, prey of Duck Hawk (Bond, Condor, 38, 1936:217); Castaic Lake, Kern

County, and Gorman Station and Elizabeth Lake, Los Angeles County (A. K. Fisher, *loc. cit.*); Nigger Slough, Los Angeles County, formerly (Willett, Pac. Coast Avif. No. 21, 1933:37); Redlands, San Bernardino County (Hill, Condor, 40, 1938:40); near Escondido, San Diego County (Sharp, Condor, 9, 1907:86); voice (van Rossem, Condor, 25, 1923:131); in general (Dawson, Birds Calif., 4, 1924:1840ff.; Bent, U. S. Nat. Mus., Bull. 130, 1925:152ff.; Kortright, Ducks, Geese, Swans N. Amer., 1942: 364ff.).

Habitat—In summer, tule-bordered ponds and lakes; in winter, these and also brackish and salt-water bodies, including coastal bays. Nests are placed among tules, on or built up from the water's surface. Foraging is accomplished in the main by diving in water of moderate depth but some food also is taken by surface dabbling. Commonly loafs and sleeps on the water well out from shore.

Lophodytes cucullatus (Linnaeus)
Hooded Merganser

Synonyms—Mergus cucullatus; Hooded Sheldrake.

Status—Winter visitant, October to April. Relatively rare, but evidently regular in appearance. Seemingly never within history appreciably more numerous than now.

Geographic range—Recorded occurrences widely scattered from one end of State to other. Record stations too numerous to list here; some peripheral ones are: At north, Smith River near Adams, Del Norte County, October 10 (Kimball, Condor, 24, 1922: 96), and Clear Lake, Modoc County, April 5 [one bird] (Willett, Condor, 21, 1919: 198). Interiorly, 4 miles east of Litchfield, Lassen County, December 28 (A. H. Miller MS; Mus. Vert. Zool.), and Bard, on Colorado River, Imperial County, November 26 (Huey, Condor, 22, 1920:73). At south, Salton Sea near Mecca, Riverside County, November 27 (Stevenson, Condor, 31, 1929:127), and Sweetwater Lake, San Diego County, December 4 (Abbott, Condor, 30, 1928:326). For general account, see Grinnell, Bryant and Storer, Game Birds Calif., 1918:89ff.

Habitat—In its California range, ponds and slow-moving streams bordered by willows, and sloughs, either fresh or salt, in marshlands.

Mergus merganser americanus Cassin
American Common Merganser

Synonyms—Mergus americanus; *Mergus merganser*; *Merganser americanus*; *Mergus aethiops*; Large Sheldrake; Buff-breasted Sheldrake; American Merganser; Merganser.

Status—Present in two rôles: (1) Summer resident, and breeding, on certain large, forest-bordered streams and lakes of northern third of State and south along Sierra Nevada; locally common. (2) Winter visitant, coastwise (fairly common), and interiorly (scattering).

Geographic range—Definitely known breeding places, all in Transition and Canadian life-zones, are: Mad, Eel and Van Duzen rivers, in Humboldt and Trinity counties (Wilder, Condor, 18, 1916:127; Grinnell MS); Forest Glen, Trinity County (Calif.

Acad. Sci.); Navarro River, Mendocino County (Moffitt, Gull, 21, 1939:64); lower McCloud River, Shasta County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:193); Eagle Lake, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:180); Lake Tahoe, Placer and Eldorado counties (Law, Condor, 14, 1912:41; Ray, Condor, 20, 1918:73); Fallen Leaf Lake, Eldorado County (A. H. Miller MS); Hetch Hetchy Reservoir, Tuolumne County (Jones, Yosemite Nature Notes, 17, 1938: 156); Yosemite Valley, Mariposa County (Mowbray, Yosemite Nature Notes, 19, 1940:47); upper Kern River, Tulare County (Grinnell, Bryant and Storer, Game Birds Calif., 1918:81ff.). Winter records are numerous for San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:49) and also for localities south to San Diego (Willett, Pac. Coast Avif. No. 21, 1933:37); interiorly to Yosemite Valley, Mariposa County (Mowbray, *loc. cit.*), Death Valley, Inyo County (Gilman, Condor, 37, 1935:240), vicinity of Redlands, San Bernardino County (Hill, Condor, 40, 1938:156), and Salton Sea near Mecca, Riverside County (Clary and Clary, Condor, 37, 1935:80). For further account of natural history, see Bent, U. S. Nat. Mus., Bull. 126, 1923:1ff.

Habitat—In summer, exclusively fresh-water lakes that are forest-girt, and swift-flowing rivers through wooded territory. In winter, both fresh and salt water, of larger rivers, sloughs, lakes and coastal bays. At least fairly clear water is needed in which active prey may be sought by subsurface swimming.

Mergus serrator Linnaeus
Red-breasted Merganser

Synonyms—Merganser serrator; Red-breasted Sheldrake.

Status—Winter visitant, October to April. Common; no change in numbers within history is indicated. Occasional summer records probably pertain to crippled or superannuated birds.

Geographic range—Entire length of State, chiefly coastwise, including neighborhoods of all islands; occurs scatteringly inland. Coastal records are numerous and practically continuous from Humboldt Bay (Townsend, Proc. U. S. Nat. Mus., 10, 1887: 193) to San Diego Bay (Baird, Brewer and Ridgway, Water Birds N. Amer., 2, 1884: 119). Some interior stations are: Truckee River, 4 miles below Lake Tahoe, December 3 (Calif. Acad. Sci.); Merced, Merced County, January 10 (Mailliard, Condor, 23, 1921:28); Lone Pine and Owens Lake, Inyo County, in December (A. K. Fisher, N. Amer. Fauna No. 7, 1893:15); near Yermo, Mohave River, San Bernardino County, November 14 (Lamb, Condor, 14, 1912:34); Colorado River, near Needles and in Chemehuevis Valley, San Bernardino County, February 18 and March 8 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:114); Salton Sea, Riverside County, April 27 (Dawson, Birds Calif., 4, 1924:1748). Some selected references: San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:49); mouth of Pescadero Creek, San Mateo County (Orr, Amer. Midl. Nat., 27, 1942:297); summering in southern California (Moffitt, Condor, 33, 1931:252; Hill, Condor, 40, 1938:92); southern coastal islands (Howell, Pac. Coast Avif. No. 12, 1917:41; Willett, Pac. Coast Avif. No. 21, 1933:38); in general (Grinnell, Bryant and Storer, Game Birds Calif., 1918: 84ff.; Bent, U. S. Nat. Mus., Bull. 126, 1923:13ff.).

Habitat—Typically, turbulent waters of exposed ocean shores; also bays and estuaries. Less usually, larger bodies of fresh or brackish waters inland.

Note—There has been obviously some confusion in the published sight records as between the Red-breasted and Common mergansers. For this reason, we have not taken such ones into account in drawing up the general statements.

Cathartes aura teter Friedmann
Western Turkey Vulture

Synonyms—Cathartes aura; *Rhinogryphus aura*; *Œnops aura*; *Cathartes aurea*; *Cathartes aura septentrionalis*; Turkey Vulture; Turkey Buzzard; Red-headed Turkey Vulture; Red-headed Vulture; Northern Turkey Vulture.

Status—Present within State throughout year, but numbers and distribution vary with seasons. Northerly and at higher altitudes, altogether absent in winter; even at low altitudes, reduced to small numbers in winter where common in summer. Thus there is definite migration of a large share of population southward out of State in October and back again in March. Thought to be less numerous now than formerly.

Geographic range—In summer, seen more or less commonly from Mexican line to Oregon line, and from seashore to Nevada line and up to altitudes (recorded) of 10,000 feet in Sierra Nevada, as on Mount Dana, Tuolumne County (Emlen, Yosemite Nature Notes, 10, 1931:83). Breeds chiefly in Upper Sonoran Life-zone. In winter, recorded only west of Sierras and at low altitudes; there, north as far as vicinity of Red Bluff, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:183) and Ornbaun Springs, Mendocino County (A. H. Miller MS). Despite long cruising radius as evidenced on mainland, there is apparently no known occurrence of Turkey Vultures on any of the islands, even on those islands where sheep have been run for many years. Sample localities, especially those where significant observations have been made: Modoc County generally (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927: 296); Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923: 22); Cape Mendocino, Humboldt County (Grinnell, Condor, 35, 1933:164); San Francisco Bay area (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:78); Mount Diablo, Contra Costa County (Leach, Condor, 31, 1929:21); 15 miles northeast of San Jose, in Alameda County (Work and Wool, Condor, 44, 1942:149); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:279); Fresno district, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:37); Elk Hills, Kern County (Pemberton, Condor, 27, 1925:38); Death Valley, Inyo County (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:62); Santa Barbara, Santa Barbara County, etc. (Dawson, Birds Calif., 4, 1924:1738ff.; Whittier, Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933: 38); Buena Park, Orange County (Robertson, Calif. Fish and Game, 14, 1928:173); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:234); Colorado River Valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:123).

Habitat—When foraging, over or on more or less open terrain of mountain sides, hills, plains, sea-beaches and deserts. For perches when roosting, uses trees with open branch-work. For nesting places, prefers shelter of rocks or brush on steep hillsides, or cavities in cliff-faces.

Gymnogyps californianus (Shaw and Nodder)
California Condor

Synonyms—Vultur californianus; *Sarcoramphus californianus*; *Cathartes californianus*; *Œnops californianas*; *Pseudogryphus californianus*; *Pseudogryphus californicus*; California Vulture; Condor.

Status—Formerly (within historic times and up to about 1870) common throughout that portion of State lying west of Great Basin and desert territories, and north from Mexican line to Oregon line. At present time appears to be restricted to a limited area, comprising mountain ranges and included and adjacent valleys, from southern San Luis Obispo County southeast to northern Los Angeles County, and thence northeast through mountains encircling southern end of San Joaquin Valley into northeastern Kern County; casually as far north along western foothills of Sierra Nevada as Fresno County. Even in this area the species is at best barely holding its own. The total number of individuals now (1943) estimated to exist is in the near neighborhood of 100.

Geographic range—Definitely known breeding stations are all for points within Upper Sonoran Life-zone. The enormous cruising powers doubtless can and do carry foraging individuals daily to great distances and high altitudes. There may also have been a seasonal drift, to account for northernmost recorded occurrences, which appear chiefly to have been for summer and fall. Some northern record stations are: Kneeland Prairie, some 18 miles east of Eureka, Humboldt County, specimen taken in "fall of 1889 or 1890" (F. J. Smith, Condor, 18, 1916:205); Yager Creek, 60 miles east of Eureka, specimen taken in "fall of 1892" (F. J. Smith, *loc. cit.*); southeastern Tehama County, about 1880 (Townsend, Proc. U. S. Nat. Mus., 10, 1887:201). Easternmost stations: Owens Valley between Big Pine and Bishop Creek, one seen "sitting on a fence-post" July 19, 1893 (Van Denburgh, Proc. Acad. Nat. Sci. Phila., 1898:208); Fort Yuma, Imperial County, "individuals observed . . . in September, 1865" (Coues, Proc. Acad. Nat. Sci. Phila., 1866:42). Out of 190 references to the California Condor, the following are a few of what seem to be the most important ones for an understanding of occurrence, present and former: Sacramento Valley, etc. (Belding, Land Birds Pac. Dist., 1890:24); Napa Valley, Napa County, 1857-1860 (Leach, Condor, 31, 1929:23); eggs from near San Rafael [, Marin County?, prior to 1869], etc. (Bendire, Life Hist. N. Amer. Birds, 1, 1892:157ff.); Pinnacles, San Benito County, up to about 1900 (Willett, Condor, 33, 1931:31); [Sisquoc region of Santa Barbara County] in 1934, and [possibly] Santa Clara County in 1933 (Dyer, Condor, 37, 1935:5); "eastern San Luis Obispo County" in 1911, etc. (Dawson, Birds Calif., 4, 1924:1717ff.); 20 miles northwest of Santa Barbara, Santa Barbara County, killed by hailstorm in 1936 (Rett, Condor, 40, 1938:225); near Bakersfield, Kern County, in 1936 (L. M. Lofberg, Condor, 38, 1936:177); [Eaton Canyon,] near Pasadena, nesting, and general account of the species (Finley, Condor, 8, 1906:135, *ibid.*, 10, 1908:5, 59, and *ibid.*, 12, 1910:5; these articles accompanied by many photographic illustrations); recent status in southwestern California (Willett, Pac. Coast Avif. No. 21, 1933:39); Palomar Mountain, San Diego County, in August, 1933 (Meadows, Condor, 35, 1933:234; in general, monograph on history up to 1900 (Harris, Condor, 43, 1941:3ff.). Much of the earlier published matter relative to nesting and food habits was obviously more or less erroneous.

Habitat—Metropolis, at present time, mainly chaparral-clothed mountain ranges of moderate altitude, where occur deep canyons, in the rocky walls of which clefts are available for nesting sites. Foraging extends to open terrain of included "potreros," and also to remote valley areas, some of these being probably up to 100 miles from the roosting and nesting localities.

Elanus leucurus majusculus Bangs and Penard

North American White-tailed Kite

Synonyms—Elanus leucurus; *Elanus dispar*; *Elanus glaucus*; *Elanus axillaris majusculus*; White-tailed Elanus; White-tailed Hawk; Black-shouldered Hawk; Black-shouldered Kite; White-tailed Kite.

Status—Resident throughout year within metropolis of range; but shifts about locally, both seasonally and from year to year, in accordance with food supply. Formerly, prior to about 1895, common and widespread in valley and lower foothill territory, but now rare or entirely gone from many sections. A slight trend toward recovery, in area and numbers, is latterly in evidence.

Geographic range—In general and formerly, lowland areas west of Sierras, from head of Sacramento Valley south, inclusive of coastal valleys and mesas, to western San Diego County at Mexican boundary. Numbers have held up best in counties bordering San Francisco Bay. Life-zone, in the main, Upper Sonoran. Nesting stations apparently all below 2000 feet altitude. Northwesternmost record station, Miranda, on South Fork of Eel River, Humboldt County, August 6, 1924 (Clay, Condor, 28, 1926:98); northernmost in Sacramento River system, Burney Falls, Shasta County, April 29, 1937 (Ingles, Condor, 39, 1937:222); easternmost, centrally, Yosemite Valley, Mariposa County, vagrant, May 24, 1903 (Widmann, Auk, 21, 1904:68); southeasternmost in San Joaquin Valley, Laton, Fresno County, May, 1910 (Tyler, Pac. Coast Avif. No. 9, 1913:39); southernmost, Tia Juana, San Diego County, January 30, 1930 (Huey, Auk, 48, 1931:620). Only record eastwardly onto desert: Victorville, San Bernardino County, September 17, 1922 (van Rossem, Condor, 25, 1923:140). Vagrants have possibly reached Farallon Islands, winter of 1886-87 [a bit dubious] (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:44). Articles relative to changing status: Pickwell, Condor, 32, 1930:221; Willett, Pac. Coast Avif. No. 21, 1933:39; Williams, Gull, 22, 1940:29. Other accounts selected for natural history content and for record stations: near Sacramento (Neff, Condor, 34, 1932:259); Russian River valley, Sonoma County (Edge, Condor, 33, 1931:79); near Napa, Napa County (Bickford, Condor, 31, 1929:36); Novato, Marin County (Ray, Condor, 6, 1904:139); San Joaquin River delta (Watson, Condor, 42, 1940:295); near Vallejo, Solano County (Stoner, Condor, 41, 1939:120); Lake Merced, San Francisco (Ray, Condor, 19, 1917:170); vicinity of San Jose, Santa Clara County (Barlow, Auk, 14, 1897:14; Taylor, Ornith. and Ool., 14, 1889:90); San Francisco Bay region generally (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:78); southern Santa Cruz County (Hawbecker, Condor, 42, 1940:106, and *ibid.*, 44, 1942:267); Carmel Valley, Monterey County (Williams, Gull, 11, 1929: December [p. 3]); Lompoc Valley, Santa Barbara County (Wood, Condor, 45, 1943:159); Santa Clara Valley, Ventura County (Peyton, Condor, 17, 1915:230; Bond, 42, 1940:168); 5 miles west of San Fernando, Los Angeles County (Bond, Condor, 44, 1942:231); Buena Park, Cypress, and San Juan Capistrano, Orange County (Robertson, Condor, 31, 1929:181); in general (Bendire, Life Hist. N. Amer. Birds, 1, 1892:173ff.; Dawson, Birds Calif., 4, 1924:1648ff.; Bent, U. S. Nat. Mus., Bull. 167, 1937:54ff.; Moore and Barr, Auk, 58, 1941:453ff.; Brooks, Condor, 45, 1943:119).

Habitat—Of two sorts: low rolling foothills or valley margins grown scatteringly to valley or live oaks; and river bottomlands or marshes adjacent to, or inclusive of, broken or scattering deciduous woodland. An essential combination of conditions seems

to be open grasslands, meadows or marshes for foraging, primarily for meadow mice, and near-by isolated dense-topped trees for perching and nesting.

Ictinia misisippiensis (Wilson)
Mississippi Kite

Status—Far vagrant from eastward or southeastward. One occurrence: male (no. 49334 L. B. Bishop Coll.) shot by a ranch-hand two miles north of Goleta, Santa Barbara County, June 18, 1933 (Willett, Pac. Coast Avif. No. 21, 1933:40).

Accipiter gentilis atricapillus (Wilson)
American Goshawk

Synonyms—Astur atricapillus; *Astur palumbarius* var. *striatulus*; *Accipiter atricapillus striatulus*; *Astur atricapillus striatulus*; *Astur atricapillus atricapillus*; *Astur gentilis striatulus*; *Astur gentilis atricapillus*; *Accipiter gentilis striatulus*; Goshawk; Western Goshawk; Eastern Goshawk.

Status—Permanently resident within restricted, montane range; not common. Part, at least, of this population may descend in winter to lower altitudes adjacently. Also birds from northward move into State as winter visitants, rarely and sporadically, but in one year, 1916-17, in considerable numbers.

Geographic range—In spring and summer, higher altitudes in northern third of State and south along Sierra Nevada. Recorded in these seasons south in coast ranges to near Laytonville, Mendocino County (Grinnell, Pac. Coast Avif. No. 11, 1915:64), and Mount Sanhedrin, same county (Stone, Proc. Acad. Nat. Sci. Phila., 1904:580); in Warner Mountains, Modoc County (Mus. Vert. Zool.), and south from Mount Shasta (Townsend, Proc. U. S. Nat. Mus., 10, 1887:201) along Sierra Nevada to Kings Canyon National Park (J. S. Dixon, Condor, 45, 1943:207) and Whitaker's Forest, Tulare County (J. T. Marshall, Jr., MS; Mus. Vert. Zool.). Breeding life-zone, Canadian. Altitudes of known nesting localities range from 5000 feet (in Trinity County) up to 9000 feet (in Mono County). Reports of actual nesting are: near Yosemite Valley (Grinnell and Storer, Animal Life Yosemite, 1924:286); vicinity of Lake Tahoe (Ray, Condor, 28, 1926:258); Virginia Lakes, Mono County (Rowley, Condor, 41, 1939:247); June Lake, Mono County (J. B. Dixon, Condor, 36, 1934:35; Dixon and Dixon, Condor, 40, 1938: 3ff.). For winter season, localities of capture extend south quite throughout length of State, and at south from close to seacoast east to Colorado River bottom. Selected, definite records for the "invasion" year are: Laytonville, Mendocino County, November 22, 1916 (Grinnell, Condor, 19, 1917:70); Berkeley, Alameda County, March 2, 1917 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:80); Jamestown, Tuolumne County, November 21, 1916 (Grinnell, *loc. cit.*); four localities in Ventura County, October 30 and November 26, 1916, January 2 and February 27, 1917 (Peyton, Condor, 19, 1917:103); Newhall, Los Angeles County, November 26, 1916 (Wyman, Condor, 19, 1917:185); vicinity of Los Angeles, November 24, December 18 and December 27, 1916 (Colburn, Condor, 19, 1917:185); Lower Otay Reservoir, San Diego County, November 9, 1916 (Stephens, Condor, 21, 1919:87); Palo Verde, Imperial County, November 2, 1916 (Grinnell, *loc. cit.*). Some specific winter records for other years: near Requa, Del Norte County, February 1, 1922 (Mus. Vert. Zool.); Straw-

berry Valley, Yuba County, October 30, 1929, November 9, 1932 (Mus. Vert. Zool.); North Palo Alto, San Mateo County, January 6, 1907 (Grey, Condor, 15, 1913:129); foothills of Merced County, February 2, 1936 (Beck, Condor, 38, 1936:177); Florence Lake, Fresno County, midwinter (L. M. Lofberg, Condor, 37, 1935:171); Lone Pine, Inyo County, December, 1890 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:37); Mesa Grande, San Diego County, January 5, 1928 (Abbott, Condor, 30, 1928:192).

Habitat—In summer, within, and in neighborhood of, coniferous forests. Red fir, lodgepole pine, Jeffrey pine, and aspens are typical trees occupied. In the lowlands in winter, frequents broken woodland principally.

Note—The synomyzing of *A. g. striatulus* with *A. g. atricapillus* has been advocated by Taverner (Condor, 42, 1940:157ff.) and Bond and Stabler (Auk, 58, 1941:346ff.); examination of material now in the Museum of Vertebrate Zoology leads us to concur. In the matter of generic and specific names we follow Peters (Check-list Birds of the World, 1, 1931:208; also A. O. U. Check-list Committee, Auk, 61, 1944:444).

Accipiter cooperii (Bonaparte)

Cooper Hawk

Synonyms—Astur cooperii; *Accipiter mexicanus*; *Nisus cooperi* var. *mexicanus*; *Nisus cooperi*; *Accipiter cooperi mexicanus*; *Accipiter cooperi cooperi*; Blue-backed Hawk; Mexican Hawk; Mexican Blue-backed Hawk; Western Cooper Hawk; Mexican Cooper Hawk.

Status—Permanently resident within State. Varyingly common, to even abundant (for a hawk) in autumn in favorable territory. An autumnal drift down and south from localities within areas of heavy winter snow, with return in spring. This results in more widespread and in places concentrated population southerly in winter; probably some wintering birds come from north of California.

Geographic range—Practically entire area of State below Canadian life-zone, but numbers few in extreme northwest coast belt and on southeastern deserts. Breeding range chiefly within Upper Sonoran and Transition life-zones. Altitudes of known nestings extend from near sea level, as in valley of Santa Clara River, Ventura County, up, exceptionally, to about 6500 feet, as on Silver Creek, Eldorado County (Barlow and Price, Condor, 3, 1901:161). Northernmost record station, Kangaroo Creek, Siskiyou County, August 3 (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:380); southernmost recorded nesting stations: Poway, San Diego County (Abbott, Condor, 30, 1928:162), and Picacho, on Colorado River, Imperial County (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:124). Individuals have reached various oases on the deserts and most of the islands, even the Farallones (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:44). Selected references bearing on natural history and distribution: Cahto, Mendocino County (McGregor, Nidologist, 3, 1896:129); Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:111); near Litchfield, Lassen County, winter (A. H. Miller MS); vicinity of Red Bluff, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:187); San Geronimo, Marin County (Mailliard, Condor, 10, 1908:129); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:79); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:53); Yosemite Valley, Mariposa County (C. W. Michael, Condor, 23, 1921:68; Grinnell and Storer, Animal Life Yosemite, 1924:284); near Lane's Bridge, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:41); Dune Lakes,

San Luis Obispo County (Glading, Tillotson and Selleck, Calif. Fish and Game, 29, 1943:97ff.); Death Valley, Inyo County, November to April (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 8, 1923:63; Gilman, Condor, 37, 1935:240); Santa Cruz and Santa Catalina islands (Howell, Pac. Coast Avif. No. 12, 1917:54; Meadows, Condor, 31, 1929:130); coastal southern California generally (Willett, Pac. Coast Avif. No. 21, 1933:41); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:57); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:235); Point Loma, San Diego County (Sefton, Condor, 36, 1934:83); Alamo River, near Brawley, Imperial County (van Rossem, Condor, 13, 1911:131); in general (E. L. Sumner, Jr., Condor, 31, 1929:85ff.; Bent, U. S. Nat. Mus., Bull. 167, 1937:112ff.).

Habitat—Woodland, chiefly of open, interrupted or marginal type. Nesting sites are predominantly in riparian growths of deciduous trees, as in canyon bottoms and on river flood-plains, although live oaks often are used.

Accipiter striatus velox (Wilson)
Northern Sharp-shinned Hawk

Synonyms—Nisus pacificus; *Astur fuscus*; *Accipiter fuscus*; *Nisus fuscus*; *Accipiter velox*; *Accipiter velox rufilatus*; *Accipiter velox pacificus*; *Accipiter velox velox*; *Accipiter striatus perobscurus*; Sharp-shinned Hawk; Western Sharp-shinned Hawk; Northwest Coast Sharpshin.

Status—Occurs in two rôles: Winter visitant, September to April, abundant (for a hawk) and widely distributed below level of, and south of, heavy winter snows. Remains through summer in small numbers and breeds in northern half of State, farther south along mountain ranges.

Geographic range—In summer, south from Oregon line, through coast belt as far as Alameda and Monterey counties, and along Sierra Nevada and on White and Inyo mountains and mountains of southern California as far as Cuyamaca Mountains, in San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:41). Actual, known nestings are few: near Redding, Shasta County, eggs, May, 1886 (Bendire, Life Hist. N. Amer. Birds, 1, 1892:191); Mount Sanhedrin, Mendocino County, young hatched, July 1, 1899 (Stone, Proc. Acad. Nat. Sci. Phila., 1904:580); near Kelseyville, Lake County, eggs, June 9, 1928 (Mus. Vert. Zool.); Berkeley, young in nest, June 16, 1923, Oakland, nest, March 28, 1935, and San Lorenzo, eggs, May 24, 1921, all in Alameda County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:79; R. Taylor, Gull, 17, 1935: August [p. 2]); Stanford, Santa Clara County, eggs, April 22, 1899 (Mus. Vert. Zool.); Carmel River bottom, near Carmel, Monterey County, young in nest, July 16, 1901 (Grinnell MS); Bear Valley, San Bernardino Mountains, young in nest, June 8, 1904 (Willett, Pac. Coast Avif. No. 7, 1912:46). Altitudes of foregoing localities range from near sea level up to 7000 feet. Breeding life-zone, Transition. In migrations and in winter, reaches practically every locality where observers have been active. This means nearly all the islands, and oases in many parts of the deserts, southeast to valley of Colorado River and to Imperial Valley at Mexican boundary. Sample localities for winter season: Trinidad, Humboldt County (Mus. Vert. Zool.); Litchfield, Lassen County (A. H. Miller MS); near Norman, Glenn County (Grinnell, Condor, 25, 1923: 174); Woodacre, Marin County (Mailliard, Condor, 31, 1929:35); Berkeley, Alameda County (A. S. Allen, Condor, 45, 1943:151); Pescadero Creek, San Mateo County (Orr, Amer. Midl. Nat., 27, 1942:298); Point Lobos, Monterey County (Grinnell and

Linsdale, Carnegie Inst. Wash., publ. 481, 1936:52); Yosemite Valley, Mariposa County (E. Michael, Yosemite Nature Notes, 20, 1941:6); Florence Lake and Fresno District, Fresno County (L. M. Lofberg, Condor, 37, 1935:171; Tyler, Pac. Coast Avif. No. 9, 1913:40); Death Valley, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:35); Pasadena, Los Angeles County (Michener, Condor, 32, 1930:212); San Clemente Island (Howell, Pac. Coast Avif. No. 12, 1917:54); Brawley, Imperial County (van Rossem, Condor, 13, 1911:131); Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:124). Other references of general natural history content: Mailliard, Science, n.s., 55, 1922:208; Dawson, Birds Calif., 4, 1924:1657; Grinnell and Storer, Animal Life Yosemite, 1924:282; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:186; Grinnell, Auk, 48, 1931:28; Bent, U. S. Nat. Mus., Bull. 167, 1937:95ff.

Habitat—In summer, either deciduous or coniferous woodland, not dense forest but at edges or where broken; in winter, all sorts of vegetational areas, save open prairie and bare desert.

Note—Although we recognize the presence of a dark race of Sharp-shinned Hawk on the coast of British Columbia (see Snyder, Occ. Papers Roy. Mus. Zool. No. 4, 1938:4), the assignment to this race of darker variants among the winter population in California seems uncertain until the limits of variation in the birds of several areas in northernwestern North America are better known. Some moderately dark individuals apparently are permanently resident in California.

Buteo jamaicensis calurus Cassin

Western Red-tailed Hawk

Synonyms—Buteo borealis; *Buteo harlani*, part; *Buteo montanus*; *Buteo calurus*; *Buteo borealis calurus*; *Buteo borealis socorroensis*; *Buteo jamaicensis borealis*; *Buteo jamaicensis fuertesi*; Red-tailed Buzzard; Harlan Hawk, part; Red-tailed Hawk; California Red-tail; Western Red-tail; Black Red-tail Hawk; Red-tailed Black Hawk; Western Hen Hawk; Texas Red-tailed Hawk.

Status—Permanently resident, save at higher, snowy altitudes whence movement occurs down-slope for winter. Common and widespread; numbers holding up, probably close to normal save in lowland areas thickly settled by humans, where marked reduction or even, locally, elimination has taken place.

Geographic range—Well-nigh universal: from most arid to rainiest belts; from below-sea-level "sinks" to at least 12,000 feet altitude on Sierra Nevada; on deserts, and on most of the islands. Has been found actually nesting under such extreme conditions as are afforded in the following places: Colorado Desert; Mohave Desert; Lava Beds National Monument, Siskiyou County; Lake Tahoe; Humboldt County; Anacapa Island; Santa Catalina Island; Santa Cruz Island. Breeding metropolis, however, seems to lie in Upper Sonoran and Transition life-zones. Selected accounts of especial natural history value: food and foraging habits (A. K. Fisher, U. S. Dept. Agr., Div. Ornith. Mamm., Bull. 3, 1893:48ff.; Wyman, Condor, 27, 1925:77; Bond, Condor, 41, 1939:56; Saylor, Condor, 39, 1937:175; Cushing, Condor, 41, 1939:100; Glading, Tillotson and Selleck, Calif. Fish and Game, 29, 1943:92); nesting (J. S. Dixon, Condor, 8, 1906:92; Tyler, Pac. Coast Avif. No. 9, 1913:41; Stoner, Condor, 41, 1939:215; H. M. Gladding, Condor, 44, 1942:226); growth of young (E. L. Sumner, Jr., Condor, 31, 1929:85ff.); longevity and dispersal of banded birds (E. L. Sumner, Jr., Condor, 42, 1940:39); flight and behavior in relation to other raptors (Stoner, Condor, 38, 1936:124; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:53; Orr, Amer.

Midl. Nat., 27, 1942:298); in general (Dawson, Birds Calif., 4, 1924:1674ff.; Grinnell and Storer, Animal Life Yosemite, 1924:287; Bent, U. S. Nat. Mus., Bull. 167, 1937: 167ff.).

Habitat—Terrain affording food ordinarily in form of rodents, and nesting sites in trees or on cliffs more or less inaccessible to potential despoilers. Perhaps nearest ideal: interspersed woodland and open grassland, the latter in predominance.

Note—A record of the race *fuertesi* from San Diego County in March (Brandt, Auk, 55, 1938: 285) is regarded as doubtful. Although we have not examined the specimen, it seems entirely possible to us that it could be a variant of *calurus*; even if similar to *fuertesi* in appearance it might not actually be derived from the breeding population of that race. For ruling favoring adoption of the specific name *jamaicensis*, see A. O. U. Check-list, Supplement, Auk, 61, 1944:444; this is a debatable decision (see Grinnell, Condor, 34, 1932:94).

Buteo jamaicensis harlani (Audubon)
Harlan Red-tailed Hawk

Synonyms—Buteo cooperi; *Buteo harlani*, part; *Buteo borealis harlani*; California Hawk; Cooper Henhawk; Harlan Hawk, part; Cooper Buzzard.

Status—Rare or sporadic winter visitant. Four instances of occurrence: near Mountain View, Santa Clara County, male, probably adult, shot by J. G. Cooper, November 10, 1855 [now no. 8525 U. S. Nat. Mus.; became type of *Buteo cooperi* Cassin (Proc. Acad. Nat. Sci. Phila., 8, 1856:253)], characters discussed by many authors, and identity established with apparent finality (Grinnell, Condor, 32, 1930:259, and Univ. Calif. Publ. Zool., 38, 1932:266); five miles southeast of Standish, Honey Lake Valley, Lassen County, male (?), immature, February 17, 1936 [now no. 68263 Mus. Vert. Zool.; not entirely typical of *harlani*] (McLean, Condor, 39, 1937:228); Chimney Canyon, near Doyle, Lassen County, January 9, 1936, female [in McLean Coll.] (McLean, *loc. cit.*); 8 miles southwest of Gridley, Butte County, January 7, 1943, immature male [no. 88317 Mus. Vert. Zool.].

Note—The grounds for considering this form a distinct species from *B. jamaicensis* (A. O. U. Check-list, Supplement, Auk, 61, 1944:445) seem quite inconclusive.

Buteo lineatus elegans Cassin
Red-bellied Red-shouldered Hawk

Synonyms—Buteo lineatus; *Buteo elegans*; Red-shouldered Buzzard; Red-breasted Buzzard; Western Red-shouldered Hawk; Red-bellied Hawk; Elegant Hawk; Red-breasted Hawk.

Status—Permanently resident. Originally common, but now (1943) greatly reduced nearly everywhere, even extirpated in some sections due to progressive human occupancy of the land (see, especially, Willett, Pac. Coast Avif. No. 21, 1933:42).

Geographic range—Entirely west of Sierran divides; chiefly Sacramento and San Joaquin valleys and coastal lowlands of southern California. Records coastward, in San Francisco Bay region, north to Tomales Point, Marin County, are chiefly of fall or winter occurrences (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:80; Stephens and Pringle, Birds Marin Co., 1933:4); however, has nested at Sonoma, Sonoma County, at Sargents, Santa Clara County. Northernmost regular locality of occurrence,

Red Bluff, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:188); but there is an old record farther north, Fort Crook [near Cayton, on Pit River], Shasta County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:202). Southeasternmost station in Great Valley area, Weldon, on South Fork of Kern River, 2600 feet, Kern County (Mus. Vert. Zool.). A high altitudinal record (vagrant, September 19) is for Seven Oaks, 5000 feet, San Bernardino Mountains (van Rossem, Condor, 16, 1914:146). Breeding localities in southern coastal area extend from southern Monterey County southeast nearly to Mexican line, near San Diego. Breeding life-zone, chiefly Lower Sonoran; enters Upper Sonoran locally or temporarily. Altitudes of actual known nestings all below 1200 feet. For general accounts, see: J. S. Dixon, Condor, 8, 1906: 94ff.; Dawson, Birds Calif., 4, 1924:1683ff.; J. B. Dixon, Condor, 30, 1928:228ff.; Bent, U. S. Nat. Mus., Bull. 167, 1937:203ff.

Habitat—Restricted and distinctive: deciduous woodland of broad, lowland river-bottoms, especially where interrupted by, or adjacent to, damp grasslands or marshes.

Buteo swainsoni Bonaparte
Swainson Hawk

Synonyms—Buteo insignatus; *Buteo harlani*, part; *Buteo obsoletus*; *Buteo swainsoni* var. *oxypterus*; *Buteo oxypterus*; Rocky Mountain Buzzard; Canada Buzzard; Brown Hawk; Harlan Hawk, part; Swainson Buzzard; Sharp-winged Hawk.

Status—Summer resident and transient; no authenticated record of winter occurrence. Passes north through southern and central-interior California in March and early April, south in September and October. Formerly abundant, but now (1943) greatly reduced in numbers and in extent of breeding range, as result of human influences.

Geographic range—As summer resident, Great Basin, Sacramento and San Joaquin valleys, and southern coast district, chiefly. Recorded north, coastwise, to Tennessee Cove, Marin County, April 7 and August 16 (Stephens and Pringle, Birds Marin Co., 1933:7), but not, in coast belt, north of that point; west, at extreme north, to Shasta Valley, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:112); northeast, nesting, to Goose Lake, Modoc County (Dawson, Birds Calif., 4, 1924:1693). Breeds south, in coast district, from near Salinas, Monterey County (Mus. Vert. Zool.) to Saticoy, Ventura County (Cooper, Auk, 4, 1887:91), through Los Angeles district, and to vicinity of San Diego (Willett, Pac. Coast Avif. No. 21, 1933:42; Sharp, Condor, 4, 1902:116). Apparently scarce in summer on Colorado and Mohave deserts; but known to nest near Cima, San Bernardino County (D. H. Johnson MS). Life-zone mainly Upper Sonoran; but after nesting, families move up-mountain for a time, even as high as 9800 feet, on Whitney Meadow, Tulare County, August 8 (Mus. Vert. Zool.). Individuals have reached certain of the islands—Santa Catalina and Santa Cruz, in August and April (Howell, Pac. Coast Avif. No. 12, 1917:55). Some further references bearing on nesting and migration: Lassen Peak section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:188); Placerville, Eldorado County (Williamson, Calif. Fish and Game, 9, 1923:125); Brentwood, Contra Costa County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:81); Arroyo Calero, Santa Clara County (Pickwell, Condor, 34, 1932:139); La Grange, Stanislaus County (Grinnell and Storer, Animal Life Yosemite, 1924:290); Fresno district, Fresno County (Tyler, Pac. Coast Avif.

No. 9, 1913:42); Mount Pinos, Ventura County (Grinnell, Auk, 22, 1905:382); Pomona, Los Angeles County (van Rossem, Condor, 16, 1914:92); Buena Park, Orange County (Robertson, Condor, 32, 1930:127); in general (Bent, U. S. Nat. Mus., Bull. 167, 1937:222ff.).

Habitat—Dry plains and open foothill territory. Sparsest woodland or scattering small trees, sufficient for nesting needs.

Buteo albonotatus Kaup

Zone-tailed Hawk

Synonyms—Buteo zonocercus; *Tachytriorchis abbreviatus*; *Buteo abbreviatus*; *Buteo albonotatus albonotatus*; Contraband Hawk; Black Hen Hawk; Band-tailed Black Hawk; Band-tailed Hawk.

Status—Rare fall and winter vagrant north across Mexican boundary into southern portion of State. Recorded occurrences: specimen taken 20 miles north of San Diego, February 23, 1862 (Cooper, Ornith. Calif., 1870:480); specimen taken at National City, near San Diego, November 26, 1906 (Linton, Condor, 10, 1908:181); specimen taken near coast 30 miles north of San Diego, September 10, 1907 (Grinnell, Condor, 11, 1909:69; specimen taken near La Jolla, San Diego County, September 11, 1908 (Willett, Pac. Coast Avif. No. 21, 1933:43); specimen taken at San Diego, December 20, 1916 (Grey, Condor, 19, 1917:103); specimen taken at Chula Vista, San Diego County, October 10, 1932 (Huey, Condor, 35, 1933:126); bird seen closely in Death Valley, Inyo County, January 11, 1934 (Gilman, Condor, 37, 1935:240).

Buteo lagopus s. johannis (Gmelin)

American Common Rough-legged Hawk

Synonyms—Archibuteo sancti-johannis; *Archibuteo lagopus*; *Archibuteo lagopus sancti-johannis*, part; *Buteo lagopus*; Rough-legged Buzzard; Rough-legged Hawk; St. John Black Hawk; Black Hawk; American Rough-legged Hawk.

Status—Midwinter visitant; extreme dates, November 15 and March 14. Fairly common in some years, in others, no record whatsoever.

Geographic range—Chiefly northern two-thirds of State, east of humid coast belt. Metropolis, on Modoc plateau and in Great Valley (see McLean, Condor, 38, 1936:16; Tyler, Pac. Coast Avif. No. 9, 1913:43). Northernmost coastwise station, Bodega, Sonoma County (Cassin, Pac. R. R. Rept., 9, 1858:33); westernmost station at extreme north, Beswick, Siskiyou County (Ferry, Condor, 10, 1908:40); easternmost centrally, 10 miles south of Bishop, Inyo County, December 26, 1925 (coll. Ralph Ellis) and Kelso Valley, 4200 feet, Kern County, November 27, 1933 (Mus. Vert. Zool.). South of Ventura County, three definite records: 5½ miles south of Chino, San Bernardino County, December 14, 1925 (coll. Ralph Ellis); Santee, January 26, 1921, and Warner Valley, November 15, 1922, San Diego County (Huey, Condor, 26, 1924:74).

Habitat—Open, usually level, grassland or bare plains.

Buteo regalis (Gray)
Ferruginous Rough-legged Hawk

Synonyms—Falco ferrugineus; *Butaëtes sancti johannis*; *Archibuteo ferrugineus*; *Buteo californica*; *Archibuteo lagopus sancti-johannis*, part; *Triorchis ferrugineus*; *Buteo ferrugineus*; *Triorchis regalis*; Ferruginous Buzzard; White-breasted Squirrel Hawk; Squirrel Hawk; Western Rough-legged Buzzard; Rusty Squirrel Hawk; California Squirrel Hawk.

Status—Winter visitant, principally from October to March. Formerly "abundant"; still more or less common locally. A few individuals occur in summer, and may nest, in extreme northeastern corner of State, in Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:298). The oft-cited nesting record from Cosumnes River [Sacramento County?] (Heermann, Pac. R. R. Rept., 10, 1859:32) is dubious.

Geographic range—In winter, south from Oregon line, east of northern humid coast belt, to Mexican line chiefly west of Colorado desert. Has reached Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:45). Eastward records at south are: Brawley, Imperial County (Hoffmann, Condor, 25, 1923:107), and Death Valley, Inyo County (Gilman, Condor, 37, 1935:240). Records from within metropolis are many; a selection of references: Lava Beds National Monument, Siskiyou County (Bond, Condor, 41, 1939:54); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:81); Coalinga, Fresno County, September 21 (J. R. Arnold, Condor, 39, 1937:32); occurrences in southern coastal district listed (Willett, Pac. Coast Avif. No. 21, 1933:43); Cuyamaca Mountains, San Diego County, September 17 to April 21 (J. G. Peterson MS); recovery of bird banded in Alberta (Lincoln, Bird-Banding, 7, 1936:41); in general (Bendire, Life Hist. N. Amer. Birds, 1, 1892:259; A. K. Fisher, Hawks and Owls U. S., 1893:91); Dawson, Birds Calif., 4, 1924:1698ff.; May, Hawks N. Amer., 1935:63; Bent, U. S. Nat. Mus., Bull. 167, 1937:284ff.).

Habitat—Characteristically, open terrain, of plains and foothills; grassland affording adequate prey, most especially ground squirrels.

Parabuteo unicinctus superior van Rossem
Sonora Harris Hawk

Synonyms—Craxirex harrissii; Harris Buzzard; Harris Hawk.

Status—Permanent resident; locally common.

Geographic range—Valley of lower Colorado River and Imperial Valley. Localities of record: Blythe, Riverside County, nesting (Rowley, Condor, 38, 1936:219); west side Colorado River, in Riverside County near Ehrenberg, August (Stephens, Condor, 5, 1903:77); Palo Verde, Imperial County, nesting, also present in November and December (Wilder, Condor, 18, 1916:127; Wiley, Condor, 18, 1916:231, and *ibid.*, 19, 1917:142; Mus. Vert. Zool.); Potholes [Laguna Dam], Imperial County, nesting, also present in December (L. Miller, Condor, 27, 1925:71, and Condor, 32, 1930:210); Calipatria, nesting, and Brawley, Imperial County (Bancroft, Condor, 22, 1920:156); El Centro, same county, November 6 (Los Angeles Museum); Calexico, same county, "flocks," October 22 and August 28 (Chambers, Condor, 23, 1921:65, and Condor, 26, 1924:75). Life-zone, Lower Sonoran. Vagrant occurrences are: Mission Valley, near San Diego, November 17, 1912 (Grey, Condor, 15, 1913:128); Oceanside, same county, November, 1942 (Kent, Condor, 46, 1944:129). A bird reported from Bardsdale, Ven-

tura County, has proved to be a Swainson Hawk (Peyton, Condor, 34, 1932:143, and Condor, 42, 1940:128).

Habitat—Deciduous woods and adjacent open ground, of river or delta bottomlands.

Note—For nomenclature, see van Rossem, Trans. San Diego Soc. Nat. Hist., 9, 1942:377.

Aquila chrysaëtos canadensis (Linnaeus)
American Golden Eagle

Synonyms—Aquila canadensis; *Aquila chrysaëtos*; Golden Eagle, Ring-tailed Eagle.

Status—Permanent resident. Within suitable territory, common. Reduced in numbers, or gone altogether, in areas closely settled by man; elsewhere, apparently holding up close to normal.

Geographic range—Entire length of State, mainly west of Sierran divides, but north of Marin County, also mainly east of narrow humid coast belt. Not uncommon in Warner Mountains region of Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:299), and to the west, in interior Humboldt County (Wilder, Condor, 18, 1916: 127). Scarce in lowlands of southeastern, desert section; has been recorded from Death Valley, Inyo County (E. L. Sumner, Jr., Condor, 31, 1929:127) and from Laguna Dam, Colorado River, Imperial County (Monson, Condor, 46, 1944:20). Recorded but once from an island: Santa Catalina Island, August, 1886 (Belding, Land Birds Pac. Dist., 1890:39). Individuals reach high altitudes, for example, 11,500 feet over Mount San Gorgonio, San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:58). Breeding life-zones, chiefly Upper Sonoran and Transition, but also in desert mountains in Lower Sonoran and up to or above timber line in Sierra Nevada (Barlow and Price, Condor, 3, 1901:161; Heil, Yosemite Nature Notes, 18, 1939:5). Literature concerning the Golden Eagle in California is extensive; selected accounts of substantial natural history content: Tehama County (Dale, Condor, 38, 1936:209); Yosemite area, feeding habits, relation to hawks, etc. (Grinnell and Storer, Animal Life Yosemite, 1924:292; McLean, Yosemite Nature Notes, 4, 1925:27; Wright, *ibid.*, 7, 1928:29; E. Michael, *ibid.*, 8, 1929:55); San Francisco Bay area (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:81); Santa Clara and San Benito counties, nesting, predation (Taylor, Ornith. and Ool., 13, 1888:172; Bendire, Life Hist. N. Amer. Birds, 1, 1892: 263; Atkinson, Bull. Cooper Ornith. Club, 1, 1899:50; Beck, Condor, 3, 1901:59; Finley, Condor, 8, 1906:5; Slevin, Proc. Calif. Acad. Sci., ser. 4, 18, 1929:45); Point Lobos, Monterey County, flight behavior and foraging (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:55); Florence Lake, Fresno County, habits (L. M. Lofberg, Condor, 37, 1935:171); southern California in general (Hanna, Condor, 32, 1930:121; Willett, Pac. Coast Avif. No. 21, 1933:44); San Diego County, nesting areas, incubation period, killing of cat (J. B. Dixon, Condor, 39, 1937:49; Abbott, Condor, 26, 1924:194; F. B. Sumner, Condor, 33, 1931:248); growth and behavior of young (E. L. Sumner, Jr., Condor, 31, 1929:85ff., Auk, 46, 1929:161ff., Univ. Calif. Publ. Zool., 40, 1933:278ff., and *ibid.*, 1934:331ff.); large set of eggs (De Groot, Condor, 30, 1928: 360); relation to Prairie Falcon (Tyler, Condor, 35, 1933:186); in general (A. K. Fisher, Hawks, Owls U. S., 1893:93ff.; Oberholser, U. S. Dept. Agr., Biol. Surv., Bull. 27, 1906:20ff.; Dawson, Birds Calif., 4, 1924:1701ff.; Bent, U. S. Nat. Mus., Bull. 167, 1937:293ff.).

Habitat—Typically, rolling foothill or coast-range terrain, where open grassland inhabited by ground squirrels and jack rabbits is scatteringly grown to oak trees, sycamores, or large digger pines. Cliff-walled canyons afford nesting headquarters in some sections.

Haliaeetus leucocephalus leucocephalus (Linnaeus)
Southern Bald Eagle

Synonyms—Falco leucocephalus; *Haliaetus leucocephalus*; *Haliaeetus leucocephalus*; *Haliaëtus leucocephalus alascanus*; White-headed Eagle; Bald Eagle; American Eagle; Northern Bald Eagle.

Status—Permanently resident, but, at least some years, with a winter increment of population from north. Formerly common and widely distributed coastwise and through interior valleys; but now either gone, or limited to vagrants or to scattered nesting pairs.

Geographic range—Originally, entire length of State, but not in high mountains or on southeastern deserts. Present breeding metropolises, Santa Barbara Islands and lake region in northeastern section of State. Nesting localities, of recent years, are: vicinity of Tule Lake, Siskiyou County (Dixon and Bond, Condor, 39, 1937:97); Eagle Lake, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:190); near Bower Cave, Mariposa County (McLean, Yosemite Nature Notes, 4, 1925:7); Torre Canyon, coast of Monterey County (L. P. Bolander, Condor, 35, 1933:238); Malibu region, northwestern Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:45); all of Santa Barbara Islands, from San Miguel southeast to San Clemente (Willett, *loc. cit.*; Howell, Pac. Coast Avif. No. 12, 1917:55; Bent, U. S. Nat. Mus., Bull. 167, 1937:321ff.; Dawson, Birds Calif., 4, 1924:1711; Pemberton, Condor, 30, 1928:146). Some recent winter or vagrant occurrences inland: 4 miles northwest of Likely, Modoc County (Mus. Vert. Zool.); Tehama County (Dale, Condor, 38, 1936: 209); near Gilroy, Santa Clara County (Unglish, Condor, 39, 1937:39); Big Bear and Baldwin lakes, San Bernardino Mountains (Pierce, Condor, 35, 1933:202; Kenyon, Condor, 42, 1940:265); Cuyamaca Lake, San Diego County (J. G. Peterson MS; coll. Ralph Ellis).

Habitat—Ocean shore-lines, lake margins, and river courses; vicinity of these regularly for foraging and for nesting, but individuals range widely over all sorts of terrain.

Note—The winter influx of Bald Eagles into the northern end of the State may involve, at least in part, birds of the far northern race, *H. l. alascanus*. Fleming (Condor, 22, 1920:110) has tentatively so identified a specimen from Lakeport, Lake County, taken February 2, 1893. But in want of adequate material this identification is not now warranted. Indeed, we have some doubt whether any subspecific separation is justified.

Circus cyaneus hudsonius (Linnaeus)
American Marsh Hawk

Synonyms—Strigiceps uliginosus; *Circus hudsonius*; *Circus uliginosus*; *Circus hudsonicus*; Marsh Hawk; Harrier; American Harrier.

Status—Winter visitant widely, September to April. Common, even abundant (for a hawk) locally, when in migration. Also relatively small numbers occur through summer and breed, in suitable territory; but such appropriate territory greatly reduced of late years, and summering population of Marsh Hawks diminished accordingly.

Geographic range—In winter and as migrant, entire length and breadth of State, and from below sea level, as in Death Valley (A. K. Fisher, N. Amer. Fauna No. 7, 1893:35; *et al.*), up to as high as 9800 feet, in Big Cottonwood Meadows, Inyo County (A. K. Fisher, *loc. cit.*). Individuals have reached the Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:44), and Santa Cruz and Anacapa islands (Howell, Pac. Coast Avif. No. 12, 1917:54). Some definite breeding stations are: near Mount Shasta City, Siskiyou County (C. F. Smith MS); Point Reyes, Marin County (Squires, Condor, 19, 1917:186); Alviso, Santa Clara County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:79); Pescadero, San Mateo County (Orr, Amer. Midl. Nat., 27, 1942:300); Dune Lakes, San Luis Obispo County (Selleck and Glading, Calif. Fish and Game, 29, 1943:122); Buena Vista Lake, Kern County (A. H. Miller MS); Saticoy, Ventura County (Cooper, Proc. U. S. Nat. Mus., 2, 1880:251); near June Lake, 8000 feet, Mono County (J. B. Dixon, Condor, 36, 1934:36); Alamitos, Los Angeles County (H. Robertson, Bull. Cooper Ornith. Club, 1, 1899:94); Corona, Riverside County, and Chino, San Bernardino County (Willett, Pac. Coast Avif. No. 21, 1933: 45); Bay City, Orange County (Willett, Pac. Coast Avif. No. 7, 1912:46); Torrey Pines, San Diego County (Walker and Walker, Aud. Mag., 43, 1941:35); San Diego (Cooper, *loc. cit.*). Life-zones in summer, Lower Sonoran to Canadian. Additional references selected for natural history content: relation to other predators (Stoner, Auk, 48, 1931:599 and Condor, 38, 1936:124; Silliman and von Bloeker, Condor, 39, 1937: 129); food and foraging habits (Bond, Condor, 41, 1939:54; Cushing, Condor, 41, 1939:103; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:55; E. L. Sumner, Jr., Condor, 33, 1931:89; see also Selleck and Glading, *loc. cit.*); recovery at Blythe, Riverside County, of bird banded in Alberta (Lincoln, Bird-Banding, 7, 1936: 42); feather structure (Chandler, Univ. Calif. Publ. Zool., 11, 1914:330ff.); in general (Dawson, Birds Calif., 4, 1924:1652ff.; Bent, U. S. Nat. Mus., Bull. 167, 1937:78).

Habitat—Characteristically, marshlands, both coastal salt, and fresh-water. But forages also over grasslands in general, from patches of salt-grass in desert sinks, and dry prairie, to mountain cienagas.

Pandion haliaetus carolinensis (Gmelin)

American Osprey

Synonyms—Pandion carolinensis; *Pandion haliaetus*; *Pandion haliætus canadensis*; Fish Hawk; Osprey.

Status—For most part, summer resident and migrant; present from February to October. But also, small numbers occur through winter, coastwise, southerly. Originally common and widespread; now (1944) much reduced in numbers, and known nesting stations few.

Geographic range—Formerly entire length of State, breeding about nearly all the islands, on mainland near mouths of larger streams, interiorly along Sacramento and San Joaquin rivers, and about lakes of northeastern plateau region. Some former nesting localities: San Diego Bay (Cooper, Ornith. Calif., 1, 1870:455); Laguna Beach, Orange County (Willett, Pac. Coast Avif. No. 7, 1912:49); Santa Cruz, Santa Cruz County (Belding, Land Birds Pac. Dist., 1890:46); Kaweah River, near Woodlake, Tulare County (Grinnell, Pac. Coast Avif. No. 11, 1915:69). Nesting stations within last two decades: Clear Lake, Modoc County (Jewett, Calif. Fish and Game, 9, 1923:

125); Pit River, near Canby, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:300); Lake Orr, near Bray, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:83, 91); Eagle Lake, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:193; *et al.*); Klamath River, near Requa, Del Norte County, and South Fork of Eel River, near Garberville, Mendocino County (Mailliard, Condor, 24, 1922:67); lower Eel River, Humboldt County (Grinnell MS); lower Russian River, Sonoma County, several stations (Squires, Condor, 18, 1916:232; *et al.*); Green Valley, near Watsonville, Santa Cruz County (Unglish, Condor, 39, 1937:39); reservoir near Milton, Calaveras County (Anon., Calif. Fish and Game, 16, 1930:83); most of Santa Barbara Islands, including San Nicolas (Howell, Pac. Coast Avif. No. 12, 1917:58; *et al.*). Northernmost winter occurrence, Farallon Islands, December 15, 1886 (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:45). In migrations, reported several times, each, from Death Valley, Colorado River, and Imperial Valley; also visits Bear Lake, San Bernardino Mountains (Willett, Pac. Coast Avif. No. 21, 1933:45). Other records scattering.

Habitat—Neighborhood of ocean shore, fresh-water lakes, and large streams. Presence, when established for nesting season, determined by presence of fish-producing waters within cruising distance, perhaps fifteen miles.

Falco mexicanus Schlegel
Prairie Falcon

Synonyms—Falco polyagrus; *Falco lanarius* var. *mexicanus*; *Falco lanarius polyagrus*; *Falco mexicanus* var. *polyagrus*; American Lanier Falcon; Prairie Hawk; American Lanner.

Status—Permanent resident. Common in metropolis of range; numbers in general holding up well.

Geographic range—Extensive, throughout State save in northwest humid coast belt. Metropolis appears to lie in southeastern deserts and thence northwest along inner coast ranges. Northwesternmost recorded stations in coast belt, in Marin County (Stephens and Pringle, Birds Marin Co., 1933:4). At extreme north, recorded west to Shasta Valley, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:113), east to Camp Bidwell, Modoc County (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. L, 1879:314). Has reached Farallon Islands, for example, December 18, 1886 (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:45), and San Miguel Island, in July, 1886 (Streator, Ornith. and Ool., 13, 1888:53). Altitudinally, occurs from below sea level, as in Death Valley and around Salton Sea, up, in summer wanderings, into high Sierras; for example, above summit of Mount Langley, 14,000+ feet, Inyo County, September 1, 1911 (Grinnell MS). Breeding life-zones, (commonly) Lower Sonoran and (less commonly) Upper Sonoran. Northernmost instance of actual nesting, Lava Beds National Monument, Siskiyou County (Dixon and Bond, Condor, 39, 1937:97); westernmost, Berkeley, Alameda County, and Mount Diablo, Contra Costa County (Keeler, Zoe, 2, 1891:169; Cohen, Condor, 5, 1903:117). Some accounts of manner of breeding occurrence: Tyler, Condor, 25, 1923:90; Dawson, Birds Calif., 4, 1924: 1608ff.; Fowler, Condor, 33, 1931:193; Pierce, Condor, 37, 1935:225. Special references to food habits: Bond, Condor, 38, 1936:72, 169, and *ibid.*, 41, 1939:54ff. (also, recovery of California-reared bird in Saskatchewan); Glading, Tillotson and Selleck, Calif. Fish and Game, 29, 1943:93, 97.

Habitat—As a rule, dry open terrain, either level or hilly. Breeding headquarters, cliffs affording nesting niches. Cruising radius long, which carries foraging birds far afield, even to marshlands or ocean shores.

Falco peregrinus pealei Ridgway
Peale Duck Hawk

Synonym—Peale Falcon.

Status—Rare winter vagrant from northward. Three definite occurrences: non-breeding immature female (no. 11694 Calif. Acad. Sci.), taken on San Diego Bay, San Diego County, March 31, 1908 (Swarth, Condor, 35, 1933:233); adult female (D. D. McLean Coll.), Tubbs Island, north side San Pablo Bay, Sonoma County, November 10, 1933 (McLean, Condor, 38, 1936:16); and immature female, taken at same place, November 5, 1939 (no. 77259 Mus. Vert. Zool.).

Falco peregrinus anatum Bonaparte
American Duck Hawk

Synonyms—Falco anatum; *Falco peregrinus*; *Falco nigriceps*; *Falco communis* var. *anatum*; *Falco communis* var. *naevius*; *Falco anatum anatum*; Duck Hawk; Peregrine Falcon; Western Duck Hawk; American Peregrine Falcon.

Status—Permanent resident, fairly common for a hawk; increments from north of State add to winter population, also occurrences at that season more extensive. Numbers, save locally, seem to hold fairly constant.

Geographic range—Entire length of State, chiefly along seacoast and around the islands, but also, especially in winter, inland, normally west of southern desert divides. Some coastwise nesting stations: Point Reyes and Tomales Point, Marin County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:82); Farallon Islands (C. F. Smith, Condor, 36, 1934:172); bay marshes near Redwood City, San Mateo County (Dawson, Birds Calif., 4, 1924:1628); vicinity of Santa Cruz, Santa Cruz County (Thompson, Condor, 3, 1901:141); several of Santa Barbara Islands (Howell, Pac. Coast Avif. No. 12, 1917:56; Willett, Pac. Coast Avif. No. 21, 1933:46); seacoast of Santa Barbara County (Willett, *loc. cit.*); San Onofre and near San Diego, San Diego County (J. S. Dixon, Condor, 8, 1906:96; Willett, *loc. cit.*). Some interior breeding stations: Lava Beds National Monument, near Tule Lake, Siskiyou County (Dixon and Bond, Condor, 39, 1937:98; Bond, Condor, 41, 1939:54); Mono Lake, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:295); inner coast range in western Kern County (Dawson, *op. cit.*:1626); Escondido, San Diego County (Sharp, Condor, 9, 1907:86). Life-zones chiefly Upper Sonoran and Transition. There are a few records from southeastern desert areas: Calipatria, Imperial County (Wyman, Condor, 24, 1922:181), 10 miles south of Westmoreland, same county, December 23, 1922 (Ellis Coll.), and Colorado River above Yuma, several observations (Monson, Condor, 46, 1944:20). Vagrants occasionally reach high altitudes, as 9200 feet on Broke-off Mountain, Shasta County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930: 196). Other references relating to behavior, food and hunting: McLean, Yosemite Nature Notes, 4, 1925:35; Bond, Condor, 38, 1936:72, 217; Grinnell and Linsdale, Car-

negie Inst. Wash., publ. 481, 1936:56; Cushing, Condor, 41, 1939:103; Orr, Amer. Midl. Nat., 27, 1942:300.

Habitat—Vicinity of sea-cliffs, both on islands and mainland coast, and of cliffs inland. From these as headquarters, a long cruising radius carries foraging individuals very many miles, over ocean and bays, and over lakes and valley marshlands.

Falco columbarius richardsonii Ridgway
Richardson Pigeon Hawk

Synonyms—Falco richardsoni; *Falco columbarius*, part; Richardson Merlin; American Merlin; Richardson Falcon; Pigeon Hawk, part.

Status—Winter visitant. Perhaps fairly common, but verified records few.

Geographic range—Eastern and southern portions of State. Recorded occurrences from north to south, based on specimens: 5 miles north of Fredonyer Peak at 5700 feet altitude, Lassen County, September 30, 1924 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:196); 3 miles north of Standish, Honey Lake Valley, Lassen County, January 21, 1935 (McLean, Condor, 38, 1936:16); Walker Basin, Kern County, August 28, 1875 (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:262); San Fernando Valley, Los Angeles County, October 31, 1903 (Daggett, Condor, 7, 1905:82); Riverside, Riverside County, January 22, 1889 (Peters, Bull. Essex Co. Ornith. Club, 8, 1926:22); same place, January 31, 1878 (Huey, Condor, 28, 1926:102); Witch Creek, San Diego County, February 9, 1904 (Bishop, Condor, 7, 1905:142); Mission Valley, San Diego County, April 9, 1925 (Willett, Pac. Coast Avif. No. 21, 1933:48); San Diego, January 10, 1900 (Huey, *loc. cit.*).

Habitat—Not enough known to us to warrant attempt at definition.

Falco columbarius bendirei Swann
Western Pigeon Hawk

Synonyms—Falco columbarius, part; *Hypotriorchis columbarius*; *Falco lithofalco* var. *columbarius*; *Aesalon columbarius*; *Falco columbarius columbarius*; *Falco columbarius richardsoni*, part; *Tinnunculus columbarius bendirei*; Pidgeon [*sic*] Falcon; Pigeon Hawk, part; American Merlin, part; Northern Pigeon Hawk; Richardson Pigeon Hawk, part; Californian Merlin.

Status—Winter visitant; mid-September to early April. Fairly common locally and in certain years; seemingly, numbers vary from year to year. (There is inconclusive evidence that small numbers remain through summer.)

Geographic range—Whole length of State, mainly west of Sierran divides. Recorded from Del Norte, Siskiyou and Modoc counties (in these northernmost counties mostly at seasons of migration) south to San Diego and Imperial counties. Easternmost stations of known occurrence: Death Valley, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:40), and Brawley, Imperial County (van Rossem, Condor, 13, 1911:131). Three island records are: Santa Cruz Island, December (Linton, Condor, 10, 1908: 127); San Clemente Island, March 30 to April 11 (Howell, Pac. Coast Avif. No. 12, 1917:57); Santa Catalina Island, March 9 (Harris, Condor, 21, 1919:172). Sight records for May and June have given ground for suspecting that the Pigeon Hawk nests

within the State: Requa, Del Norte County, May 14 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:22); near Eagle Lake, Lassen County, May 14 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:197); Mammoth Lakes, Mono County, June 26 (Dawson, Birds Calif., 4, 1924:1631). However, the record often and varyingly cited (as by Bendire, Life Hist., 1, 1892:300), of nest and eggs found near Sargents, Santa Clara County, April 6, 1888, is exceedingly dubious. Some citations of general significance: McLean, Calif. Fish and Game, 14, 1928:171, and Condor, 30, 1928:352; Willett, Pac. Coast Avif. No. 21, 1933:47; Bond, Condor, 38, 1936:72, 85; Bent, U. S. Nat. Mus., Bull. 170, 1938:81ff.

Habitat—Chiefly open type of woodland; foothills and valleys, often where scatteringly grown to blue oaks, black oaks, live oaks, or valley oaks.

Note—We were inclined to follow Swarth (Condor, 37, 1935:201) in his protest against the recognition of the race *bendirei* on the basis of any good demonstration of characters yet given for it. However, the opinion of Peters (Bull. Essex Co. Ornith. Club, 8, 1926:22, and Birds of the World, 1, 1931:296) and others who have seen appropriate material, positively favorable to its recognition, leads us to continue provisional use of *bendirei*, on their authority.

Falco columbarius suckleyi Ridgway

Black Pigeon Hawk

Synonyms—Falco lithofalco var. *suckleyi*; Black Merlin.

Status—Vagrant or winter visitant from north. Apparently rare; at least, verified records are few.

Geographic range—West-Sierran portion of State, chiefly coastwise and northerly; one northeastern record station. Occurrences, from north to south: Yreka, Siskiyou County, October [not verified] (Baird, Brewer and Ridgway, Hist. N. Amer. Birds, 3, 1874:147); Wagon Camp, Mount Shasta, Siskiyou County, August 8, 1898 [identity not satisfactory] (Merriam, N. Amer. Fauna No. 16, 1899:113); 1 mile south of Eagleville, Modoc County, January 31, 1942, somewhat intermediate (Calif. Acad. Sci.); Humboldt Bay, Humboldt County, specimens, January 24, 31, February 14, 1925 (J. M. Davis, Condor, 42, 1940:222); Cold Flats, 16 miles southeast of Mount Hamilton, Santa Clara County, April 11, 1933 [specimen in McLean Coll.] (McLean, Condor, 38, 1936:16); Guadalupe Creek, 1½ miles northwest of San Jose, Santa Clara County, March 3, 1933 (McLean, *loc. cit.*; Mus. Vert. Zool.); 8 miles west of Gilroy, Santa Clara County, February 13, 1934, specimen (Unglish, Condor, 36, 1934:166; Mus. Vert. Zool.); 4½ miles southwest of Gonzales, Monterey County, February 12, 1933, "intermediate" [in McLean Coll.] (McLean, *loc. cit.*); Santa Barbara, October 28, 1878 [specimen in Mus. d'Hist. Nat., Paris] (van Rossem, Condor, 36, 1934:176), and January 25, 1940, and April 6, 1932 [specimens in Santa Barbara Mus.] (Rett, Condor, 42, 1940:266); Claremont, Los Angeles County, December 6, 1895, specimen (Willett, Pac. Coast Avif. No. 7, 1912:49; Mus. Vert. Zool.).

Habitat—Meager information indicates broken woodland.

Falco sparverius sparverius Linnaeus

North American Sparrow Hawk

Synonyms—Falco sparverius; *Cerchneis sparverius*; *Tinnunculus sparverius*; *Tinnunculus sparverioides*; *Falco sparverius deserticolus*; *Falco sparverius phalaena*; *Cerchneis sparverius phalaena*; *Cerchneis sparverius sparverius*; Little Falcon; Sparrow Hawk; American Sparrow Hawk; American Kestrel; Desert Sparrow Hawk; Cuban Sparrow Hawk; Western Sparrow Hawk; Eastern Sparrow Hawk.

Status—Resident throughout most of California; at high altitudes and in parts of northeastern plateau region, present in summer only; a considerable influx of birds from the north takes place in fall and winter, so that in lowland valleys in migration and in winter to be rated as abundant. Generally common in summer but sparse then on southeastern deserts and in heavily forested northern coast belt.

Geographic range—As breeding, generally throughout State below timber line. In winter, below lower level of heavy snow; also areas on Mohave and Colorado deserts unoccupied at other seasons. Has been found on practically all the coastal islands, at least in status of transient or winter visitant; on Santa Cruz Island, nesting (Dawson, Birds Calif., 4, 1924:1640). Breeds in life-zones from Lower Sonoran up to Hudsonian. Altitudinally, occurs from —240 feet, as when migrating through Death Valley, Inyo County (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:64), up to 13,000 feet, as a vagrant on Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899: 113). Most extensive recent review of taxonomy, distribution, migration, etc.: Bond, Condor, 45, 1943:165. Other references selected to exemplify distribution and with view to natural history content: near Walker, Klamath River, March 2 (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:7); Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 2, 12, 1923:22); Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:300); Lassen section (Mailliard, Condor, 26, 1924:34; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:197); Ruth, Trinity County (Grinnell, Condor, 35, 1933:236); Chico, Butte County, experiments on predation (Ingles, Condor, 42, 1940:104); Echo Lake, Eldorado County (De Groot, Condor, 36, 1934:7); Elk Grove, Sacramento County, mixed brood of hawks and Screech Owl (F. A. Sumner, Condor, 35, 1933:231); Shellville, Sonoma County, eats quail (Mailliard, Gull, 10, 1928: March [p. 1]); Tomales Point, Marin County, hunting habits (Cushing, Condor, 41, 1939:103); Benicia, Solano County (Stoner, Condor, 39, 1937:39); Oakland, Alameda County (Seibert, Condor, 44, 1942:68); Stanford University, Santa Clara County (Bonnot, Condor, 23, 1921:136); near Watsonville, Santa Cruz County (Hawbecker, Condor, 45, 1943:74); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:57); Yosemite section (Grinnell and Storer, Animal Life Yosemite, 1924:296); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:46); Panamint Mountains, Argus Mountains, etc., Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:40); Santa Monica, Los Angeles County (Rising, Condor, 3, 1901:162); Pasadena and South Pasadena, same county, at bird traps, preying on Black Phoebes (Michener, Condor, 32, 1930:212; Cowles, Condor, 30, 1928:327); Claremont, same county, growth of young, habits of captives (E. L. Sumner, Jr., Condor, 31, 1929:85ff.; Pierce, Condor, 39, 1937:137); Santa Rosa, Santa Barbara, San Nicolas and Santa Catalina islands (Pemberton, Condor, 30, 1928:145, 147; Howell, Pac. Coast Avif. No. 12, 1917:57; Meadows, Condor, 30, 1928:250); Twin Oaks, San Diego County (F. A. Merriam, Auk, 13, 1896:116); Mohave Desert, San Bernardino County, mixed sets of hawk and Screech Owl (Hanna, Condor, 38,

1936:250, and *ibid.*, 42, 1940:218); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:59); Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:126).

Habitat—Typically, open terrain such as plains, deserts, fields, meadows and unforested portions of mountain-sides, where ground surface affords adequate prey-supply, but only where perching places are present. These perching places may be dead-tipped trees, tree stubs, points of rock, telephone or power poles, or fence posts. For nesting, holes in trees either dug by the larger woodpeckers or "natural," crevices in cliffs, or holes in earth banks, are requisite to presence in breeding season; also utilizes magpie nests.

Note—Bond (*loc. cit.*) has shown the advisability of abandoning the concept of a desert race of the Sparrow Hawk (*F. s. phalaena*). Small birds from the deserts of California are regarded as members of an intergrading complex between *F. s. sparverius* and *F. s. peninsularis* to the south. No true population of *peninsularis* occurs within the boundaries of the State.

Dendragapus fuliginosus fuliginosus (Ridgway)
Oregon Sooty Grouse

Synonyms—Tetrao obscurus, part; *Canace obscurus* var. *obscurus*, part; *Dendragapus obscurus fuliginosus*, part; Dusky Grouse, part; Blue Grouse, part; Sooty Grouse, part; Sierra Grouse, part.

Status—Resident. Fairly common locally, but apparently has disappeared from southern portion of range.

Geographic range—Narrow northwest humid coast strip south from Oregon line in Del Norte County as far (formerly, prior to 1915) as vicinity of Seaview, Sonoma County (Grinnell, Pac. Coast Avif. No. 11, 1915:60; Coffman, Calif. Fish and Game, 2, 1916:212). Interiormost authenticated localities of occurrence, 12 miles northwest of Happy Camp, western Siskiyou County, and South Fork Mountain, Trinity County (Mus. Vert. Zool.); intergrades with *D. f. sierrae* occur eastward through Trinity County, as at Hayfork. Altitudinal range, a few hundred feet above sea level up to 5600 feet (on South Fork Mountain). Life-zones, Transition and Canadian. Important accounts of this race: Swarth, Univ. Calif. Publ. Zool., 30, 1926:74ff.; Bent, U. S. Nat. Mus., Bull. 162, 1932:103ff.; Moffitt, Auk, 55, 1938:589ff.

Habitat—Edges of Douglas fir and white fir woods, chiefly interior to the redwood belt proper. That is to say, this grouse seems to avoid pure redwood timber.

Note—The development of the characters of typical *fuliginosus* (as represented by specimens from the coastal region of British Columbia) is, in northwestern Californian birds at hand, only partial. In other words, Californian *fuliginosus* only approaches, but does not reach the full manifestation of the subspecific features of this race. We think it incorrect to merge *D. fuliginosus* with *D. obscurus* (see A. O. U. Check-list, Supplement, Auk, 61, 1944:445) in accord with a freely exercised vogue for joining in one species related geographically complementary forms. There are some very trenchant structural and behavioristic differences between these types of grouse and thus far no proved intergradation (see Moffitt, Auk, 55, 1938:589ff., and earlier authors there cited).

Dendragapus fuliginosus sierrae Chapman
Sierra Sooty Grouse

Synonyms—Tetrao obscurus, part; *Canace obscurus* var. *obscurus*, part; *Canace obscura*, part; *Dendragapus obscurus fuliginosus*, part; *Dendragapus obscurus*; *Dendragapus fuliginosus*; *Tetrao*

californica; *Dendragapus obscurus sierrae*, part; Dusky Grouse, part; Blue Grouse, part; Sooty Grouse, part; Mountain Grouse; Sierra Grouse, part; Sierra Dusky Grouse.

Status—Resident. There is believed to be, in places along Sierra Nevada, a partial up-mountain movement in late summer, with return drift before spring. Common, even abundant locally, according to observers prior to about 1895; but of late years reports indicate much reduction in numbers and even disappearance locally.

Geographic range—From Oregon line in parts of Siskiyou and Modoc counties, south along Sierra Nevada to about latitude 37° (in Fresno County) and along inner northern coast ranges as far as Mount Sanhedrin, Mendocino County, and central Lake County (Denison Spring, 6 miles north of Clear Lake, in 1902); at north, discontinuously from Warner Mountains west to include eastern Siskiyou and Trinity mountains. Life-zones, high Transition, Canadian, and (less commonly) Hudsonian. Altitudinal range, 3200 feet, as near Keddie, Plumas County (A. P. Smith, Condor, 20, 1918:46) and on Kidder Creek, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:91) up to 10,800 feet on Shepherd's Crest, Yosemite National Park (Petrides, Yosemite Nature Notes, 19, 1940:64). Selected citations: Beswick, Siskiyou County (Ferry, Condor, 10, 1908:40); Warner Mountains, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:295); Mount Shasta, Siskiyou County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:200; Merriam, N. Amer. Fauna No. 16, 1899: 110); Lassen section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930: 200); Mount Sanhedrin, Mendocino County (Stone, Proc. Acad. Nat. Sci. Phila., 1904: 580); Glen Alpine and vicinity and Echo Lake, Eldorado County (Barlow and Price, Condor, 3, 1901: 160; De Groot, Condor, 36, 1934:6); Big Trees, Calaveras County (Belding, Proc. U. S. Nat. Mus., 1, 1879:438, and Land Birds Pac. Dist., 1890:15); Yosemite National Park (Grinnell and Storer, Animal Life Yosemite, 1924:272; McLean, Yosemite Nature Notes, 6, 1927:51; Oneal, *ibid.*, 9, 1930:105; H. C. Bryant, *ibid.*, 15, 1936:67); western Mono County (Howell, Condor, 19, 1917:186); food (Belding, Zoe, 3, 1892:232); molts and plumages (van Rossem, Ibis, ser. 12, 1, 1925: 419; Moffitt, Auk, 55, 1938:589); taxonomy (Swarth, Univ. Calif. Publ. Zool., 30, 1926:74ff.; see also Moffitt, *loc. cit.*); in general (Grinnell, Bryant and Storer, Game Birds Calif., 1918:544ff.; Bent, U. S. Nat. Mus., Bull. 162, 1932:114ff.).

Habitat—Coniferous forest, chiefly as composed of Douglas, white or red firs; pines and hemlocks to lesser extent. Prefers margins of woods, or where broken and interspersed with tracts of open or partly brushy ground. Nest emplacements are on well drained ground and may be partly screened by brush or other low cover. Dense foliage of trees serves as retreats for adults and flying young, and as feeding and roosting quarters during winter.

Dendragapus fuliginosus howardi Dickey and van Rossem

Mount Pinos Sooty Grouse

Synonyms—Canace obscurus var. *obscurus*, part; *Canace obscura*, part; *Dendragapus obscurus sierrae*, part; *Dendragapus obscurus howardi*; Dusky Grouse, part; Sooty Grouse, part; Sierra Grouse, part; Mount Pinos Grouse.

Status—Resident. Locally common in suitable parts of main southern Sierra Nevada; but always, within history, sparsely represented on the more southwesterly, out-

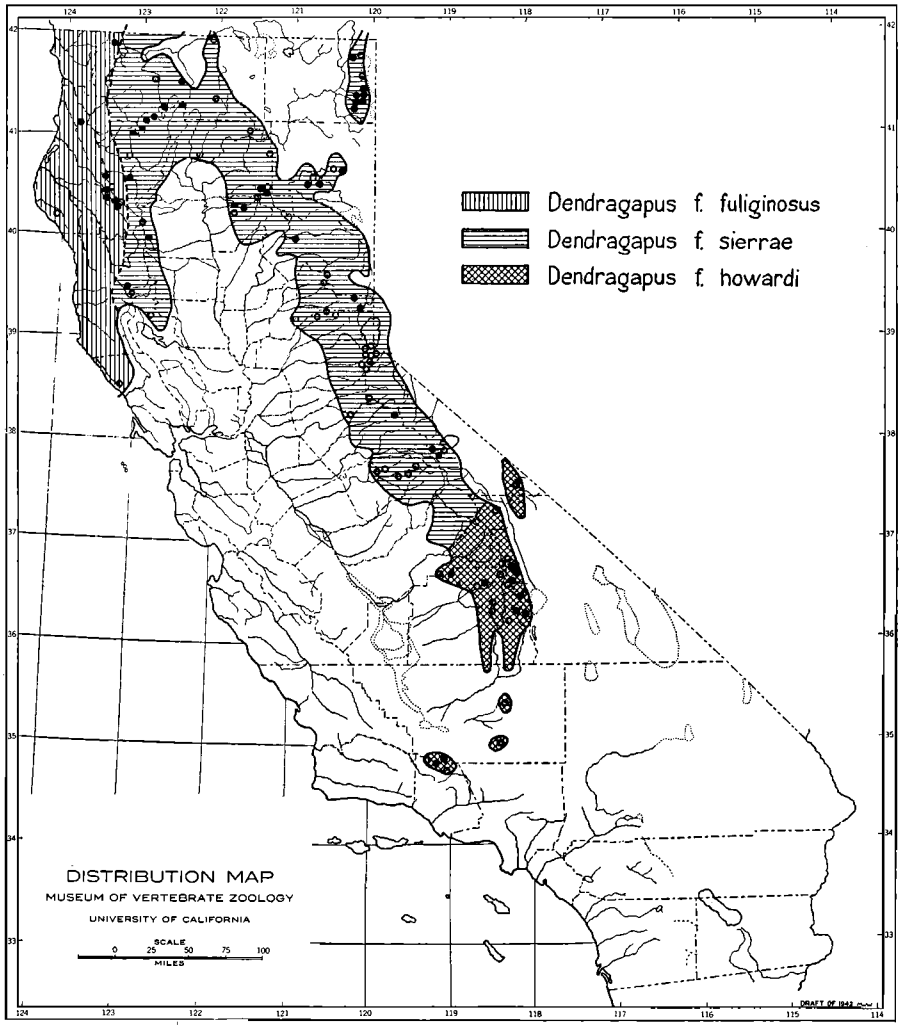

Fig. 3. Distribution of the subspecies of Sooty Grouse, *Dendragapus fuliginosus*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

lying "islands" of occurrence. Said to have become very scarce of late years on Mount Pinos.

Geographic range—Extreme southern Sierra Nevada, south from about latitude 37° (Fresno County) nearly to Kern Gap, at southern boundary of Tulare County; thence interruptedly, in Kern County, on Piute Mountains, Tehachapi Peak, and Mount Pinos, and on Frazier Mountain, closely adjacent to Mount Pinos, in Ventura County (see Dickey and van Rossem, Condor, 25, 1923:168; Pemberton, Condor, 30, 1928: 347; Bent, U. S. Nat. Mus., Bull. 162, 1932:117; Willett, Pac. Coast Avif. No. 21, 1933:48). Altitudinal range, 5500 feet, as near Neff's Mill in Fresno County, to 11,000 feet, as at Cottonwood Lakes in Inyo County. Life-zones, high Transition, Canadian and, in late summer, Hudsonian.

Habitat—Chiefly slopes clothed sparsely with white firs; but also other coniferous trees frequented, as well as open or brushy ground interspersed with, or adjacent to, forest.

Note—Sooty Grouse also occur on the White Mountains, Mono County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:30); but their inclusion under the name *howardi* is, in absence of specimens, provisional.

Bonasa umbellus sabini (Douglas)
Oregon Ruffed Grouse

Synonyms—Tetrao sabini; *Bonasa sabinii*; *Bonasa umbellus*; Oregon Grouse; Sabine Ruffed Grouse; Pacific Ruffed Grouse.

Status—Resident. Formerly fairly common locally, but apparently never, in Californian portion of general range, abundant. Now rare, having disappeared completely from most places whence formerly reported (for example, valley of Van Duzen River, *fide* H. E. Wilder).

Geographic range—Extreme northern humid coast strip, in Del Norte, Siskiyou and Humboldt counties. Recorded east in Siskiyou County to Horse Creek near Klamath River and Salmon River district (C. H. Merriam MS, *fide* J. W. Aldrich), and south and east in Humboldt County to Redwood Creek at 800 feet, in 1942 (Mus. Vert. Zool.), to Van Duzen River, 6 miles east of Carlotta (Mus. Vert. Zool.) and to 4 miles northeast of Bridgeville, juveniles, July 2, 1926 (Calif. Acad. Sci.). For accounts of occurrence and natural history, see: Townsend, Auk, 3, 1886:491; W. K. Fisher, Condor, 4, 1902:132; Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:6; Grinnell, Bryant and Storer, Game Birds Calif., 1918:552ff.

Habitat—Rather dense canyon-bottom or stream-side growths, usually of mixed deciduous and coniferous trees.

Pedioecetes phasianellus columbianus (Ord)
Columbian Sharp-tailed Grouse

Synonyms—Tetrao phasianellus; *Tetrao urophasianellus*; *Pedioecetes columbianus*; *Tetrao columbianus*; *Pediocaetes phasianellus columbianus*; *Pediocaetes columbianus*; Sharp-tailed Grouse; Columbia Sharp-tail; Southern Sharp-tailed Grouse; Prairie Chicken.

Status—Resident and formerly abundant (up to about 1880) on suitable parts of northeastern plateau region. Persisted, in lessening numbers, up to about 1915; nothing better than rumors of occurrence since then. Now thought to be extinct within the boundaries of this State.

Geographic range—Originally, portions of Modoc County southwest through northwestern Lassen County into Shasta County as far as (in 1855) Canoe Creek [= Hat Creek], near Cassel. Last specific reports were from Timbered Mountain and Lookout, Modoc County, and mouth of Juniper Creek, Lassen County. (See Newberry, Pac. R. R. Rept., 6, 1857:94; Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. L, 1879:317; Grinnell, Bryant and Storer, Game Birds Calif., 1918:558ff.) There is no corroboration of Cooper's idea (Ornith. Calif., 1, 1870:533) that the species occurred south along

the east side of the Sierra Nevada as far as latitude 39°, of Bendire's report (Life Hist. N. Amer. Birds, 1, 1892:98) from the eastern slopes of the Siskiyou Mountains, nor of local, unpublished rumors of one-time occurrence on the "prairies" of Humboldt County.

Habitat—Flat or gently rolling grasslands, usually adjacent to streams or lakes.

Centrocercus urophasianus (Bonaparte)
Sage Grouse

Synonyms—Tetrao urophasianus; Cock-of-the-plains; Sage-cock; Sage Fowl; Sage-hen.

Status—Resident in northeastern, Great Basin portion of State. Formerly abundant; now, as a result of intensive sheeping, and of penetration of the country by many roads (facilitating over-hunting), greatly reduced in numbers and localized in occurrence.

Geographic range—At north, from Nevada line west through Modoc County to west side of Lower Klamath Lake, in eastern Siskiyou County (Jewett, Condor, 27, 1925:115); south from Oregon line, east of Sierran axis, as far as vicinity of Big Pine, in Owens Valley, Inyo County (Howell, Condor, 19, 1917:187; Ober, Calif. Fish and Game, 6, 1920:12). Altitudinal range, from 3500 feet near Pit River, in extreme northeastern Shasta County (formerly), up to 12,000 feet, on White Mountains, Mono County. Life-zones, Upper Sonoran and Transition; occasionally higher, in or near sage-brush areas, as near Granite Lake, Yosemite National Park (Evans, Yosemite Nature Notes, 23, 1944:28). The single record from toward the head of Mohave River, San Bernardino County, in December, 1860 (Cooper, Amer. Nat., 3, 1869:188, and Ornith. Calif., 1870:537), if authentic, indicates occurrence formerly far south of present range of the species. Further sources of information for California: Grinnell, Bryant and Storer, Game Birds Calif., 1918:564ff.; Dawson, Birds Calif., 4, 1924: 1602ff.; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:201.

Habitat—Restricted to flat or rolling terrain grown to sage-brush (*Artemisia tridentata*). Upon this plant, in its thrifty growth, the bird apparently depends absolutely, for food, especially at critical times of the year, and for shelter.

Oreortyx picta palmeri Oberholser
Coast Mountain Quail

Synonyms—Ortyx picta, part; *Lophortyx plumifera*, part; *Callipepla picta*, part; *Oreortyx pictus*, part; *Oreortyx picta plumifera*, part; *Oreortyx picta picta*, part; Plumed Quail, part; Plumed Partridge, part; Mountain Partridge, part; Plume Mountain Partridge; Painted Partridge; Mountain Quail, part; Painted Quail; Northwestern Mountain Quail.

Status—Resident. Common in but a few places; mostly of sparse and interrupted occurrence. Has disappeared in some areas where at one time considered plentiful; for example, in parts of Sonoma County.

Geographic range—Northwest coast belt, from Oregon line in Del Norte County south as far as northwestern San Luis Obispo County (here doubtfully referable to this subspecies). But this north-south range is discontinuous: at San Francisco Bay,

where there are no authenticated records for Marin, San Francisco, Alameda, Contra Costa, Santa Clara or San Mateo counties, and at Monterey Bay, where there is a hiatus covering southern Santa Cruz County and northern Monterey County. Of somewhat doubtful occurrence, formerly, in Santa Cruz Mountains (McGregor, Pac. Coast Avif. No. 2, 1901:5). Eastward limit southerly, east side of Santa Lucia Mountains, west of Salinas Valley, in Monterey County, and inner coast range west of Vacaville, Solano County. At north, extends east at least to South Fork Mountain and Helena, in Trinity County (Mus. Vert. Zool.). Life-zone, mainly Transition. Altitudinal range, from near sea level, as near mouth of Gualala River, in Mendocino County, up to 5600 feet, as on Santa Lucia Peak, Monterey County. Selected references: Adams, Del Norte County (Kimball, Condor, 24, 1922:96); Ukiah Valley, Mendocino County (Bendire, Life Hist. N. Amer. Birds, 1, 1892:13); Sonoma, Napa and Solano counties (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:75); Santa Lucia Peak, Monterey County (Pemberton and Carriger, Condor, 17, 1915:193); in general (Grinnell, Bryant and Storer, Game Birds Calif., 1918:513; McLean, Calif. Div. Fish and Game, Game Bull. No. 2, 1930:7); for taxonomy, see note under *O. p. eremophila.*

Habitat—Mountain-side brushland, mixed or broken deciduous woods, and edges of coniferous forests. More prone than California Quail to keep to continuous, heavy chaparral cover, as of manzanita.

Oreortyx picta picta (Douglas)
Sierran Mountain Quail

Synonyms—Ortyx picta, part; *Ortyx* [or *Ortix*] *plumifera*, part; *Callipepla picta*, part; *Oreortyx picta* [or *pictus*], part; *Oreortyx picta plumifera*, part; *Oreortyx picta confinis*, part; Plumed Quail, part; Plumed Partridge, part; Mountain Quail, part; Mountain Partridge, part; San Pedro Quail, part.

Status—In general, resident; but a partial vertical migration (on foot) takes place in autumn locally, from levels of heavy snow down to lower ones in foothills, with return movement in spring. As to numbers, common, where conditions most favorable, to sparse, marginally. For most part, numbers holding up fairly well, in face of hunting, because of difficulty of access of hunters to habitat.

Geographic range—In general, northern and central Sierra Nevada; north to Oregon line in Siskiyou Mountains, Siskiyou County; east to Warner Mountains, Modoc County; toward west, south from Trinity Mountains through inner coast ranges at least to Snow Mountain, in western Colusa County and Mount Sanhedrin, northeastern Mendocino County; south through Sierra Nevada as far as about latitude 37°, in Madera County. (About here, intergradation with race *eremophila* occurs; see van Rossem, Condor, 39, 1937:22.) While living on both flanks of central Sierra Nevada, most numerous on western slope. Life-zones, Transition and Canadian, latter especially in summer season. Altitudes of occurrence extend from as low as 2000 feet, near Redding, Shasta County, up to 9500 feet, in Yosemite National Park. Sample localities of occurrence: Seiad Valley, Siskiyou Mountains, Siskiyou County (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:6); 8 miles west of Yreka, same county (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:85); Mount Sanhedrin, Mendocino County, and Fout's Springs, Colusa County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919:294); Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:110); Warner Mountains, Modoc County (Mailliard, Proc. Calif. Acad. Sci.,

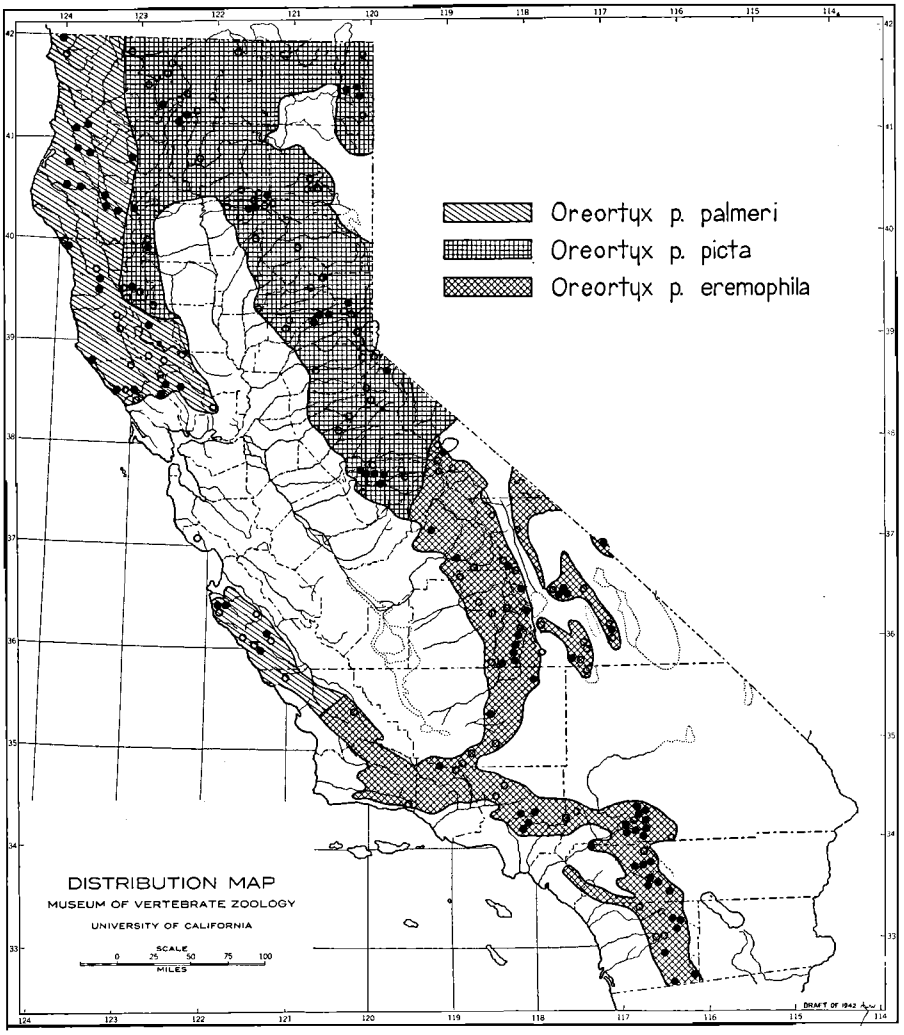

Fig. 4. Distribution of the subspecies of Mountain Quail, *Oreortyx picta*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

ser. 4, 16, 1927:294); Baird, Shasta County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:199); Lassen section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:211); Stanfield Hill, Yuba County (Belding, Condor, 5, 1903:18); Fyffe and Mount Tallac, Eldorado County (Barlow and Price, Condor, 3, 1901:158); Bloods, Alpine County (Keyes, Condor, 7, 1905:14ff.); Yosemite Valley and vicinity, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:267; Wright, Yosemite Nature Notes, 7, 1928:8; Garrison, *ibid.*, 16, 1937:64). Some general references (Belding, Zoe, 3, 1892:233; Judd, U. S. Dept. Agr., Biol. Surv., Bull. 21, 1905:58; Grinnell, Bryant and Storer, Game Birds Calif., 1918:504ff.; Dawson, Birds Calif., 4, 1924:1570ff.; McLean, Calif. Div. Fish and Game, Game Bull. No. 2, 1930:7ff.; Bent, U. S. Nat. Mus., Bull. 162, 1932:43ff.

Habitat—Brushy mountain-sides; perhaps best, slopes clothed with mixed brush (manzanita, snow-brush, chinquapin, etc.) and broken forest (firs, pines, black oaks, etc.).

Oreortyx picta eremophila van Rossem
Southern California Mountain Quail

Synonyms—Callipepla picta, part; *Oreortyx picta* [or *pictus*], part; *Oreortyx picta plumifera*, part; *Oreortyx picta confinis*, part; *Oreortyx picta picta*, part; Plumed Quail, part; Plumed Partridge, part; Mountain Partridge, part; Mountain Quail, part; San Pedro Quail, part.

Status—Mainly resident; but more or less, autumnal, down-mountain movement (on foot) takes place locally on the higher mountain masses, with return in spring. In other words, lowest altitudinal records are for midwinter, highest for midsummer. In the main, numbers seem to have held up well, save around remote desert-side springs where, in some arid ranges, completely shot out.

Geographic range—Mountains of southern California in general. Northwest from Mexican boundary in San Diego County to southern San Luis Obispo County; east through Tehachapi country to southern Sierra Nevada and thence north along west flank of Sierra to Fresno County and on east flank to vicinity of Mono Lake about latitude 38°; east, interruptedly, in Inyo region to Inyo, Coso, Argus, Panamint and Grapevine mountains. Life-zones, Transition and Canadian (the latter, for most part, in summer only); enters Upper and even Lower Sonoran locally, as on eastern base of San Jacinto Mountains, in Riverside County, and in mountains of Inyo County. Altitudes of known breeding occurrence extend from 1500 feet in San Rafael Hills, west of Pasadena, up to an extreme of 10,000 feet on west side of Olancha Peak, Tulare County. Selected references to representative localities: head of Owens River, Mono County, and Inyo, Coso, Argus and Panamint mountains, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:26); Grapevine Mountains, Inyo County, in 1940 (A. H. Miller MS); Kings Canyon region, Fresno County (J. S. Dixon, Condor, 45, 1943:208); Mineral King, Tulare County (Van Denburgh, Proc. Acad. Nat. Sci. Phila., 1898:208); mountains near Santa Barbara, Santa Barbara County (Streator, Ornith. and Ool., 9, 1886:67); Mount Pinos, Ventura County (Grinnell, Auk, 22, 1905:381); vicinity of Pasadena, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:19); San Bernardino Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:228); Santa Ana Mountains, Orange County (Swarth MS); Volcan Mountains, San Diego County (Bendire, Life Hist., 1, 1892:14). Some general accounts: Willett, Pac. Coast Avif. No. 21, 1933:50 and references cited under *Oreortyx p. picta.*

Habitat—Brushy canyon walls and hillsides; mixed growths of deciduous or coniferous trees and scattered patches of bushes, such as of snow-brush and manzanita; desertwards, often mixture of sage-brush, piñon and juniper, but always within daily reach of water. Undisturbed access (on foot) to perennial springs is an essential factor for existence on desert mountain ranges.

Note—We have here followed, for the subspecies, the latest review, by van Rossem (Condor, 39, 1937:20-24, fig. 7 [map]), but with misgivings. Certainly the amount of variation locally and individually prevents any trenchant definition of subspecific range, as between *palmeri* and *picta* or *picta* and *eremophila*. The positions of the inter-racial lines as here indicated are largely arbitrary.

Lophortyx californica californica (Shaw and Nodder)
Valley California Quail

Synonyms—*Tetrao californicus*; *Ortyx californica*, part; *Perdix californica*, part; *Lophortyx californica*, part; *Callipepla californica*, part; *Callipepla californica vallicola*, part; *Lophortyx californica vallicola*, part; Crested Partridge; California Partridge, part; Californian Crested Quail, part; California Quail, part; California Valley Quail, part; Valley Partridge, part; Valley Quail, part.

Status—Resident. As to numbers, varyingly common to abundant in favorable territory where not "shot out"; marginally (toward desert or upward toward limit of altitudinal range), irregular in numbers from year to year and less continuously distributed. Trend of aggregate population numbers in past 35 years definitely downward.

Geographic range—In general, California below level of heavy winter snows, west of the deserts and main Sierra Nevada, and, north of Monterey Bay, interiorly from coastal fog belt. Extends north to Oregon line in Modoc County and in Siskiyou County east of Siskiyou Mountains, east to Nevada line in Modoc and Lassen counties, and south to Mexican line in San Diego County. This race does not occur on any of the islands save by introduction (as on San Clemente Island). Life-zone, characteristically Upper Sonoran; extends marginally down into Lower Sonoran and up into Transition. Altitudinally, ranges from near sea level, as at Santa Barbara, up as high as 8500 feet on Mount Pinos, Ventura County. As to eastward range in southern section, formerly or sporadically to desert oases as far as Lone Willow and Leach Point springs, northern San Bernardino County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:28), and down Mohave River, at least back in the 1860's, to its sink, in middle San Bernardino County. Easternmost "natural" edge of range farther south, southeastern flank of Santa Rosa Mountains, Riverside County, and vicinity of Jacumba, San Diego County. The distributional picture is now extraordinarily confused by reason of the planting of quail stocks in new places and transplanting them from place to place within original range; this process has been going on of late even more actively than in 1915 (see Grinnell, Pac. Coast Avif. No. 11, 1915:59). This policy, on the part of sportsmen's agencies, supposedly making for more game to be shot, has even led to the introduction of quail of another subspecies (see under *Lophortyx californica plumbea*); subspecific features of endemic populations are probably thereby being perverted. Literature concerning California Quail (races usually confused) is voluminous. Clue to most of it, as well as partial summarizations, will be found in the following publications: Grinnell, Bryant and Storer, Game Birds Calif., 1918:514ff.; Dawson, Birds Calif., 4, 1924:1575ff.; McLean, Calif. Div. Fish and Game, Game Bull. No. 2, 1930:14ff.; Bent, U. S. Nat. Mus., Bull. 162, 1932:59, 62ff.; E. L. Sumner, Jr., Calif. Fish and Game, 21, 1935: 167ff.; Glading, Calif. Fish and Game, 24, 1938:318ff.; Emlen, Jour. Wildlife Man., 3, 1939:118ff., and *ibid.*, 4, 1940:92ff.; Glading, Biswell and Smith, Jour. Wildlife Man., 4, 1940:128ff.; Emlen and Lorenz, Auk, 59, 1942:369ff.

Habitat—Broken brushland; low vegetative cover of "interspersed" character, as where chaparral, to meet the safety-refuge requirement, adjoins weedy ground or grassland affording forage. Additional needed features of environment are presence of stiff-twigged, dense-foliaged trees for night-roosting, and, in the dry season, fresh water within distance reachable in the daily cruising of the quail (see Sumner, *op. cit.*, 277ff.).

Note—Separation of the populations of Modoc County as a distinct race, *L. c. orecta*, Oberholser seems ill-founded (see van Rossem, Auk, 56, 1939:69; A. H. Miller, Condor, 43, 1941:259).

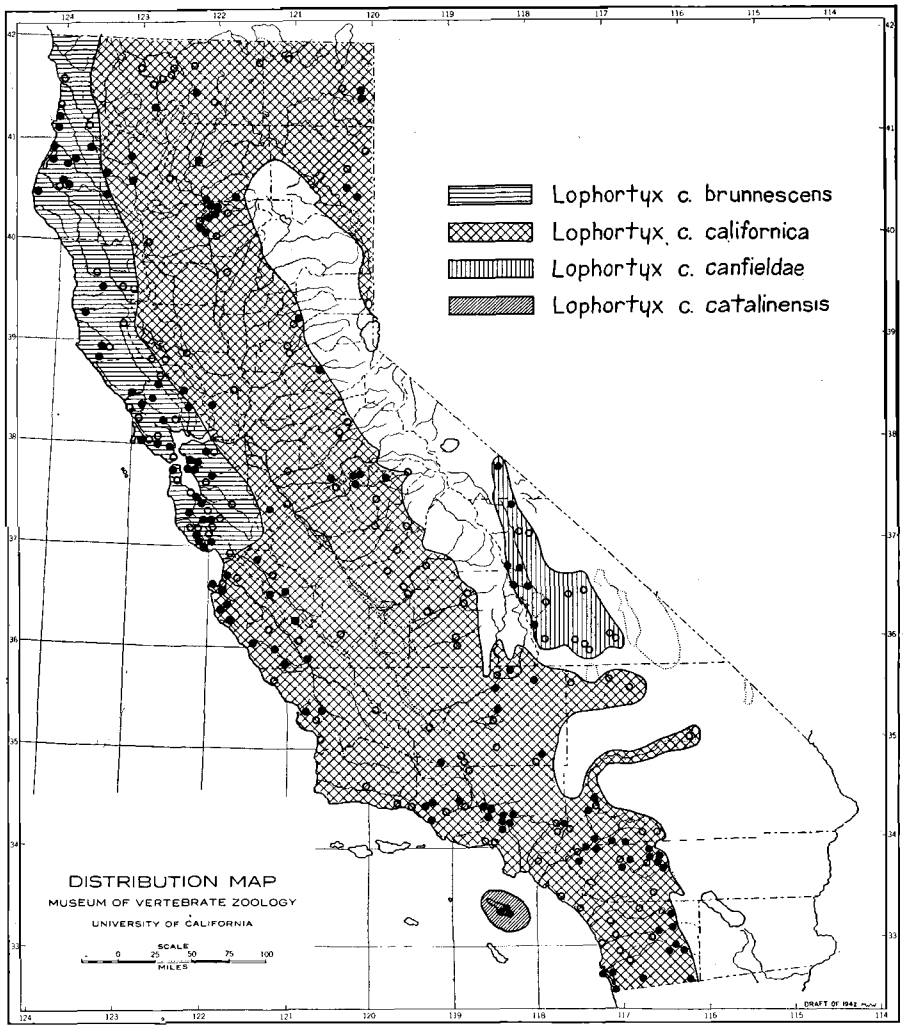

Fig. 5. Distribution of the subspecies of California Quail, *Lophortyx californica*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature. Areas known to be populated solely through introduction are excluded from consideration.

Lophortyx californica brunnescens Ridgway

Coast California Quail

Synonyms—*Ortyx californica*, part; *Perdix californica*, part; *Lophortyx californica*, part; *Callipepla californica*, part; *Lophortyx californica vallicola*, part; *Lophortyx californica californica*, part; Californian Crested Quail, part; California Quail, part; Brown-backed California Quail; California Partridge, part; Valley Quail, part; California Valley Quail, part.

Status—Resident. In metropolis of range, abundant under normal conditions; toward north, becomes less numerous and more interrupted in occurrence. Numbers and extent of range locally vary greatly from year to year; but general tendency in this race

seems for total population at least to hold its own; factors, favorable or unfavorable, are many (see E. L. Sumner, Jr., Calif. Fish and Game, 21, 1935:167ff.).

Geographic range—Narrow northwest coast belt, chiefly within reach of summer fogs, from near Oregon line in Del Norte County south through Santa Cruz County. Some interiorward stations represented by specimens examined (not likely to have been "transplants"): upper Mad River valley, in extreme western Trinity County; Mount Sanhedrin, Mendocino County; Mount Saint Helena, Napa County; Mount Diablo, Contra Costa County. Entire San Francisco Bay region coastward from Napa and Mount Hamilton ranges is thought to have belonged to this race under original conditions, that is, until transplanting of stocks began. Life-zones, Transition and Upper Sonoran. Altitudinally, ranges from near sea level up to at least 2700 feet, as near Sherwood, Mendocino County. For references to literature, see under *L. c. californica*. Additionally, the following recent references are of special significance: Price, Condor, 33, 1931:3ff. (flocking), and *ibid.*, 40, 1938:87 (male incubating); Compton, Condor, 33, 1931:249 (breeding in midwinter in Humboldt County); Hunter and Fry, Calif. Fish and Game, 26, 1940:316; Price and Danforth, Condor, 43, 1941:253 (pale variants).

Habitat—Brushland of interrupted kind, whether hillside or riparian; an intermixture of safety-providing thickets or tangles and near-by open ground for foraging. Forest or heavy chaparral is avoided.

Note—The belt of intergradation between the races *brunnescens* and *californica* as originally obtaining is impossible accurately to define from any material in hand; and because of restocking, and resulting racial intermixing, it is now likely to remain but obscurely known. The rather general picture of subspecific range here given is, however, probably correct. For nomenclature, see Grinnell, Condor, 33, 1931:37.

Lophortyx californica canfieldae van Rossem
Inyo California Quail

Synonyms—Callipepla californica vallicola, part; *Lophortyx californica vallicola*, part; Valley Quail, part.

Status—Resident. Common locally.

Geographic range—Owens Valley north to Benton, Mono County, and eastward, scatteringly, in mountains of Inyo County to west side of Death Valley; specifically recorded from White, Inyo, Coso, Argus and Panamint mountains. Life-zones, Upper Sonoran and Lower Sonoran. Ranges altitudinally from 3500 feet up to 8400 feet (see A. K. Fisher, N. Amer. Fauna No. 7, 1893:28; van Rossem, Auk, 56, 1939:68).

Habitat—Riparian and spring-side brush, primarily composed of willows, and, for foraging, adjoining sage-brush land.

Note—The position of the boundary between this race and *L. c. californica* to the south has not been ascertained; a probable dividing line is indicated on the map (fig. 5).

Lophortyx californica catalinensis Grinnell
Catalina Island California Quail

Synonyms—Lophortyx californicus, part; *Callipepla californica vallicola*, part; *Lophortyx catalinensis*; *Lophortyx californica vallicola*, part; California Quail, part; Valley Partridge, part; Catalina

Island Quail; Santa Catalina Partridge; Catalina Quail; Santa Catalina Island California Quail; Valley Quail, part.

Status—Resident. Common to "abundant."

Geographic range—Santa Catalina Island. Some references: Grinnell, Auk, 23, 1906:262; Dickey and van Rossem, Condor, 24, 1922:34; Grinnell, Bryant and Storer, Game Birds Calif., 1918:537; McLean, Calif. Div. Fish and Game, Game Bull. No. 2, 1930:14. Apparently introduced and established on Santa Rosa Island (specimens, 1941, Mus. Vert. Zool.).

Habitat—Hillsides and ravine bottoms where grown more or less thickly to brush-plants of several kinds. Shady north slopes where growth of certain bushes is taller are especially favored, as also places where tracts of brush are interspersed with patches of tuna cactus.

Lophortyx gambelii gambelii Gambel

Southern Gambel Quail

Synonyms—Callipepla venusta; *Callipepla gambeli*; *Lophortyx gambelii*; *Callipepla gambeli deserticola*; *Lophortyx gambeli deserticola*; Gambel Partridge; Gambel Quail; Desert Partridge; Desert Quail.

Status—Resident. Locally abundant. With extention of accessible water supply in certain parts of the desert, as through irrigation, the area inhabited by this bird has been enlarged; this is notably true in the Imperial Valley.

Geographic range—In general, Colorado and Mohave deserts. North in Colorado Valley from Mexican border in Imperial County to vicinity of Needles, San Bernardino County; west on Colorado Desert from Colorado River to Coyote Wells, Imperial County, and Borego Valley, northeastern San Diego County; northwest through Salton Sea region as far as Whitewater, Cabezon, and even Banning, Riverside County; on Mohave Desert, west to Mohave River, as at Victorville and Hesperia, and north as far as valley of Amargosa "River," Inyo County [now to Death Valley, though not for certain native there]. The fact that earliest travellers, for example Heermann (Pac. R. R. Rept., 10, pt. 4, no. 2, 1859:60), found this quail along the Mohave River shows the species was native there. Life-zone, Lower Sonoran. Altitudes of occurrence, from —200 feet, near Mecca, Riverside County, up to as high as 5400 feet, at 5 miles northeast of Granite Well, Providence Mountains, San Bernardino County (Mus. Vert. Zool.). Along the western edge of its range this quail occurs at some points on common ground with the California Quail, and occasionally hybrids between the two species have been found there. Records have been made of Gambel Quail at several points west of the desert divides; but these occurrences probably were all the result of introductions such as have been made in sportsmen's presumed interests, far and wide, in western and even northern California. The only extralimital place of actual establishment we know of (in 1944) is San Clemente Island. Citations to literature that afford most of basis for above statements are: A. K. Fisher, N. Amer. Fauna No. 7, 1893:29; Thurber, Auk, 13, 1896:265; Gilman, Condor, 9, 1907:148; Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:231; Grinnell, Bryant and Storer, Game Birds Calif., 1918:538ff.; Abbott, Condor, 30, 1928:163; McLean, Calif. Div. Fish and Game, Game Bull. No. 2, 1930:37ff.; Huey, Condor, 34, 1932:46; Bent, U. S. Nat. Mus.,

Bull. 162, 1932:73; True, Calif. Fish and Game, 19, 1933:23, 249; Willett, Pac. Coast Avif. No. 21, 1933:49.

Habitat—Thickets and adjacent more or less open ground, usually where within reach of water (permanent springs or streams) for daily use, at least during certain seasons of year. Tracts or clumps of mesquite, screwbean, catclaw and a certain kind of saltbush (*Atriplex lentiformis*) each provides suitable safe cover and other favoring factors for this quail. The aggregate area of such cover in a given locality seems to govern the size of the quail population there.

Grus canadensis canadensis (Linnaeus)
Lesser Sandhill Crane

Synonyms—Grus mexicana, part; *Grus canadensis*, part; *Megalornis canadensis*; Sandhill Crane, part; Little Crane; Little Brown Crane.

Status—Known chiefly as more or less common migrant; passes south in late September and during October, north in March and April. But also, flocks winter in San Joaquin Valley and Imperial Valley, and, at least formerly, in Los Angeles region. Numbers, in aggregate, obviously reduced in last 30 years; "thousands" not now to be seen.

Geographic range—In migration, traverses entire length of State, save that we have no record from coast belt north of Marin County and west of longitude of upper Sacramento Valley. Seen in flight otherwise, widely, both east and west of Sierran divides, and also through certain passes in these divides. Normally avoids immediate seashore; and there is no record from any of the islands. Some definite records of wintering are as follows: San Rafael, Marin County, and San Francisco, in the 1840's (Buturlin, Condor, 12, 1910:80); Los Baños, Merced County (Grinnell, Bryant and Storer, Game Birds Calif., 1918:276; Mailliard, Condor, 23, 1921:30; McLean, Condor, 32, 1930: 3); Corcoran, Kings County (Swarth, Condor, 21, 1919:213); Riverside and Corona, Riverside County [and other southern California records reviewed] (Willett, Pac. Coast Avif. No. 21, 1933:51); south end of Salton Sea, Imperial County (Abbott, Condor, 42, 1940:264). Sight records from the Colorado River valley likely, at least in part, belong here. For notes on migration in Surprise Valley, Modoc County, see Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:288.

Habitat—When foraging, open grassland and grain fields, often far from water. Also resorts to untimbered margins of large rivers and fresh-water lakes.

Grus canadensis tabida (Peters)
Greater Sandhill Crane

Synonyms—Megalornis mexicana; *Grus canadensis*, part; *Grus pratensis*; *Grus canadensis mexicana*; *Grus mexicana*, part; *Megalornis canadensis tabida*; *Megalornis canadensis mexicanus*; Great Brown Crane; Brown Crane; Sandhill Crane, part.

Status—Resident within the State. Formerly common in interior and northern portions; now numbers small, and breeding range greatly reduced. Probably some increment from north among the aggregate numbers which winter.

Geographic range—As breeding, northeastern plateau region, west (formerly) to eastern Siskiyou County and northeastern Shasta County, and south to Honey Lake Valley, Lassen County. Also, though not proven to have been nesting, observed sparsely in summer of earlier years south through Great Valley as far as neighborhood of Buttonwillow, Kern County (Grinnell, Bryant and Storer, Game Birds Calif., 1918:279ff.; *et al.*). Definite breeding records are: Fort Crook, Shasta County, in 1860 (Coues, Birds Northwest, 1874:534; Ridgway, U. S. Nat. Mus., Bull. 27, 1883:156); vicinity of Eagleville, Modoc County, in 1912 and 1924 (Dawson, Birds Calif., 3, 1924:1529; Mailliard, Condor, 26, 1924:216, and Proc. Calif. Acad. Sci., ser. 4, 16, 1927:289); Jess Valley, Modoc County, in 1931 (Mus. Vert. Zool.); near Alturas, Modoc County, in 1926 (Hoffmann, Condor, 29, 1927:118). Winters chiefly in Sacramento Valley from Tehama County southward, but also in San Joaquin Valley and sparingly south to Imperial Valley. Specimen-backed winter records are: Gridley, Butte County, February 28, 1924 (Mus. Vert. Zool.); Butte Creek Basin, near Colusa, Colusa County, October 28, 1923, October 11 and November 30, 1924 (Mus. Vert. Zool.); 6 miles west of Pennington, Sutter County, December 17, 1936 (Calif. Acad. Sci.); Los Baños, Merced County, January 20, 1898, and February 27, 1909 (Mailliard, Condor, 23, 1921:31); Corcoran, Kings County, November 17, 1918 (Swarth, Condor, 21, 1919: 213); southern end of Salton Sea, Imperial County (Abbott, Condor, 42, 1940:264). Sight record of cranes (possibly of this race) near ocean shore-line: Piedras Blancas Point, San Luis Obispo County, January 4, 1930 (Grinnell MS). According to Willett (Pac. Coast Avif. No. 21, 1933:51) none of the sight records of cranes from coastal southern California is surely pertinent to the Greater Sandhill rather than to the Lesser Sandhill. Indeed, for the entire State, relatively few of the published records can be assigned subspecifically.

Habitat—In summer, open terrain in vicinity of elevated shallow lakes or freshwater marshlands; in winter, plains and valleys, usually in neighborhood of bodies of fresh water.

Rallus longirostris obsoletus Ridgway

California Clapper Rail

Synonyms—Rallus elegans, part; *Rallus elegans obsoletus*; *Rallus longirostris*; *Rallus obsoletus*; *Rallus obsoletus obsoletus*; King Rail, part; Red-breasted Rail; Marsh Hen; Clapper Rail, part; California King Rail.

Status—Resident; locally abundant. In days of market-hunting became much reduced in numbers and in extent of territory occupied; with passage of protective laws, in 1913, increase soon manifested, until now (1944) much of former status has been regained, save as extensive areas of the bay marshes have been transformed from their original condition for human use.

Geographic range—Metropolis, marshes of south arm of San Francisco Bay, in counties of Alameda, Santa Clara, and San Mateo; formerly, and in part again recently, marshes on northern and eastern sides of this bay, in Marin, Sonoma, Napa, Contra Costa and extreme western Solano counties. Also, in lesser numbers at Tomales Bay (Brooks, Condor, 42, 1940:126) and in marshes bordering Monterey Bay, as near Elkhorn Slough, Monterey County (Silliman, Condor, 17, 1915:201). For general accounts, see Grinnell, Bryant and Storer, Game Birds Calif., 1918:283ff.; Bent, U. S.

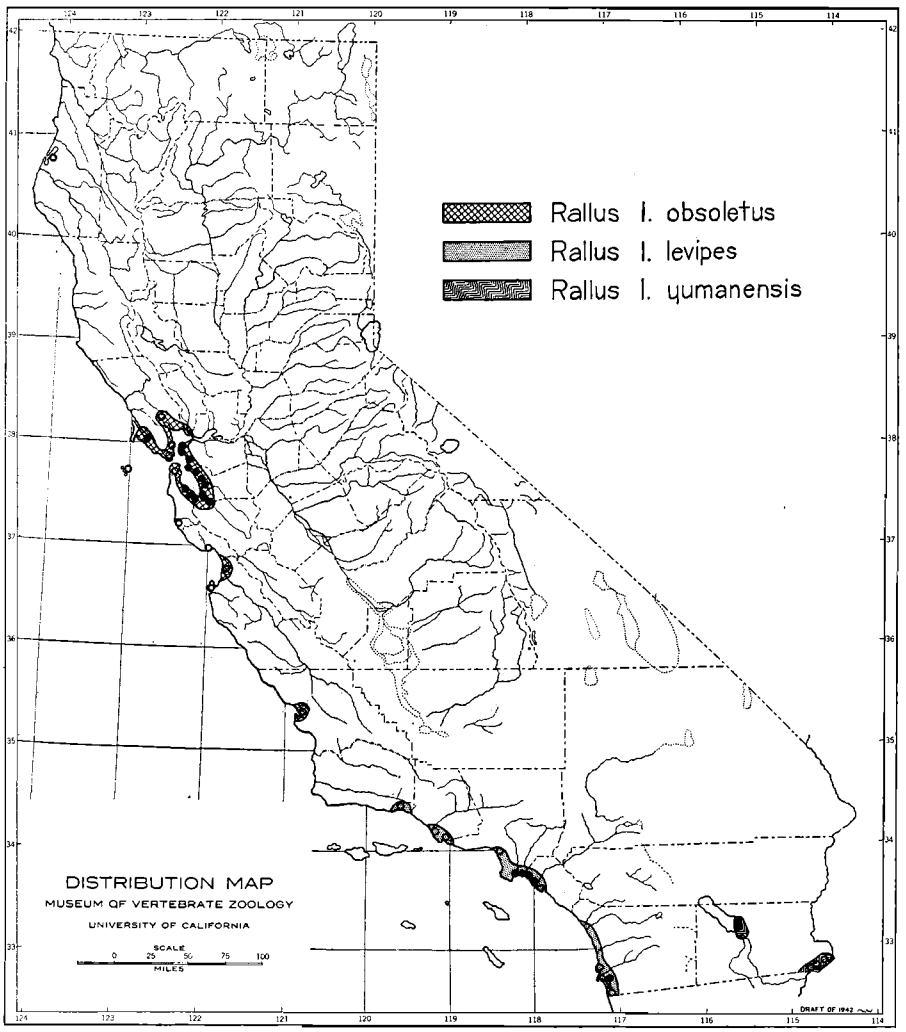

Fig. 6. Distribution of Clapper Rails, *Rallus longirostris*, in California. Shading indicates areas of resident establishment; localities shown outside these areas represent vagrants and pioneers. Dots mark stations from which specimens have been examined; circles, localities reported in the literature.

Nat. Mus., Bull. 135, 1926:267ff.; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927: 62; De Groot, Condor, 29, 1927:259ff. Even so sedentary a bird as the Clapper Rail shows proneness to wander. In autumn, especially, individuals appear at places well away from salt marshes (Linsdale, Condor, 38, 1936:216; anonymous, Gull, 19, 1937:March [p. 2]; Orr, Condor, 41, 1939:152); "pioneers" have been observed singly even on the rocky or sandy, outer ocean shore of San Mateo County, November 17, 1936, and at Pescadero Marsh, April 2, 6, 1936 (Littlejohn MS; Orr, Amer. Midl. Nat., 27, 1942: 301), at Santa Cruz, Santa Cruz County, 1939-40 (C. P. Streator MS), and at Pacific Grove, Monterey County, October, 1916 (Kimball, Condor, 24, 1922:96). There are records from Humboldt Bay [three occurrences cited, but dates not available] (Storer,

Condor, 17, 1915:98), and a straggler has reached even the Farallon Islands, November 18, 1886 (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:42). Birds taken at Morro Bay (Brooks, *loc. cit.*) may represent a small resident population; of somewhat doubtful racial status, these specimens have been referred to *R. l. obsoletus*.

Habitat—Exclusively salt-water marshes traversed by tidal sloughs. Usually associated with abundant growths of pickle-weed (*Salicornia*), but feeds out from cover, on molluscs obtained from the mud-bottomed sloughs (see Williams, Condor, 31, 1929: 52ff.; Moffitt, Condor, 43, 1941:270; Test and Test, Condor, 44, 1942:228).

Rallus longirostris levipes Bangs
Light-footed Clapper Rail

Synonyms—Rallus elegans, part; *Rallus obsoletus*, part; *Rallus levipes*; *Rallus obsoletus levipes*; *Rallus elegans levipes*; King Rail, part; California Clapper Rail, part; Southern California Clapper Rail; Bangs Rail; Clapper Rail, part; Light-footed Rail; Southwestern Clapper Rail; Los Angeles Clapper Rail.

Status—Resident; formerly "common in all coastal marshes, but now [despite protection from hunting], because of drainage of some marshes and pollution of others by oil, much more restricted" in occurrence and fewer in numbers (see Willett, Pac. Coast Avif. No. 21, 1933:52).

Geographic range—Coastal salt marshes from Santa Barbara (formerly, at least in 1875) to San Diego. At present time, not known from northwest of Ventura region (Point Mugu and Hueneme, L. Miller MS). Distribution markedly interrupted (see van Rossem, Condor, 31, 1929:213). For general account see: Grinnell, Bryant and Storer, Game Birds Calif., 1918:289ff. Subsequent accounts: Edwards, Oologist, 39, 1922:60; Dawson, Birds Calif., 3, 1924:1533ff.; Bent, U. S. Nat. Mus., Bull. 135, 1926:272ff.

Habitat—Salt-water marshlands traversed by tidal sloughs, where usually the pickle-weed (*Salicornia*) is a conspicuous plant. One nesting record from an inland marsh grown to "reeds": Nigger Slough, Los Angeles County (Willett, Condor, 8, 1906:151).

Rallus longirostris yumanensis Dickey
Yuma Clapper Rail

Synonyms—Rallus yumanensis; *Rallus obsoletus yumanensis*; *Rallus elegans yumanensis*.

Status—Evidently resident, but only summer occurrences (May and June) so far have been recorded. Known range very restricted and aggregate numbers probably small.

Geographic range—Valley of lower Colorado River in Imperial County, from Laguna Dam to Yuma (Dickey, Auk, 40, 1923:90; Bent, U. S. Nat. Mus., Bull. 135, 1926:275; van Rossem, Condor, 31, 1929:215), and marshes at southeastern end of Salton Sea, same county (Moffitt, Condor, 34, 1932:137; Abbott, Condor, 42, 1940: 264; Mus. Vert. Zool.).

Habitat—Fresh-water or brackish stream-sides and marshlands. Associated with heavy riparian and swamp vegetation.

Rallus limicola limicola Vieillot
Northern Virginia Rail

Synonyms—Rallus virginianus; *Rallus virginianus pacificus*; *Rallus limicola pacificus*; *Rallus limicola zetarius*; *Rallus limicola*; Virginia Rail; Pacific Virginia Rail; Western Virginia Rail.

Status—Resident within the State, but populations of northern and more elevated sections withdraw to more southern and lower portions for winter season. Common in suitable habitat, but the reduction of this obviously has meant commensurate reduction in aggregate numbers of the inhabitants.

Geographic range—In summer, from Oregon line nearly or quite to Mexican line in San Diegan district and from coast to eastern boundary. Life-zones, Lower Sonoran to Transition, occasionally Canadian. Has been found breeding from near sea level, as at Lake Merced, San Francisco (Ray, Condor, 18, 1916:223) up to as high as 6800′ feet on McGee Creek, Mono County (Rowley, Condor, 41, 1939:248). In northwest coast belt, there are few records north of Sonoma County: Crescent City, Del Norte County, in early October (Ferry, Condor, 10, 1908:39), and Big Lagoon, Humboldt County, molting immature, September 19 (Mus. Vert. Zool.). Southernmost definite record of nesting, from Ramona, San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:52). Birds in breeding condition taken at southeastern end of Salton Sea, Imperial County, May 9-18 (Mus. Vert. Zool.). While wintering regularly in Great Valley and in central and southern coast district, some individuals at that season also frequent suitable spots in the southeastern, desert portion of the State, such as Saratoga Springs, San Bernardino County, February 3, 1891 (A. K. Fisher, N. Amer. Fauna No. 7, 1893: 21), and Mecca, Riverside County, January 26, 1936 (Clary and Clary, Condor, 38, 1936:125). There are no records, known to us, from any of the islands. Some additional localities and references: Yreka, breeding, and Tule Lake, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:20; Bond, Condor, 41, 1939:54); Lassen section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:214); Blue Lakes, Lake County, August 29 (Mus. Vert. Zool.); Benicia, Solano County (Stoner, Condor, 39, 1937:222, 227); Smith Creek, near Coulterville, and Yosemite Valley, Mariposa County (McLean, Condor, 18, 1916:229; Grater, Yosemite Nature Notes, 22, 1943:87); in general (Grinnell, Bryant and Storer, Game Birds Calif., 1918:219ff.).

Habitat—Chiefly fresh-water marshes, but also, locally, borders of salt marshes. A very small extent of marshland, if including a bit of open water and this bordered at least in part with cattails and sedges, will often suffice to hold a pair through the nesting season.

Note—For evidence against recognition of a western race, see Ridgway and Friedmann, Birds N. M. Amer., 9, 1941:91.

Porzana carolina (Linnaeus)
Sora Rail

Synonyms—Sora; Common Rail; Carolina Rail.

Status—Resident one place or another within the State; in summer, common and widely distributed, but in winter a share of the population (all of it at north and at higher altitudes) moves southward, apparently entirely out of our bounds. No change

in aggregate numbers, historically, manifest, save as caused by reclamation of marshlands.

Geographic range—In summer, entire length and breadth of State, wherever suitable conditions are afforded. Life-zones, Lower Sonoran through Transition. Altitudinally, breeds from sea level, as at Alvarado, Alameda County (H. C. Bryant, Calif. Fish and Game, 1, 1915:193, 194) up to as high as 6225 feet, at south end of Lake Tahoe, Eldorado County (Ray, Condor, 15, 1913:112), 6500 feet at Mono Lake, Mono County (Wood, Condor, 45, 1943:201), and even to 6700 feet, at Bear Lake, San Bernardino Mountains (Pierce, Condor, 18, 1916:178; Willett, Pac. Coast Avif. No. 21, 1933:52); vagrant taken at Bullfrog Lake, 10,634 feet, Fresno County, August 29 (J. S. Dixon, Condor, 45, 1943:208). At times of migration, turns up at desert oases, such as in Death Valley, Inyo County (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:58); and winters along Colorado River, as at Potholes, Imperial County (Howell and van Rossem, Condor, 17, 1915:233), and along Alamo River, Imperial County (van Rossem, Condor, 13, 1911:131). An exceptional instance of northern wintering is for mouth of Mad River, Humboldt County, November 24, 1885 (Townsend, Proc. U. S. Nat. Mus., 10, 1887:197); otherwise north to Sonoma County (Calif. Acad. Sci.). A straggler or migrant has reached the Farallon Islands, in August, 1890 (Keeler, Zoe, 3, 1892:164), and another, San Clemente Island, in December, 1908 (Linton, Condor, 11, 1909:193). For general account, see Grinnell, Bryant and Storer, Game Birds Calif., 1918:296ff.

Habitat—Typically, fresh-water marshes, wet meadowlands, and margins of slow-flowing streams. In winter, occurs also in salt marshes.

Laterallus jamaicensis coturniculus (Ridgway)
California Black Rail

Synonyms—Porzana jamaicensis; *Porzana jamaicensis coturniculus*; *Porzana coturniculus*; *Creciscus jamaicensis*; *Creciscus coturniculus*; *Creciscus jamaicensis coturniculus*; Black Rail; Pacific Black Rail; Little Black Rail; Farallon Rail; California Black Rail; Farallon Black Crake.

Status—Permanently resident, but much more widely distributed in winter than in summer. Fairly common in but a few places, and not regularly so there; otherwise occurrences are scattered.

Geographic range—In the main, salt marshes bordering the larger bays: Tomales Bay (where noted most frequently) south to San Diego Bay. Actual nesting has been reported only from vicinity of San Diego (many instances) and (one instance) from Chino, San Bernardino County (Hanna, Condor, 37, 1935:81). Main accounts of breeding at San Diego: Stephens, Condor, 11, 1909:47; Ingersoll, Condor, 11, 1909:123; Huey, Condor, 18, 1916:58; Walker, Condor, 43, 1941:246; Heaton, Oologist, 54, 1937:30, 102, and *ibid.*, 55, 1938:130 [40 miles north of San Diego]. General accounts enumerating nearly all published records from the State are: Grinnell, Bryant and Storer, Game Birds Calif., 1918:304; Dawson, Birds Calif., 4, 1924:1549; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:64; Willett, Pac. Coast Avif. No. 21, 1933: 53. These summaries show no occurrence north of Marshall, Marin County, Suisun Marshes, Solano County, and Stockton, San Joaquin County. The last-named is also the interiormost locality for the State. Has been recorded as a vagrant three times on

the Farallon Islands; dates of last two of these, June, 1905 (Calif. Acad. Sci.), December, 1909 (Mus. Vert. Zool.). In southern California, has been found away from the seacoast as far as Riverside and San Bernardino.

Habitat—Chiefly, tidal salt marshes, where associated characteristically with heavy growths of pickle-weed (*Salicornia*). But also occurs in brackish and fresh-water marshes, all at low elevations. Most important hazards to existence on salt marshes appear to be extra high tides.

Coturnicops noveboracensis noveboracensis (Gmelin)
Northern Yellow Rail

Synonyms—Porzana noveboracensis; *Ortygops noveboracensis*; *Coturnicops noveboracensis*; *Coturnicops neveboracensis emersoni*; Yellow Rail; Pacific Yellow Rail.

Status—Winter visitant, probably from northeastward. Judging from paucity of records, rare; but so secretive a bird may easily be overlooked, even in a locality of regular occurrence. Also summer resident east of Sierra Nevada, at least in Mono County.

Geographic range—Known occurrences in winter are mostly for San Francisco Bay region, with scattering ones elsewhere north and south on coastal slope of State; all have been at low altitudes, below 1000 feet. Listed from north to south, the definite records are: Humboldt Bay, pair in 1884 (Townsend, Auk, 3, 1886:491); vicinity of Point Reyes Station, Marin County, six specimens, November 16, 1898, November 20 [= 19?] 1900, October 27, November 24, December 27, 1905 (Mus. Vert. Zool.; Mailliard, Condor, 3, 1901:16); Rincon Valley, Sonoma County, November 17, 1912 (Mus. Vert. Zool.); Sonoma, Sonoma County, December 20, 1898 (Carriger, Bull. Cooper Ornith. Club. 1, 1899:72); Cygnus and Cordelia Slough, Suisun Marshes, Solano County, four specimens, October 19, 1910, December 28, 1910, January 1, 1911, December 8, 1915 (Mus. Vert. Zool.; Littlejohn MS); Martinez, Contra Costa County, December 15, 1863 (Cooper, Proc. Calif. Acad. Sci., 4, 1868:8); Redwood City, San Mateo County, seven specimens, January 2, 1893, December 23, 1894, December 21, 1896, January 22 and October 24, 1897, November 17, 1911, January 4, 1912 (Littlejohn MS); Alameda, Alameda County, two specimens, November 21, 1897, November 7, 1900 (Calif. Acad. Sci.; Cohen, Condor, 3, 1901:185); Alvarado, Alameda County, December 28, 1883 (W. E. Bryant, Forest and Stream, 26, 1886:426; Alviso, Santa Clara County, December 14, 1898 (Calif. Acad. Sci.); Mountain View, Santa Clara County, no date (Calif. Acad. Sci.); Berryessa, Santa Clara County, no date (Cooke, U. S. Dept. Agr., Bull. 128, 1914:32); Los Baños, Merced County, two specimens, November 30, 1911 (Mus. Vert. Zool.); Merced County [Los Baños?], three specimens, November 2, 14, December 30, 1908 (Calif. Acad. Sci.); Shandon, San Luis Obispo County, October 9, 1917 (Mus. Vert. Zool.; H. H. Bailey, Bailey Mus. and Libr. Nat. Hist., Bull. 10, Sept. 1, 1935:3); Santa Barbara, December 26, 1914 (Willett, Pac. Coast Avif. No. 21, 1933:53); Newport Bay, Orange County, December 12, 1896 (Osburn, Condor, 13, 1911:108); Corona, Riverside County, January 31, 1914 (Pierce, Condor, 16, 1914:182). Occurrences at Quincy, Plumas County, April 16 and 24, 1889, April 24, 1894 (H. C. Bryant, Condor, 22, 1920:33; Mus. Vert. Zool.) may be for transients or, possibly, for birds on their nesting ground. Definite breeding records are for Bridgeport Valley, 6500 feet, and Long Valley, 7000 feet, Mono County, nest

and eight eggs found (Dawson, Birds Calif., 3, 1924:1546; Heaton, Oologist, 57, 1940:39).

Habitat—Fresh-water marshlands. Exceptionally, brackish and even coastal salt-marshes.

Gallinula chloropus cachinnans Bangs
North American Black Gallinule

Synonyms—Gallinula galeata; *Gallinula chloropus galeata*; Gallinule; Florida Gallinule; American Gallinule; Red-billed Mud-hen.

Status—Summer resident, March to November; locally fairly common. Some remain through midwinter, even at northern limits of range. Reduction in aggregate numbers about commensurate with shrinkage in total area of preferred habitat; in some measure development of irrigation has offset destruction of marshlands.

Geographic range—Suitable marshlands of Sacramento and San Joaquin valleys, of southern coast district southward from Alameda County to San Diego County, and of Imperial and Colorado River valleys. Life-zones, Lower Sonoran and to lesser extent Upper Sonoran. Northernmost record stations are in Glenn and Butte counties, summer and winter (Neff, Condor, 36, 1934:217); southernmost reported places of summer residence in coastal district, San Pasqual and Lakeside, San Diego County (Sharp, Condor, 9, 1907:86; Peterson, Condor, 43, 1941:75). Record stations to east of coastal divides: 8 miles northwest of Calipatria, Imperial County, birds in breeding condition, May 7-17 (Mus. Vert. Zool.); Colorado River near Laguna Dam, Imperial County, April 18, 1930 (L. Miller, Condor, 32, 1930:210); near Bard, in same area (L. W. Arnold, Condor, 44, 1942:184). There is no record from any of the islands, nor from the coast belt north of Golden Gate Park, San Francisco (Hansen, Condor, 19, 1917:22). Additional records of distributional significance: Suisun Marshes, winter (Stoner, Condor, 40, 1938:185); Mount Eden, Alameda County, immatures evidently locally hatched, July 4, 1904 (Calif. Acad. Sci.); Soap Lake, near Gilroy, Santa Clara County, breeding (Unglish, Condor, 39, 1937:39); Glenn County to Merced County in Great Valley, fall records (Linsdale, Calif. Fish and Game, 24, 1938:33); Fresno district and Firebaugh [breeding], Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:23); Buena Vista Lake, Kern County, eggs (Mus. Vert. Zool.); Elizabeth Lake, Los Angeles County (Heermann, Pac. R. R. Rept., 10, 1859:61); formerly in vicinity of Los Angeles, Nigger Slough, near Redondo, etc., nesting (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:16; Swarth, Condor, 2, 1900:15; Willett, Pac. Coast Avif. No. 21, 1933:54); San Jacinto Lake, Riverside County, eggs (Willett, *loc. cit.*). For general accounts see: Grinnell, Bryant and Storer, Game Birds Calif., 1918:309ff.; Dawson, Birds Calif., 4, 1924:1554ff.; Bent, U. S. Nat. Mus., Bull. 135, 1926:346ff.

Habitat—Tule-grown borders of ponds and sluggish streams of lowlands; closely restricted to fresh-water areas.

Fulica americana americana Gmelin
North American Coot

Synonyms—Fulica americana; Common Coot; American Coot; Mud-hen; Coot.

Status—Permanently resident within the State. In general, abundant, and numbers

holding up through the years; but numbers variable with the seasons: at the north and at higher altitudes the populations there withdraw for midwinter; in western lowlands toward the south, numbers greatly increase in winter. California receives some wintering birds which breed north of this State.

Geographic range—Entire length and breadth of State, from Oregon line to Mexican line, wherever suitable habitat exists. Centers of abundance, both summer and winter, Great Valley and southwestern coastal counties. Altitudinally, has been found nesting from close to sea level, as at Lake Merced, San Francisco County (Ray, Condor, 18, 1916:226), up to 6750 feet, at Bear Lake, San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:54). Life-zones, Lower Sonoran to Transition. Has bred on Santa Cruz Island (Dickey and van Rossem, Condor, 25, 1923:126) and in Deep Springs Valley, Inyo County (Webb, Condor, 41, 1939:36). Has occurred in winter in numbers on Santa Catalina Island (Meadows, Condor, 31, 1929:129); also, in fall, on the ocean around the Farallones (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:42). In season of post-breeding dissemination, and during winter, reaches across deserts to valley of Colorado River and Imperial Valley, where, also there are resident populations. For general accounts see: Grinnell, Bryant and Storer, Game Birds Calif., 1918:313ff.; Dawson, Birds Calif., 4, 1924:1557ff.; Bent, U. S. Nat. Mus., Bull. 135, 1926:358ff.; Jones, U. S. Dept. Int., Wildlife Research Bull. 2, 1940. Other citations bearing significantly on natural history and distribution: habits (Henshaw, Condor, 20, 1918:92; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:215); recovery of birds banded in California (M. T. Cooke, Bird-Banding, 9, 1938:86); preyed upon by Bald Eagle (Kenyon, Condor, 43, 1941:162).

Habitat—Breeds on fresh-water lakes, ponds and slow-moving streams, mostly such as are bordered by thick growths of cattails, tules or rushes. Forages all the year on and near these waters; also prone to appear on any transient rain pool or irrigation overflow, or at any sequestered desert oasis. In winter, visits salt water of sheltered coastal bays and estuaries, and at times may "raft" in such places in large numbers.

Haematopus ostralegus frazari Brewster
Frazar Pied Oyster-catcher

Synonyms—Haematopus palliatus; *Haematopus frazari*; *Haematopus palliatus frazari*; *Haematopus ostralegus bachmani*, part; Pied Oyster-catcher; American Oyster-catcher; Frazar Oyster-catcher.

Status—Occurred formerly as a vagrant, apparently also as an occasional resident, north coastwise to Ventura County. No record since 1910, though this form remains plentiful south of the Mexican line, whence vagrants may be expected to come at any time.

Geographic range—Was probably, at best, much interrupted; included the islands and parts of the mainland coast of the San Diegan district. Definite localities of record: Santa Barbara Island, breeding (Cooper, Proc. Calif. Acad. Sci., 4, 1868:8; Baird, Brewer and Ridgway, Water Birds N. Amer., 1, 1884:112) and specimen taken June 2, 1863, by J. G. Cooper (see Grinnell, Pac. Coast Avif. No. 11, 1915:57); coast of Ventura County, "seen occasionally" and "known to breed," 1879 to 1881 (Evermann, Auk, 3, 1886:92); White's Landing, Santa Catalina Island, one seen February 12, 1910

[somewhat doubtful] (Osburn, Condor, 13, 1911:76); San Diego, specimen taken by J. G. Cooper, May 16, 1862 (Cooper, *loc. cit.*; Baird, Brewer and Ridgway, *loc. cit.*; Grinnell, *loc. cit.*).

Habitat—Open ocean shore, chiefly where rocky; intertidal rock surfaces used as forage grounds.

Note—Although much can be said for combining *H. o. frazari* and *H. bachmanii* in the same species because of evidence of interbreeding of the two in Lower California (Stresemann, Ornith. Monatsberichte, 35, 1927:71), their interrelation might well be more fully investigated before adoption of this change. There seem to be some trenchant differences in behavior and ecologic tolerance (see Bancroft, Condor, 29, 1927:51), and the frequency of hybridization and the fertility of the offspring are not adequately known. If it is decided that a conspecific relation holds, we would logically be forced to view the formerly reported breeding *frazari* in California as individual variants of the form *bachmanii*.

Haematopus bachmanii Audubon
Black Oyster-catcher

Synonyms—Haematopus townsendii; *Haematopus ater*; *Haematopus niger*; *Haematopus ostralegus bachmani*, part; Townsend Oyster-catcher; Bachman Oyster-catcher.

Status—Permanent resident; common locally. Because of interrupted extent of habitat, aggregate numbers not great. Has disappeared in certain neighborhoods where once known, as on the Farallon Islands and around San Pedro.

Geographic range—In general, suitable parts of outer seacoast and adjacent islands the entire length of the State. Localities of record in last three decades include: Castle Rock, Del Norte County (Clay, Condor, 19, 1917:71; Zerlang and Fraser, Condor, 42, 1940:264); Trinidad, Humboldt County (Grinnell, Pac. Coast Avif. No. 11, 1915:57); Tomales Point, Marin County, breeding (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:75; Stephens and Pringle, Birds Marin Co., 1933:15); Cypress Point and vicinity of Point Lobos, Monterey County (Williams, Condor, 29, 1927:80; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:60; C. W. Michael, Condor, 40, 1938:125); north from Port Harford, San Luis Obispo County (Willett, Condor, 11, 1909:186); San Miguel, Anacapa, Santa Barbara, and others of the Santa Barbara group of islands (Willett, Pac. Coast Avif. No. 21, 1933:55; *et al.*). For general account of the Black Oyster-catcher in California, see Grinnell, Bryant and Storer, Game Birds Calif., 1918:57ff.

Habitat—Rocky, open ocean shore, usually where surf beats heavily; forages for invertebrates, chiefly molluscs, on intertidal rock surfaces; nests just above high-tide level on detached rocks.

Squatarola squatarola (Linnaeus)
Black-bellied Plover

Synonyms—Squatarola helvetica; *Charadrius helveticus*; *Charadrius squatarola*; *Squatarola squatarola cynosurae*; Swiss Plover; American Black-bellied Plover.

Status—As to season, chiefly spring and fall migrant; in some years, numbers of individuals remain locally throughout the winter. There are records also, probably of

non-breeders, throughout the summer. At the peaks of migration time, in April and May, and in September and October, common to abundant.

Geographic range—Near vicinity of mainland seacoast the whole length of the State; also interiorly, in San Joaquin Valley, from Buena Vista Lake (A. H. Miller, Condor, 26, 1924:106) north to Stockton (Grinnell, Bryant and Storer, Game Birds Calif., 1918:454). Northernmost recorded wintering station, Eel River, Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:199). Has been recorded from certain of the Santa Barbara group of islands: San Nicolas, San Clemente, Santa Catalina, and Santa Cruz (Howell, Pac. Coast Avif. No. 12, 1917:49). Selected references bearing on habitat and behavior: Grinnell, Bryant and Storer, Game Birds Calif., 1918:452ff.; Dawson, Birds Calif., 3, 1924:1290ff.; C. W. Michael, Condor, 36, 1934: 248, and *ibid.*, 37, 1935:169; Orr, Amer. Midl. Nat., 27, 1942:303.

Habitat—Sandy sea-beaches, tidal mud-flats and (interiorly) open marshlands.

Pluvialis dominica dominica (P. L. S. Müller)
American Golden Plover

Synonyms—Pluvialis virginiaca; *Charadrius virginiacus*; *Charadrius virginicus*; *Charadrius dominicus*, part; *Charadrius dominicus domincus*; *Pluvialis dominica*; Golden Plover.

Status—Migrant coastwise, occurring chiefly if not altogether in autumn. Numbers so small as to warrant term "rare." Positively identified specimens bear data as follows: Eureka, Humboldt County, September 10, 1922 (no. 5954 Ellis Coll.); Cerrito, Contra Costa County, November 11, 1921 (no. 43118 Mus. Vert. Zool.); Alviso, Santa Clara County, September 21, 1933 (McLean, Condor, 38, 1936:17); Morro, San Luis Obispo County, September 29, 1918 (no. 29659 Mus. Vert Zool.); Santa Barbara, Santa Barbara County, November 11, 1918 (no. 30815 Bishop Coll.). Other reports of Golden Plover, usually single birds, not now verifiable as to subspecies, are: Mad River Slough, Humboldt County, September 10, 1922 (Abbott, Condor, 29, 1927:203); Eureka, Humboldt County, August 31, 1935 (J. M. Davis, Condor, 41, 1939:124); San Francisco [markets] (Suckley, Pac. R. R. Rept., 12, 1860:229; and other authors); Vallejo, Solano County [no dates] (Kobbé, *in* Bailey Handbook Birds Western U. S., 1902:1); Redwood City, San Mateo County, September 2 to 19 of different years (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:72); Santa Cruz, Santa Cruz County, October 22, 1888 (Cooke, U. S. Biol. Surv., Bull. No. 35, 1910:84); Playa del Rey, Los Angeles County, September 4 to November 9 of different years (Willett, Pac. Coast Avif. No. 21, 1933:57); La Jolla, San Diego County, November 2 to 17, 1933 (C. W. Michael, Condor, 36, 1934:247).

Habitat—Californian records are mostly of birds observed on tide-exposed mud-flats or beaches.

Pluvialis dominica fulva (Gmelin)
Pacific Golden Plover

Synonyms—Charadrius dominicus, part; *Pluvialis dominica dominica*, part; Golden Plover, part; American Golden Plover, part.

Status—Rare winter visitant. Two definitely established occurrences: specimen, no. 43999 Mus. Vert. Zool., male, taken by Donald D. McLean on Bay Farm Island,

Alameda County, January 15, 1922 (Grinnell, Condor, 38, 1936:219; Brooks, Condor, 39, 1937:177); specimen, no. 5953 Ellis Coll., male, taken by Franklin J. Smith, at Eureka, Humboldt County, September 10, 1922 (A. H. Miller, Condor, 46, 1944:130). While these are our only positive records of this race, it is likely that the bird seen by Torrey (Condor, 11, 1909:207) on San Diego Bay near Coronado, January 12, 15 and 20, 1908, belonged under this heading, as possibly also single birds reported by other observers as seen in late November at Playa del Rey, Los Angeles County, and in December at Santa Barbara (see Willett, Pac. Coast Avif. No. 21, 1933:57).

Charadrius semipalmatus Bonaparte
Semipalmated Plover

Synonyms—Aegialitis semipalmata; *Aegialeus semipalmatus*; *Charadrius hiaticula semipalmatus*; King Plover; Semipalmated Ring Plover.

Status—Migrant; in spring chiefly mid-April to mid-May, in fall early August to mid-October. Numbers variable; "fairly common" to "abundant," by report, probably as according to place and date. Occurs also sparingly through winter, chiefly from Santa Barbara to San Diego, and, furthermore [probably non-breeders], in all summer months, one place or another, coastwise (Willett, Pac. Coast Avif. No. 21, 1933:55; Mailliard, Condor, 23, 1921:32; Grinnell, Bryant and Storer, Game Birds Calif., 1918:470; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:73).

Geographic range—In passage, near or along seacoast for entire length of State. Reported also from a few inland points, as follows: Webber Lake, Sierra County, August 5, 1889; 10 miles west of Madera, Madera County, May 14, 1915; near Caruthers [or Riverdale], Fresno County, April 21, 1914; Julian, San Diego County, April 16, 1884; and Salton Sea, Imperial County, April 22, 1909, and April 27, 28, 1917 (H. C. Bryant, Calif. Fish and Game, 1, 1915:194; Grinnell, Bryant and Storer, *op. cit.*:471; Dawson, Birds Calif., 3, 1924:1311). There are records at migration time from Santa Cruz, San Clemente and San Nicolas islands (Calif. Acad. Sci.; Howell, Pac. Coast Avif. No. 12, 1917:49). Northernmost winter record: Oakland, Alameda County, February 14 (A. S. Allen, Gull, 24, 1942:27). Accounts of general value: Townsend, *in* Bent, U. S. Nat. Mus., Bull. 146, 1929:217ff.; Orr, Amer. Midl. Nat., 27, 1942:302.

Habitat—Both sandy sea-beaches, and mud-flats of larger bays and interior marshlands, above the water line. Any sort of shore may be resorted to on occasion by migrating flocks. Individuals of this species are unusually prone to fall in with flocks of other kinds of waders of somewhat similar size, hence to be seen under a wide range of habitat conditions.

Note—Doubtfully conspecific with *Charadrius hiaticula* of the Old World.

Charadrius nivosus nivosus (Cassin)
Western Snowy Plover

Synonyms—Charadrius melodus (?); *Aegialitis nivosa*; *Charadrius cantianus*; *Aegialitis cantiana*; *Aegialitis cantiana nivosa*; *Charadrius cantianus nivosus*; *Aegialitis alexandrina nivosa*; *Charadrius alexandrinus nivosus*; *Charadrius nivosus*; Kentish Plover; Snowy Plover; American Kentish Plover.

Status—Permanent resident; withdraws from more northern localities for winter season, and then correspondingly concentrated on southern seacoast. Locally common; in summer, southerly, less plentiful and less widely distributed than formerly.

Geographic range—Suitable parts of seacoast almost entire length of State. Northernmost station of recorded breeding, near Eureka, Humboldt County; southernmost, San Diego (Grinnell, Bryant and Storer, Game Birds Calif., 1918:473ff.; and many preceding writers). Has been found nesting also near Alvarado, etc., Alameda County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:73), at Los Baños, Merced County, in 1937 (Unglish, Condor, 40, 1938:40); (formerly) at Buena Vista Lake, Kern County (Linton, Condor, 10, 1908:197; Lamb and Howell, Condor, 15, 1913:117); (formerly) at Nigger Slough, Los Angeles County (Mus. Vert. Zool.); at Lake Elsinore, Riverside County, 1939, 1940 (Hill, Condor, 43, 1941:71); and (regularly) at Salton Sea, Imperial County (Willett, Pac. Coast Avif. No. 21, 1933:55). Other interior occurrences have been: Goose Lake, Modoc County, June 10, 1912 (Dawson, Birds Calif., 3, 1924:1314ff.); Firebaugh, Fresno County, May 24, 1915 (Tyler, Condor, 18, 1916:197); Tulare Lake, Kings County, May 14, 1912 (Dawson, *loc. cit.*); Owens Lake near Keeler, Inyo County, May 30 to June 4, 1891, and December 27, 1890 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:25). Recorded also from nearly all of Santa Barbara islands: San Miguel, Santa Cruz, San Nicolas, San Clemente and Santa Catalina (Howell, Pac. Coast Avif. No. 12, 1917:49; Meadows, Condor, 36, 1934:40). Northernmost known occurrence in winter, near Bodega Bay, Sonoma County, January 7, 1934 (Grinnell MS). Additional accounts cited for general content relating to natural history: Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:268; Chambers, Condor, 6, 1904:139; Torrey, Field-Days Calif., 1913:9ff.; Bent, U. S. Nat. Mus., Bull. 146, 1929:246ff.; Walker, Bird-Lore, 37, 1935:119.

Habitat—Characteristically, sandy sea-beaches, chiefly the upper portions of these, above upper limit of normal tides. But also present locally on dikes of salt-ponds, and on shores of alkali or brackish lakes inland.

Note—This species is questionably conspecific with the Old-World *Charadrius alexandrinus* from which it is separated by great geographic intervals.

Charadrius wilsonia beldingi (Ridgway)
Belding Wilson Plover

Synonyms—Aegialitis wilsonia; *Charadrius wilsoni*; *Ochthodromus wilsonius*; *Ochthodromus wilsonius wilsonius*; *Pagolla wilsonia beldingi*; *Pagolla wilsonia wilsonia*; Wilson Plover; Belding Plover.

Status—Rare visitant from southward. Ascribed merely to "California" several times, as by Seebohm (Geog. Dist. Charadriidae, 1887:154); but Lower California was probably meant. Only two definite records: adult male (now no. 31920 Mus. Vert. Zool.) taken at Pacific Beach, San Diego County, June 29, 1894 (Ingersoll, Nidiologist, 2, 1895:87; Grinnell, Bryant and Storer, Game Birds Calif., 1918:480); a lone bird seen at Imperial Beach, San Diego County, May 11, 1918 (Ingersoll, Condor, 20, 1918:187).

Habitat—Sandy ocean beaches, above normal upper limit of tides; on about same type of terrain as Snowy Plover.

Oxyechus vociferus vociferus (Linnaeus)
Northern Killdeer

Synonyms—Charadrius vociferus; *Aegialitis vocifera*; *Oxyechus vociferus*; Killdeer Plover; Killdeer.

Status—The most widespread and numerous wader breeding within the State. Resident, though withdrawing from more northern and elevated portions of breeding range for winter. In suitable places, abundant, and continuingly so; numbers from year to year vary locally with amount of seasonal rainfall. Extension of irrigation, affording favorable habitat conditions, has probably more than compensated for reduction of "natural" territory. Little or no attention from hunters, now or formerly, is an added favorable factor.

Geographic range—In summer, entire length and breadth of State, but main breeding area comprises low-lying portion west of Sierran divides, into which latter portion the populations from elsewhere concentrate also for the winter season. Northernmost record stations for midwinter: in coast belt, Fortuna, Humboldt County (Grinnell MS); in Sacramento Valley, vicinity of Red Bluff, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:216); east of Sierran divides, in Owens Valley, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:24). Ranges as far as outermost coastal islands in winter (Howell, Pac. Coast Avif. No. 12, 1917:49). Altitudes of known nestings extend from near sea level, as in San Francisco Bay region, and even below sea level as in Death Valley, Inyo County (Gilman, Condor, 37, 1935: 241), up to 6750 feet, at Bear Lake, San Bernardino Mountains (Willett, Pac. Coast Avif. No. 21, 1933:57). Occurrences on mountain meadows still higher, as up to 9800 feet, on Whitney Meadow, Tulare County, August 7, 1911 (Grinnell MS), may mean occasional breeding in Hudsonian Life-zone; in the other direction, there are numbers of nesting instances for Lower Sonoran, as at Palo Verde, in Colorado River valley, Imperial County (Wiley, Condor, 18, 1916:230). For general accounts see: Grinnell, Bryant and Storer, Game Birds Calif., 1918:463ff.; Dawson, Birds Calif., 3, 1924: 1299ff.; Bent, U. S. Nat. Mus., Bull. 146, 1929:202ff. Other references of general natural history import: Red Bluff, Tehama County (Pickwell, Auk, 47, 1930:499ff.); Benicia, Solano County (Stoner, Condor, 39, 1937:127); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:61); Yosemite section (Grinnell and Storer, Animal Life Yosemite, 1924:265); Fresno district, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:31); Santa Barbara, Santa Barbara County (Torrey, Field-Days Calif., 1913:12ff.); Los Angeles (Abbott, Condor, 46, 1944:3); Buena Park, Orange County (Calder, Condor, 28, 1926:176); food (McAtee and Beal, U. S. Dept. Agr., Farmers' Bull. 497, 1912:16).

Habitat—Chiefly vicinity of fresh water, either along shores of lakes, ponds, rainpools or streams, or on moist meadowlands adjacent; resorts to irrigated lands, alfalfa fields, lawns that are kept sprinkled, arroyos (just so there be a little water accessible), mountain meadows, and desert oases. Only exceptionally visits salt marshes or seashore.

Eupoda montana (J. K. Townsend)
Mountain Plover

Synonyms—Aegialitis montanus; *Charadrius montanus*; *Podasocys montanus*; *Aegialitis asiaticus* var. *montanus*; *Eudromias montanus*; Rocky Mountain Plover.

Status—Winter visitant, mid-September to mid-March. At one time, prior to 1880, considered "abundant"; by 1915 had become notably scarce; since that time there has perhaps been a slight increase.

Geographic range—Chiefly interior valleys and plains at low altitudes, south from lower Sacramento Valley and inner portion of San Francisco Bay region to Pacific slopes of southern coast counties and to Imperial Valley. Northernmost station of record: Humboldt Bay, Humboldt County, January 8, December 6, specimens (J. M. Davis, Condor, 41, 1939:124); northern localities otherwise: Marysville, Yuba County (Belding, Proc. U. S. Nat. Mus., 1, 1879:440), Knights Landing, Yolo County, and Cannon, Solano County (Mus. Vert. Zool.); westernmost station centrally: Oakland, Alameda County (Grinnell, Pac. Coast Avif. No. 11, 1915:56); easternmost centrally: Raisin, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:32); southeasternmost: near Indio, Riverside County (Clary and Clary, Condor, 38, 1936:125), and Brawley and Pilot Knob, Imperial County (Hoffmann, Condor, 25, 1923:106; Abbott, Condor, 42, 1940:124); southernmost: Coronado Heights, San Diego County, December 18, 1908 (Abbott, *op. cit.*:124). Has also been reported from San Clemente Island (Breninger, Auk, 21, 1904:222) and San Miguel Island (Pemberton, Condor, 33, 1931:218). For summaries of our knowledge of this species in California, see: Grinnell, Bryant and Storer, Game Birds Calif., 1918:481ff.; Dawson, Birds Calif., 3, 1924:1329ff.; Willett, Pac. Coast Avif. No. 21, 1933:56; Bent, U. S. Nat. Mus., Bull. 146, 1929:263ff.

Habitat—Plains and low, rolling hills, either where sparsely grown to short grass or essentially barren of vegetation. Presence or absence of water seems in no wise to govern the presence of this shore-bird. Resorts at times to newly ploughed or sprouting grain fields.

Bartramia longicauda (Bechstein)
Upland Plover

Synonym—Bartramian Sandpiper.

Status—Rare fall migrant, or, possibly, summer visitant, in northeastern section of State. One definite record: bird shot at Tule Lake, in Modoc or Siskiyou County, by Vernon Bailey, August 8, 1896 (Cooke, U. S. Biol. Surv., Bull. No. 35, 1910:65). A wing of this bird was mailed to Washington, D.C., to ensure correctness of the field identification, but was not preserved. The species breeds not far away, in eastern Oregon (Jewett, Condor, 33, 1931:245; Gabrielson and Jewett, Birds Oregon, 1940:251). See also: Grinnell, Bryant and Storer, Game Birds Calif., 1918:428; Dawson, Birds Calif., 3, 1924:1277.

Habitat—Hay meadows in mountain valleys.

Numenius hudsonicus Latham
Hudsonian Curlew

Synonyms—Phaeopus hudsonicus; *Numenius phaeopus hudsonicus*; Short-billed Curlew.

Status—Migrant; in spring, chiefly late March to early May; in fall, early July to late September. Occasional individuals reported through summer months, and a greater number, at south, throughout winter months; but all these individuals may be ones

that are below-par physically. Aggregate numbers large so that, even now, after some depletion, this species is to be called "abundant" at heights of migrations.

Geographic range—Coastwise, entire length of State. Interiorly, principally in spring migration, north through San Joaquin and lower Sacramento valleys. (See, especially: Tyler, Pac. Coast Avif. No. 9, 1913:30; Grinnell, Bryant and Storer, Game Birds Calif., 1918:446ff.; Church, Calif. Fish and Game, 7, 1921:181; Dawson, Birds Calif., 3, 1924:1286ff.; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:71; Orr, Amer. Midl. Nat., 27, 1942:305). Northernmost midwinter record: Santa Cruz, Santa Cruz County, January 12, 1936 (Mus. Vert. Zool.). Has reached several of Santa Barbara islands, including San Nicolas (Howell, Pac. Coast Avif. No. 12, 1917:48), and the Farallones (Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:363); occurs also about Salton Sea, Imperial County, April 5 to May 9, and Bishop, Inyo County, May 29 (Dawson, *loc. cit.*; C. A. Harwell MS; Mus. Vert. Zool.). For summary of occurrences in winter from Santa Barbara southward, as well as general status in southern California, see Willett, Pac. Coast Avif. No. 21, 1933:61.

Habitat—Sandy sea-beaches, tidal flats, marshes where vegetation is low; also wet meadows interiorly, especially where adjacent to shallow bodies of water.

Note—For usage of generic name, see Peters (Birds of the World, 2, 1934:260). Doubt remains whether the form *hudsonicus* is conspecific with *Numenius phaeopus* of the Old World.

Numenius americanus Bechstein
Long-billed Curlew

Synonyms—Numenius longirostris; *Numenius americanus americanus*; *Numenius americanus occidentalis*; *Numenius americanus parvus*; Curlew; American Long-billed Curlew; Lesser Long-billed Curlew; Eastern Long-billed Curlew; Northern Curlew.

Status—Present within State throughout the year, but in two seasonal rôles: summer resident, breeding locally in moderate numbers, in northeastern plateau region; transient and (or) winter visitant, varyingly common, on seacoast and in lowlands chiefly west of Sierran divides. Wintering population much greater than that in summer, but at best not now anywhere nearly as large as prior to 1900. Individuals occur on wintering grounds all through summer months, but these are likely decrepit or non-breeding birds.

Geographic range—As breeding, locally: west through Modoc region from Nevada line as far (formerly) as Butte Valley, Siskiyou County (Feilner, Ann. Rept. Smithsonian Inst., 1865:423, 428); south from Oregon line as far as Honey Lake Valley, Lassen County (Calif. Acad. Sci.). In winter occurs north along seacoast as far as Humboldt County (Grinnell, Condor, 21, 1919:237; J. M. Davis, Condor, 36, 1934: 168), through interior to head of Sacramento Valley (Grinnell, Bryant and Storer, Game Birds Calif., 1918:439ff.). Also, Owens Lake, Inyo County, December and May (A. K. Fisher, N. Amer. Fauna No. 7, 1893:24), near Calipatria, Imperial County, April 5, 1942 (C. A. Harwell MS) and Colorado River, in San Bernardino County below Ehrenberg, in August (Stephens, Condor, 5, 1903:77). Only one record from islands: Farallones, "stragglers . . . during migration" (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:43). South on coastal slope of southern California to San Diego (Willett, Pac. Coast Avif. No. 21, 1933:60; *et al.*). Citations of import besides above:

Dawson, Birds Calif., 3, 1924:1282ff.; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:71; Tyler, Pac. Coast Avif. No. 9, 1913:30; Grinnell and Hunt, Condor, 31, 1929:71; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:293; Abbott, Auk, 61, 1944:137.

Habitat—In breeding season, elevated interior grasslands, usually adjacent to lakes or marshes. In migrations and in winter, chiefly coastal salt marshes, tide-flats, and sandy sea-beaches; otherwise on grasslands or borders of marshes at low elevations in interior valleys.

Note—Two subspecies of this species are currently recognized, *N. a. occidentalis* Woodhouse [or *parvus* Bishop] and *N. a. americanus* Bechstein (see Bishop, Auk, 27, 1910:59; Oberholser, Auk, 35, 1918:188; and Bishop, Condor, 40, 1938:225); but whatever the situation (dubious, it seems to us) in North America as a whole, in California there is no practicable way of separating available specimens definitely into two racial categories (see Grinnell, Condor, 23, 1921:21ff.).

Limosa fedoa (Linnaeus)

Marbled Godwit

Synonyms—Vetola fedoa; Great Marbled Godwit; American Bar-tailed Godwit.

Status—Migrant; in spring, early April to mid-May, in fall, early July through October. Coastwise, common; most so in fall. Present also in winter season, especially southeastward from Santa Barbara, but in smaller numbers; and stragglers occur through summer season. After marked diminution in numbers about 1910, recovery began; now thought to be nearly as numerous as formerly.

Geographic range—In migration, entire length of State, chiefly coastwise. Many records, from Humboldt Bay to San Diego Bay; but apparently there is no island record. Interior occurrences are: Eagleville, Modoc County, October 11 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:292); Maxwell, Colusa County, September 5 to 8 (Wetmore, Condor, 21, 1919:74); Stockton, San Joaquin County (Belding MS); Los Baños, Merced County, April 22, November 30, etc. (Mus. Vert. Zool.); Tulare Lake, Kings County, winter (Calif. Acad. Sci.); Death Valley, Inyo County, August 27 (Gilman, Condor, 39, 1937:90); Lake Elsinore, Riverside County, February (Nordhoff, Auk, 19, 1902:214); Salton Sea, Imperial County, April 28, May 24 (Mus. Vert. Zool.). Some stragglers in summer: Bodega, Sonoma County, June 12 (Pitelka, Condor, 43, 1941:294); Bay Farm Island, Alameda County, June 18 (Linsdale, Aud. Mag., 43, 1941:479); for June records on southern beaches, see Willett (Pac. Coast Avif. No. 21, 1933:67). In winter remains north as far as Tomales Bay, Marin County (Stephens and Pringle, Birds Marin Co., 1933:9) and apparently even Humboldt Bay (Townsend, Proc. U. S. Nat. Mus., 10, 1887:198 ["the year around"]). General accounts are: Torrey, Field-Days Calif., 1913:44-49; F. M. Bailey, Condor, 18, 1916:101; Grinnell, Bryant and Storer, Game Birds Calif., 1918:396ff.; Dawson, Birds Calif., 3, 1924: 1258ff.; Willett, *loc. cit.*; Grinnell and Hunt, Condor, 31, 1929:70.

Habitat—Typically, sandy sea-beach, but also tidal mud-flats, and open shores of sloughs, rivers and larger lakes.

Totanus flavipes (Gmelin)
Lesser Yellow-legs

Synonyms—Gambetta flavipes; *Neoglottis flavipes*; Yellow-shanks Tattler; Little Yellow-shank Tattler; Yellow-legs.

Status—Migrant; more records in fall (late July to mid-October) than in spring (late March to early May). Additionally, there are three winter records. As to numbers, rated as "rare" or "rather rare," even though "regular" in certain coastwise localities.

Geographic range—Entire length of State, chiefly near seacoast. Omitting general statements and those of doubtful authenticity, following are records specifying localities and dates: Humboldt Bay, August 17, 1924, seven birds, August 16 to September 4, 1932, up to five birds, August 26 to October 15, 1933, up to six birds (J. M. Davis, Condor, 36, 1934:168); Gridley, Butte County, April 20, 1896 (Belding MS); Gualala River, Mendocino County, three birds, July 23, 1938 (Nichols, Condor, 41, 1939:87); Stockton, September 13, 1878 (Belding, Proc. U. S. Nat. Mus., 1, 1879:441); Redwood City, San Mateo County, November 28, 1915, two birds (Littlejohn, Condor, 20, 1918: 44); Baumberg, Alameda County, September 14, 1924, and 16, 1923 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:70); near Palo Alto, Santa Clara County, March 5, 1937, two birds (Martin, Condor, 41, 1939:125); Alviso, Santa Clara County, September 13, 1932, "flock of about forty" (McLean, Condor, 38, 1936:17); Santa Cruz, Santa Cruz County, August 26, 1939 (C. P. Streator MS); mouth of Salinas River, Monterey County, December 23, 1936, pair (Silliman and von Bloeker, Condor, 39, 1937:128); Monterey Bay, August 19, 1907 (Mailliard, Condor, 23, 1921:32); Los Baños, Merced County, September 21 and October 6, six birds (Mailliard, *loc. cit.*); near Merced, Merced County, September 17, 1943, and January 27, 1944, two specimens (R. H. Beck MS); Goleta, Santa Barbara County, August 11, 1915 (van Rossem, Condor, 18, 1916:171); Santa Barbara, same county, August 30 to about September 12, 1912, four birds (Dawson, Condor, 14, 1912:224), August 16, 1913, eleven birds (Dawson, Condor, 15, 1913:204), and April 27 to May 3, 1912 (Dawson, Birds Calif., 3, 1924:1266); Playa del Rey, Los Angeles County, September 4, 1924, September 6 and 10, 1925, August 11, 14, and October 5, 1926 (Willett, Pac. Coast Avif. No. 21, 1933: 63); Mission Bay, San Diego County, January 10, 1934, nine individuals (C. W. Michael, Condor, 37, 1935:42); 1 mile south of Mecca, Riverside County, April 22, 1937 (Mus. Vert. Zool.); Brawley, Imperial County, March 28, 1922 (Hoffmann, Condor, 24, 1922:101). It will be seen that there are but two good records from east of the Sierran divides. For general account, see: Grinnell, Bryant and Storer, Game Birds Calif., 1918:408ff.

Habitat—Mud-flats, sand-bars, and marshlands (either salt or fresh) where the vegetation is low.

Totanus melanoleucus (Gmelin)
Greater Yellow-legs

Synonyms—Gambetta melanoleuca; *Neoglottis melanoleuca*; *Tringa melanoleuca*; Tell-tale; Greater Yellow-shank Tattler; Stone Snipe; Tell-tale Tattler.

Status—Migrant, both spring and fall (chiefly, mid-March to mid-May, late July to October); common. But also, late northbound transients, or early southbound ones, quite span summer months; and a few birds, at least in some years, winter at low alti-

tudes in central and southern portions of State. No dependable evidence serves to show much reduction in aggregate numbers.

Geographic range—During migrations, in suitable places quite throughout State, dropping in, especially in spring, at oases on deserts and reaching islands at sea. As wintering, some northern stations are: 6 miles west of Pennington, Sutter County, February 25 (Calif. Acad. Sci.); 4 miles south of Suisun, Solano County (Calif. Acad. Sci.); San Francisco Bay (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:69); Los Baños, Merced County (Grinnell, Bryant and Storer, Game Birds Calif., 1918:404); Lone Pine, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:23). Island stations are: Santa Cruz Island, March 17, 1886 (Streator, Ornith. and Ool., 13, 1888:53); Santa Rosa Island, April 3, 1927 (Pemberton, Condor, 30, 1928:147). Some eastward stations are: Eagleville, Modoc County, June 30, 1912 (Dawson, Condor, 18, 1916:25); Death Valley, Inyo County, October 21, 1933, and February 27 to April 16, 1934 (Grinnell, Condor, 36, 1934:67; Gilman, Condor, 37, 1935:241); Brawley, Imperial County, December 1 to 25, 1910 (van Rossem, Condor, 13, 1911:131). Additional references of more than local significance: Bent, U. S. Nat. Mus., Bull. 142, 1927:321ff.; Willett, Pac. Coast Avif. No. 21, 1933:63.

Habitat—Typically, shores of fresh-water ponds or margins of shallow rain-pools, whether in naturally marshy districts or far from such; less typically, coastal salt marshes, and rarely, open sea-beaches.

Tringa solitaria cinnamomea (Brewster)
Western Solitary Sandpiper

Synonyms—Rhyacophilus solitarius; *Totanus solitarius*; *Totanus solitarius cinnamomeus*; *Helodromas solitarius cinnamomeus*; *Helodromus solitarius*; *Tringa solitaria solitaria*; Solitary Sandpiper; Eastern Solitary Sandpiper.

Status—Spring and fall migrant (April 10 to May 14, July 20 to September 26). Records from Pacific slope of southern California frequent enough to warrant designation as "fairly common" there; but elsewhere so sparse that appearance is unpredictable.

Geographic range—Apparently nearly entire length and breadth of State, save for northwest coast belt, though recorded occurrences show decided concentration south of latitude 35° (most of these latter, Santa Barbara to San Diego County, summarized by Willett, Pac. Coast Avif. No. 21, 1933:62). Northernmost record: western base of Mount Shasta [= Sisson, Siskiyou County], August 3, 1883 (Townsend, Proc. U. S. Nat. Mus., 10, 1887:198). Easternmost records: Death Valley, Inyo County, April 19 to May 4, 1934 (Gilman, Condor, 37, 1935:241), and Palo Verde, in Colorado Valley, Imperial County, August 14, 1916 (Brooks, Condor, 26, 1924:38). Has reached three of the islands, Santa Cruz, San Nicolas and San Clemente (Howell, Pac. Coast Avif. No. 12, 1917:47). Has been found from sea level, as at Santa Barbara (Bowles and Howell, Condor, 14, 1912:9), up to 10,634 feet altitude, at Bullfrog Lake, Fresno County (J. S. Dixon, Condor, 45, 1943:208). For general account, see: Grinnell, Bryant and Storer, Game Birds Calif., 1918:411ff.

Habitat—As occurring in California, chiefly streamsides or margins of fresh-water ponds, in either case beneath or adjacent to vegetational cover. Birds are sometimes observed in canyon bottoms at considerable altitudes.

Note—The feasibility of recognizing two races of *Tringa solitaria* has been questioned (Swarth, Condor, 37, 1935:199). However, fairly adequate definition of the characters and ranges of the two has recently been provided by Taverner (Condor, 42, 1940:215), such that we think the continued use of the name *cinnamomea* is justified. In light of his diagnosis of the races, the one California-taken specimen (wing 140 mm.) that has been reported as *T. s. solitaria* (Brooks, *loc. cit.*) now seems referable to *T. s. cinnamomea*.

Actitis macularia (Linnaeus)
Spotted Sandpiper

Synonyms—Totanus macularius; *Tringoides macularius*.

Status—In three rôles: (1) as spring and fall migrant (April and May, mid-July to September) throughout State; (2) as breeding, in mountainous portions of northern two-thirds of State; (3) as wintering, in coast district of southern California. Scattering individuals or pairs overstep the limits of each of the last two categories. As to numbers, in most favorable places, common, and, through time, unvaryingly so.

Geographic range—Breeding: south from Oregon line, in coast range district to Russian River, Sonoma County (Squires, Condor, 18, 1916:232; Gignoux, Condor, 24, 1922:185), in Warner Mountains, Modoc Plateau, Cascade Mountains and Sierra Nevada to near Kern Lake, 6200 feet, Tulare County (van Rossem, Condor, 22, 1920:39). Scattered breeding places south of these localities are: near Santa Paula, Ventura County (Willett, Pac. Coast Avif. No. 21, 1933:61), and Big Bear Lake, San Bernardino County (Pierce, Condor, 35, 1933:201). Altitudes of nesting extend from near sea level, as on Russian River, up to 11,000 feet, at Cottonwood Lakes, Inyo County (Grinnell MS). Breeding life-zones prevalently Transition and Canadian. Winters regularly north from Mexican line along seacoast and about Santa Barbara Islands, including San Nicolas, to about latitude 35°; winters sparingly north to San Francisco Bay (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:71), to Sacramento Valley, and even to Trinity River (Mus. Vert. Zool.); also along Colorado River to vicinity of Needles, San Bernardino County (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:121). In migration, reaches many out of the way places—reservoirs, desert oases, canyon streams, islands. Some useful references additional to above: Howell, Pac. Coast Avif. No. 12, 1917:48; Grinnell, Bryant and Storer, Game Birds Calif., 1918:431ff.; Dawson, Birds Calif., 3, 1924:1278ff.; Grinnell and Storer, Animal Life Yosemite, 1924:263; van Rossem, Auk, 42, 1925:230; E. Michael, Yosemite Nature Notes, 8, 1929:99, and *ibid.*, 13, 1934:71; Bent, U. S. Nat. Mus., Bull. 146, 1929:78ff.; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:219.

Habitat—In summer and inland, typically sand-bars or gravel-bars along courses of streams and sandy stretches around margins of fresh-water lakes; in winter, chiefly sea-shores that are gravelly, pebbly or rocky, but also as in summer.

Catoptrophorus semipalmatus inornatus (Brewster)
Western Willet

Synonyms—Symphemia semipalmata; *Totanus semipalmatus*; *Symphemia semipalmata inornata*: *Catoptrophorus semipalmatus*; Willet.

Status—Present, one place or another, throughout the year: in summer, as breeding, sparsely, on parts of northeastern plateau, in Modoc, Lassen and Plumas counties;

in migrations and in winter, along seacoast from Humboldt Bay southward; a few, non-breeders, occur along seacoast during every summer month; greatest numbers, then "rather abundant," reached during southbound migration (late July to October) in coast belt from San Francisco to San Diego.

Geographic range—In general, as indicated above. Definite breeding records are: Goose Lake, Modoc County (Dawson, Birds Calif., 3, 1924:1273); Surprise Valley, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:293); Grasshopper Valley, Lassen County (Van Denburgh, Condor, 21, 1919:39); Petes Valley, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:222); 8 miles southwest of Wendel, Lassen County (Calif. Acad. Sci.); Sierra Valley, near Beckwith, Plumas County (Cooke, U. S. Biol. Surv., Bull. No. 35, 1910:62). Northernmost winter station, Humboldt Bay (Townsend, Proc. U. S. Nat. Mus., 10, 1887:199). Has reached some of the islands: San Clemente, December (Linton, Condor, 11, 1909:194); San Nicolas, January (Howell, Pac. Coast Avif. No. 12, 1917:47); San Miguel, June 17, "small flock" (Willett, Pac. Coast Avif. No. 21, 1933:63). Strangely, there appear to be few records of this wader, even as transient, for points in California east of Sierran divides and south of Plumas County; reported from southeastern end of Salton Sea, Imperial County, May 3, 6, 1937 (Linsdale MS), March 8 to April 20, 1942 (C. A. Harwell MS). Easternmost station otherwise in southern California, Bear Lake, 6700 feet altitude, San Bernardino County, July 28 to August 2, 1905 (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:55). For general accounts, see: Grinnell, Bryant and Storer, Game Birds Calif., 1918:416ff.; Bent, U. S. Nat. Mus., Bull. 146, 1929:36ff.

Habitat—In summer, wet meadowlands usually adjacent to marshes or shallow lakes; in winter, chiefly open, coastal salt marshes or sandy sea-beaches.

Heteroscelus incanus (Gmelin)
Wandering Tattler

Synonyms—Heteroscelus brevipes; *Totanus incanus*; *Heteractitis incanus*; *Heteroscelus incanus incanus*; American Wandering Tattler; Alaskan Tattler.

Status—Essentially a spring and fall transient, greatest numbers being present in April and August; but laggards or non-breeding individuals occur all through summer, and a few individuals normally winter on coast and islands south from Monterey Bay. Plentiful, for a "solitary" species; and no marked fluctuations, or any general change in population size, evidenced by data in hand.

Geographic range—Suitable portions of outer seacoast, entire length of State; also recorded from all the islands. No inland occurrence known, farther than occasional appearance within San Francisco Bay; for instance, near Vallejo, Solano County, December 7, 1916 (Calif. Acad. Sci.) and at Alameda, Alameda County, May 11, 1911 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:70). Other sample localities and selected accounts of behavior: Farallon Islands, through summer (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:43; Dawson, Condor, 13, 1911:180); coast of southern San Mateo County (Orr, Amer. Midl. Nat., 27, 1942:306); Pacific Grove, and Point Lobos, December 11, Monterey County (Torrey, Field-Days Calif., 1913:133; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:64); Piedras Blancas, San Luis Obispo County (Grinnell and Hunt, Condor, 31, 1929:70). Some references of

comprehensive nature are: Grinnell, Bryant and Storer, Game Birds Calif., 1918:422; Bent, U. S. Nat. Mus., Bull. 146, 1929:41; Willett, Pac. Coast Avif. No. 21, 1933:62.

Habitat—Open, rocky or pebbly ocean shore, where forages over seaweed-clothed rock surfaces, as these may be exposed by surf and tide.

Aphriza virgata (Gmelin)
Surf-bird

Synonyms—Strepsilas virgata; Townsend Surf Bird; Plover-billed Turntone.

Status—Regular spring and fall transient in moderate numbers, with some occurrences nearly through the winter. Actual records cover every month of the year except December. Restriction of its habitat makes this shorebird, despite its numerical status, less often reported than most other species.

Geographic range—Appropriate portions of the outer seacoast the entire length of the State, inclusive of the islands. Some selected record stations: Trinidad Head, Humboldt County (Clay, Condor, 41, 1939:121); Bodega Bay, Sonoma County, etc. (Grinnell, Bryant and Storer, Game Birds Calif., 1918:487); Tomales Point, Marin County, Cliff House, San Francisco, etc. (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927: 74; Schussler, Condor, 19, 1917:101); Farallon Islands (Heermann, Pac. R. R. Repts., 10, 1859:64; and later authors); near Pescadero Creek, San Mateo County (Orr, Amer. Midl. Nat., 27, 1942:304); Monterey and vicinity (Loomis, Proc. Calif. Acad. Sci., ser. 2, 5, 1895:224; and many subsequent authors); points in southern California from Santa Barbara to Point Loma, and some of the Santa Barbara Islands (Dawson, Condor, 15, 1913:5; Willett, Pac. Coast Avif. No. 21, 1933:58, with many references).

Habitat—Exposed, rocky parts of the ocean shore; forages over intertidal reefs and surf-swept ledges.

Arenaria interpres morinella (Linnaeus)
American Ruddy Turnstone

Synonyms—Strepsilas interpres; *Arenaria interpres*; *Arenaria morinella*; *Arenaria interpres interpres*; *Arenaria interpres oahuensis*; Turnstone; Common Turnstone; Ruddy Turnstone; European Turnstone.

Status—Chiefly spring and fall transient. Recorded, March 30 to May 11, July 8 to October 26; also a few present in winter months from San Francisco Bay southward. As to numbers, sometimes moderately common; but mostly of scattering, sparse occurrence.

Geographic range—Entire coast-line of State, including nearly if not quite all the islands. Only one interior station of record: Salton Sea, Imperial County, May 17, 1930 (Willett, Condor, 34, 1932:228). Northernmost station of midwinter occurrence: Red Rock and other islets in San Francisco Bay, December and January (Mailliard, Condor, 6, 1904:16). Some other records: Humboldt Bay, Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:199); Farallon Islands, May 7, 1887 (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:44); San Francisco Bay region (Grin-

nell and Wythe, Pac. Coast Avif. No. 18, 1927:74); Santa Cruz, Santa Cruz County (C. P. Streator MS); Morro, San Luis Obispo County (Mus. Vert. Zool.); Santa Barbara Islands, west to San Nicolas, several instances (Howell, Pac. Coast Avif. No. 12, 1917:50); southern California, many instances (Willett, Pac. Coast Avif. No. 21, 1933:59). General accounts: Grinnell, Bryant and Storer, Game Birds Calif., 1918: 489ff.; Dawson, Birds Calif., 3, 1924:1337ff.; Bent, U. S. Nat. Mus., Bull. 146, 1929: 278ff.

Habitat—Shores of oceans and bays: usually sandy beaches, such as are sprinkled with pebbles, shells or fragments of sea-weed, but also surf-swept rock surfaces, and sometimes mud-bars in protected estuaries.

Note—We are unable to see justification for recognizing more than one subspecies in the skins we have examined. Variation is wide, however, and some of it may be significant of separate racial breeding areas in the far north (see also Bent, *op. cit.*: 278, 294, 297).

Arenaria melanocephala (Vigors)
Black Turnstone

Synonyms—Strepsilas melanocephalus; Californian Turnstone.

Status—Transient and winter visitant; present throughout year, but only non-breeders, or else late northbound migrants or early arrivals, during summer months; bulk of individuals arrive in August and depart in May. In suitable habitat, common to abundant; no appreciable change in relative numbers through time indicated by evidence in hand.

Geographic range—Entire length of seacoast, from Oregon line to Mexican line. Most plentiful on islands; least so, normally, in the larger bays. At times of storm, great numbers may seek shelter in-shore, as on salt ponds near Dumbarton Bridge, San Francisco Bay, November 2, 1935 (A. S. Allen, Bird-Lore, 38, 1936:165). Only one interior record: Salton Sea, Imperial County, May 17, 1930 (Willett, Condor, 34, 1932:228). Literature concerning this species extensive; most important references from natural history and distributional standpoints: Torrey, Field-Days Calif., 1913: 36ff.); Howell, Pac. Coast Avif. No. 12, 1917:50; Grinnell, Bryant and Storer, Game Birds Calif., 1918:493ff.; Dawson, Birds Calif., 3, 1924:1342ff.; Bent, U. S. Nat. Mus., Bull. 146, 1929:298ff.; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936: 63; Orr. Amer. Midl. Nat., 27, 1942:305.

Habitat—Exposed, rocky, pebbly, or kelp-covered ocean shores; typically, surf-swept reefs, but also little beaches at bases of sea-bluffs.

Limnodromus griseus scolopaceus (Say)
Long-billed Dowitcher

Synonyms—Macrorhamphus griseus, part; *Macrorhamphus scolopaceus*, part; *Macrorhamphus griseus scolopaceus*, part; *Limnodromus griseus fasciatus*; *Limnodromus scolopaceus*; *Limnodromus griseus*, part; Red-breasted Snipe, part; Gray Snipe, part; Greater Longbeak, part; Long-billed Snipe, part; Red-bellied Snipe, part.

Status—Migrant; in spring, late March to mid-May, in fall, late July through October. Common, yet much less numerous than *L. g. griseus*. Also present, in smaller numbers, regularly through winter, coastwise, southerly. Occasional birds or groups reported all through summer.

Geographic range—As migrating, entire length of State west of Sierra Nevada, both along seacoast and, especially in spring, through Great Valley; also through Imperial Valley. Some northernmost wintering stations are: Tomales Bay, Marin County (Stephens and Pringle, Birds Marin Co., 1933:9); Cygnus and Pierce, Solano County (Stoner, Condor, 32, 1930:165; Orr, Condor, 42, 1940:63); Los Baños, Merced County (Grinnell, Bryant and Storer, Game Birds Calif., 1918:360). There appears to be but one record from any island at any season: San Clemente Island, August (Mearns, U. S. Nat. Mus., Bull. 56, 1907:141). Some record stations farthest interior are: Tule Lake, Siskiyou County, October 20 (race uncertain; Mus. Vert. Zool.); Fresno and vicinity, May, August, October (Tyler, Condor, 18, 1916:197); near Daggett, San Bernardino County, February (Lamb, Condor, 14, 1912:35); Salton Sea, Imperial County, observed, March 8 (C. A. Harwell MS), April, specimen (Mus. Vert. Zool.). General accounts [some refer in part to *L. griseus griseus* as may some of specific occurrences cited above]: Grinnell, Bryant and Storer, *op. cit.*: 358ff.; Dawson, Birds Calif., 3, 1924:1221ff.; Bent, U. S. Nat. Mus., Bull. 142, 1927:115ff.; Willett, Pac. Coast Avif. No. 21, 1933:66; Orr, *loc. cit.*

Habitat—Sandy, surf-swept sea-beaches; tidal mud-flats; open marshlands, fresh or alkaline; muddy margins of rain-pools.

Note—For comment on systematics, see under *L. g. griseus*.

Limnodromus griseus griseus (Gmelin)
Eastern Dowitcher

Synonyms—Macrorhamphus griseus, part; *Scolopax grisea*; *Scolopax noveboracensis*; *Macrorhamphus scolopaceus*, part; *Macrorhamphus griseus scolopaceus*, part; *Limnodromus griseus scolopaceus*, part; *Limnodromus griseus hendersoni*; *Limnodromus griseus*, part; Red-breasted Snipe, part; Gray Snipe, part; Long-billed Snipe, part; Red-bellied Snipe, part; Long-billed Dowitcher, part; Inland Dowitcher; Greater Longbeak, part.

Status—Migrant; in spring, late March to mid-May, in fall, mid-July through October. Small numbers winter southerly. In migration common to abundant, surpassing in numbers *L. g. scolopaceus*.

Geographic range—In migration, entire length of State west of Sierra Nevada; sample localities represented by specimens of this race (in Mus. Vert. Zool. unless otherwise specified) are: Arcata, Humboldt Bay, Humboldt County, September 3; Dale's, east of Red Bluff, Tehama County, April 25; Rowland's Marsh, Lake Tahoe, Eldorado County (Calif. Acad. Sci.); Point Reyes, Marin County, June 2 (Orr, Condor, 42, 1940:63); Alameda, Alameda County, many specimens (Calif. Acad. Sci.); Los Baños, Merced County, March 18 to April 19; Santa Cruz, Santa Cruz County, August 16; Moss, Monterey County, April 6; Carmel, Monterey County, March 10 (Calif. Acad. Sci.); Morro, San Luis Obispo County, September 30; Santa Barbara, Santa Barbara County, May 2; 8 miles northwest of Calipatria, Imperial County, April 29. Coastal localities southeast from Santa Barbara to Sunset Beach, Orange County, October 10

to April 25, are listed by Willett, Pac. Coast Avif. No. 21, 1933:66. General accounts as cited under *L. g. scolopaceus* cover this race, in part, also.

Habitat—As far as detectable from data in hand, exactly the same as for the Long-billed Dowitcher.

Note—Despite all that has been written one way or another, some of it with considerable positiveness, about the splitting of the dowitchers into several subspecies, we still encounter difficulty in dealing with the series of specimens available from California. Division into two arrays (not three) is reasonably satisfactory although a number of individuals, especially males, are equivocal (see Orr, Condor, 42, 1940:61). The statements given under the two foregoing headings must be taken with a margin of flexibility. References pertinent to the systematics of the case are: Bent, U. S. Nat. Mus., Bull. 142, 1927:107, 115; Rowan, Auk, 49, 1932:14ff.; Brodkorb, Proc. Biol. Soc. Wash., 46, 1933: 123ff.; Willett, Pac. Coast Avif. No. 21, 1933:66; Orr, *loc. cit.*; Conover, Auk, 58, 1941:376.

Capella delicata (Ord)
Wilson Snipe

Synonyms—Scolopax wilsoni; *Gallinago wilsonii*; *Gallinago delicata*; *Gallinago media wilsoni*; *Gallinago media*; *Gallinago gallinago delicata*; *Capella gallinago delicata*; English Snipe; Common Snipe.

Status—Occurs all the year in one part of the State or another; but seasonal status varies with latitude and altitude: present as a rule only in summer in elevated northern and northeastern areas; only in fall, winter and spring (August to April) in west-central and southern California, below level of hard-freezing winters; and at migration times in these areas and everywhere else that suitable habitat offers. As to numbers, common. Serious reduction by hunting in earlier years has been followed (1944) by evidences of recovery.

Geographic range—In summer, chiefly parts of Modoc, Siskiyou and Lassen counties, thence south along Sierra Nevada, chiefly on eastern side. Westernmost breeding station, vicinity of Weed, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:91); southernmost along Sierra Nevada, Lone Pine, Inyo County (Dawson, Condor, 18, 1916:25). Unexpectable nesting stations much farther south, and west of desert divides, are: Gorman, northwestern Los Angeles County (Mailliard, Condor, 16, 1914:261); vicinity of San Bernardino, San Bernardino County (Wall, Condor, 21, 1919:207; Hanna, Condor, 29, 1927:163); and Bear Lake, San Bernardino Mountains (Hill, Condor, 40, 1938:40). Life-zones in summer, principally Upper Sonoran and Transition. Altitudinal range of nesting stations, 1000 to 6700 feet; has ranged to 9000 feet in fall migration, on Tuolumne River (Borell, Yosemite Nature Notes, 13, 1934:12). In winter, occurs north regularly in coast belt to Sonoma County and has been reported from Humboldt Bay, Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887: 198); also in Sacramento Valley north to Red Bluff, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:218), and beyond, to Shasta River, Siskiyou County (Grinnell, Bryant and Storer, Game Birds Calif., 1918:352); east of Sierra Nevada north to Honey Lake Valley, Lassen County (A. H. Miller MS) and even to Dransfield's, same county (Grinnell, Dixon and Linsdale, *loc. cit.*). In migrations and in winter reaches oases wherever such occur on the southeastern deserts (Gilman, Condor, 37, 1935:241; F. Carter, Condor, 39, 1937:212); at those seasons extends to Mexican line, in San Diego and Imperial counties. But one record for any of the islands: Santa Catalina, January 27, 1929 (Meadows, Condor, 31, 1929:130). Reports

of note, besides ones just given: near Alturas, Modoc County, behavior (Cottam and Williams, Condor, 43, 1941:293); Grasshopper Meadow, Lassen County, nesting (Evermann, Condor, 21, 1919:121); Eagle Lake, Lassen County, flight performance (Hoffmann, Condor, 26, 1924:175); Owens Valley, Inyo County, nesting (Dawson, Birds Calif., 3, 1924:1215ff.); Lake Merced, San Francisco, behavior (C. R. Smith, Gull, 14, 1932: April [p. 2]); general account (Bent, U. S. Nat. Mus., Bull. 142, 1927:81ff.).

Habitat—Fresh-water marshes, grassy borders of slow-moving streams, wet meadows, and weedy margins of irrigating ditches on farm-lands. Vegetational cover is required, plus wet earth or sod soft enough to permit the birds to probe for invertebrate animal life.

Lymnocryptes minima (Brünnich)
European Jack Snipe

Status—Rare vagrant, probably from Siberian region. One record: female taken 4 miles northwest of Marysville Buttes, Butte County, November 20, 1938 (McLean, Condor, 41, 1939:164; specimen in McLean Coll.).

Calidris canutus rufus (Wilson)
American Red Knot

Synonyms—Tringa canutus; *Canutus canutus*; *Calidris canutus*; *Canutus canutus rufus*; *Calidris canutus canutus*; Knot; American Knot.

Status—Migrant: in spring, mid-April to mid-May; in fall, mid-July to October; has been noted once in June. Also winter resident in reduced numbers, principally in southern California. There are more records for autumn than spring. Aggregate numbers, at best, not large; has been designated as "irregular," "at times rather common."

Geographic range—From one end of State to other, but strictly coastwise. Northernmost winter station, San Leandro Bay, Alameda County, December 7, 1931, four specimens (Mus. Vert. Zool.). Records have been summarized up to date of publication as follows: for whole State, by Grinnell, Bryant and Storer, Game Birds Calif., 1918: 364; for San Francisco Bay, by Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:67; for southern California, by Willett, Pac. Coast Avif. No. 21, 1933:64. Some recent records not included in above summaries are: Trinidad, Humboldt County (Conover, Condor, 45, 1943:228); Humboldt Bay, May 8, August 27, and September 8, of different years, up to twelve individuals on one occasion (J. M. Davis, Condor, 36, 1934: 168); San Francisco Bay shores of Alameda and Contra Costa counties, May 4 to 11, 1934, groups of up to thirty individuals (Stevenson and Davis, Condor, 36, 1934:244); Alviso, Santa Clara County, September 13, 1932, one individual (McLean, Condor, 38, 1936:17); Moss Landing, Monterey County, September 22, 1930, five birds (L. P. Bolander, Gull, 12, 1930: November [p. 2]); Morro, San Luis Obispo County, August 25, 1923, one specimen (Mus. Vert. Zool.); Hermosa Beach, Los Angeles County, January 1, 1919 (Wyman, Condor, 21, 1919:173); coast of Los Angeles County, May 2, 1938, four, September 23, 1940, six, September 5, 13, 29, and October 20, 1941, one to five birds (W. A. Kent MS); San Diego Bay area, December 22, 1937, twenty-eight,

February 12, 1892, one specimen, March 3, 5, 1939, many (Huey, Condor, 40, 1938: 90; Abbott, Condor, 41, 1939:217). For further general account, see Bent, U. S. Nat. Mus., Bull. 142, 1927:131ff.

Habitat—Observed mainly on sandy sea-beaches, but also on mud-flats and open salicornia marshes (see Ross, Condor, 26, 1924:91).

Note—Conover (*loc. cit.*) recently has improved our understanding of the races of this species. It seems doubtful that knots from California belong to *C. c. rufus*. However, the picture with respect to characters of adults is not clear since no adequate series of such birds was available to him from the Pacific Coast. Material before us now is not conclusive, and the application of the name *C. c. canutus* (or indeed possibly *C. c. rogersi*) to California birds cannot at this time be fully endorsed.

Crocethia alba (Pallas)
Sanderling

Synonyms—Tringa arenaria; *Calidris arenaria*; *Calidris leucophaea*; *Calidris alba*; Sanderling Sandpiper.

Status—Migrant and winter visitant; locally common. Numbers through winter fewer than at times of migration, greatest south from Monterey. Laggard or advance migrants quite span summer season. No evidence to show appreciable fluctuations in numbers through the years.

Geographic range—Seacoast the full length of State, though records few north of Sonoma County. Northern stations: Samoa, Humboldt County, September 20, 1925 (Ellis Coll.); Salmon Creek, Sonoma County, February 27, 1934 (Mus. Vert. Zool.). In fall and winter, reaches nearly if not quite all Santa Barbara Islands, including San Nicolas (Howell, Pac. Coast Avif. No. 12, 1917:47; *et al.*); northwest to San Miguel Island, September 22 and 28, 1927 (Mus. Vert. Zool.). Aside from upper reaches of San Francisco Bay, there is no interior station for this species, save for Salton Sea, Imperial County, April 20 to May 24, of different years (Willett, Condor, 34, 1932: 228; Mus. Vert. Zool.). Some accounts of general significance are: Torrey, Field-Days Calif., 1913:16-18, 23-28, 40; Grinnell, Bryant and Storer, Game Birds Calif., 1918: 391ff.; Dawson, Birds Calif., 3, 1924:1253ff.; Aldrich, Bird-Lore, 40, 1938:112 (habits and oil pollution); Martin, Condor, 41, 1939:125; Orr, Amer. Midl. Nat., 27, 1942: 309; Hawbecker, Condor, 45, 1943:74 (caught by Sparrow Hawk).

Habitat—Sandy sea-beaches, usually where wet and surf swept; in flight, birds hug shore line. Very little departure observed from this restricted type of association; occasional on mud-flats.

Ereunetes mauri Cabanis
Western Sandpiper

Synonyms—Tringa semipalmata; *Ereunetes petrificatus*; *Ereunetes occidentalis*; *Ereunetes pusillus*; *Ereunetes pusillus occidentalis*; Semipalmated Sandpiper.

Status—Migrant; in spring, early April to mid-May, in fall, late July through October. Abundant. Also, some birds remain through winter coastally south from San Francisco Bay; and straggling occurrences tide over the summer period.

Geographic range—Whole length of State, coastwise; also, mostly at migration times, various favorable localities interiorly. Sample interior stations are: Dale's, east of Red Bluff, Tehama County, April 30, and Jones', Lassen County, July 24 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:224); Rowland's Marsh, Lake Tahoe, Eldorado County, April 21, May 17 (Calif. Acad. Sci.); Black Lake, west of Benton, Mono County, September 12 (Mus. Vert. Zool.); localities in Fresno County, May 6, July 5, August 12, October 15 (Tyler, Condor, 18, 1916:197); Owens Lake and Little Owens Lake, Inyo County, June 1, May 6 to 11 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:23); Salton Sea, Riverside and Imperial counties, December, March 18 to 31, April 30, May 1, April 21 to May 21, etc. (van Rossem, Condor, 13, 1911: 131, 135; Mus. Vert. Zool.; *et al.*). Northernmost report for winter: near Colusa, Colusa County, February 18 (C. A. Harwell MS). For records of summer stragglers, see Willett, Pac. Coast Avif. No. 21, 1933:67; Pitelka, Condor, 43, 1941:294; Linsdale, Aud. Mag., 43, 1941:479. There seems to be only one insular locality of record: San Clemente Island, August 22 to 29, December (Mearns, U. S. Nat. Mus., Bull. 56, 1907:141; Linton, Condor, 11, 1909:194). Summarizing or natural history accounts are: Grinnell, Bryant and Storer, Game Birds Calif., 1918:386ff.; Dawson, Birds Calif., 3, 1924:1246ff.; Murie and Bruce, Condor, 37, 1935:258; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:64; Nichols, Condor, 42, 1940:219; Orr, Amer. Midl. Nat., 27, 1942:308.

Habitat—Typically, open marshes and mud-flats, either tidal or fresh. Also sea-beaches and, interiorly, shores of rivers, ponds and lakes.

Erolia minutilla (Vieillot)
Least Sandpiper

Synonyms—Tringa wilsonii; *Actodromas minutilla*; *Tringa minutilla*; *Limonites minutilla*; *Pisobia minutilla.*

Status—Chiefly migrant; in fall mainly during August and September, in spring during April and early May; abundant. Occurs also, in varyingly smaller numbers, through winter coastwise and at low altitudes interiorly. Furthermore, late or early migrating, or non-breeding, individuals occur quite through summer months.

Geographic range—At one season or another, entire length and breadth of State, wherever suitable habitat conditions obtain. Reaches nearly if not quite all the islands, including San Nicolas (Howell, Pac. Coast Avif. No. 12, 1917:46) and turns up at remote desert oases. Some interior record stations are: Clear Lake, Modoc County (Willett, Condor, 21, 1919:202); Eagle Lake, Lassen County (Sheldon, Condor, 9, 1907:187); Lake Tahoe, Eldorado County (Ray, Condor, 13, 1911:108); Mono Lake, Mono County (Coleman, Calif. Fish and Game, 13, 1927:148); Death Valley, Inyo County (Gilman, Condor, 37, 1935:241); Colorado River (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:121); Salton Sea (van Rossem, Condor, 13, 1911:135). Records from places on seacoast are innumerable. Selected references bearing on natural history: preyed upon by Burrowing Owl, Pigeon Hawk and Prairie Falcon (Stoner, Condor, 34, 1932:229; Martin, Condor, 41, 1939:125; Grinnell and Hunt, Condor, 31, 1929:69); Pescadero Creek, San Mateo County (Orr, Amer. Midl. Nat., 27, 1942:307); in general (Dawson, Birds Calif., 3, 1924:1238ff.; Grinnell, Bryant and Storer, Game Birds Calif., 1918:376ff.; Bent, U. S. Nat. Mus., Bull. 142, 1927:202ff.).

Habitat—Of unusually wide scope: sandy sea-beach; tidal mud-flat; marshland, both salt and fresh, where vegetation is sparse and low; river-bars; and margins of interior ponds and lakes, either fresh or alkaline.

Note—We follow the decision of the A. O. U. Check-list Committee (Auk, 61, 1944:448) in merging the genera *Pisobia* and *Pelidna* with *Erolia*. But if this is done, *Arquatella* should likewise be merged (see Peters, Birds of the World, 2, 1934:282, 285).

Erolia bairdii (Coues)
Baird Sandpiper

Synonyms—Heteropygia bairdi; *Tringa bairdi*; *Actodromas bairdi*; *Pisobia bairdii*.

Status—Through migrant, chiefly in fall (July 25 to October 3); in spring, April 14 to May 7. Aggregate numbers small, so that the species has been called "rather rare" even though "regular." Records have become more frequent of recent years probably not only because of increased number of observers, but also because it is now known exactly where to go to find the species.

Geographic range—Entire length of State, mainly coastwise (there mostly in fall), but also through interior (and there mostly in spring). Northernmost station of record, near Eureka, Humboldt County, August 15 to September 24 (J. M. Davis, Condor, 41, 1939:124; Ellis Coll.); southernmost, Pacific Beach, San Diego County, September 8, 1904 (Bishop, Condor, 7, 1905:141). All interior stations known to us are: Dale's, east of Red Bluff, Tehama County, April 14, 1928 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:223); Deep Springs Valley, Inyo County, October 9, 1929 (McLean, Condor, 38, 1936:17); Fish Springs, Imperial County, April 27 [or 28], 1917 (Dawson, Jour. Mus. Comp. Ool., 2, 1921:27). Summarizing accounts: for southern California, Willett, Pac. Coast Avif. No. 21, 1933:65; at Santa Barbara, Dawson, Condor, 18, 1916:25, and Birds Calif., 3, 1924:1235ff. [in this account "Mt." Pinos should read Pt. Pinos]; for State in general prior to 1918, Grinnell, Bryant and Storer, Game Birds Calif., 1918:373ff. There is a single island record: White's Landing, Santa Catalina Island, September 1, 1907, one specimen (Grinnell, Condor, 11, 1909:139). Some further records not included in the above references: near Palo Alto, Santa Clara County, September 4, 1937 (Martin, Condor, 41, 1939:125); Waddell Creek, Santa Cruz County, August 10, 1938 (Orr, Condor, 41, 1939:218); Santa Cruz, same county, August 4, 5, 6, 11, 23, specimens (C. P. Streator MS); Carmel, Monterey County, August 23, September 1, 4, 1911 (Orr, *loc. cit.*); near Morro, San Luis Obispo County, September 19 and 23, 1918 (Grinnell and Hunt, Condor, 31, 1929:68); Hueneme, Ventura County, August 23, 1922 (L. Miller Coll.).

Habitat—Upper portions of sea-beaches; borders of rain-pools or lakes, either salt or fresh, especially where thinly grown to grass or other low vegetation.

Erolia melanotos (Vieillot)
Pectoral Sandpiper

Synonyms—Tringa maculata; *Actodromas maculata*; *Pisobia maculata*; *Octodromus maculata*; *Pisobia melanotos*; Jack Snipe.

Status—Fall migrant, chiefly coastwise; rather rare of record, though annual occurrence probably quite regular. There is also one sight record for spring.

Geographic range—Stations and dates of definite record, from north to south, are: Big Lagoon, Humboldt County, September 23, 1942 (Mus. Vert. Zool.); Eureka, Humboldt County, September 18 to November 7 (J. M. Davis, Condor, 36, 1934:168); Olema, Marin County, October 9, 22 (Stephens and Pringle, Birds Marin Co., 1933:9; L. A. Stephens, Gull, 18, 1936; June [p. 2]); Mill Valley Junction, Marin County, September 14 (Mailliard, Condor, 6, 1904:15); Farallon Islands, September 4 (Cooke, Biol. Surv. Bull. No. 35, 1910:36); Richmond, Contra Costa County, September 11 (Ellis Coll.); Oakland, Alameda County, October 8 (Grinnell, Bryant and Storer, Game Birds Calif., 1918:370 [specimen taken by W. E. Bryant, had been previously recorded under the name *Tringa fuscicollis*]); Redwood City, San Mateo County, August 22 to October 7 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:67); Alviso, Santa Clara County, September 10, 11 (McLean, Condor, 38, 1936:17); Santa Cruz, Santa Cruz County, September 16, October 6, 1939, and September 1, October 6, 27, 1940 (C. P. Streator MS; Mus. Vert. Zool.); Elkhorn, Monterey County, October 11 (Dawson, Birds Calif., 3, 1924:1232); Point Sur, Monterey County, September 9, and Los Baños, Merced County, September 15 and 18 (Mailliard, Condor, 23, 1921:32); Chorro Creek, near Morro Bay, San Luis Obispo County, September 23 (Grinnell and Hunt, Condor, 31, 1929:68); Santa Barbara and vicinity, April 14, and August 18 to October 5 (Torrey, Condor, 12, 1910:44; Bowles and Howell, Condor, 14, 1912:8; Cogswell, Aud. Mag., 44, 1942: April, sect. 2, p. 16; *et al.*); 5 miles south of Ventura, Ventura County, September 22, 1924 (Mus. Vert. Zool.); Del Rey marshes, Los Angeles County, September 15, 16 (Wyman, Condor, 26, 1924:36; Willett, Pac. Coast Avif. No. 21, 1933:64); Los Angeles River at Long Beach, Los Angeles County, October 4, 1943 (Frank Watson *fide* H. L. Cogswell MS); Mohave River, 5 miles south of Victorville, July 18, 1943 (H. L. Cogswell MS); National City, San Diego County, "latter part of October" (Kimball, Condor, 24, 1922:96).

Habitat—Frequents, as a rule, grassy or weedy ground near bay shores, especially ground that is inundated at high tide.

Erolia acuminata (Horsfield)

Sharp-tailed Sandpiper

Synonyms—Pisobia aurita; *Pisobia acuminata.*

Status—Rare transient or sporadic visitant coastwise. But two records: a male in first fall plumage (San Diego Natural History Museum) shot on mud-flats of Mission Bay, near San Diego, September 16 [15, according to label on specimen, which has been examined by Grinnell], 1921 (Anthony, Auk, 39, 1922:106); the bird was feeding along the edge of a tide-pool in company of Least Sandpipers. A female "in first autumn plumage" (no. 1170 in Peabody Mus., Yale Univ.) taken by A. P. Kluit at Olema, Marin County, November 27, 1870 (Ball, Auk, 47, 1930:417); specimen examined and its identity and data verified.

Erolia ptilocnemis couesi (Ridgway)
Aleutian Rock Sandpiper

Synonyms—Arquatilla ptilocnemis couesi; Aleutian Sandpiper.

Status—Winter visitant on extreme northwestern seacoast. Recorded from Humboldt Bay, definitely in 1925-26 (nine birds, December 13 to March 6) and in 1926-27 (five birds, December 19 to January 8) (J. M. Davis, Condor, 35, 1933:119). One of the specimens taken is now no. 65398 Mus. Vert. Zool., an immature male; this was shot on the breakwater at the entrance to Humboldt Bay, March 6, 1926.

Habitat—The above-recorded sandpipers were, according to Davis, associated with Black Turnstones; thus they occurred in the rocky seashore type of habitat.

Note—For nomenclature, see under *Erolia minutilla*.

Erolia alpina pacifica (Coues)
American Red-backed Sandpiper

Synonyms—Tringa alpina; *Tringa alpina* var. *americana*; *Pelidna alpina americana*; *Tringa alpina pacifica*; *Pelidna americana*; *Tringa pacifica*; *Pelidna alpina sakhalina*; *Pelidna alpina*; Dunlin; Red-backed Sandpiper; American Dunlin.

Status—Migrant; in spring, ordinarily mid-April to mid-May, in fall from last of July to October. Common. In perhaps lesser numbers, chiefly coastwise, also through winter months; and non-breeders, or delayed or advanced migrants, occur all through summer season (Willett, Pac. Coast Avif. No. 21, 1933:65).

Geographic range—In migrations, whole length of State, on or near seacoast. In winter, north coastwise at least to Tomales Bay, Marin County (Stephens and Pringle, Birds Marin Co., 1933:9), and interiorly through San Joaquin Valley to Stockton (Ridgway, U. S. Nat. Mus., Bull. 27, 1883:150) and even into "Sacramento Valley" (Belding MS). Others of the few interior stations are: Dale's, east of Red Bluff, Tehama County, April 25, 30 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:224); Rowlands Marsh, Lake Tahoe, Eldorado County, May 16, 17 (Calif. Acad. Sci.); Los Baños, Merced County, all winter and spring (Grinnell, Bryant and Storer, Game Birds Calif., 1918:381ff.); Salton Sea, near Mecca, Riverside County, January (Dawson, Condor, 18, 1916:25), and April 22 (Mus. Vert. Zool.); Alamo Duck Preserve, Salton Sea, Imperial County, May 5 and 20 (Mus. Vert. Zool.). There are two island records: Farallones, "in flocks in fall" (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 1; 2, 1888:43); Anacapa Island, May 20 (L. Miller, Condor, 30, 1928:325). For extended summaries see: Dawson, Birds Calif., 3, 1924:1243ff.; Grinnell, Bryant and Storer, *loc. cit.*). For natural history see also: Grinnell and Hunt, Condor, 31, 1929:69; Orr, Amer. Midl. Nat., 27, 1942:308.

Habitat—Most generally, sandy sea-beaches and tidal mud-flats; but also, interiorly, muddy margins of rain pools and open parts of marshlands.

Note—For evidence supporting return to the racial name *pacifica*, see Bishop, Condor, 40, 1938: 225. For generic name, see note under *Erolia minutilla*.

Micropalama himantopus (Bonaparte)
Stilt Sandpiper

Status—Rare transient coastwise. One definite record: an immature female (now no. 65400 Mus. Vert. Zool.) was taken on a small pond near the mouth of a slough within the town limits of Eureka, Humboldt County, September 10, 1933, by John M. Davis (Condor, 36, 1934:168).

Tryngites subruficollis (Vieillot)
Buff-breasted Sandpiper

Status—Rare fall transient. Only two records: young male (now no. 43994 Mus. Vert. Zool.) taken on outer sea-beach near Morro, San Luis Obispo County, September 14, 1923 (Brooks, Condor, 26, 1924:37); one seen daily, July 1 to 5, 1935, at overflow irrigation ponds at Furnace Creek Ranch, Death Valley, Inyo County (Gilman, Condor, 38, 1936:40).

Himantopus mexicanus (P. L. S. Müller)
Black-necked Stilt

Synonyms—Himantopus nigricollis; *Himantopus candidus*; American Black-necked Stilt; North American Stilt; Black-winged Stilt.

Status—Summer resident, from about April 1 to October 15. Formerly abundant, now common only locally. The great reduction in numbers and in area occupied is approximately commensurate with reduction in area of marshlands. Small numbers irregularly winter north to latitude of San Francisco.

Geographic range—Entire length of State, but chiefly east of Cascade-Sierran axis at north, through Sacramento-San Joaquin Valley centrally, and west of desert divides at south. Northernmost recorded breeding stations are, on northeastern plateau: Surprise Valley, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:291); in Sacramento Valley, Sutter County [probably vicinity of Marysville] (Belding, Proc. U. S. Nat. Mus., 1, 1879:440). Westernmost breeding stations: points near Alameda County shore of San Francisco Bay (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:66). In southern coast district, has nested from Santa Barbara (Dawson, Condor, 18, 1916:25) southeast to Lake Elsinore, Riverside County, and to vicinity of Oceanside [Carlsbad, etc.], San Diego County (Hill, Condor, 43, 1941:71; Willett, Pac. Coast Avif. No. 21, 1933:69). Life-zones in summer, Lower Sonoran and Upper Sonoran. Altitudinal range from sea level up to at least 4800 feet. At times of migration, individuals appear at favorable points in southeastern section of State; for example: Death Valley, Inyo County, September 2 (Gilman, Condor, 39, 1937:90); 9 miles east of Daggett, San Bernardino County, August 20 to 28, April 10 (Lamb, Condor, 14, 1912: 35); Palo Verde, near Colorado River, Imperial County, May 12 through summer (Wiley, Condor, 18, 1916:230); Salton Sea, Riverside and Imperial counties, April 21 to May 19 (Mus. Vert. Zool.); Calexico, Imperial County, August 29 (Abbott, Condor, 33, 1931:38). Highest altitudinal stations in periods of fall migration: Baldwin and

Big Bear lakes, 6700 feet, San Bernardino County, August 1 to September 10 (Pierce and Sumner, Condor, 29, 1927:82). There is apparently no record for northwest coastal section of State north of Marin County, and only one from any of the islands: San Nicolas Island, May 25, 1897 (Grinnell, Pasadena Acad. Sci., publ. 1, 1897:26). Some midwinter record stations: Miller, Marin County, and Mt. Eden, Alameda County (Grinnell and Wythe, *loc. cit.*); Playa del Rey and Bixby, Los Angeles County, and Bolsa Chica, Orange County (Willett, *loc. cit.*); Salton Sea, Imperial County, December 8, 1919 (Mus. Vert. Zool.). General or natural history accounts not indicated in foregoing references: Chapman, Camps and Cruises, 1908:288ff.; Tyler, Pac. Coast Avif. No. 9, 1913:25ff.; Grinnell, Bryant and Storer, Game Birds Calif., 1918:344ff.; L. Miller, Condor, 20, 1918:126; Dawson, Birds Calif., 3, 1924:1204ff.; Bent, U. S. Nat. Mus., Bull. 142, 1927:47ff.; E. L. Sumner, Jr., Condor, 33, 1931:89.

Habitat—Typically, open marshlands; margins of shallow bodies of water, permanent or merely rain-pools, whether fresh, brackish, stagnant or strongly alkaline. Irrigated grazing lands are favorable.

Recurvirostra americana Gmelin
American Avocet

Synonyms—Recurvirostra occidentalis; Californian Avocet; White-headed Avoset; White Avocet; Western Avocet; Avocet.

Status—In general, summer resident; common. Of widest occurrence at times of population shifting, March to mid-May and in September and October. Present also through winter, southerly, but in smaller numbers and irregularly. Reduction apparent in aggregate numbers, and retraction of breeding range, during past forty years, doubtless commensurate with reduction in area of interior marshlands.

Geographic range—As breeding, most plentiful in plateau region of Siskiyou, Modoc and Lassen counties, and in Sacramento-San Joaquin Valley; occasional in San Francisco Bay region; also Los Angeles, Orange and Riverside counties, of San Diegan district (largely in early years). Northernmost stations of recorded nesting are: Lower Klamath Lake, Siskiyou County (H. C. Bryant, Condor, 16, 1914:233), and Surprise Valley, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:291); westernmost centrally, near Palo Alto, Santa Clara County, in 1937 (Martin, Condor, 41, 1939:125); southernmost east of Sierra Nevada, Deep Springs Valley, Inyo County (Webb, Condor, 41, 1939:37); southernmost in San Joaquin Valley, Buena Vista Lake, Kern County (Lamb and Howell, Condor, 15, 1913:117). For southern California, the records of nesting, southeast to near Santa Ana, Orange County, have been summarized by Willett (Pac. Coast Avif. No. 21, 1933:68); southernmost reported nesting, Lake Elsinore, Riverside County, in 1940 (Hill, Condor, 43, 1941:71). Altitudes of nesting stations range from sea level up to 5000 feet. Life-zones, Lower Sonoran and Upper Sonoran. Northernmost wintering stations, vicinity of Novato, Marin County, near Willows, Glenn County (Grinnell, Bryant and Storer, Game Birds Calif., 1918:339; C. A. Harwell MS); Honey Lake, Lassen County, January 3, 1943, single bird (A. H. Miller MS). There are but two records for any season from coast belt north of San Francisco Bay region: Eureka, Humboldt County, August 17, 18, 1935 (J. M. Davis, Condor, 41, 1939:124). One record for the islands: Santa Cruz Island, June 10 (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:270). Some southeastward stations,

for non-breeders: Owens Lake, etc., in Owens Valley, Inyo County, May, June, July, December (A. K. Fisher, N. Amer. Fauna No. 7, 1893:22); Death Valley, Inyo County, April, September (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:58; Gilman, Condor, 37, 1935:241, and *ibid.*, 39, 1937:91); Salton Sea, Riverside and Imperial counties, March, April 21 to May 24 (van Rossem, Condor, 13, 1911:134; Mus. Vert. Zool.); Colorado River valley [specimen, February 12, 1864, Mineral City, Arizona] (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:120). Accounts of general significance are: Tyler, Pac. Coast Avif. No. 9, 1913:24, and Condor, 15, 1913:16; Grinnell, Bryant and Storer, Game Birds Calif., 1918:337ff.; Dawson, Birds Calif., 3, 1924:1191ff.; Ross, Condor, 26, 1924:91; Bent, U. S. Nat. Mus., Bull. 142, 1927:37ff.; Parmenter, Gull, 15, 1933: June [p. 1]; Stoner, Condor, 39, 1937:174.

Habitat—Interior, open marshlands, fresh or alkaline, especially where there are expanses of shallow water with included low "islands or mud reefs." Flooded grazing lands, as at Los Baños, comprise "artificial" areas attractive to this wader. (See Dawson, *op. cit.*: 1194.)

Phalaropus fulicarius (Linnaeus)
Red Phalarope

Synonyms—Crymophilus fulicarius; Grey Phalarope.

Status—Migrant; in spring, chiefly late April to early June; in fall, about August 1 to November. Abundant. Stragglers nearly or quite span both summer and winter seasons, at latter season only south from Monterey Bay. No fluctuations in aggregate numbers apparent.

Geographic range—Entire length of State, offshore and coastwise. Records numerous, most of which are summarized by: Grinnell, Bryant and Storer, Game Birds Calif., 1918:320ff.; Dawson, Birds Calif., 3, 1924:1171ff.; Bent, U. S. Nat. Mus., Bull. 142, 1927:1ff.; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:65; Willett, Pac. Coast Avif. No. 21, 1933:69. Some wintering places are: off Point Pinos, near Monterey (Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:70); around Santa Cruz and Anacapa islands (Willett, Condor, 12, 1910:175); off San Diego (McGregor, Osprey, 2, 1898: 88). Occurrences inland are few and sporadic, usually after severe storms at sea: Laytonville, Mendocino County, October 27, 1934, Clear Lake, Lake County, October 28, 1934, Arbuckle, Colusa County, same date, and Palmdale, Los Angeles County, November 2, 1934 (Gabrielson, Murrelet, 16, 1935:28); Stockton, October 10, 1890 (Belding MS); Pasadena, Los Angeles County, in fall (Grinnell, Pasadena Acad. Sci., 2, 1898:16); Los Angeles, November 1, 1911 (Willett, Pac. Coast Avif. No. 7, 1912: 34); near Corona, Riverside County, November 7, 1914 (Pierce, Condor, 17, 1915: 130). Additional references, especially as bearing on manner of occurrence and behavior: Torrey, Field-Days Calif., 1913:49ff.; Wyman, Condor, 20, 1918:192; Lamb, Condor, 24, 1922:29; Ross, Condor, 24, 1922:66; L. Miller, Condor, 38, 1936:14; Marshall, Condor, 40, 1938:91; C. W. Michael, Condor, 40, 1938:181; Stoner, Condor, 40, 1938:182.

Habitat—Maritime; chiefly open ocean and outer surf-line, but also protected tidal waters closely adjacent, especially at times of storm. Occasionally forages on kelp-strewn shores, but usually food is sought by dabbling while swimming or spinning on the surface of the water.

Steganopus tricolor Vieillot
Wilson Phalarope

Synonyms—Phalaropus wilsoni; *Steganopus wilsoni*; *Phalaropus tricolor.*

Status—Summer resident in northeastern and central portions of State; migrant thence south and southwestward, late April to about June 1, late July through September. Locally, fairly common.

Geographic range—As breeding, elevated Great Basin area, east of Cascade-Sierran axis, from Oregon line south as far as vicinity of Bishop, Inyo County (Dawson, Jour. Mus. Comp. Ool., 2, 1922:50); west at north to Lower Klamath Lake, Siskiyou County (H. C. Bryant, Condor, 16, 1914:232). Also as breeding, but less regularly (at least in smaller numbers), in central San Joaquin Valley: Los Baños, Merced County (Mailliard, Condor, 23, 1921:31; *et al.*); 12 miles southwest of Fresno (Tyler, Condor, 19, 1917:167). Life-zones, Lower Sonoran and Upper Sonoran. Altitudinal range of nesting stations, 100 feet to 6500 feet. In migrations has been found at places south in coast belt from mouth of Salmon Creek, Sonoma County, August 2, 1933 (Grinnell MS), and in interior from Dale's, east of Red Bluff, Tehama County, June 3, 1924 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:225) to Mexican boundary. Willett (Pac. Coast Avif. No. 21, 1933:70) has fully summarized the records to date for southern coastal slope of State southeast from Santa Barbara. Some interior stations are: Death Valley, Inyo County, May 2 to 7, 1934, and September 2, 1936 (Gilman, Condor, 37, 1935:241; *ibid.*, 39, 1937:91); 9 miles east of Daggett, San Bernardino County, June 10, 1911 (Lamb, Condor, 14, 1912:35); Salton Sea, Riverside and Imperial counties, April 21 to May 20, 1937 (Mus. Vert. Zool.); Baldwin Lake, 6700 feet, San Bernardino County, August 1 to September 10, 1926 (Pierce and Sumner, Condor, 29, 1927:82). Some general accounts are: Ray, Condor, 15, 1913:113; Grinnell, Bryant and Storer, Game Birds Calif., 1918:332ff.; Dawson, Birds Calif., 3, 1924: 1184ff.; Ross, Condor, 26, 1924:90.

Habitat—Marshlands, usually fresh-water ones where there is some open, shallow water and where the vegetation is low. In migrations includes brackish, even salt playas and bay shores. Forages by walking or wading, gleaning surfaces and side-sweeping with bill in water and on submerged mud.

Lobipes lobatus (Linnaeus)
Northern Phalarope

Synonyms—Lobipes hyperboreus; *Phalaropus hyperboreus*; *Phalaropus lobatus*; Red-necked Phalarope.

Status—Migrant; in spring, late April to early June, in fall, mid-July to late October. Abundant. Late spring transients and (or) early fall ones nearly span midsummer period. Some occurrences recorded for winter may have been due to fortuitous circumstances.

Geographic range—Whole length of State; most abundant coastwise, but also passes through interior; appears at times plentifully on larger lakes. The birds seem to keep to seacoast most closely in spring migration; majority of inland records are for return migration, in August and September. Records are too numerous to cite *in extenso*. Some

citations of more than ordinary purport are: W. K. Fisher, Condor, 4, 1902:8 (Mono Lake, Mono County); Chapman, Camps and Cruises, 1908:268ff. (Monterey, habits); Torrey, Field-Days Calif., 1913:16, 41, 52ff. (Santa Barbara, habits); Grinnell, Bryant and Storer, Game Birds Calif., 1918:326ff. (general account); Dawson, Birds Calif., 3, 1924:1178ff. (general account); Ross, Condor, 26, 1924:90 (Playa del Rey, Los Angeles County); Abbott, Condor, 30, 1928:163 (off Point Loma, San Diego County); Willett, Pac. Coast Avif. No. 21, 1933:70 (southern California); L. Miller, Condor, 38, 1936:14 (southern offshore waters); Gilman, Condor, 38, 1936:40 (Death Valley, Inyo County); C. W. Michael, Condor, 40, 1938:85 (San Francisco; foraging and escape reactions).

Habitat—Waters along seacoast, both open ocean and bays, and of inland ponds and lakes, whether fresh or strongly alkaline. Typically forages while swimming and spinning on surface of water, shallow or deep. Also takes insects on the wing over water surface.

Catharacta skua chilensis (Bonaparte)
Chilean Skua

Synonyms—Stercorarius catarractes; *Buphagus skua*; *Stercorarius skua*; *Megalestris skua*; *Catharacta chilensis*; Common Skua; Skua; Skua Gull.

Status—Rare summer and early fall visitant, transequatorially, from breeding stations (probably) off west coast of South America.

Occurrences—Specimen obtained previously to 1853, by Nicolas Pike, Esq., "near the coast of California in the latitude of Monterey" (Lawrence, Ann. Lyc. Nat. Hist. New York, 6, 1853:8, and Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:21); specimen (no. 10920 Calif. Acad. Sci.) obtained August 7, 1907, on Monterey Bay (Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:61); specimens (nos. 17758, 17759 Mus. Vert. Zool.) taken by R. H. Beck on Monterey Bay, August 4 and September 21, 1910 (Grinnell, Pac. Coast Avif. No. 11, 1915:20). Some form of Skua seen off Santa Cruz, Santa Cruz County, March 14, 1935 (Brooks, Ibis, ser. 14, 3, 1939:325).

Habitat—Open ocean well offshore.

Note—The subspecific status of the skuas that visit our coast is still not satisfactorily settled (see Bent, Condor, 23, 1921:78, and Murphy, Oceanic Birds S. Amer., 1936:1007, 1013; also, with respect to Washington state records, Alcorn, Condor, 44, 1942:218). The two specimens in the Museum of Vertebrate Zoology were submitted to Dr. Robert C. Murphy, of the American Museum of Natural History, who made comparison of them with the extensive collections there. He writes (under date May 25, 1936) that our birds agree exactly with certain peculiarily characterized South American birds which are not like the usual *chilensis*; these may constitute a color phase of that race, or, on the contrary, they may represent a distinct and as yet unnamed subspecies the breeding range of which is not now known.

Stercorarius pomarinus (Temminck)
Pomarine Jaeger

Synonym—Caprotheres pomarinus.

Status—Migrant; occurs chiefly in autumn, August to October. At times common. Individuals, strays or non-breeders, have been reported from off "Point Pinos [Monterey County] in every month in the year" (Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:61).

Geographic range—Doubtless, entire coast-line of State, although actual record stations are few and only of central and southern position. Important records are: "ocean beach, San Francisco, after a heavy storm in 1887" (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 2, 1889:87); San Francisco Bay, September 1 to October 2, May 5 to 16, of different years (Mailliard, Condor, 6, 1904:15, and Condor, 18, 1916:202; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:40); Berkeley Aquatic Park, September 28 to October 4, 1940 (Linsdale, Bird-Lore, 42, 1940:582); Monterey Bay and off Point Pinos, July 31 to October 27, of various years (Loomis, Proc. Calif. Acad. Sci., ser. 2, 5, 1895:213; Beck, *loc. cit.*; Grinnell, Pac. Coast Avif. No. 11, 1915:20); off San Pedro, Los Angeles County, July 25 to October 20, of different years (Willett, Pac. Coast Avif. No. 21, 1933:71, and Condor, 41, 1939:255).

Habitat—Chiefly waters of open ocean, well offshore. Sometimes sheltered bays.

Stercorarius parasiticus (Linnaeus)
Parasitic Jaeger

Synonyms—Stercorarius longicaudus, part; Long-tailed Jaeger, part.

Status—Migrant; in spring, late April and early May, in fall, August to October. Common. Small numbers occur also in winter southward from Monterey Bay; occasional records for June and July; greatest numbers occur in southward flight, in August and September.

Geographic range—Entire length of State, coastwise. Record-stations are well scattered, from Humboldt Bay to off San Diego. Interiormost station, near Suisun, Solano County, October 8, 1924 (Moffitt MS). More important or summarizing references are: Humboldt Bay (J. M. Davis, Condor, 42, 1940:222); Monterey Bay (Loomis, Proc. Calif. Acad. Sci., ser. 2, 5, 1895:213; Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:61); Morro, San Luis Obispo County (Grinnell and Hunt, Condor, 31, 1929:63); Santa Barbara and waters toward Catalina and Santa Cruz islands (Dawson, Birds Calif., 3, 1924:1359); Santa Catalina Island (Meadows, Condor, 31, 1929:129); off San Pedro, San Diego, etc. (Willett, Pac. Coast Avif. No. 21, 1933:71); vicinity of Monterey in January (Silliman and von Bloeker, Condor, 39, 1937:128).

Habitat—Rather strictly, marine littoral; often waters well offshore. Rarely includes larger bays.

Stercorarius longicaudus Vieillot
Long-tailed Jaeger

Status—Fall migrant, August and September. Apparently rare, though offshore observation might show otherwise.

Geographic range—Probably entire length of State, coastwise. Definitely known occurrences are as follows: off Point Pinos, near Monterey, one specimen, August 23, 1894 (Loomis, Proc. Calif. Acad. Sci., ser. 2, 5, 1895:213); Monterey Bay, four specimens, August 2 and 13, September 5 and 7, 1910 (nos. 17760-17763 Mus. Vert. Zool.), and one specimen, October 4, 1909 (no. 11062 Calif. Acad. Sci.); Pacific Beach, San Diego County, September 19, 1904, one specimen (Bishop, Condor, 7, 1905:141). In

the Los Angeles Museum are three immature specimens (no. 3733 Willett Coll., nos. 18179, 18880 L. A. Mus.) taken off San Pedro, July 29 and September 13, 1933, and August 28, 1937, respectively (Willett and Howard, Condor, 36, 1934:158ff.; Willett MS). The general migration of this species is discussed significantly for California by Murphy, Oceanic Birds S. Amer., 1936:1039.

Habitat—Open ocean.

Note—Certain specimens which have been recorded as *S. longicaudus* have turned out to be *S. parasiticus*. (See Willett, Pac. Coast Avif. No. 21, 1933:71; Willett and Howard, *loc. cit.*)

Larus heermanni Cassin
Heermann Gull

Synonyms—Blasipus heermanni; *Blasipus belcheri*; *Procellarus heermanni*; *Leucophaius belcheri*; White-headed Gull; Belcher Gull.

Status—Summer and autumn visitant from south; present in greatest numbers from June to November, then diminishing toward March; only strays or non-breeders present during spring months, when nesting is taking place south of Mexican line. Prior to about 1915, numbers, at least south from Bodega Bay, sufficient to warrant term "common"; then, by 1930, marked reduction took place even to complete absence in previously favorable spots, locally; now, 1943, good recovery is apparent.

Geographic range—Seacoast entire length of State; this includes environs of most, if not all, the islands. There is one unverified record of occurrence interiorly: Sacramento River at confluence with Feather River (Newberry, Pac. R. R. Rept., 6, 1857: 105). Reported breeding on the Farallon Islands (Gruber, Zeitschr. für gesammte Ornith., 1, Heft 2, 1884:168; Baird, Brewer and Ridgway, Water Birds N. Amer., 2, 1884: 254) may well be doubted (Grinnell, Condor, 28, 1926:38). General accounts and those with significant natural history content are: Howell, Pac. Coast Avif. No. 12, 1917:28; Bent, U. S. Nat. Mus., Bull. 113, 1921:148ff.; Dawson, Birds Calif., 3, 1924:1428ff.; Swarth, Condor, 26, 1924:192; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:42; Sefton, Condor, 29, 1927:163; Willett, Pac. Coast Avif. No. 21, 1933:75; L. Miller, Condor, 38, 1936:15; Pitelka, Condor, 43, 1941:295; Orr, Amer. Midl. Nat., 27, 1942:312.

Habitat—Marine littoral: open ocean shores, islands, and adjacent waters. Sheltered bays resorted to in less numbers; never, so far as known positively, invades fresh-water areas.

Larus delawarensis Ord
Ring-billed Gull

Synonyms—Larus canus, part; Mew Gull, part.

Status—Winter visitant, August to May, with scattering individuals through summer months. Varying "common" or "abundant," on southern seacoast in midwinter, to "casual," on interior bodies of water. Breeds in at least one locality in northeastern corner of State.

Geographic range—In winter, on or near seacoast entire length of State, but numbers greatest south from San Francisco Bay to San Diego Bay. In summer, aside from stragglers on or near seacoast, occurrences are frequent on lakes of northeastern plateau region; for example, Tule Lake, Siskiyou County (Moffitt, Condor, 44, 1942) and Clear Lake, Modoc County (Willett, Condor, 21, 1919:196), where this species probably has nested, especially in view of undoubted former nesting just across Oregon line, on Lower Klamath Lake (Finley, Condor, 9, 1907:13). Only proven nesting locality: Honey Lake, Lassen County (Moffitt, *loc. cit.*). In winter or at seasons of migration, reaches most of the islands, Salton Sea, and Imperial Valley, as well as such interior bodies of water as Lake Tahoe and Owens Lake. References: A. K. Fisher, N. Amer. Fauna No. 7, 1893:14; Grinnell, Pac. Coast Avif. No. 11, 1915:22; Dawson, Birds Calif., 3, 1924: 1413ff.; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:42; Robertson, Condor, 30, 1928:354; Willett, Pac. Coast Avif. No. 21, 1933:74; McCabe and McCabe, Condor, 37, 1935:79; J. W. Kelly, Gull, 20, 1938:17.

Habitat—With us, in winter, mainly surf-beaten sea-beaches as well as more sheltered waters and tidal flats of bays and estuaries. But also, inland, environs of marshes, lakes and ponds, fresh or alkaline. In summer, nests on islets in large interior lakes.

Larus canus brachyrhynchus Richardson
Short-billed Mew Gull

Synonyms—Larus brachyrhynchus; *Larus canus*, part; Short-billed Gull; American Mew Gull; Mew Gull, part; Common Gull.

Status—Winter visitant, October to March. Numbers variable from year to year, "fairly common" to even "abundant," sometimes, along central Californian coast.

Geographic range—The seacoast entire length of State, but of less and less regular occurrence toward extreme south. Some definite records are: Humboldt Bay, December (Townsend, Proc. U. S. Nat. Mus., 10, 1887:192); Tomales Bay, Marin County, February (Moffitt, Calif. Fish and Game, 19, 1933:256); San Francisco Bay, October 9 near Berkeley, to March 30 at Alameda (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:42, *et al.*); Monterey Bay, October 27 to March 20 (Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:24; Mus. Vert. Zool.; *et al.*); mouth of Carmel River, Monterey County, February 6 to March 3 (Williams, Condor, 35, 1933:161); Santa Barbara, Santa Barbara County (Dawson, Birds Calif., 3, 1924:1419; *et al.*); Santa Cruz Island, February 20, March 6 (Hoffmann, Condor, 34, 1932:190); Santa Catalina Island, February 11 (Howell, Pac. Coast Avif. No. 12, 1917:28); Hyperion, Los Angeles County, November 17 to April 1 (Willett, Pac. Coast Avif. No. 21, 1933:74); off La Jolla, San Diego County, December 15 (Kenyon, Condor, 37, 1935:170).

Habitat—Marine littoral; that is, typically, outer shore-line and adjacent open-ocean waters; less usually, the sheltered bays. This is, perhaps, the most pelagic, here in the winter quarters of the species, of any of our gulls.

Larus argentatus thayeri W. S. Brooks
Thayer Herring Gull

Synonyms—Larus californicus, part; *Larus argentatus*, part; *Larus kumlieni*, part; *Larus thayeri*; Herring Gull, part; California Gull, part; Kumlien Gull, part; Thayer Gull.

Status—Midwinter visitant, December to mid-March. Numbers recorded small, and times and places of appearance irregular; probably fairly common.

Geographic range—South coastwise from (presumably) Oregon line to San Diego. Some verified occurrences are: San Francisco, January 15, 1904 (Mus. Vert. Zool.); Alameda, Alameda County, March 12, 13, 1910 (Calif. Acad. Sci.); Russell City, Alameda County, April 21, 1940 [straggler] (Mus. Vert. Zool.); Santa Cruz, Santa Cruz County, December 28, 1937 (Mus. Vert. Zool.); Monterey Bay, 12 specimens, December 10, 1910, to February 16, 1911 (Mus. Vert. Zool.); Pacific Grove, Monterey County, January 4, 1912 (Bishop, Condor, 17, 1915:185 ["kumlieni?," now considered by Dr. Bishop (MS) to be *thayeri*]); Santa Barbara, December 12, 1912 (Mus. Vert. Zool.); Nigger Slough, Los Angeles County, January 20, 1896 (Mus. Vert. Zool.); Hyperion, Los Angeles County, 5 [and more] specimens, December 30 to March 14, of different years (Willett, Pac. Coast Avif. No. 21, 1933:73); San Diego, November 26, 1861 [collected by J. G. Cooper and called by him and subsequently by others "*californicus*"] (Mus. Vert. Zool.).

Habitat—Seacoast, including adjacent waters and marshlands.

Larus argentatus smithsonianus Coues
American Herring Gull

Synonyms—Larus argentatus, part; *Larus smithsonianus*; *Larus cachinnans*; *Larus vegae*; *Larus argentatus argentatus*; Herring Gull, part; Pallas Herring Gull; Pallas Gull; Vega Gull.

Status—Winter visitant, late September to April or even early May. Usually "common" or "fairly common"; but numbers, locally, variable or unpredictable.

Geographic range—Entire length of State, chiefly coastwise. Of most regular appearance on larger bays; more prone to venture inland than most of the large gulls. Interiormost recorded stations: Death Valley, Inyo County (M. F. Gilman MS); Salton Sea, Riverside County, January 20, 1913 (Dawson, Birds Calif., 3, 1924:1394). Some of the records for this species, selected as best outlining range and status, are: Tomales Bay, Marin County (Moffitt, Calif. Fish and Game, 19, 1933:256); San Francisco Bay (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:41); Monterey Bay (Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:23; W. K. Fisher, Condor, 9, 1907:91); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:67); Santa Barbara to San Diego (Henshaw, Auk, 2, 1885:232); "uplands of Los Angeles County" (Swarth, Condor, 17, 1915:205); Anaheim Landing, Orange County (Bishop, Condor, 29, 1927:202); San Diego Bay (Willett, Condor, 15, 1913: 20); Santa Cruz Island (Dawson, Condor, 17, 1915:204); San Clemente and Santa Catalina islands (Willett, Pac. Coast Avif. No. 12, 1917:27).

Habitat—Sandy seashores; bays and harbors; estuaries; river courses. Hence, both salt- and fresh-water localities.

Larus californicus Lawrence
California Gull

Synonyms—Larus delawarensis var. *californicus*; *Larus fuscus californicus*.

Status—Present in three rôles: (a) Winter visitant coastwise and at low levels interiorly, normally late August to early May; common to abundant. (b) Summer visitant, and breeding in concentrated numbers, at lakes of northeastern plateau region. (c) Transient or vagrant, individually or in groups, almost anywhere, in spring, summer and fall, and below level of snows in winter.

Geographic range—Entire length and breadth of State, in one rôle or another (see above and below). Nesting colonies have been described from following localities: Clear Lake, Modoc County (Lincoln, Condor, 35, 1933:239); Eagle Lake, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:226; *et al.*); Mono Lake, Mono County (Brewster, Bull. Mus. Comp. Zool., 41, 1902:20; Dawson, Jour. Mus. Comp. Ool., 2, 1922:52, and Birds Calif., 3, 1924:1398ff.; Grinnell and Storer, Animal Life Yosemite, 1924:248; Nichols, Condor, 40, 1938:262; *et al.*). There is evidence of former nesting "somewhere in the middle stretches of the Sacramento River" (Dawson, *op. cit.*: 1405; eggs taken in 1910 in "Sutter Basin" in Mus. Vert. Zool.), and unverified report of breeding at Lake Tahoe. Individuals, vagrants or foragers, have been seen in the Sierra Nevada as high as 10,000 feet, at Young Lake, Yosemite National Park (Grinnell and Storer, *loc. cit.*). In winter, reaches all the islands, Salton Sea, and Colorado River. Some general accounts, other than cited above, are: H. C. Bryant, Condor, 21, 1919:127; Bent, U. S. Nat. Mus., Bull. 113, 1921:124ff.; R. C. Miller, Condor, 25, 1923:5ff.; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:41; Robertson, Condor, 30, 1928:354; Bunnell, Condor, 32, 1930:269ff.; Price, Condor, 33, 1931:123; Willett, Pac. Coast Avif. No. 21, 1933:74; Brooks, Auk, 60, 1943:15ff.

Habitat—Greatest in scope of any of our gulls: littoral waters; sandy sea-beaches; waters and shore-lines of bays; tidal mud-flats; both fresh-water and alkaline marshes, lakes and ponds; river courses; after rains, rain-pools and open lands anywhere; at times, forages into cities, to reach lawns and school yards. Nests colonially on islets in larger interior lakes, either fresh or strongly alkaline.

Larus occidentalis occidentalis Audubon
Northern Western Gull

Synonyms—Larus occidentalis, part; *Larus argentatus* var. *occidentalis*, part; *Larus occidentalis livens*, part; *Larus occidentalis wymani*, part; Western Gull, part; Grey-backed Western Gull; Southern Western Gull, part.

Status—Permanent resident. Locally common. There is a partial southward drift in winter and some influx from Oregon coast (see Ferris, Condor, 42, 1940:193ff., banded birds).

Geographic range—Seacoast south from Oregon line as far as Farallon Islands, breeding (*fide* Dwight, Bull. Amer. Mus. Nat. Hist., 52, 1925:217). This appears to be the race prevalent in winter on San Francisco Bay, and there are winter-taken specimens from Monterey Bay, there mixed with examples of *wymani* (Mus. Vert. Zool.). Also recorded in winter south to San Pedro, Los Angeles County (Dwight, *loc. cit.*; Ferris, *loc. cit.*). Inland records, such as the one from "100 miles up Sacramento River" (Newberry, Pac. R. R. Rept., 6, 1857:105), are to be doubted unless backed by specimens preserved. Some accounts of nesting and habits: Castle Island, Del Norte County (Clay, Condor, 19, 1917:71); Point Reyes, Marin County (C. A. Allen, Ornith. and Ool., 6, 1881:18); Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1,

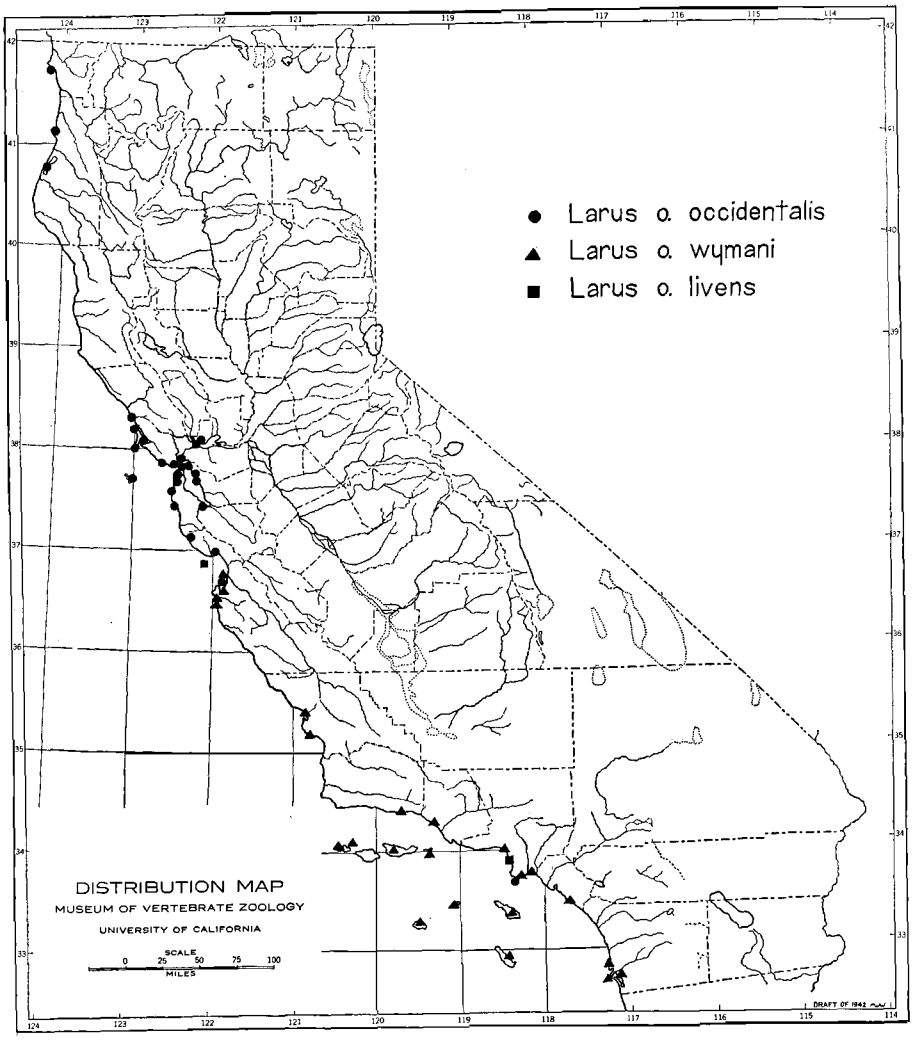

Fig. 7. Distribution of Western Gulls, *Larus occidentalis*, in California. Localities are shown from which critically determined specimens have been taken (included are a few from which color-banded birds have been reported). Includes records from all seasons of the year; for discussion of breeding ranges, see text.

1888:37; Ray, Auk, 21, 1904:434; Bent, U. S. Nat. Mus., Bull. 113, 1921:89ff., part; Dawson, Birds Calif., 3, 1924:1376ff., part; C. F. Smith, Condor, 36, 1934:171; *et al.*).

Habitat—Immediate seacoast. Nests both on islets and on mainland seacliffs (even on piers of San Francisco Bay Bridge). Forages along beach-lines and up estuaries, but not beyond tidal influence.

Note—Gulls of this species are plentiful all the way down the central California coast. Distribution of nesting places is nearly "continuous"; but just where the race *occidentalis* blends with, or adjoins, the race *wymani* is not apparent from the series of specimens examined. The southernmost breeding colony of attested *occidentalis* is that on the Farallon Islands; the northernmost of *wymani* is at Point Lobos, Monterey County (Mus. Vert. Zool.).

Larus occidentalis wymani Dickey and van Rossem
Southern Western Gull

Synonyms—Larus occidentalis, part; *Larus argentatus* var. *occidentalis*, part; *Larus occidentalis livens*, part; Western Gull, part; Hyperion Gull; Dark-backed Western Gull; Wyman Gull.

Status—Permanent resident. Locally abundant.

Geographic range—Seacoast south from about latitude of Monterey Bay to Mexican boundary near San Diego. Recorded breeding stations are very many, including all of Santa Barbara Islands (or contiguous "rocks"), and several mainland places such as cliff-sides at La Jolla, San Diego County (L. Miller, Condor, 38, 1936:15). Inland records, such as that from Elsinore Lake, Riverside County (Nordhoff, Auk, 19, 1902: 212), are dubious. Some accounts of general nature: Wright and Snyder, Condor, 15, 1913:89; Howell, Pac. Coast Avif. No. 12, 1917:26; Bent, U. S. Nat. Mus., Bull. 113, 1921:89ff., part; Dawson, Birds Calif., 3, 1924:1376ff., part; Dickey and van Rossem, Condor, 27, 1925:162; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936: 66; McCabe, Auk, 54, 1937:204.

Habitat—Immediate seacoast. Nests on precipitous portions of mainland shore as well as on outlying rocks and islands. In foraging, reaches far and wide over marine littoral, beaches, bays and tidal marshes but rarely, if ever, ventures inland from salt water.

Larus occidentalis livens Dwight
Yellow-footed Western Gull

Synonym—Yellow-footed Gull.

Status—One certain record of vagrant from Gulf of California: female adult taken 7 miles off Santa Cruz, Santa Cruz County, February 29, 1936 (Brooks, Condor, 40, 1938:89). Another that possibly falls in this category: adult female (no. 33053 Bishop Coll.) taken at Hyperion, Los Angeles County, April 25, 1922 (Willett, Pac. Coast Avif. No. 21, 1933:189).

Larus glaucescens Naumann
Glaucous-winged Gull

Synonyms—Larus glaucus, part; *Larus hyperboreus*, part; *Larus leucopterus*, part (?); Glaucous Gull, part; Iceland Gull, part (?).

Status—Winter visitant, late October to early May. Common; in favorable places, in midwinter, abundant. Occasional birds, probably ones of deficient vitality, occur throughout summer season.

Geographic range—South along seacoast entire length of State: Oregon line to San Diego Bay. Has been recorded from waters around most of the islands. Rarely seen inland; two record stations: University Campus, Berkeley, Alameda County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:40; Rodgers and Sibley, Condor, 42, 1940: 204), and Westlake Park, Los Angeles (Willett, Pac. Coast Avif. No. 21, 1933:72). Some general or summarizing accounts: Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:

22; Mailliard, Condor, 18, 1916:47; Howell, Pac. Coast Avif. No. 12, 1917:26; Dawson, Birds Calif., 3, 1924:1366ff.; Wales, Condor, 28, 1926:97; Swarth, *ibid.*; Grinnell and Wythe, *loc. cit.*; Bishop, Condor, 29, 1927:201; Gander, Condor, 31, 1929:250; Willett, *loc. cit.*; A. B. Stephens, Gull, 17, 1935; February [p. 2].

Habitat—Ocean shore-line: littoral waters, open sea-beaches, sheltered bays and estuaries; limited rather closely to vicinity of salt or brackish water.

Larus hyperboreus Gunnerus
Glaucous Gull

Synonyms—Larus hutchinsii; *Larus glaucus*; *Larus hyperboreus barrovianus*; *Larus leucopterus*, part (?); *Larus kumlieni*, part (?); Hutchins White Gull; Burgomaster; Iceland Gull, part (?); Point Barrow Gull; Kumlien Gull, part (?).

Status—Winter visitant. Apparently rather rare; but because of great variability of immature plumages in this and related species of *Larus*, the true status is obscure.

Geographic range—South along seacoast probably as far at least as Orange County. Some verified identifications are: Bodega Bay, Sonoma County, March 17, 1927 (specimen no. 3807 Ellis Coll.); Alameda, Alameda County, March 30, 1910 (Calif. Acad. Sci.); Monterey Bay, December 30, 1910, and March 14, 1926 (specimens no. 17887, Mus. Vert. Zool., no. 2655 Ellis Coll.); Santa Cruz, Santa Cruz County, June 14, 1938, straggler (no. 87919 Mus. Vert. Zool.); Hyperion, Los Angeles County, November 24, 1915, January 28, 1921, and February 18, 1918 (specimens nos. 14142 and 4307 L. A. Mus., no. 2314 Willett Coll.). Some published records (not verified by us) that probably belong under this heading are: Farallon Islands and San Francisco Bay (Cooper, Proc. Calif. Acad. Sci., 4, 1868:9); off Monterey (Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:22, and *ibid.*, ser. 3, zool., 2, 1900:357; Beck. Proc. Calif. Acad. Sci., ser. 4, 3, 1910:62); San Francisco (Mailliard, Condor, 18, 1916:47); Monterey, Monterey County (Oberholser, Auk, 35, 1918:474); Santa Barbara, Santa Barbara County (Dawson, Birds Calif., 3, 1924:1364; Rett, Condor, 41, 1939:219); near Santa Cruz Island (Ross, Condor, 28, 1926:241); Anaheim Landing, Orange County (Bishop, Condor, 29, 1927: 201); Sausalito, Marin County (Stephens and Pringle, Birds Marin Co., 1933:12); vicinity of Monterey (Silliman and von Bloeker, Condor, 39, 1937:129); Suisun, Solano County (Brooks, Condor, 40, 1938:89); Los Angeles, January 14 to February 7, 1944 (H. L. Cogswell MS); the one interior station of record is Buena Vista Lake, Kern County, December 30, 1921 (Dickey and van Rossem, Auk, 39, 1922:411 [under "*Larus leucopterus*"]).

Habitat—Typically, maritime littoral.

Note—Our disposal of names which have been applied to unusual variants in the species of large gulls is indicated in each case by the allocation of the name in the paragraph on synonyms. For example, the records of "*Larus leucopterus*," as far as California is concerned, we believe to fall under *L. hyperboreus*. We think that correct criteria for determination of age from features of plumage have not yet been worked out and that much confusion of features due to age, wear and fading with supposed specific and subspecific characters is shown in the pertinent literature. This holds for Dwight (Bull. Amer. Mus. Nat. Hist., 52, 1925:243, 252, 255, etc.) and Rand (Canadian Field Nat., 56, 1942: 123ff.), as well as for other authors. See, in this connection, Willett (Pac. Coast Avif. No. 21, 1933:72), with the tenor of whose comments we concur.

Larus atricilla Linnaeus
Laughing Gull

Status—Rare, possibly sporadic, summer visitant to Salton Sea, Imperial County. On June 9 and 22, 1928, three of the birds and two sets of eggs were collected from islets near southern end of that body of brackish water (Miller and van Rossem, Condor, 31, 1929:141). The total number of individuals present was evidently small. (Specimens taken now in collections of D. R. Dickey and L. Miller and in Mus. Vert. Zool.)

Larus pipixcan Wagler
Franklin Gull

Synonyms—Larus franklini; *Chroicocephalus franklinii.*

Status—Rare migrant in southern half of State. Specimen taken [McLean Coll.] at Tulare Lake, Kings County, May 18, 1939 (McLean, Condor, 41, 1939:164); two additional specimens from same lake, May 18, 1939, September 28, 1941 [McLean Coll.]; three specimens taken at Hyperion, Los Angeles County, November 22, 1913, October 17, 1914, and November 24, 1914 [nos. 1500, 2350, 2587, Law Coll.] (Law, Condor, 17, 1915:96); specimen [whereabouts at present not known] taken at same place, October 29, 1917 (Wyman, Condor, 20, 1918:192).

Larus philadelphia (Ord)
Bonaparte Gull

Synonym—Chroicocephalus philadelphia.

Status—Transient and winter visitant, late August to mid-May. Common; at times of migration, locally abundant. Strays, in some years, noted throughout summer.

Geographic range—Entire length of State, chiefly on or near seacoast. In migration reaches some of the islands and certain interior localities; some records covering these are: Santa Cruz Island, between April 24 and May 2 (Howell and van Rossem, Condor, 13, 1911:209); Santa Barbara Island, November 11, 12 (Pemberton, Condor, 31, 1929: 37); Santa Catalina Island, January 2 (Meadows, Condor, 31, 1929:129); Goose Lake, Modoc County, June 5, and Horse Lake, Lassen County, June 12, immature (Dawson, Condor, 18, 1916:24); Lake Tahoe, June 16, immature (Ray, Condor, 20, 1918:77); Merced County, September 15 (Calif. Acad. Sci.); Buena Vista Lake, Kern County, June 8, immature (Lamb and Howell, Condor, 15, 1913:117); Lone Pine, Inyo County, December (A. K. Fisher, N. Amer. Fauna No. 7, 1893:14); Neenach, Los Angeles County, June 4, 1927 (Mus. Vert. Zool.); Mohave River, 9 miles east of Daggett, San Bernardino County, November 8 (Lamb, Condor, 14, 1912:33); Colorado River, autumn, April 19 (Coues, Proc. Acad. Nat. Sci. Phila., 1866:99; Monson, Condor, 46, 1944:21); Salton Sea, in Imperial and Riverside counties, April 22 to May 21 (Mus. Vert. Zool.). Northernmost winter record: Humboldt Bay, Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:192. Some general accounts are: Dawson, Birds Calif., 3, 1924: 1422ff.; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:42; Willett, Pac. Coast Avif. No. 21, 1933:75. Feeding habits: D. G. Nichols, Gull, 22, 1940:41.

Habitat—Coastwise, open seashores, bays, and tidal marshes; interiorly, marshlands and river courses.

Rissa tridactyla pollicaris Ridgway
Pacific Black-legged Kittiwake

Synonyms—Rissa kotzebuei; *Rissa tridactyla kotzbuei*; *Rissa pollicaris*; *Larus canus*, part; *Rissa tridactyla*; Kotzebue Kittiwake; Kotzebue Gull; Pacific Kittiwake; Mew Gull, part; Kittiwake.

Status—Winter visitant, November to April. Irregular in appearance; in some years "common," in others no record at all; it is possible that in certain years none come so far south as California.

Geographic range—Southward along seacoast in some years entire length of State. Definite records of living birds (not remains found on beach) are: San Francisco Bay (Cooper, Proc. Calif. Acad. Sci., 4, 1868:10; Kobbé, Bailey's Handbook Birds Western U. S., 1902:xlviii); Monterey Bay and vicinity, November 5 to April 25, of different years, exceptionally August 14, 1907 (Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:21; Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:62; Mus. Vert. Zool.; Calif. Acad. Sci.); near Paso Robles, San Luis Obispo County, a waif, March 22, 1899 (Thompson, Condor, 3, 1901:187); Santa Barbara, seen once (Dawson, Birds Calif., 3, 1924:1362); Manhattan Beach, Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:75); Long Beach, Los Angeles County (Linton, Condor, 10, 1908:238); Alamitos Bay, Los Angeles County (Linton, Condor, 9, 1907:199); vicinity of San Diego, in winters of three years (Anthony, Auk, 12, 1895:177, and Auk, 15, 1898:267). A record from "Nicasio," Marin County (Southwick and Jencks, Auk, 2, 1885:313) is dubious as to locality—the collector, C. A. Allen, lived there, but whence the bird taken actually came is problematic. A pick-up of unusual date, August 14, 1937, reported from ocean beach at Humboldt Bay, Humboldt County (J. M. Davis, Condor, 42, 1940:222).

Habitat—Chiefly the open sea. Seashore records are mostly of dead or decrepit birds washed in during storms.

Xema sabini (Sabine)
Sabine Gull

Synonyms—Larus sabini; *Xema sabinei*; Fork-tailed Gull.

Status—Migrant; in spring, April and May; in fall, late July through October. One winter record. Of regular occurrence and at times "common" in autumn migration; but in spring, numbers reported are small, in some years none.

Geographic range—Entire length of State, coastwise. Our more explicit records are: Humboldt Bay, Humboldt County, February 7, 1932, specimen taken [only winter record] (J. M. Davis, Condor, 42, 1940:222); Point Reyes, Marin County, September 10, 1927 (Mus. Vert. Zool.); San Francisco Bay, "October," April 28, May 19 (W. E. Bryant, Zoe, 3, 1892:165; Kobbé, Bailey's Handbook Birds Western U. S., 1902:xlix; Booth, Condor, 28, 1926:271; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:43); Berkeley, Alameda County, August 21, 22 (Dalquest, Condor, 46, 1944:34); Pescadero, San Mateo County, April 7 (Grinnell and Wythe, *loc. cit.*); Monterey Bay and vicinity, April 9 to May 25, July 22 to October 28 (Loomis, Proc. Calif. Acad. Sci., ser. 2, 5, 1895:215, and *ibid.*, ser. 3, 2, 1900:358; Breninger, Auk, 20, 1903:433; Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:63; Bent. U. S. Nat. Mus., Bull. 113, 1921:196; Dwight, Bull. Amer. Mus. Nat. Hist., 52, 1925:330; Mus. Vert. Zool.); Santa Barbara, August 25 (Dawson, Birds Calif., 3, 1924:1433); waters off Santa Barbara and around Santa

Cruz Island, August 1 to 11 (Wright, Condor, 15, 1913:227); points on or off coast of Los Angeles County, April 22 to May 20, July 22 to October 14 (Willett, Pac. Coast Avif. No. 21, 1933:75); Santa Monica, Los Angeles County, August 20, November (H. L. Cogswell MS); off San Pedro, same county, September 30, October 1, 1928 (L. Miller Coll.); Anaheim Landing, Orange County, August 30 (Bicknell, Condor, 23, 1921:193); waters off San Diego, San Diego County, May 15, July 29, August 28, September 13, 18 (Nelson, Mem. Nat. Acad. Sci., 16, 1921:13; Abbott, Condor, 29, 1927:73, and *ibid.*, 30, 1928:163); San Diego Bay, April 23 (Calif. Acad. Sci.). Only vagrants or wind-driven waifs occur inland, as at 3 miles south of Tahoe City, Placer County, October 11, 1925 (Calif. Acad. Sci.), at Mono Lake, Mono County, in September, 1901 (W. K. Fisher, Condor, 4, 1902:10), and near El Cajon, San Diego County, October 10, 1920 (Lee, Condor, 23, 1921:38).

Habitat—Chiefly open ocean; individuals, even in fullest vigor, appear occasionally on our larger bays.

Chlidonias nigra surinamensis (Gmelin)
American Black Tern

Synonyms—Sterna nigra; *Hydrochelidon plumbea*; *Hydrochelidon fissipes*; *Hydrochelidon lariformis*; *Hydrochelidon nigra*; *Hydrochelidon nigra surinamensis*; *Hydrochelidon surinamensis*; *Chlidonias nigra*; Black Tern; Black-bellied Tern.

Status—Summer visitant and migrant, April to September. As breeding, locally common; when in migration along southern seacoast, at times "abundant."

Geographic range—Entire length of State, interiorly of coast belt at north and chiefly west of deserts at south. Definitely recorded breeding stations are: Tule Lake, Modoc County (V. Bailey, Condor, 4, 1902:64); Alturas Meadow, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:280); Eagle Lake, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:229); Lake Tahoe, Eldorado County, Ray, Osprey, 5, 1901:116, and Condor, 15, 1913:112); Sacramento and San Joaquin rivers, latter near Merced (Mailliard, Condor, 6, 1904:15); Los Baños, Merced County (Dawson, Birds Calif., 3, 1924:1460ff.); Laton and Firebaugh, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:14); Buena Vista Lake, Kern County (van Rossem, Condor, 25, 1923:208, and Condor, 35, 1933:49); Merritt Lake, near Castroville, Monterey County (Silliman, Condor, 17, 1915:207). Recorded occurrences in June and July on lakes of southern California are not to be interpreted as of actual breeding in those places (see Willett, Pac. Coast Avif. No. 21, 1933:79). Migrants near or along seacoast: San Francisco Bay, May 5, September 6, November 26 [possibly decrepit bird] (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:44); Monterey Bay, August 2 to September 23 (Mus. Vert. Zool.; Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:64); Santa Barbara, August 25 to September 11 (Dawson, Condor, 18, 1916:24); off coasts of Los Angeles and San Diego counties (Willett, *loc. cit.*); off Point Loma, San Diego County (L. Miller, Condor, 38, 1936:15). Eastward stations: Mono Lake, Mono County, May 6, June 3 (Grinnell and Storer, Animal Life Yosemite, 1924:251); Mohave River, 9 miles east of Daggett, San Bernardino County, June 28 (Lamb, Condor, 14, 1912:33); Salton Sea, Imperial County, April 18 to May 20 (Mus. Vert. Zool.; C. A. Harwell MS).

Habitat—In breeding season, fresh-water marshes, ponds and lake borders. In migration, the same and also seacoast, even out over open ocean, well offshore. Rice culture locally has increased suitable breeding habitat and has at least partly taken the place of the more extensive natural marshes of the last century.

Gelochelidon nilotica aranea (Wilson)
American Gull-billed Tern

Synonyms—Gelochelidon nilotica vanrossemi; *Gelochelidon nilotica*; Gull-billed Tern; van Rossem Gull-billed Tern; Western Gull-billed Tern.

Status—Summer visitant in extreme southeastern portion of State. A breeding colony, first detected in May, 1927 (Pemberton, Condor, 29, 1927:253ff.), established with headquarters on low, sandy islets in the southeast end of Salton Sea, Imperial County. That year there were estimated to be 500 nesting pairs, and it was believed, on basis of local evidence, that the birds might well have been coming there already for six seasons. The colony was present in June, 1928 (Miller and van Rossem, Condor, 31, 1929:141), and in May, 1937, though then apparently less than 200 in number (Linsdale MS; Mus. Vert. Zool.). Up to 450 individuals were estimated to be present in the area in April, 1940 (Abbott, Condor, 42, 1940:265) and about 150 were seen near Westmoreland in April, 1942 (C. A. Harwell MS). The birds have been noted feeding on fishes at the mouths of the entrant distributaries from the Colorado River and on grasshoppers in alfalfa fields.

Note—For a statement concerning the unsatisfactory state of taxonomic information on races of this species, see Murphy, Oceanic Birds S. Amer., 1936:1092; under the circumstances we do not recognize a western race.

Hydroprogne caspia caspia (Pallas)
Holarctic Caspian Tern

Synonyms—Sterna regia, part; *Sterna caspia*; *Sterna tschegrava*; *Hydroprogne caspia*; *Hydroprogne caspia imperator*; *Sterna caspia imperator*; Caspian Tern; Coues Caspian Tern.

Status—Present throughout year: in summer and breeding, colonially and locally, one favorable place or another; in spring and fall, widely scattered; in winter, rather rare. Save where concentrated for nesting, this tern is not thought of as at all "common." However, in late years, aggregate numbers appear to be increasing—slow recovery since the era of the "feather trade," prior to 1900.

Geographic range—Entire length of State, interiorly of northwest coast belt, west of Sierra Nevada, and west of southeastern desert region north of Imperial Valley. Places and years of recorded nestings: Tule Lake, Modoc County, at least in 1899 (V. Bailey, Condor, 4, 1902:64); Sutter Basin, 5 miles north of Knight's Landing, in Sutter County, in 1916 (Mus. Vert. Zool.; Bent, U. S. Nat. Mus., Bull. 113, 1921:210, 211); marshes of southern arm of San Francisco Bay, in Alameda [not "San Mateo"] County, from at least 1922 [probably earlier; eggs taken in general area in 1916; Mus. Vert. Zool.] to date [1943] (De Groot, Condor, 33, 1931:188-192; A. H. Miller, Condor, 45, 1943:220ff.); Buena Vista Lake, Kern County, "sporadically," in 1920-22 (van Rossem, Condor, 35, 1933:49); islet in southeastern end of Salton Sea, Imperial County, in 1927 and 1928 and presumably subsequently (Pemberton, Condor, 29, 1927:254;

Mus. Vert. Zool.; Abbott, Condor, 42, 1940:265). Occurrences of birds in midwinter have been noted north to Stockton, San Joaquin County (Ridgway, Bull. Nuttall Ornith. Club, 6, 1881:124), and San Francisco Bay (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:43). Northernmost coastwise station at any season, Bolinas, Marin County, October 17, May 23 (Grinnell and Wythe, *loc. cit.*; Ellis Coll.). Other noteworthy citations: Goose Lake, Modoc County, June 10, Los Baños, Merced County, June 4, and Santa Barbara, August 6 (Dawson, Condor, 18, 1916:24); Eagle Lake, Lassen County, May 28 to June 29 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:228); Maxwell, Colusa County, August 21 to September 8 (Wetmore, Condor, 21, 1919:73); Fresno district, April 3 to May 6, August 14 to October 2 (Tyler, Condor, 18, 1916:195); coastal slope of southern California, Santa Barbara to San Diego and interiorly to near Corona, Riverside County, and Lake Henshaw, San Diego County, many places and dates (literature summarized by Willett, Pac. Coast Avif. No. 21, 1933:79).

Habitat—Typically inland, where fresh-water lakes and marshes afford fishes for food; but also brackish or salt waters of coastal estuaries and bays. No record for ocean off mainland shore.

Note—The supposed American form, *H. c. imperator*, has been found to be indistinguishable from Palaearctic birds (Peters, Birds of the World, 2, 1934:331).

Sterna hirundo hirundo Linnaeus
Linnaean Common Tern

Synonyms—Sterna hirundo, part; *Sterna paradisaea*, part; Common Tern, part; Wilson Tern; Arctic Tern, part.

Status—Migrant; in spring during May, in fall, August to mid-October. Numbers greatest in autumn, when at times "common."

Geographic range—Coastal waters, probably entire length of State; yet authentic records are for points only from San Francisco Bay southward, as follows: Berkeley, Alameda County, October 5, 1941 (M. L. Nichols, Gull, 23, 1941:40); near Alameda, Alameda County, September 6, 1899 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:44); vicinity of Monterey and Point Pinos, Monterey County, April 29 to May 18, August 4 to October 17, of different years (Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:64; Mus. Vert. Zool.); Morro Bay, San Luis Obispo County, September 29, 1918, August 22, 1923 (Grinnell and Hunt, Condor, 31, 1929:64; Mus. Vert. Zool.); Santa Barbara, in September, 1911 (Willett, Pac. Coast Avif. No. 7, 1912:16); Hyperion, vicinity of San Pedro, and Alamitos Bay, Los Angeles County, May 7 to 24, July 23 to October 30, of different years (Daggett, Condor, 5, 1903:17; Willett, Condor, 10, 1908:50, and *ibid.*, 12, 1910:174; L. Miller, Condor, 16, 1914:40; Willett, Pac. Coast Avif. No. 21, 1933:76; Willett, Condor, 41, 1939:255), Pacific Beach, San Diego County, September 8 to 15, 1904 (Bishop, Condor, 7, 1905:141); off Point Loma, same county, May 15, August 31, September 1, 1936 (coll. L. Miller). Inland occurrences (of waifs?) have been reported: near Mendota, in Madera County, October 2, 1915 (Tyler, Condor, 18, 1916:195); Victorville, San Bernardino County, September 22, 1921 (Dickey and van Rossem, Condor, 24, 1922:29). A decrepit bird taken at Presidio, San Francisco, January 19, 1903 (Littlejohn, Condor, 5, 1903:81), can have little or no seasonal significance.

Habitat—With us, in migration, chiefly open ocean; otherwise, casually, sea-beaches, bays and tidal flats.

Note—Published records of terns need to be checked upon carefully; in known instances, specimens of *S. hirundo* have been called *S. paradisaea* and of *S. forsteri* have been called *S. hirundo*.

Sterna paradisaea Pontoppidan
Arctic Tern

Synonyms—Sterna pikei; *Sterna hirundo*, part (?); *Sterna macrura*; *Sterna pykei*; Slender-billed Tern; Common Tern, part (?); Pike Tern.

Status—Known but meagerly. Southward migrant, August to October; on occasion, off Monterey, fairly common. One spring record, as below.

Geographic range—While probabilities indicate passage offshore along our entire seacoast, definite record stations based on specimens are few, as follows: off Monterey, August 22, 27, 1894 (Loomis, Proc. Calif. Acad. Sci., ser. 2, 5, 1895:215); off Point Pinos, Monterey County, late August and September, of different years (Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:64); Monterey Bay, August 4 to September 14, 1910, many specimens (Mus. Vert. Zool.); Little Sur River, Monterey County, September 21, 1911 (Calif. Acad. Sci.); off San Pedro, Los Angeles County, August 27 to October 14, of different years (Willett, Pac. Coast Avif. No. 21, 1933:77); Laguna Beach, Orange County, May 1, 1915 (Pierce, Condor, 21, 1919:125).

Habitat—As migrating, open ocean.

Sterna forsteri Nuttall
Forster Tern

Synonyms—Sterna hirundo, part; Common Tern, part.

Status—Present within State, one place or another, entire year; but status in any one locality, seasonally limited. In summer, and breeding sparsely, around lakes and on marshes on northeastern plateau and locally in Great Valley; stragglers elsewhere. In winter, some years fairly commonly, along central and southern seacoasts and on lowland waters, locally, inland. In migrations, common along entire seacoast, and of irregular occurrence far and wide inland.

Geographic range—In general, as indicated above. Definitely known breeding localities, from north to south, are: Laguna at Willow [Creek] Ranch, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:280); Eagle Lake, Lassen County (Sheldon, Condor, 9, 1907:186; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:228); Lake Tahoe (Ray, Osprey, 5, 1901:116, and Condor, 5, 1903:47); "Sacramento Valley" (Heermann, Pac. R. R. Rept., 10, pt. 4, no. 2, 1859:73); "northern Monterey County" (Mus. Vert. Zool.); Los Baños, Merced County (Dawson, Birds Calif., 3, 1924:1443); Buena Vista Lake, Kern County (van Rossem, Condor, 35, 1933:49). No conclusive evidence forthcoming of nesting south of last-named place, though birds have been observed in summer at certain lakes; for example, at Bear Lake, 6700 feet, San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:52; Willett, Pac. Coast Avif. No. 21, 1933:76). The numerous records of this

species in times of migration include: Humboldt Bay (Townsend, Proc. U. S. Nat. Mus., 10, 1887:192); San Francisco Bay (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:44; *et al.*); Monterey Bay (Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:64; *et al.*); Fresno district (Tyler, Condor, 18, 1916:167); 9 miles east of Daggett, San Bernardino County (Lamb, Condor, 14, 1912:33); Salton Sea, Imperial County (Mus. Vert. Zool.). Northernmost occurrences in midwinter, on San Francisco Bay (Grinnell and Wythe, *loc. cit.*) and at Stockton, San Joaquin County (Belding MS).

Habitat—In summer, fresh-water marshlands; in migrations and in winter, sandy seashores, bays, marshes (both fresh and salt), and shallow-bordered lakes.

Sterna albifrons browni Mearns
California Least Tern

Synonyms—Sterna antillarum; *Sterna superciliaris* var. *antillarum*; *Sternula antillarum browni*; *Sterna antillarum browni*; Least Tern; Brown Tern; Brown Least Tern.

Status—Summer visitor, April to September, rarely so late as November 14. Breeding colonies (each of 20 or more pairs) formerly many, the species reckoned as "common" to "abundant." Now (1943) breeding stations few and sparsely populated, owing to almost complete human use of suitable beaches.

Geographic range—Coast-line from Mexican boundary north to Monterey Bay. More northern, perhaps vagrant, occurrences are: one bird picked up dead, August 17, 1923, at Alvarado, Alameda County (Ellis Coll.); two birds seen August 19, 1923, near Alameda (A. S. Allen, Bird-Lore, 25, 1923:408). Northernmost nesting colony, Moss Landing, Monterey County (Beck, Condor, 9, 1907:58, and Proc. Calif. Acad. Sci., ser. 4, 3, 1910:64). Nesting colonies, present or one-time, thence southward: neighborhoods of Santa Barbara and Carpinteria, Santa Barbara County; near Ventura, Hueneme, and Mugu Bay, Ventura County; Santa Monica, Venice, Playa del Rey, Ballona Beach, Redondo, Terminal Island, and Alamitos Bay, Los Angeles County; Anaheim Landing, Sunset Beach, Bolsa Beach, Huntington Beach, Newport Bay, and Balboa, Orange County; Pacific Beach and vicinity of San Diego, San Diego County. Pertinent literature: Dawson, Birds Calif., 3, 1924:1453ff.; Hoffmann, Condor, 23, 1921:192, and Auk, 38, 1921:596; Willett, Pac. Coast Avif. No. 21, 1933:77; Bent, U. S. Nat. Mus., Bull. 113, 1921:270ff.; Chambers, Condor, 10, 1908:237; Lamb, Condor, 24, 1922:182; Edwards, Condor, 21, 1919:67; Ashworth, Oologist, 47, 1930:84; Kelsey, Condor, 4, 1902:144; L. Miller, Condor, 38, 1936:15.

Habitat—For nesting, sandy, upper sea-beaches, or, rarely, inside mud-flats; for foraging, adjacent open ocean, surf-line or estuaries.

Thalasseus maximus maximus (Boddaert)
American Royal Tern

Synonyms—Sterna regia; *Sterna cayanensis*; *Thalasseus regius*; *Sterna maxima*; *Thalasseus maximus*; Royal Tern; Cayenne Tern; Royal Sea Tern.

Status—Visitor northward from Mexican waters. While recorded in every month of the year, numbers greatest in period from September to March; then, formerly, "fairly common." Variable in times of appearance and relative numbers. Since about 1912, seemingly less regular, at least north of San Diegan district.

Geographic range—Coastwise, north from Mexican boundary to about San Francisco Bay. Northernmost record station: Tomales Bay, Marin County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:43 [*fide* J. and J. W. Mailliard]). Includes waters around practically all of Santa Barbara group of islands, even San Nicolas (Howell, Pac. Coast Avif. No. 12, 1917:29). Reported as at one time breeding on San Miguel Island (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:277); but there has been no verification of this, or subsequent similar report. Further noteworthy references: Monterey and vicinity (Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:25; Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:63); Morro Bay, San Luis Obispo County (Grinnell and Hunt, Condor, 31, 1929:63); Santa Barbara (Dawson, Birds Calif., 3, 1924:1439ff.); southern California, status summarized (Willett, Pac. Coast Avif. No. 21, 1933:78); vicinity of San Diego (L. Miller, Condor, 38, 1936:15). The interior record from Elsinore Lake, Riverside County (Nordhoff, Auk, 19, 1902:213), although often cited, is now doubted (see Willett, *loc. cit.*).

Habitat—In foraging, open ocean mostly well offshore, but occasionally along beach-line. Roosts on strand and on inside, tidal flats.

Thalasseus elegans (Gambel)
Elegant Tern

Synonyms—Sterna galericulata; *Sterna elegans.*

Status—Autumn visitor from south, August to October. Probably irregular in occurrence; in most years rare anywhere, or even altogether absent.

Geographic range—North, coastwise, from Mexican boundary as far as San Francisco Bay. Definite records are: San Francisco Bay [no date] (Cooper, Proc. Calif. Acad. Sci., 4, 1868:10); San Francisco Bay, September 17 [year not given] (Bent, U. S. Nat. Mus., Bull. 113, 1921:220); Monterey Bay, September 22 to October 29, 1896 (Loomis, Proc. Calif. Acad. Sci., ser. 3, zool., 2, 1900:279, 287, 293, 319); Monterey Bay, off Pacific Grove, Monterey County, October 27, 1910 (Mus. Vert. Zool.); vicinity of Morro, San Luis Obispo County, September 22 to October 4, 1918 (Grinnell, Condor, 21, 1919:230); points along coast from Playa del Rey, Los Angeles County, south to Bolsa Chica, Orange County, July 30 to September 17, 1926, September 5, 1941 (F. B. Schneider, Condor, 29, 1927:71; Willett, Pac. Coast Avif. No. 21, 1933: 78; W. A. Kent MS); Pacific Beach, San Diego County, September 21, 1904 (Bishop, Condor, 7, 1905:141); off La Jolla and Point Loma, San Diego County, August 15 to September 19, 1926 (Abbott, Condor, 29, 1927:171).

Habitat—Sandy seashores and waters adjacent to them, both outside surf-line and in sheltered bays.

Uria aalge californica (H. Bryant)
California Common Murre

Synonyms—Uria brunnichii; *Uria troile*; *Uria ringvia*; *Catarractes californicus*; *Lomvia californica*; *Lomvia troile*; *Uria lomvia*; *Lomvia troile californica*; *Uria lomvia* var. *californica*; *Uria lomvia arra*; *Uria grylle*, part; *Uria californica*; *Uria aalge*; Foolish Guillemot; Large-billed Guillemot; Murre; Common Guillemot; California Guillemot; Pallas Murre; Guillemot; California Murre.

Status—Resident. Up to about 1880, "abundant" locally. At one time, "myriads" congregated on the chief breeding ground, the Farallon Islands. Commercial egging, permanent occupancy of those islands by people, and petroleum on the ocean surface has, directly or indirectly, caused great reduction in numbers of the murres.

Geographic range—Chiefly offshore waters, south from Oregon line at least as far (formerly) as Santa Barbara County. Southernmost record is for Newport Beach, Orange County, January 28, 1914 (van Rossem, Condor, 16, 1914:144); but this was of an oil-soaked beach pick-up, hence not probably indicative of normal occurrence so far south. The same holds for a number of other southern records (summarized by Willett, Pac. Coast Avif. No. 21, 1933:80). On San Francisco Bay, murres appear regularly in late summer within Golden Gate as far as waters about Angel Island, and elsewhere within the Bay sporadically (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927: 39; *et al.*). Breeding localities have been recorded as follows: "Rocks of Humboldt and Del Norte counties" [exact points not specified] (Dawson, Birds Calif., 3, 1924:1495); rocks in vicinity of Point Reyes Lighthouse, Marin County (J. and J. W. Mailliard MS; Williams, Condor, 44, 1942:93); sea-cliff and islet near mouth of Bear Valley, Marin County [in 1935-36] (A. H. Miller MS); Farallon Islands (Heermann, Pac. R. R. Rept., 10, pt. 4, no. 2, 1859:75; W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:31; Keeler, Zoe, 3, 1892:155ff.; Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:356; Palmer, U. S. Dept. Agr. Yearbook, 1899:271; Kaeding, Condor, 5, 1903:123ff.; Ray, Auk, 21, 1904:431; Bent, U. S. Nat. Mus., Bull. 107, 1919:182ff.; Dawson, *loc. cit.*; Chaney, Condor, 26, 1924:30; C. F. Smith, Condor, 36, 1934:171; *et al.*); islet off Pedro Point, San Mateo County, up at least to 1908 (Ray, *op. cit.*:434, and Condor, 11, 1909:94); Prince Island, adjacent to San Miguel Island, Santa Barbara County, but not since 1912 (Willett, Condor, 12, 1910:172; Wright and Snyder, Condor, 15, 1913:89; Howell, Pac. Coast Avif. No. 12, 1917:25; Willett, Pac. Coast Avif. No. 21, 1933:80). For discussion of recent losses due to oil contamination, see Aldrich, Bird-Lore, 40, 1938:110ff.; and Moffitt and Orr, Calif. Fish and Game, 24, 1938:242.

Habitat—Open ocean, resorting to steep-sided, offshore islands for breeding.

Cepphus columba columba Pallas
American Pigeon Guillemot

Synonyms—Uria grylle, part; *Uria columba*; *Cepphus columba*; *Pseuduria columba*; Western Guillemot; Black Guillemot; Pigeon Guillemot; Western Sea Dove.

Status—Resident. Locally common, but not distinctly colonial. Few individuals recorded in winter; majority apparently move out to sea for that season. No appreciable change in numbers through time is in evidence.

Geographic range—Seacoast and adjacent ocean waters south from Oregon line, perhaps interruptedly, as far as Santa Barbara Islands. Southernmost record station, San Clemente Island (Cooper, Proc. Calif. Acad. Sci., 4, 1870:79); southernmost definitely known breeding place, Santa Barbara Island (Grinnell, Pasadena Acad. Sci., publ. no. 1, 1897:23; *et al.*). "Stragglers" have been reported within San Francisco Bay in summer (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:39). Breeding localities have been reported as follows, from north to south: Castle Island, near Crescent City, Del Norte County (Clay, Condor, 19, 1917:71); Point Reyes, Marin County

(C. A. Allen, Ornith. and Ool., 6, 1881:19; *et al.*); Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:30; and many other authors); San Francisco at south side of Golden Gate (Schussler, Condor, 18, 1916:35; Hansen and Squires, Condor, 19, 1917:58); Pedro Point, San Mateo County (Ray, Condor, 11, 1909:95; *et al.*); Año Nuevo Island, San Mateo County (Grinnell and Wythe, *loc. cit.*); Carmel Point [= Point Lobos], Monterey County (Loomis, Proc. Calif. Acad. Sci., ser. 2, 5, 1895: 212; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:69; San Simeon and Point Buchon, San Luis Obispo County (D. T. Wood, Condor, 45, 1943:201); vicinity of Port Harford, same county (Willett, Condor, 11, 1909:186); San Miguel, Santa Rosa, Santa Cruz, Anacapa and Santa Barbara islands (records summarized by Howell, Pac. Coast Avif. No. 12, 1917:24; Willett, Pac. Coast Avif. No. 21, 1933:81). General accounts: Bent, U. S. Nat. Mus., Bull. 107, 1919:167ff.; Dawson, Birds Calif., 3, 1924:1475ff.

Habitat—Rugged portions of exposed seacoast, both mainland and island. Forages in offshore waters, and nests in caverns of sea-cliffs or amid surf-beset talus a little above high-water level.

Brachyramphus marmoratus marmoratus (Gmelin)
American Marbled Murrelet

Synonyms—Brachyramphus marmoratus; *Brachyzaurphus marmoratus*; Marbled Auk; Marbled Guillemot; Marbled Murrelet.

Status—Resident. More numerous in winter than in summer; even "plentiful" then in some years, and occurring farther south. Summer-time occurrences include points inland as far as 25 miles from seacoast and probably indicate breeding sites there.

Geographic range—South, coastwise, from Oregon line regularly to Monterey Bay; irregularly as far as vicinity of Santa Barbara (Streator, Ornith. and Ool., 11, 1886:90; Willett, Pac. Coast Avif. No. 21, 1933:81; Ellis Coll.). Occurs occasionally in winter within San Francisco Bay (Mailliard, Condor, 6, 1904:15; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:39). Other significant reports of occurrence have been: vicinity of Tomales Point and Point Bonita, Marin County, in February and March (Stephens and Pringle, Birds Marin Co., 1933:12); vicinity of Golden Gate, San Francisco (Moffitt and Orr, Calif. Fish and Game, 24, 1938:242); Monterey Bay and vicinity, all the year (Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:19; Mailliard, *loc. cit.*; Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:59; Mus. Vert. Zool.). Both seen and heard on occasion in summer, inland from seacoast, as follows: near Trinidad, Humboldt County, June, 1916 (Dawson, Birds Calif., 3, 1924:1488); inland near Eureka, Humboldt County, July 16, 1916 (F. J. Smith MS; adult specimen in Mus. Vert. Zool.); vicinity of Carlotta, Humboldt County, May to July of several different years (Dawson, *loc. cit.*; H. E. Wilder MS; Grinnell MS); Pescadero Creek, San Mateo County, August 24, 1904 (Grinnell MS); "Major Creek" [= Big Creek], Santa Cruz County, May 18, 1914 (Dawson, *loc. cit.*).

Habitat—Open ocean, usually well offshore. Although no authenticated instance of actual nesting is yet known to us, circumstantial evidence indicates that the birds resort to forested slopes on the mainland within the humid coast belt, where natural recesses under logs or mammal burrows in spongy ground may be used for nesting places.

Endomychura hypoleuca scrippsi Green and Arnold
Northern Xantus Murrelet

Synonyms—Brachyramphus hypoleucus, part; *Micruria hypoleuca*; *Endomychura hypoleuca*; White-bellied Auk; Southern Auk; Xantus Guillemot; Xantus Murrelet, part; Scripps Murrelet.

Status—Resident. As to numbers, "fairly common" to even "common," locally, for example, on Monterey Bay in winter of 1904-05 (Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:60, part). Evidently more numerous north of Mexican line, in aggregate, in winter than in summer.

Geographic range—Southerly, coastwise. North of Mexican boundary breeds northwest at least to Anacapa Island, of the Santa Barbara group. In fall and winter, spreads north more or less regularly to Monterey Bay. Northernmost station: 6½ miles south of Point Arena, Mendocino County, April 3, 1926 (Mus. Vert. Zool.); same year, April 10, a fresh bird was found on beach at Half Moon Bay, San Mateo County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:39). [These records suggest possibility of breeding somewhere much farther north than heretofore known.] Actual breeding stations are of record as follows: Anacapa Island (Willett, Pac. Coast Avif. No .7, 1912: 12; Wright and Snyder, Condor, 15, 1913:89; S. B. Peyton, Oologist, 30, 1913:78; Willett, Pac. Coast Avif. No. 21, 1933:81); Santa Barbara Island (Cooper, Proc. Calif. Acad. Sci., 4, 1868:12; Wright and Snyder, *loc. cit.*; Willett, *loc. cit.*). Other notable accounts concern status around Santa Barbara Islands and along coast of southern California (Howell, Pac. Coast Avif. No. 12, 1917:22; Bent, U. S. Nat. Mus., Bull. 107, 1919:149ff., pl. 29; Dawson, Birds Calif., 3, 1924:1489ff.; L. Miller, Condor, 38, 1936: 15), and on Monterey Bay (Mailliard, Auk, 15, 1898:197; Beck, Condor, 9, 1907:58; van Rossem, Condor, 28, 1926:82).

Habitat—Open ocean. For nesting, resorts to islands providing broken or cavernous cliff-sides, or basal rock taluses, with surf beating close below.

Note—For systematic treatment of Xantus Murrelets, see Green and Arnold, Condor, 41, 1939: 25ff., and van Rossem, Ann. Mag. Nat. Hist., ser. 11, 4, 1939:443. *E. hypoleuca* and *E. craveri* may be conspecific but complete proof of this is not yet at hand, particularly evidence from southern Lower California. The genus *Brachyramphus* has been found to differ importantly from *Endomychura* with respect to osteology (R. W. Storer MS in press) and the two should not be merged.

Endomychura hypoleuca hypoleuca (Xantus)
Guadalupe Xantus Murrelet

Synonym—Guadalupe Island Xantus Murrelet.

Status—Apparently rare migrant northward from breeding grounds at Guadalupe Island, Mexico. Thus far known definitely only from two specimens: nos. 2803, 2804 Willett Coll., taken August 11 and 13, 1928, in the channel between Catalina Island and San Pedro, Los Angeles County (Willett, Condor, 41, 1939:121).

Endomychura craveri (Salvadori)
Craveri Murrelet

Synonyms—Synthliboramphus craveri; *Brachyramphus hypoleucus*, part; *Brachyramphus craveri*; Xantus Murrelet, part.

Status—Autumnal visitant from south. Numbers, at least in some years, are probably considerable; but authentic records are too few and scattering to judge much from.

Geographic range—North coastwise from Mexican boundary to Monterey Bay. Records backed by specimens preserved are: Monterey Bay and vicinity, August 14 to October 6 of different years (Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:60, part; van Rossem, Condor, 28, 1926:80ff.; Mus. Vert. Zool.); channel between San Pedro and Santa Catalina Island, August 13 to 20 of different years (Willett, Pac. Coast Avif. No. 21, 1933:82); ocean between San Diego and Los Coronados Islands, Mexico, August 13, 1914 (van Rossem, Condor, 17, 1915:74). Confusion existed in identification of *E. craveri* and different from *E. hypoleucus* until the matter was straightened out by van Rossem (*loci cit.*).

Habitat—Open ocean.

Synthliboramphus antiquus (Gmelin)
Ancient Murrelet

Status—Midwinter visitant, regularly November to March; perhaps individuals below par or decrepit alone comprise those that have been reported after latter month. Apparently common.

Geographic range—South, coastwise, entire length of State. Rarely reaches "inside" waters: San Francisco Bay off San Bruno, San Mateo County, December 23, 1907 (Littlejohn, Condor, 14, 1912:41). Some of more noteworthy stations of record are: vicinity of Monterey and Monterey Bay (Stejneger, Proc. U. S. Nat. Mus., 9, 1886:524; Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:17; *et al.*); among Santa Barbara Islands (Howell, Pac. Coast Avif. No. 12, 1917:22; *et al.*); southern California waters (Willett, Pac. Coast Avif. No. 21, 1933:82); off La Jolla, San Diego County (Kenyon, Condor, 44, 1942:233); near Point Loma, San Diego County (Sefton, Condor, 29, 1927:163). Many published records are of dead birds found on outer beaches after storms, or following widespread oil pollution of water (Aldrich, Bird-Lore, 40, 1938:114).

Habitat—Inshore waters of open ocean.

Ptychoramphus aleuticus aleuticus (Pallas)
Northern Cassin Auklet

Synonyms—Mergulus cassinii; *Ptychoramphus aleuticus*; Cassin Auk; Aleutian Auk; Cassin Auklet.

Status—Resident. Common.

Geographic range—Entire length of State, coastwise. Known breeding places are surprisingly few for so numerous a sea-fowl: "Off-shore Rock" [= Off Trinidad Rock ?], Humboldt County (Clay, Condor, 15, 1913:93); Farallon Islands [far and away largest nesting colony] (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:28; and many other accounts); Prince Island, near San Miguel Island (Willett, Condor, 12, 1910: 172; Wright and Snyder, Condor, 15, 1913:89; *et al.*); islet at Scorpion Harbor, Santa Cruz Island (Beck, Bull. Cooper Ornith. Club, 1, 1899:85); Santa Barbara Island

(Grinnell, Pasadena Acad. Sci., publ. 1, 1897:22; H. Robertson, Condor, 5, 1903:96; *et. al.*). At times of winter storms, many decrepit or dead individuals are washed up on outer sea-beaches of mainland. For some general or summarizing accounts, see: Stephens, Auk, 10, 1893:298 (at Santa Catalina Island); Howell, Pac. Coast Avif. No. 12, 1917:20; Bent, U. S. Nat. Mus., Bull. 107, 1919:110ff.; Dawson, Birds Calif., 3, 1924:1467ff.; Willett, Pac. Coast Avif. No. 21, 1933:82.

Habitat—Open ocean, mostly well offshore. Islands or islets are resorted to for nesting, but only those affording niches under or among rocks, or top-soil into which burrows can be dug by the birds.

Cyclorrhynchus psittacula (Pallas)
Paroquet Auklet

Synonyms—Simorhynchus psittaculus; *Phaleris psittacula*.

Status—Midwinter visitant from north. Rare or sporadic.

Geographic range—Possibly entire length of State, coastwise. Records: in-shore waif, in stormy weather, at Eureka, Humboldt County, February 7, 1909 (Clay, Condor, 14, 1912:196); "ocean side of Humboldt Bay," specimen taken, April 5, 1924 (J. M. Davis, Condor, 42, 1940:222); Stinson Beach, Marin County, April 9, 1944, pick-up dead on beach (R. W. Storer, Condor, 46, 1944:244); "bay and ocean at San Francisco," five specimens in former collection of California Academy of Sciences, of dates January 10, 1895, January 8, 1899 [two], December 17, 1899 [two] (Loomis, Auk, 18, 1901:104); Monterey Bay, "several miles from shore," three specimens taken, January 14 and 17, 1905 (Beck, Condor, 9, 1907:58); vicinity of Point Pinos, near Monterey, "several miles from shore," in 1908, twelve captured on January 13, one on 15th, one on 30th, and dead one picked up on beach at Pacific Grove on 28th (Beck, Proc. Calif. Acad. Sci., ser. 4, 3, 1910:59); on beach north of La Jolla, San Diego County, three, dead and more or less decomposed, found January 28, 1937 (Kenyon, Condor, 39, 1937:257). This last record might have resulted from southward drift, an unknown distance, of helpless birds, so that, as yet, southernmost station of known normal wintering would be neighborhood of Monterey.

Habitat—Open ocean.

Cerorhinca monocerata (Pallas)
Rhinoceros Auklet

Synonyms—Cerorhina monocerata; *Cerorhina occidentalis*; *Uria occidentalis*; *Cerorhina suckleyi*; *Sagmatorrhina suckleyi*; *Ceratorhyncha monocerata*; *Ceratorhina monocerata*; *Ceratorhyncha occidentalis*; *Ceroryncha monocerata*; Horn-billed Guillemot; Horn-billed Auk; Suckley Auk; Horn-billed Puffin.

Status—Winter visitant; September 27 and May 19 may be considered extreme dates for birds of full vigor; decrepit ones stay through summer; however, active individuals have recently been taken in July and August (Willett, Pac. Coast Avif. No. 21, 1933:83, and Condor, 41, 1939:255). Common. Additionally, some numbers formerly remained through summer to breed on islands off San Francisco.

Geographic range—South coastwise entire length of State. Besides many records from littoral waters, especially around Santa Barbara Islands, there are numerous ones of dead or dying birds cast up on outer beaches at many points on mainland. Previous to about 1865, nested on Farallon Islands (Heermann, Pac. R. R. Rept., 10, pt. 4, 1859: 75; Gruber, Zeitschr. für gesammte Ornith., 1, 1884:169; Grinnell, Condor, 28, 1926: 37ff.; Swarth, Condor, 28, 1926:252). Some additional references are: Loomis, Proc. Calif. Acad. Sci., ser. 2, 6, 1896:16 (Monterey Bay), Grinnell, Bull. Cooper Ornith. Club, 1, 1899:17 (at Santa Catalina Island); Howell, Pac. Coast Avif. No. 12, 1917:19 (around Santa Barbara Islands); W. E. Allen, Bird-Lore, 28, 1926:331 (La Jolla, San Diego County); Ross, Condor, 28, 1926:240 (near Santa Cruz Island).

Habitat—Open ocean; at times, waters close in to outer coast-line.

Fratercula corniculata (Naumann)
Horned Puffin

Status—Winter visitant, at least in some years. Records, as below, do not afford conclusive proof that many, if any, of the birds range normally as far south as the Oregon-California line.

Records—Four birds found dead February 16 and 23, 1919, after violent storm, on ocean beach at Samoa, near Eureka, Humboldt County (F. J. Smith, Condor, 21, 1919:128; one, with corroboratory data, now no. 30686 Mus. Vert. Zool.); outer beach at San Francisco, one found dead January 22, 1933 (Grinnell, Condor, 40, 1938:242; no. 62756 Mus. Vert. Zool.); Mussel Rock, March 2 (bird alive but decrepit), Coast Ways, May 17 (dead bird), and Montara Beach, May 24 (two dead birds), on ocean shore of San Mateo County, all in 1919 (H. C. Bryant, Condor, 21, 1919:239; two of specimens saved, nos. 30713-14 Mus. Vert. Zool.); ocean beach 4 miles north of Santa Cruz, Santa Cruz County, dried remains found August 25, 1929 (head saved, no. 54004 Mus. Vert. Zool.); Del Monte, Monterey County, February 22, 1929, pick-up on beach, no. Bi 661, skel. coll., L. A. Mus. (Grinnell, *op. cit.*:245); Pacific Grove, Monterey County, specimen [condition not recorded], no. 26172 L. B. Bishop Coll., "collected" February 17, 1914 (Bishop, Condor, 16, 1914:204, and Condor, 17, 1915:185); beach, 3 miles north of La Jolla, San Diego County, remains found February 25, 1933, saved as mummy, no. 16183 San Diego Soc. Nat. Hist. (Huey, Condor, 35, 1933:233). It would appear that, in most if not all these cases, southward drift of the surface waters may have carried the birds, decrepit if not already dead, more or less south of the winter range characteristic of the species (for discussion, *pro* and *con,* see Grinnell, *op. cit.*).

Habitat—With us, probably only open ocean.

Lunda cirrhata (Pallas)
Tufted Puffin

Synonyms—Fratercula cirrhata; *Mormon cirrhatus*; Puffin.

Status—Resident. Concentrated about nesting islands from about April 1 to end of August; widely scattered, and far less often noted, through winter.

Geographic range—South, coastwise, from Oregon line to Santa Barbara Islands. Southernmost station of record, San Nicolas Island, where single birds seen in May, 1910, and on June 23, 1911 (Willett, Pac. Coast Avif. No. 7, 1912:10). Individuals sometimes enter San Francisco Bay, as far as Sausalito (Grinnell and Wythe, Pacific Coast Avif. No. 18, 1927:37). Places where known to have bred are, from north to south: Castle Island, near Crescent City, Del Norte County (Clay, Condor, 19, 1917: 71); "Off Trinidad Rock," Humboldt County (Dawson, Birds Calif., 3, 1924:1512); Bird Rock, Tomales Point, Marin County (Stephens and Pringle, Birds Marin Co., 1933:5; also *fide* James Moffitt); Point Reyes, Marin County (C. A. Allen, Ornith. and Ool., 6, 1881:19; *et al.*); Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:27; Dawson, Condor, 13, 1911:173; C. F. Smith, Condor, 35, 1933:235; *et al.*); islet in Carmel Bay, Monterey County (Loomis, Proc. Calif. Acad. Sci., ser. 2, 5, 1895:211); islets near Port Harford, San Luis Obispo County (Willett, Condor, 11, 1909:186); Prince [or Princess] Island, near San Miguel Island (Streator, Ornith. and Ool., 13, 1888:53; *et al.*); Anacapa Island (Wright and Snyder, Condor, 15, 1913:88; *et al.*). Recorded in summer also from Santa Cruz, Santa Barbara, and Santa Catalina islands (Howell, Pac. Coast Avif. No. 12, 1917:19); probably nested at one time on at least the first two of these islands. For general accounts, see: Bent, U. S. Nat. Mus., Bull. 107, 1919:82ff.; Dawson, 1924, *loc. cit.*

Habitat—Open ocean; for nesting, resorts to islands, islets, or (rarely) cliffs of the mainland situated farthest seaward, and which at the same time afford sod or earth into which the birds can burrow.

Columba fasciata monilis Vigors
Pacific Band-tailed Pigeon

Synonyms—Columba monilis; *Columba fasciata*; *Cólumba fasciata fasciata*; *Chloraenas fasciata fasciata*; Band-tailed Pigeon; Wild Pigeon; Northern Band-tailed Pigeon.

Status—Permanently resident within State, but with considerable shifting of local populations seasonally and also irregularly. There is doubtless an increment of pigeons in winter from breeding territory north of California. Unrestricted shooting in earlier years, especially when, in winter of 1911-12, the birds were concentrated in the southern Coast Range area, brought great reduction and consequent threat of early extinction. But with legal protection established in 1913, the numbers began to build up, until the species is again common, even abundant at times in favorable localities.

Geographic range—In general, that portion of State lying entirely west of Sierran divides, from Oregon line to Mexican line. In summer, at low altitudes northerly, at middle altitudes southerly; in winter, especially at times of heavy snow, restricted to valleys and lower foothills, south from head of Sacramento Valley to San Diegan district. Life-zone, Transition, locally Upper Sonoran. Extreme altitudes of known nesting places are: 7500 feet, on Mount Pinos, Ventura County (Willett, Pac. Coast Avif. No. 21, 1933:83), and within a few hundred feet of sea level near Redwood City, San Mateo County (Grinnell, Bryant and Storer, Game Birds Calif., 1918:582). Easternmost record stations: at north, Keddie, Plumas County, to September 26 (A. P. Smith, Condor, 20, 1918:45); centrally, Glen Alpine, Eldorado County (Barlow and Price, Condor, 3, 1901:160) and upper Tule Canyon, Tulare County, nesting (Rowley, Condor, 36, 1934:217); at south, Laguna Mountain, San Diego County, nesting (Stephens,

Condor, 15, 1913:129). Northernmost definitely known nesting place, Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:5, 22); southernmost, Laguna Mountain, San Diego County (Stephens, *loc. cit.*). Has visited Santa Catalina Island in January (Meadows, Condor, 36, 1934:40); also in winter, Santa Cruz Island (Hoffmann, Condor, 34, 1932:190) and Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:44). For general account, summarizing previous knowledge of the species, see Grinnell, Bryant and Storer, Game Birds Calif., 1918:575ff. Important subsequent articles are: nesting at Eureka, Humboldt County (J. M. Davis, Condor, 40, 1938:182); in Yosemite Valley (Grinnell, Condor, 30, 1928:126; C. W. Michael, *ibid.*:127; E. Michael, Yosemite Nature Notes, 8, 1929:6, 30); status in southern California (Willett, Pac. Coast Avif. No. 21, 1933:83); nesting season at Pasadena, fall and late winter (W. I. Allen, Condor, 43, 1941:156); nesting in San Diego County (Abbott, Condor, 29, 1927:121); seasonal kill in State (Hunter and Fry, Calif. Fish and Game, 26, 1940:316, map); in general (Dawson, Birds Calif., 3, 1924:1153ff.; Bent, U. S. Nat. Mus., Bull. 162, 1932:353ff.).

Habitat—In summer, chiefly open woods of black oak, Garry oak and golden oak, often where mixed with conifers such as Douglas and big-cone spruces, white firs and yellow pines; less commonly nests in live oaks. In fall and early winter, the same, but then descends normally to the belts of interior and coast live oaks, blue oaks and valley oaks. With exhaustion or failure of acorn crops, or anyway, wandering flocks seek fruits of madrone, toyon, manzanita, elderberry, coffee-berry and chokecherry; also they may resort to grain fields, to vineyards and, in northwest coast belt, to cherry orchards. The propensity, as one food crop fails, to scout about and find another, makes the local winter appearance of Band-tailed Pigeons unpredictable.

Note—For taxonomy and geographic variation in size, see Brodkorb, Condor, 45, 1943:19, and Ridgway, Birds N. M. Amer.,7, 1916:289.

Zenaidura macroura marginella (Woodhouse)
Western Mourning Dove

Synonyms—Columba carolinensis; *Ectopistes carolinensis*; *Zenaidura carolinensis*; *Zenaidura marginella*; *Zenaidura macroura*; *Zenaidura macroura carolinensis*; Carolina Turtle-dove; Common Turtle Dove; Turtle Dove; Carolina Dove; Common Dove; Mourning Dove; California Mourning Dove.

Status—Resident within State, but numbers much smaller and range more restricted in winter than in summer. From northern and elevated areas, exodus migration occurs in October, and return migration takes place in April and May. Aggregate numbers vary from year to year, but in general the species has held its own very well.

Geographic range—In summer, practically throughout State save in highest mountains; spreads then through northwest coast belt into Del Norte County, and east of Sierra Nevada north through Great Basin area to Modoc County at Oregon line. Reaches westward to all of larger islands. Altitudinally, extends regularly to 8000 feet on arid mountains of Inyo County, and exceptionally or casually even to 10,300 feet in central Sierra Nevada (Grinnell and Storer, Animal Life Yosemite, 1924:278). Breeds mainly in Lower and Upper Sonoran life-zones, sparingly in Transition. Winters in more or less reduced numbers south from head of Sacramento Valley (vicinity of Red Bluff, Tehama County) through Great Valley, and in valleys of coast counties from San Francisco

Bay region to San Diego County; also in Imperial and Colorado River valleys. For summary of our knowledge, see Grinnell, Bryant and Storer, Game Birds Calif., 1918:588ff.; also some later accounts: Gander, Auk, 44, 1927:418; Robertson, Calif. Fish and Game, 16, 1930:183; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:230; L. Miller, Condor, 38, 1936:16; Lincoln, Bird-Banding, 7, 1936:124 (returns in Idaho and Nevada of birds banded in San Diego); Hunter and Fry, Calif. Fish and Game, 26, 1940:313.

Habitat—Characteristically, an open type of deciduous woodland, or interspersed grassland and sparse chaparral. Examples: the foothill blue-oak belt, and the broad bottomlands of lowland streams. However, foraging for seeds of herbs carries the doves onto all sorts of open ground, as on plains and deserts far from water, which latter is sought twice daily by long, swift flights.

Zenaida asiatica mearnsi (Ridgway)
Western White-winged Dove

Synonyms—Melopelia leucoptera; *Melopelia asiatica*; *Melopelia asiatica trudeaui*; *Melopelia asiatica mearnsi*; White-winged Dove.

Status—Summer visitant, April to September; locally common.

Geographic range—Extreme southeastern corner of State: valley of Colorado River north from Mexican line to vicinity of Needles, San Bernardino County; northwest from Imperial Valley to Coachella Valley, Riverside County, and Twentynine Palms, San Bernardino County (Grinnell, Bryant and Storer, Game Birds Calif., 1918:604; Wiley, Condor, 18, 1916:230; Fortiner, Condor, 22, 1920:190, and *ibid.*, 23, 1921:168; Dawson, Birds Calif., 3, 1924:1165ff.; Ricketts, Calif. Fish and Game, 14, 1928:252; F. Carter, Condor, 39, 1937:86). Life-zone, strictly Lower Sonoran. Altitudinal range from —200 feet at Salton Sea up to 2100 feet in southern San Bernardino County. Vagrant occurrences have been recorded elsewhere in southern and central California: ten miles west of Escondido, San Diego County, specimen taken about September 25, 1911 (J. [S.] Dixon, Condor, 14, 1912:196); Redlands, San Bernardino County, birds seen (McAllister, Gull, 22, 1940:25); Sierra Madre, Los Angeles County, bird seen, January 19 [=17], 1943 (Cogswell, Aud. Mag., 45, 1943:16; Cogswell MS); Santa Barbara, bird seen, November 8, 1922 (Parmenter, Condor, 25, 1923:107); Dune Lakes near Oceano, San Luis Obispo County, October 19, 1939 (Rett, Condor, 42, 1940:266); 5 miles west of Watsonville, Santa Cruz County, July 18, 1939, bird seen several times (Bond, Condor, 41, 1939:255).

Habitat—River bottomlands and desert oases and basins where deciduous growths (cottonwood, willow, mesquite) are interspersed with, or flanked by, weedy fields; also visits certain cactuses when these are fruiting.

Columbigallina passerina pallescens (Baird)
Mexican Ground Dove

Synonyms—Chamaepelia passerina; *Columbigallina passerina*; *Chaemepelia passerina pallescens*; Ground Dove.

Status—Resident. In a very few places, fairly common; otherwise of but casual occurrence.

Geographic range—Extreme southeastern corner of State, along valley of Colorado River north from vicinity of Fort Yuma at least to Palo Verde, Imperial County, and in Imperial Valley (Grinnell, Bryant and Storer, Game Birds Calif., 1918:606ff. [citing new as well as previously published information]; Wiley, Condor, 18, 1916:230; Fortiner, Condor, 22, 1920:154, and *ibid.*, 23, 1921:168; Hoffmann, Condor, 24, 1922:101). Life-zone, Lower Sonoran. Normally occurs below altitudes of 1000 feet. Vagrant movements, to which this species seems specially prone, have carried individuals westward into San Diegan district and thence northwest to San Francisco Bay region. Such reported occurrences based on specimens have been as follows: San Diego, specimen, November 10, 1915 (Grey, Condor, 18, 1916:83); San Pasqual, San Diego County, specimen, "about 1900" (Willett, Pac. Coast Avif. No. 7, 1912:44); Escondido, San Diego County, specimen, June 29, 1915 (J. [S.] Dixon, Condor, 18, 1916:84); Banning, Riverside County, specimen, October, 1902 (Willett, *loc. cit.*); San Gabriel, Los Angeles County, "several" in '60's (Baird, Brewer and Ridgway, Hist. N. Amer. Birds, 3, 1874: 390, 522); Monterey, Monterey County, taken (same authority); Castroville, same county, specimen, "middle of June, 1913" (Silliman, Condor, 17, 1915:207); Pescadero, San Mateo County, February 27, 1898, specimen taken from flock of eleven (Littlejohn, Bull. Cooper Ornith. Club, 1, 1899:73); San Francisco, specimen, May, 1870 (Baird, Brewer and Ridgway, *loc. cit.*).

Habitat—River bottomlands, where tracts of cottonwood, willow and mesquite adjoin weedy open ground; near vicinity of water a necessity. Seems to have increased and spread, with irrigation of low-lying desert lands.

Coccyzus americanus occidentalis Ridgway
California Yellow-billed Cuckoo

Synonyms—Coccyzus erythrophthalmus; *Coccyzus americanus*; Black-billed Cuckoo; Yellow-billed Cuckoo; California Cuckoo.

Status—Summer visitant, May to September. In general, population thinly spread; "fairly common" to even "common" in earlier years in a few, most-favorable localities. Because of removal widely of essential habitat conditions, this bird is now wanting in extensive areas where once found.

Geographic range—Metropolis lies in larger valleys west of Sierran divides. Occurrences elsewhere concern migrant individuals or outlying breeding stations. Main breeding range extends northwest from Mexican line in western San Diego County along coast belt through San Francisco Bay region as far as Sebastopol, Sonoma County (Shelton, Condor, 13, 1911:19; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:87), and through San Joaquin and Sacramento valleys, from vicinities of Bakersfield and Weldon, Kern County, to vicinity of Redding, Shasta County. Yet farther north, has been reported from Siskiyou County: Shasta River, in July, 1899 (Merriam, N. Amer. Fauna No. 16, 1899:114); Edgewood, in late May, 1920 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:81, 91); Sisson [Mount Shasta City], in July, 1916 (Dawson, Birds Calif., 3, 1924:1148ff.). There is also a record from Surprise Valley, Modoc County, "in midsummer" (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:339).

East of Sierras, recorded as follows: Bishop, Owens Valley, Inyo County, August 11, 1891 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:45); Independence, Owens Valley, Inyo County, June 29, 1917 (two specimens, nos. 27888-89 Mus. Vert. Zool.); Death Valley, Inyo County, June 20, 1891 (A. K. Fisher, *loc. cit.*); Colorado River near Needles, San Bernardino County, middle of June, 1902 (Stephens, Condor, 5, 1903: 101); Mohave River, near Yermo, San Bernardino County, August 6 and 7, 1910 (Lamb, Condor, 14, 1912:36). Altitudes of known occurrences extend from —178 feet in Death Valley up to 4700 feet in Surprise Valley, Modoc County. Life-zones, Upper and Lower Sonoran. Besides some of references given above, important ones are: Bendire, Life Hist. N. Amer. Birds, 2, 1895:25; Atkinson, Bull. Cooper Ornith. Club, 1, 1899:95 (nesting near San Jose, Santa Clara County); Jay, Condor, 13, 1911:69 (nesting in Los Angeles County); Tyler, Pac. Coast Avif. No. 9, 1913:53 (nesting in Fresno County); Willett, Pac. Coast Avif. No. 21, 1933:86 (southern California in general); Hanna, Condor, 39, 1937:57ff. (nesting in San Bernardino Valley).

Habitat—Most characteristic, riparian jungles of willows of fairly old growth, often mixed with cottonwoods, and with a tangled "lower story" of blackberry, nettles, or wild grape. Such conditions obtain on the broad lower flood-bottoms of our larger streams.

Geococcyx californianus (Lesson)
California Road-runner

Synonyms—Saurothera californiana; *Saurothera bottae*; *Leptostoma longicauda*; *Geococcyx mexicanus*; *Geococcyx viaticus*; *Geococcyx affinis*; Ground Cuckoo; Road-runner; Paisano; Chaparral Cock.

Status—Resident wherever found at all. Under optimum conditions, common, in the sense that 8 or 10 individuals may be seen along roads in a half day's auto trip. In parts of the State where formerly common, and which have been thickly settled by people, or heavily hunted, now greatly reduced in numbers or even gone entirely.

Geographic range—Greater portion of State at lower elevations south of head of Sacramento Valley. West from Nevada line and Colorado River quite or nearly to seacoast in central and southern sections; northwest from Mexican boundary, in coast belt (chiefly interiorly to sweep of summer fogs) to Mendocino County, west of Sierra Nevada to Shasta County, and east of Sierra Nevada to northern Inyo County. More exactly, northernmost record stations in coast belt are near mouth of Gualala River, Navarro River ten miles from seacoast and "below" Willits, all these points in Mendocino County (A. H. Miller, Condor, 35, 1933:37); northernmost in Sacramento Valley: Igo, Shasta County (Belding, Land Birds Pac. Dist., 1890:56), and Copper City, ten miles up Pit River, Shasta County (Townsend, Proc. U. S. Nat. Mus., 10, 1887: 204); northernmost east of Sierra Nevada: Owens Valley between Big Pine and Bishop, Inyo County (Mus. Vert. Zool.). There is an old record from Santa Catalina Island (Cooper, Proc. Calif. Acad. Sci., 4, 1870:77), but it is probably a mistake (see Howell, Pac. Coast Avif. No. 12, 1917:103). Altitudes of known occurrence extend from —250 feet, in Death Valley, Inyo County, up exceptionally to 7500 feet, in Piute Mountains, Kern County. Life-zones, Lower and Upper Sonoran; metropolis in former. Some further literature, as bearing on distribution and on natural history: Bendire, Life Hist. N. Amer. Birds, 2, 1895:13ff.; Grinnell, Condor, 9, 1907:51; H. C. Bryant, Univ. Calif. Publ. Zool., 17, 1916:21ff.; Dawson, Birds Calif., 3, 1924:1137ff.; Law, Condor, 25,

1923:133; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:31, 70; Abbott, Condor, 42, 1940:119ff.; Bent, U. S. Nat. Mus., Bull. 176, 1940:36ff.; Webb, Gull, 24, 1942:35.

Habitat—Areas of mixed open ground and tracts of brush; arid, open land with scattered bushes or thickets; "edges" of chaparral, where adjoining sparsely vegetated grassland. Negatively, *not* forest, not solid chaparral, not continuous prairie or bare desert surface. Positively again, requirements include continuous and plentiful presence of terrestrial insects of large caliber and lizards supplemented on occasion with other kinds of animal prey obtainable on the ground, and thickets, large bushes or small trees, for shade, safety-refuge, roosting and nesting. Kinds of plants used in latter ways include mesquite, cholla and tuna cactus, catclaw, sumac, buck-brush, and small-sized, thick-foliaged oak trees.

Tyto alba pratincola (Bonaparte)
North American Barn Owl

Synonyms—Strix pratincola; *Strix perlata*; *Strix flammea pratincola*; *Strix flammea americana*; *Aluco flammeus americanus*; *Aluco pratincola*; *Tyto perlata pratincola*; *Tyto pratincola*; *Tyto alba*; Barn Owl; American Barn Owl.

Status—Resident; common, even (for an owl) abundant. Quite probably more numerous and widespread now than originally, by reason of increase in number and extent of suitable breeding sites; also locally because of reduction in numbers of owl-persecuting falconids such as Prairie Falcon.

Geographic range—Far and wide over low-level portions of State; metropolis lies in warm southern and interior sections. Humid coast belt north of Marin County rarely or but recently occupied; high altitudes, open deserts, and heavy forests avoided. Some marginal stations of occurrence at north: Petrolia, Humboldt County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:19); Carlotta and Ferndale, Humboldt County (Wilder, Condor, 18, 1916:127); Trinidad, Humboldt County (Dawson, Birds Calif., 3, 1924:1070); Castle Rock, off Crescent City, Del Norte County (Bonnot, Condor, 30, 1928:320); Lava Beds National Monument, Siskiyou County (Dixon and Bond, Condor, 39, 1937:97; Bond, Condor, 41, 1939:54); Camp [= Fort] Bidwell, Modoc County (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. L, 1879:313). East of southern Sierra Nevada, has been found north to Alvord [Big Pine], Owens Valley, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:42). Has been recorded from islands as follows: Santa Rosa Island (Pemberton, Condor, 30, 1928:147); Santa Cruz Island (Linton, Condor, 10, 1908:127; Howell and van Rossem, Condor, 13, 1911:209); Anacapa Island (Willett, Pac. Coast Avif. No. 7, 1912:50). Altitudes of known occurrence extend from —240 feet, at southeast end of Salton Sea (Mus. Vert. Zool.), up to 5500 feet, at Whitaker's Forest, 10 miles northeast of Badger, Tulare County (J. T. Marshall, Jr., MS). Life-zones, characteristically Lower and Upper Sonoran; invades Transition sporadically or marginally, as illustrated by records from northwestern portion of State. A few notable references, additional to above, out of 162 at hand: Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:47); bathing (Mailliard, Condor, 24, 1922:31); food, Berkeley, Alameda County (Hall, Condor, 29, 1927:274); growth of young and habits (E. L. Sumner, Jr., Condor, 31, 1929:85ff., and Univ. Calif. Publ. Zool., 40, 1933-34: 278ff., 331ff.); killed by Prairie Falcons (Tyler, Condor, 35, 1933:187; Bond, Condor,

38, 1936:169); southwestern California (Willett, Pac. Coast Avif. No. 21, 1933:87); fight with Marsh Hawk (Silliman and von Bloeker, Condor, 39, 1937:129); San Francisco Bay region (Smith and Hopkins, Condor, 39, 1937:189); longevity (E. L. Sumner, Jr., Condor, 42, 1940:39); Dune Lakes, San Luis Obispo County, food (Glading, Tillotson and Selleck, Calif. Fish and Game, 29, 1943:93ff., and Selleck and Glading, *ibid.*, 122ff.).

Habitat—Requirements include three essential factors: (1) grassland, hay fields, or open hillsides that are productive of small to medium-sized mammals in sufficient abundance for food; (2) thick-foliaged trees, or brush thickets, or buildings for day-time roosting; and (3) cavities for breeding, such as pot-holes in cliffs, holes in earth banks, holes in tree-trunks, and, as latterly available, human-built enclosures or shelters of a wide variety of dimensions and original purposes.

Otus flammeolus (Kaup)
Flammulated Owl

Synonyms—Scops flammeolus; *Megascops flammeolus*; *Megascops flammeolus idahoensis*; *Otus flammeolus idahoensis*; *Megascops flammeolus flammeolus*; *Otus flammaeolus flammeolus*; Flammulated Owlet; Feilner Owl; Flammulated Screech Owl; Little Flammulated Screech Owl; Dwarf Screech Owl; Dwarf Flammulated Screech Owl.

Status—Obscurely known. Summer resident within the State; in view of but one winter record, presumed to be migratory in the main; always considered "rare," until specialized field technique was applied (by J. T. Marshall, Jr., see below), whereupon in several areas, at least, numbers have been found present to point of meriting term "common."

Geographic range—In the main, northern inner coast ranges, Sierra Nevada, and higher mountain masses of southern California including suitable desert ranges. Altitudes of known or presumed breeding stations extend from 2400 feet, in Trinity County, up to 9000 feet, at Dry Lake, San Bernardino Mountains. Life-zones, of breeding, Canadian and Transition. Records to date (1944) are: Mad River at 2400 feet altitude, June 12, 1930, and South Fork Mountain, 5000 feet, August 28-31, 1942, breeding (Grinnell MS; A. H. Miller MS; Mus. Vert. Zool.); Mount Hanna, Lake County, July 8, 1940 (N. Stone, Condor, 43, 1941:70); Fort Crook, Shasta County, one specimen, August 23, 1860 (Cooper, Ornith. Calif., 1, 1870:422); Quincy, Plumas County, 1907 (H. C. Bryant, Condor, 22, 1920:33); near Meeks Bay, 6300 feet, Lake Tahoe, Eldorado County, September 10, 1937 (Mus. Vert. Zool.); Rowland's Marsh, Lake Tahoe, specimen (Ray, Condor, 43, 1941:247); Davis, Yolo County, October 31, 1935, specimen (Emlen, Condor, 38, 1936:43); Big Trees, Calaveras County, August 16, 1880, specimen (Belding, Proc. U. S. Nat. Mus., 5, 1883:549); Twin Lakes, 7100 feet, southwest of Bridgeport, Mono County, "early June," 1926 (Mus. Vert. Zool.); 9 miles west of Benton, Mono County, June 20, 22, 1942 (W. C. Russell MS; Mus. Vert. Zool.); Whitaker's Forest, 5500 feet, Meadows Flat, 5000 feet, and Big Meadow, 7659 feet, Tulare County, eleven specimens, May 21 to July 10, 1938 (Marshall, Condor, 41, 1939: 71ff.); Lone Pine Creek, 8200 feet, Inyo County, May 24, 1942 (W. C. Russell MS); Monache Meadows, 8000 feet, Tulare County, adult and young, August 4, 1911 (Grinnell, Pac. Coast Avif. No. 11, 1915:72); Shepherd Canyon, Argus Mountains, Inyo County, August 11, 1931, juvenile (Huey, Auk, 49, 1932:107); Mount Pinos, 7500 feet,

Ventura County, July 24, 25, 1936 (L. Miller, Condor, 38, 1936:228); Clark Mountain, 7500 feet, eastern San Bernardino County, May 20, 1939 (A. H. Miller, Condor, 42, 1940:162); San Bernardino Mountains, at least eleven instances, May, June (nesting), July and January (Hasbrouck, Auk, 10, 1893:260; E. D. Palmer, Auk, 11, 1894:78; Oberholser, Ornis, 10, 1899:36, 38; Gilman, Condor, 4, 1902:85; Stephens, Condor, 4, 1902:40; J. S. Dixon, Condor, 7, 1905:140; Grinnell, Univ. Calif. Publ. Zool., 5, 1908: 59; Robertson, Condor, 24, 1922:34; Willett, Pac. Coast Avif. No. 21, 1933:88; Hanna, Condor, 43, 1941:290).

Habitat—In breeding season, broken or open coniferous forest. In Trinity County, associated with mixed black and Garry oaks, yellow pine, Douglas spruce and white fir; in Sierra Nevada and more southern mountains, one place or another, with Jeffrey pine, lodgepole pine, red fir, white fir, yellow pine, incense cedar, black oak; once taken in piñon belt. Concealment well within the foliage canopy of large trees is sought even during periods of activity at night, although foraging for insects in the foliage and in the airways between trees takes the birds into the open momentarily (see Marshall, *loc. cit.*).

Note—The trinomial is not used for this species since validity of the race *rarus* of Guatemala seems questionable.

Otus asio macfarlanei (Brewster)
MacFarlane Screech Owl

Synonyms—Scops asio; *Scops asio bendirei*, part; *Megascops asio kennicottii*, part; *Otus asio kennicotti*; Little Red Owl, part; Mottled Owl, part; California Screech Owl, part; Kennicott Screech Owl, part.

Status—Probably resident.

Geographic range—Presumed to extend southwest from eastern Oregon, etc., into northeastern corner of State, to cover Modoc plateau; but only one definite record is so far known, as follows: specimen (no. 16027 U. S. Nat. Mus.) taken by John Feilner (probably in 1860) at Fort Crook [near present Cayton] in extreme northeastern Shasta County (Brewster, Bull. Nutt. Ornith. Club, 7, 1882:32; Ridgway, Birds N. M. Amer., pt. 6, 1914:698; Grinnell, Condor, 21, 1919:173).

Otus asio brewsteri Ridgway
Brewster Screech Owl

Synonyms—Otus asio bendirei, part; California Screech Owl, part; California Coast Screech Owl, part.

Status—Sparse resident.

Geographic range—Narrow coastal belt from Oregon line south at least to central Humboldt County. Replaced interior to redwood forests by *O. a. bendirei*. Known records verified as to race: Eureka, Humboldt County, 2 specimens (Swarth, Condor, 17, 1915:167); same locality, specimen (Bent, U. S. Nat. Mus., Bull. 170, 1938:280; E. T. Smith, *in litt.*); Carlotta, same county, specimen taken August 26, 1934, by L. Miller (now no. 88292 Mus. Vert. Zool.).

Habitat—Broken coastal coniferous forest and stands of alders.

Note—Swarth (*loc. cit.*) allocated the specimens from Eureka to *bendirei*, but pointed out also their resemblance to *brewsteri* from which they differed only in less ruddy coloration. With accumulation of further material from Oregon it now appears that these California specimens correspond well with gray-phase individuals of *brewsteri* or *kennicotti* and may properly be assigned to the former which must therefore extend southward in the coastal fog belt from Oregon.

Otus asio bendirei (Brewster)
California Coast Screech Owl

Synonyms—*Scops asio*, part; *Scops asio* var. *maccalli*, part; *Scops asio* a. *asio*, part; *Scops asio bendirei*, part; *Megascops asio bendirei*, part; *Megascops asio kennicottii*, part; *Otus asio*, part; Mottled Owl, part; Screech Owl, part; Mottled Screech Owl, part; Western Mottled Owl, part; California Screech Owl, part; California Mottled Owl; Kennicott Screech Owl, part.

Status—Resident. Generally common and widespread, more so now, probably, than in earlier years, because of "opening up" of heavy forests.

Geographic range—In general, northwest coast belt exclusive of narrow coastal strip in Del Norte and Humboldt counties south from Oregon line through coast counties as far as Monterey Bay. Specimens now at hand warrant further outlining as follows: north to Redwood Creek, 800 feet [about 20 miles inland], Humboldt County; south to southern Santa Cruz County; east at north to Beegum, Tehama County; east centrally and southerly at least to Howell Mountain, Napa County, and to Oakley, Contra Costa County, and Arroyo Mocho, Alameda County. Blending southward and eastward into subspecies *quercinus* is gradual. Life-zones, Upper Sonoran and Transition. Altitudes of known occurrence extend from near sea level, as in San Francisco Bay region, up to about 3000 feet, near Hyampom, Trinity County (A. H. Miller MS). From the many references in the literature concerning the California Coast Screech Owl, the following selections are cited as being of most significance for its natural history: Emerson, Ornith. and Ool., 10, 1885:173; Clabaugh, Condor, 28, 1926:43; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:85; McLean, Calif. Fish and Game, 14, 1928:251; McCabe, Condor, 35, 1933:240; A. S. Allen, Condor, 45, 1943:154.

Habitat—Typically, more or less broken woodland. Preference is shown for belts of oak trees of various kinds; but also any sort of tree species suffices which provides the "natural" or woodpecker-excavated cavities of the right size for daytime shelter and for nesting. Ranches and suburbs of towns often furnish favorable quarters, in buildings as well as in planted trees.

Otus asio quercinus Grinnell
Southern California Screech Owl

Synonyms—*Ephialtes choliba*; *Ephialtes asio*; *Scops asio*, part; *Scops asio* var. *maccalli*, part; *Scops asio* a. *asio*, part; *Scops trichopsis*; *Megascops asio*; *Megascops asio bendirei*, part; *Otus asio*, part; *Otus asio bendirei*, part; *Scops asio bendirei*, part; *Otus asio clazus*; Screech Owl, part; Mottled Owl, part; Little Screech Owl; Mottled Screech Owl, part; Western Mottled Owl, part; California Screech Owl, part; Pasadena Screech Owl.

Status—Resident. In wooded sections, common to "abundant," for an owl. With appearance and growth of towns and ranches on prairie lands, has doubtless spread, so that aggregate numbers now are greater than originally obtained.

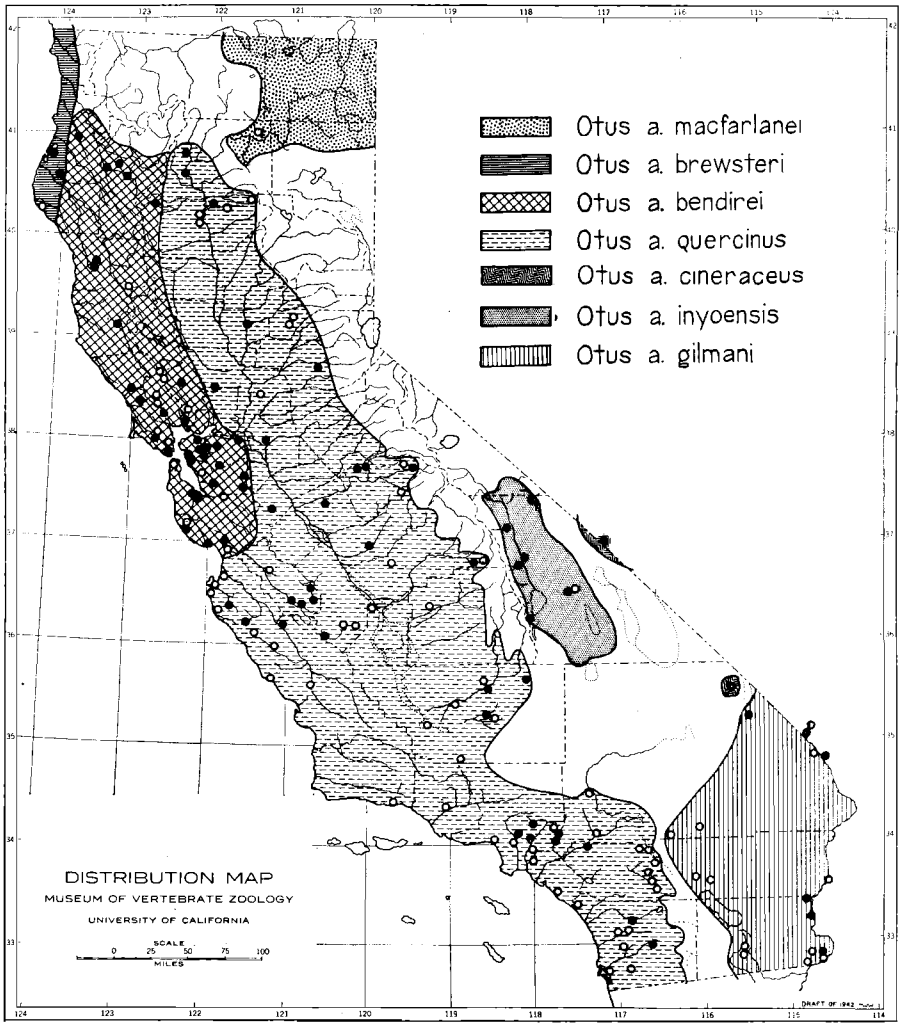

Fig. 8. Distribution of Screech Owls, *Otus asio*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Geographic range—Roughly, that large portion of State west of Sierran divides, east of northern and central humid coast belt, and north from Mexican line to head of Sacramento Valley, in Shasta County. Life-zone, chiefly Upper Sonoran; but occupies also portions of Transition and of Lower Sonoran. Altitudinally, extends from near sea level, as at Santa Barbara, up to at least 5500 feet, as on Mount Wilson, Los Angeles County. References in the literature are many; selections: vicinity of Red Bluff, Tehama County, 300 to 4800 feet (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:233); Elk Grove, Sacramento County, young in brood of Sparrow Hawks (F. A. Sumner, Condor, 35, 1933:231); near Salinas, and San Lucas, Monterey County (von Bloeker and Rudd, Condor, 39, 1937:176); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:49); Santa Ana River near Riverside, Riverside County, nesting (Bendire, Life Hist. N. Amer. Birds, 1, 1892:362); Buena Park, Orange County, nest-

ing and habits (Robertson, Condor, 23, 1921:97, *ibid.*, 27, 1925:35, *ibid.*, 29, 1927:77, and *ibid.*, 33, 1931:138); Claremont, Los Angeles County, growth and habits, longevity (E. L. Sumner, Jr., Condor, 30, 1928:333, *ibid.*, 31, 1929:106, and *ibid.*, 42, 1940: 40); southern side Mohave Desert, nesting, mixed sets of eggs with Sparrow Hawk (Hanna, Condor, 38, 1936:250, and *ibid.*, 42, 1940:218); Victorville, San Bernardino County (Rowley, Condor, 31, 1929:127); Escondido, San Diego County, nesting (Sharp, Condor, 9, 1907:87); near San Diego, voice (Abbott, Condor, 32, 1930:258).

Habitat—Primarily woodland, especially as exemplified in tracts of live oaks; any other kind of oak, or tree of any sort that furnishes cavities suitable for shelter and nesting, may provide the factor for presence of this owl in a locality in which subsistence otherwise is adequate. Thus, river bottoms grown to cottonwood and willow, sparsely wooded foothills, canyon walls carrying broken forest, suburbs of towns, all are likely to support a normal population of this Screech Owl.

Note—In the present writers' judgment subspecific "splitting" farther than is indicated in the present treatment of *Otus asio* in California is not likely to be useful. For the trends in geographic variation are, because of continuity of populations, for the most part gradual; and also, the differences between the recognized and additional marginal or intermediate races that might be named are so slight as to be obscured by the extent of individual variation in any one population. It is better, we think, merely to say that screech owls here included under the name *quercinus*, from the Walker Basin region, in Kern County, vary toward *inyoensis*; from the western part of the Mohave Desert area vary toward *gilmani*; up the coast ranges from Santa Barbara County to Monterey County and San Benito County vary gradually toward *bendirei*; in the upper Sacramento Valley vary toward *macfarlanei*; and that *bendirei* northwestwardly reaches an extreme as to darkness of color tone, toward the race *brewsteri*, in the Humboldt Bay region.

Otus asio inyoensis Grinnell
Inyo Screech Owl

Synonym—Southern California Screech Owl.

Status—Resident. Fairly common locally.

Geographic range—Inyo region, east and southeast of southern Sierra Nevada; includes Owens Valley and mountains to eastward to edge of Death Valley. Northernmost known station in State, Roberts Ranch, 8250 feet, Wyman Creek, White Mountains, extreme northern Inyo County; southernmost, Walker Creek, 5200 feet, 4 miles southwest of Olancha, Inyo County; easternmost, near Lee Pump, 6000 feet, in northern section of Panamint Mountains, Inyo County (Grinnell, Auk, 45, 1928:213; Mus. Vert. Zool.). Life-zones, Upper and Lower Sonoran. Altitudes of recorded occurrence in Owens Valley, down to 3900 feet, at Independence.

Habitat—On the mountains, tracts of piñon pines; in Owens Valley, riparian woodland and planted trees (poplars and cottonwoods) at towns and ranches.

Otus asio cineraceus (Ridgway)
Mexican Screech Owl

Status—Resident, probably permanently, of restricted areas along Nevada boundary. Known to be present in but two localities: Grapevine Mountains, Inyo County, specimens from Nevada within 2 miles of boundary near Grapevine Peak (Mus. Vert.

Zool.); Clark Mountain, San Bernardino County, 6300 feet, specimen taken May 16, 1939, by A. H. Miller (no. 77346 Mus. Vert. Zool.).

Habitat—Piñon and juniper woodland.

Note—We find it impossible to distinguish birds from northern Arizona from those of the southeastern mountains of that state and therefore consider *mychophila* (Oberholser, Jour. Wash. Acad. Sci., 27, 1937:356) a synonym of *cineraceus*. The latter in the inclusive sense ranges into the mountains of southern Nevada (see Linsdale, Pac. Coast Avif. No. 23, 1936:61).

Otus asio gilmani Swarth
Sahuaro Screech Owl

Synonyms—Megascops asio cineraceus; *Otus asio*, part; *Otus asio cineraceus*, part; Mexican Screech Owl; Arizona Screech Owl.

Status—Resident. Common where suitable conditions for daytime shelter and for nesting obtain.

Geographic range—Valley of Colorado River and adjacent parts of Mohave and Colorado desert areas. In detail: valley of lower Colorado River from neighborhood of Needles to Mexican boundary (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:128; Stephens, Condor, 5, 1903:100; Brown, Condor, 6, 1904:46; L. Miller, Condor, 30, 1928: 192). Also, Imperial Valley: Brawley, Salton, and southwest of Coachella (van Rossem, Condor, 13, 1911:131; Mrs. B. L. Clary, Condor, 35, 1933:80; Moore and Moore, Auk, 56, 1939:40). Specimens (Mus. Vert. Zool.) from Providence Mountains, San Bernardino County, are intermediate in characters toward *cineraceus* but are nearest present race. Records of Screech Owls from Morongo Valley, Twentynine Palms, Shaver's Well, and other points on southern Mohave and Colorado deserts (L. Miller, *loc. cit.*; F. Carter, Condor, 39, 1937:213) probably belong under this heading. Altitudes extend from near sea level (river bottom near Pilot Knob, Imperial County) up, exceptionally, to 5000 feet (intergrades in Providence Mountains). Life-zones, Lower and Upper Sonoran.

Habitat—River-side bottomlands grown to cottonwoods and large willows and mesquites; open desert where carrying giant cactus or tree-yucca; marginally, mountains carrying piñon pines; probably also niche-affording cliffs. The critical factor for presence of this owl clearly is availability of proper-sized holes, usually as excavated by woodpeckers in tree trunks, or in yucca or cactus boles, for purposes of breeding and daytime shelter. Forages at low level in trees or desert scrub.

Bubo virginianus occidentalis Stone
Rocky Mountain Horned Owl

Synonyms—Bubo virginianus pacificus, part; *Bubo virginianus pallescens*, part; *Bubo virginianus*, part; Western Horned Owl, part; Pacific Horned Owl, part; Pale Horned Owl; Pallid Great Horned Owl; Montana Horned Owl; Horned Owl, part.

Status—Resident. Common.

Geographic range—Northeastern, high-plateau corner of State, east of main Cascade-Sierra Nevadan forests. Recorded from various points in Modoc County and

eastern Siskiyou and Lassen counties. Chief records are: Warner Mountains and near Alturas, Modoc County, and Shumway, Termo, etc., Lassen County (Swarth, Condor, 23, 1921:136; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:234); Cowhead Lake, 5400 feet, Modoc County (Mus. Vert. Zool.); Clear Lake, Modoc County (Willett, Condor, 21, 1919:204); Lava Beds National Monument and Tule Lake, Modoc and Siskiyou counties (Dixon and Bond, Condor, 39, 1937:97ff.; Bond, Condor, 41, 1939:54). Life-zones, Upper Sonoran and Transition; altitudes of known occurrence, 4200 feet, at Tule Lake, to 8700 feet, at head of Pine Creek, Warner Mountains (Mus. Vert. Zool).

Habitat—Well-nigh all kinds of territory within general range, save for open playas. Headquarters of individuals are in woodland, broken forest, lava escarpments, cliffs, or buildings; thence the birds forage out far and wide over any sort of ground producing rabbits or rodents.

Bubo virginianus pacificus Cassin
Pacific Horned Owl

Synonyms—Strix virginiana; *Bubo magelannicus*; *Bubo virginianus arcticus*; *Bubo virginianus*, part; *Bubo virginianus subarcticus*, part; *Bubo subarcticus*; *Asio magellanicus*; *Asio magellanicus pacificus*; *Asio magellanicus icelus*, part; *Bubo virginianus icelus*, part; *Bubo horribilis*; *Bubo virginianus elachistus*; Great Horned Owl, part; Western Great Horned Owl, part; Western Horned Owl, part; Horned Owl, part; Dusky Horned Owl, part; California Horned Owl; Coast Horned Owl, part; Pacific Great Horned Owl; Dwarf Horned Owl.

Status—Resident. As a rule, common. Becoming scarce locally, but numbers in the main holding up remarkably well, even in certain districts closely settled by man and despite much hunting of "vermin." Indeed, some rural areas in central California contiguous to cities seem to be "saturated" with Horned Owls, as judged from their nocturnal voicings.

Geographic range—In general, that major portion of State lying west of the Great Basin and southeastern deserts, and east of the northern and central humid coast belt; north from Mexican line in San Diego County to Oregon line in central Siskiyou County; at extreme north, specimens of this race are at hand (Mus. Vert. Zool.) from South Fork Mountain and Weaverville, Trinity County, and from Boggs Creek and near Weed, Siskiyou County. Range includes all of Sierra Nevada, Great Central Valley and enclosing foothills, and southern coast range belt northwest on the seacoast through Monterey County and interiorly to Alameda and Contra Costa counties. Altitudinally, occurs from near sea level up regularly, at least in summer, to 7000 feet, exceptionally to 10,500 feet (in Yosemite National Park). Life-zones of breeding, Lower Sonoran to Transition; possibly also Canadian. References are very many; some, of significance, especially for distribution, are: Sisson [Mount Shasta City], Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:114); Lassen Peak region, Tehama and Lassen counties (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:234); Blairsden, Plumas County (Ewan, Condor, 38, 1936:83); Gold Lake, Sierra County (M. W. Wythe, Condor, 29, 1927:65); Stockton, San Joaquin County, food (W. B. Sampson, Condor, 34, 1932:140); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:309); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:86); Berkeley, food (Hunt, Condor, 20, 1918:125); Los Baños, Merced County, behavior and food (E. L. Sumner, Jr., Calif. Fish and Game, 17, 1931:277, 278, and *ibid.*, 21, 1935:240); Madera County, nesting (Fitch, Condor, 42, 1940:73); Fresno

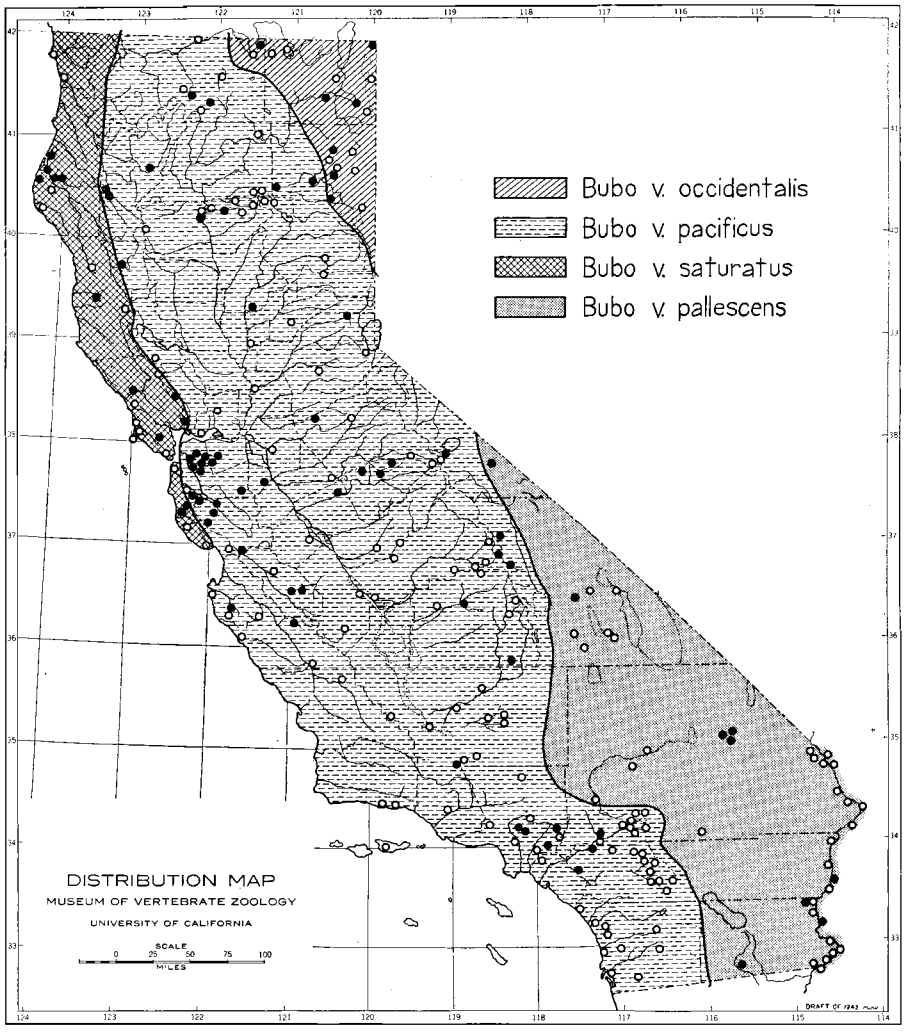

Fig. 9. Distribution of Horned Owls, *Bubo virginianus*, in California. Ranges outlined indicate areas of breeding residence. Dots mark localities from which specimens have been examined; circles, localities reported in the literature.

district (Tyler, Pac. Coast Avif. No. 9, 1913:50); Shandon, San Luis Obispo County, food habits (Glading, Tillotson and Selleck, Calif. Fish and Game, 29, 1943:93ff.); San Bernardino Mountains, young, territorialism (Pierce, Condor, 18, 1916:34; L. Miller, Condor, 32, 1930:290); vicinity of Escondido, San Diego County, nesting (Carpenter, Condor, 9, 1907:20; J. B. Dixon, Condor, 16, 1914:47); Sorrento, San Diego County, nesting (Kelsey, Condor, 6, 1904:138); southern California in general (Willett, Pac. Coast Avif. No. 21, 1933:88); growth and behavior (E. L. Sumner, Jr., Condor, 31, 1929:85, 108, Univ. Calif. Publ. Zool., 40, 1933:278ff., and *ibid.*, 1934:331ff.). Curiously, there seems to be no good record of this owl from any of the islands. Possibly lack of any native rabbits on them is at fault.

Habitat—Of wide variety; perhaps most usual, woodland especially of oaks, or broken type of forest, with open ground included or adjacent. But also, cliff-sided canyons; broad washes if with trees such as cottonwood and sycamore containing old hawks' nests; in fact, almost any locality affording sheltered daytime roosting places and nesting sites up from the level ground, whether in trees or in rock walls.

Bubo virginianus saturatus Ridgway
Dusky Horned Owl

Synonyms—Bubo virginianus atlanticus; *Bubo virginianus subarcticus*, part; *Bubo virginianus pacificus*, part; *Asio magellanicus icelus*, part; *Bubo virginianus icelus*, part; Virginia Eagle Owl; Great Horned Owl, part; Western Great-horned Owl, part; Western Horned Owl, part; Horned Owl, part; Coast Horned Owl, part; Pacific Horned Owl, part.

Status—Resident. Locally common.

Geographic range—Northwest coast belt, south from Oregon line in Del Norte County and western Siskiyou County, more and more narrowly as far as Santa Cruz County. Only arbitrarily can any racial limits be set, because of gradual blending of characters, obscured by great individual variations, as obtains between adjacent races. We consider *saturatus*, in "diluted" manifestation, as extending interiorwards through Humboldt County at the north, as far as Napa County just north of San Francisco Bay, but south of Golden Gate as restricted to the "peninsula," that is, to the humid belt west of the south arm of San Francisco Bay, from San Francisco south to vicinity of Santa Cruz. With this quasi-arbitrary limitation set forth, the following selections of references to this race in California can be cited: Crescent City, Del Norte County (W. K. Fisher, Condor, 4, 1902:132); Requa, Del Norte County, and Petrolia, Humboldt County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:19, 22); Humboldt Bay (Townsend, Proc. U. S. Nat. Mus., 10, 1887:204); Marin County (Mailliard, Condor, 2, 1900:63); La Honda, San Mateo County (Anderson and Jenkins, Condor, 5, 1903:154; Mus. Vert. Zool.); Santa Cruz, Santa Cruz County (Skirm, Ornith. and Ool., 9, 1884:149). Life-zones, Transition and Canadian. A specimen (no. 59111 Mus. Vert. Zool.) from Grizzly Island, Solano County, November 14, 1931, may be considered a southeastward winter straggler. However, a record of "*saturatus*" from Fyffe, Eldorado County (Barlow, Condor, 3, 1901:162), based on a specimen not now extant, is dubious—probably a variant of the resident race *pacificus*.

Habitat—Chiefly mixed woodland, broken forest, or forest margin.

Bubo virginianus pallescens Stone
Pallid Horned Owl

Synonyms—Bubo virginianus, part; *Bubo virginianus subarcticus*, part; *Bubo virginianus pacificus*, part; *Asio magellanicus pallescens*; Great Horned Owl, part; Western Horned Owl, part; Pacific Horned Owl, part; Desert Horned Owl.

Status—Resident. Locally common.

Geographic range—In general, Colorado and Mohave deserts. North from Mexican line in Imperial County to Argus and Panamint mountains, in Inyo County (A. K.

Fisher, N. Amer. Fauna No. 7, 1893:43, part), and even, apparently, to Benton, Mono County (specimen in Mus. Vert. Zool.); west from valley of Colorado River, Needles to Pilot Knob (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:129), to south end of Salton Sea, Imperial County (Linsdale MS), and to Victorville, San Bernardino County (Mailliard and Grinnell, Condor, 7, 1905:74). Other stations: Providence Mountains (Stephens, Condor, 5, 1903:78; Mus. Vert. Zool.); Death Valley (Grinnell, Condor, 36, 1934: 67); near Yermo, San Bernardino County (Lamb, Condor, 14, 1912:36); Twentynine Palms, San Bernardino County (F. Carter, Condor, 39, 1937:213). Some winter-taken specimens interpreted as vagrants of this race have been reported westwardly, as follows: Fillmore, Ventura County, November 16, 1929; San Fernando, Los Angeles County, December 16, 1919; Pasadena, same county, October 2, 1896; San Antonio Canyon, same county, January 10, 1915 (Willett, Pac. Coast Avif. No. 21, 1933:89). Also, there is a record, of breeding, from Buena Vista Lake, Kern County (Dickey and van Rossem, Condor, 24, 1922:67); this may represent a local variant of *B. v. pacificus*. Altitudes of occurrence extend from 200 or more feet below sea level, in Death Valley and around Salton Sea, up to at least 6200 feet, in Panamint Mountains, Inyo County. Life-zones, Lower and Upper Sonoran.

Habitat—In different places: rock-walled canyons; piñon- and juniper-clothed mountain sides; riparian lowlands where grow cottonwoods and willows of large size; desert washes with bluff-like sides; desert mesas supporting large-sized tree-yuccas. Thus varied, the requisite elements of the habitat seem to be shaded shelter and places for nesting, out of reach of terrestrial marauders—niches in cliffs, or other birds' nests in trees.

Nyctea scandiaca (Linnaeus)

Snowy Owl

Synonym—Nyctea nyctea.

Status—Midwinter visitant. Of occasional or sporadic occurrence south in northwestern portion of State coastwise as far as Santa Cruz County and interiorly to Butte County. "Invasions" occured in 1895, 1896 and 1916.

Geographic range—First definitely recorded occurrence is for vicinity of Eureka, Humboldt County, in "October, 1895 when some three or four dozen owls came here in a flock" and some of those shot were preserved (Clay, Oologist, 26, 1909:12). On December 2, 1896, a bird was shot on edge of salt marsh of Bay Farm Island "almost within the city limits" of Alameda, Alameda County (Cohen, Osprey, 1, 1897:71, and Condor, 3, 1901:185). October 26, 1897, bird reported seen in same locality (Cohen, *loci cit.*). A bird wounded, and kept captive for some years, at Wood's Lagoon near Santa Cruz; year of capture not known, but probably in 1896 or 1897, and in open season for ducks (Thompson, Condor, 3, 1901:141). Three birds "taken in Sonoma County," about December 2, 1896 (Cohen, *loci cit.*). Reported from Humboldt County "in flocks" about December 8, 1896 (Cohen, *loci cit.*). Crescent City, Del Norte County, and Arcata, Humboldt County, specimens taken in 1896 (H. C. Bryant, Calif. Fish and Game, 3, 1917:37). Eureka, Humboldt County, specimen taken December 26, 1908 (Clay, *loc. cit.*). Two specimens taken November 17, 1916, at Trinidad and Upper Mattole, Humboldt County (F. J. Smith, Condor, 19, 1917:24). Talowa Lake, Del Norte County, specimen (Mus. Vert. Zool.) taken November 14, 1916, and between Lake Earl and mouth of Smith River, Del Norte County, specimen (Mus. Vert. Zool.),

November 25, 1916, and at least eleven more reported from same neighborhood at about same time (H. C. Bryant, *loc. cit.*). Gridley, Butte County, specimen (Mus. Vert. Zool.), November 17 or 18, 1916 (H. C. Bryant, *loc. cit.*). There are three additional specimens from Humboldt County: from Arcata, December 30, 1916, and from Loleta, December 2, 1916 (Mus. Vert. Zool.), and from marshes of Humboldt Bay, December 19, 1916 (Calif. Acad. Sci.). A specimen (Santa Barbara Mus. Nat. Hist.) was taken November 1, 1916, at edge of Lake Earl, Del Norte County (Dawson, Birds Calif., 3, 1924:1119; E. Z. Rett, in *litt.*). An unsubstantiated report from Chula Vista, San Diego County, in December, 1896, is mentioned by Bent (U. S. Nat. Mus., Bull. 170, 1938:374).

Habitat—Definitely, marshlands, meadows and sea-beaches; in other words, whatever environments here in California nearest resemble the habitat of the species in the Arctic Zone.

Glaucidium gnoma pinicola Nelson
Rocky Mountain Pigmy Owl

Synonym—Glaucidium minutissimum pinicola.

Status—Recorded twice from Inyo region: near Jackass Spring, 6200 feet, northern Panamint Mountains, Inyo County, September 30, 1917, specimen taken, others heard, so thought to have been "common" there (Grinnell, Condor, 20, 1918:86; no. 27887 Mus. Vert. Zool.); Lone Pine Creek, 8200 feet, near Lone Pine, Inyo County, May 23, 1942, specimen in breeding condition taken by W. C. Russell (no. 84825 Mus. Vert. Zool.). Life-zones, Upper Sonoran and Transition. It is quite probable that Pigmy Owls of this race occur widely on the mountains of the Inyo region.

Habitat—Piñon pine woods of typical scattered stand with sage-brush intermingled, and open yellow pine forest.

Note—We see in material available to us some differentiation of this form from *G. g. californicum* when specimens of the same phase are compared. Accordingly, we do not follow the action of the A.O.U. Check-list Committee (Auk, 61, 1944:450) in eliminating this race.

Glaucidium gnoma californicum Sclater
California Pigmy Owl

Synonyms—Athene infuscata; *Glaucidium infuscatum*, part; *Glaucidium californicum*, part; *Glaucidium gnoma*, part; *Glaucidium passerinum* var. *californicum*, part; *Glaucidium gnoma gnoma*; *Glaucidium gnoma vigilante*; *Glaucidium gnoma pinicola*, part; *Glaucidium minutissimum californicum*; *Glaucidium gnoma grinnelli*, part; Little Western Owl; Pigmy Owl, part; Rocky Mountain Pigmy Owl, part; Sierra Pigmy Owl; Coast Pigmy Owl, part.

Status—Resident; probably considerable down-mountain shift of the populations breeding at the higher altitudes occurs in winter. Usually, where detected at all, "common," for an owl.

Geographic range—In the main, west flank of Sierra Nevada for its entire length, and mountainous parts of San Diegan district. Southernmost attested record station, Laguna Mountains, San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:89); thence extends northwestwardly at least to vicinity of Santa Barbara (Dawson, Con-

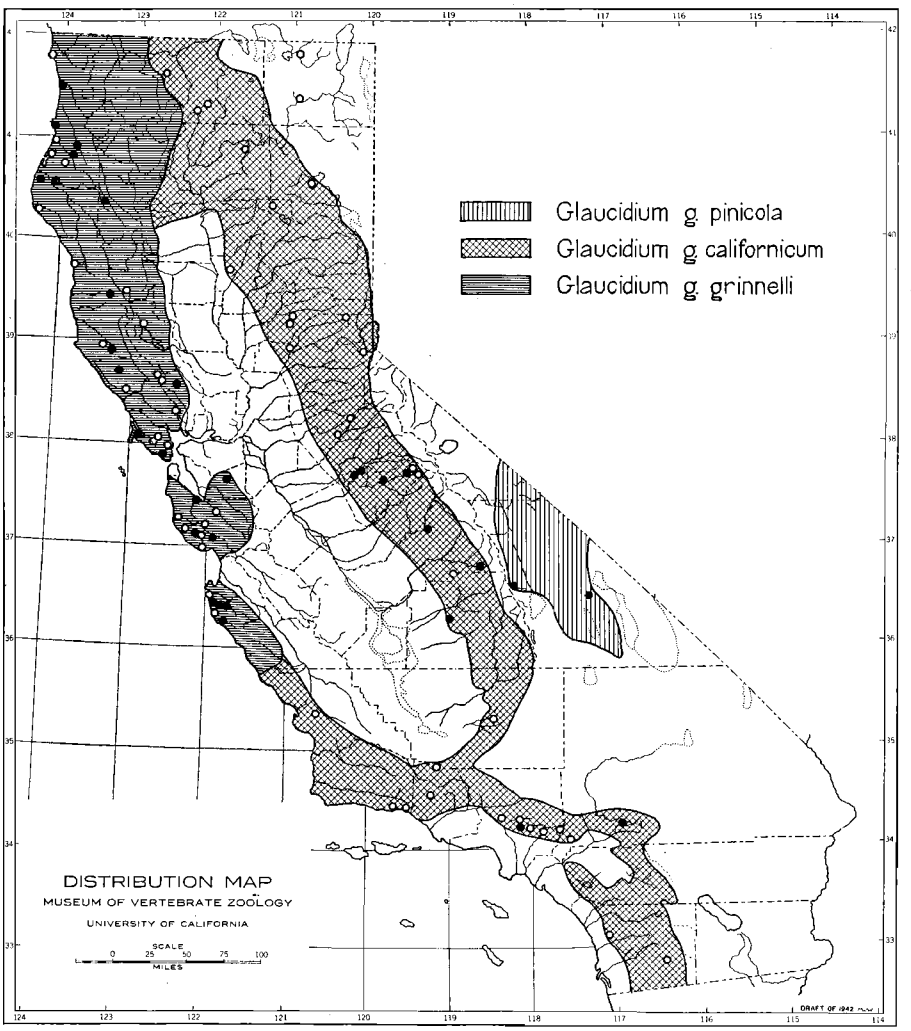

Fig. 10. Distribution of Pigmy Owls, *Glaucidium gnoma*, in California. Shaded regions indicate areas of breeding residence. Dots mark localities from which specimens have been examined; circles, localities reported in the literature. Stations in Modoc County are of birds of uncertain racial and seasonal status.

dor, 18, 1916:26) and [probably nearest this subspecies] to Santa Margarita, San Luis Obispo County (Swarth, Condor, 13, 1911:163). A record from Piute Mountains, at 6000 feet, Kern County (Richardson, Condor, 6, 1904:135) indicates bridging of gap between Mount Pinos, Ventura County (Willett, *loc. cit.*) and the southern Sierra Nevada. Sierran and Cascade records are many, from near Lindsay, Tulare County (Grinnell, Auk, 30, 1913:224), north to Eagle Lake, Lassen County (Calif. Acad. Sci.) and "Mount Shasta" (Ridgway, Birds N. M. Amer., 6, 1914:790). Pigmy Owls reported from farther north, Steele Meadow and Pit River Forest Station on the Modoc plateau (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:302), may or may not belong to the race here under consideration. A specimen is at hand (no. 51704 Mus. Vert. Zool.) taken

January 9, 1928, in the town of Independence, Inyo County; probably a winter vagrant from western slope of Sierra Nevada. Life-zones, Transition and Upper Sonoran; rarely enters Canadian (for summer only?). Altitudes of nesting extend from within a few hundred feet of sea level, as near Escondido, San Diego County (Sharp, Condor, 9, 1907:87), up to 6750 feet, in Bear Valley, San Bernardino Mountains (Swarth, Condor, 12, 1910:109). Some especially significant accounts additional to ones cited above: Hat Creek, Shasta County, food (Clabaugh, Condor, 35, 1933:80); Calaveras Big Trees, Calaveras County, nesting (Belding, Land Birds Pac. Dist., 1890:55); Yosemite region, food habits and nesting (Grinnell and Storer, Animal Life Yosemite, 1924:311; Holman, Condor, 28, 1926:92; C. W. Michael, Condor, 27, 1925:110, and *ibid.*, 29, 1927:161; McLean, Calif. Fish and Game Comm., Teachers' Bull. No. 10, 1928:14; E. Michael, Yosemite Nature Notes, 19, 1940:86); Altadena, Los Angeles County, bathing (Mailliard, Condor, 28, 1926:171); Cucamonga Canyon, near Upland, San Bernardino County, food (Pierce, Condor, 23, 1921:96).

Habitat—Mixed or broken woodland; edges of coniferous forest; wooded canyon bottoms. Breeding dependent usually upon presence of woodpecker-excavated cavities in trees. Kinds of trees occurring where California Pigmy Owls are most common: Douglas or big-cone spruces; yellow pine; incense cedar; golden, black and (at south) live oaks; black cottonwood and white alder.

Note—After reviewing the literature relative to the systematics of *Glaucidium* in California, and again looking at the series of specimens in the Museum of Vertebrate Zoology, we are inclined to think that further subspecific "splitting," as by recognizing *G. g. vigilante* from the San Diegan district, would serve no useful purpose.

Glaucidium gnoma grinnelli Ridgway
Coast Pigmy Owl

Synonyms—Glaucidium californicum, part; *Glaucidium infuscatum*, part; *Glaucidium gnoma*, part; *Glaucidium passerinum californicum*, part; *Glaucidium gnoma californicum*, part; *Glaucidium minutissimum grinnelli*; Sparrow Owl; Pigmy Owl, part; California Pigmy Owl, part.

Status—Resident. In most localities of record, where looked and listened for with special technique, found to be "common," for an owl.

Geographic range—Northwest coast belt, south from Oregon line through series of counties from Del Norte to and including Monterey County; eastward at north through Trinity Mountain region and centrally to Napa and eastern Alameda County. Southernmost station definitely for this subspecies, Little Sur River, Monterey County (Grinnell, Condor, 4, 1902:127; Mus. Vert. Zool.); southeast of this, intergradation is likely, toward *G. g. californicum* of San Diegan district. At south, has been detected east to Arroyo Mocho, 15 miles south [southeast] of Livermore, Alameda County (Mus. Vert. Zool.); north of San Francisco Bay has been found east to Howell Mountain, Napa County (Clark, Condor, 32, 1930:51). Life-zone, typically Transition; but invades Upper Sonoran locally. Altitudinally, extends up from near sea level to at least 3500 feet, as in Santa Lucia Mountains, Monterey County (A. H. Miller MS). More important references concerning distribution and habits: Kneeland Prairie, Humboldt County, behavior (Mailliard, Condor, 24, 1922:31); Eureka, Humboldt County, nesting (J. M. Davis, Condor, 40, 1938:182); Sonoma Valley, Sonoma County, nesting (Carriger, Nidiologist, 2, 1895:172); Nicasio, Marin County (C. A. Allen, Bull. Nutt.

Ornith. Club, 3, 1878:193); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:87); Santa Cruz, Santa Cruz County, nesting (W. A. Cooper, Bull. Nutt. Ornith. Club, 4, 1879:86); Monterey County, habits (C. F. Smith, Condor, 37, 1935:210); in general (Skinner, *in* Bent, U. S. Nat. Mus., Bull. 170, 1938:430ff.).

Habitat—Woodland; broken forest, or mixed coniferous and deciduous woods; margins of redwood or Douglas spruce forest. Presence of woodpecker-excavated nesting cavities, of about flicker-size, a requisite for breeding.

Micropallas whitneyi whitneyi (Cooper)
Arizona Elf Owl

Synonyms—Micrathene whitneyi; *Micropallas whitneyi*; *Micrathene whitneyi whitneyi*; Whitney Owl; Elf Owl; Whitney Elf Owl; Whitney Dwarf Owl.

Status—Summer resident. On this, western, margin of the range of the species, individuals are probably few in total number; indeed the tenure of the species within the confines of this State may be impermanent.

Geographic range—In general, valley of Colorado River. More definitely, has been found (birds and eggs obtained) on the California side of that river only within about 25 miles north of Yuma—vicinity of Laguna Dam and Bard. References: Brown, Condor, 6, 1904:45; Grinnell, Univ. Calif. Publ. Zool., 12, 1914:129; Kimball, Condor, 24, 1922:96. The record from near San Bernardino (Loomis, Auk, 19, 1902:80) has been questioned (see Stephens, Condor, 4, 1902:45). We consider some doubt to pertain also to that from "Kern County" (Ridgway, Condor, 4, 1902:18); it was based on a dealer's specimen. There are many ascriptions of this species to "southeastern California" or to "Colorado Valley, California," which hark back to J. G. Cooper's capture of the species at "Fort Mohave, Calif.," which, however, was on the Arizona side of the river.

Habitat—Portions of Colorado Desert where woodpecker excavations, notably in giant cactuses, afford nesting places and day-time shelter.

Speotyto cunicularia hypugaea (Bonaparte)
Western Burrowing Owl

Synonyms—Strix californica; *Strix cunicularia*; *Athene socialis*; *Athene hypogaea*; *Athene cunicularia*; *Speotyto cunicularia*; *Speotyto hypogaea*; *Speotyto cunicularia obscura*; Large-headed Burrowing Owl; Burrowing Owl; North American Burrowing Owl; Dusky Burrowing Owl; Ground Owl.

Status—Resident in most parts of its breeding range; probably most of those breeding at higher altitudes, for example, on the Modoc plateau, move southward for winter. In fall and winter, individuals put in appearance at various unexpected places, as on even the smaller islands. Numbers in favorable localities large; originally common, even "abundant." Latterly becoming scarce in settled parts of State; reasons, roadside shooting, anti-"vermin" campaigns, elimination of ground squirrels—hence of nesting places for these owls.

Geographic range—Suitable, that is, level and treeless, areas, almost throughout

State, from Oregon line east of Siskiyou Mountains south to Mexican line, and from Nevada line and Colorado River west quite to ocean shore; includes practically all the islands, from the Farallones southward. Mostly rare or wanting in coastal counties north of Marin County and, of course, in all mountainous areas. Life-zones, mainly Lower and Upper Sonoran; but breeds locally in Transition, and vagrants go even higher. Altitudes of occurrence extend from over 200 feet below sea level, in Death Valley and around Salton Sea, up regularly to 5300 feet, in Lassen County. Northernmost inland record for winter: Lower Klamath Lake, Siskiyou County, January 20 (Sooter, Condor, 42, 1940:266). There is a large literature concerning this owl (156 references in 1943); selections from these are made on basis of significance for distribution, ecology, or habits, as follows: localities in Humboldt County (Wilder, Condor, 18, 1916:128); behavior (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:235); in hay piles (Stoner, Condor, 35, 1933:36); in San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:86); over ocean off Monterey and Santa Barbara counties (Lamb, Condor, 31, 1929:36); status in Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:51); in Death Valley (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:65); on Santa Barbara Islands (Howell, Pac. Coast Avif. No. 12, 1917:59); in general (Dawson, Birds Calif., 3, 1924:1120; Bent, U. S. Nat. Mus., Bull. 170, 1938:384ff.).

Habitat—Open, dry, nearly or quite level, grassland; prairie; desert floor. The Burrowing Owl is, in a way, thus complementary in its choice of habitat to the Short-eared Owl, the latter preferring moist, even marshy terrain. The former depends more on insect and reptilian food sources, those that pertain to arid, sparsely vegetated land. Also there is conspicuous dependence of the Burrowing Owl, in its subterraneous nesting needs, upon the larger burrowing mammals, notably, west of the Sierran divides, the California ground squirrel.

Strix occidentalis caurina (Merriam)
Northern Spotted Owl

Synonyms—Strix occidentalis occidentalis, part; Spotted Owl, part.

Status—Resident. Fairly common; in some localities even common, for an owl.

Geographic range—Northwest coast belt, from Del Norte and western Siskiyou counties south to and including Marin County. Altitudes of occurrence, from near sea level up to at least 4000 feet. Representative records are as follows: from Marin County, Mount Tamalpais (Grinnell, Condor, 11, 1909:138), Phoenix Lake (Stephens and Pringle, Birds Marin Co., 1933:15), Manor (Calif. Acad. Sci.), San Geronimo (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:85), and Point Reyes [Station ?] (A.O.U. Check-list, ed. 3, 1910:170); from Sonoma County, near Hilton (Mus. Vert. Zool.); from Mendocino County, head of Garcia River (Mailliard, Condor, 29, 1927:160), near Ornbaun (Mus. Vert. Zool.), and near Willits (A. H. Miller, Condor, 36, 1934: 207); from Humboldt County, Elk River (Clay, Condor, 13, 1911:75), Ferndale and Eureka (Wilder, Condor, 18, 1916:127; J. M. Davis, Condor, 42, 1940:222), Petrolia (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:19), and near Garberville (A. H. Miller, *loc. cit.*); from Trinity County, South Fork Mountain (Mailliard, 1927, *loc. cit.*); from Siskiyou County, Quartz Valley [near Fort Jones] (Wilder, *loc. cit.*); from Del Norte County (Mailliard, 1927, *loc. cit.*). The record from Salmon Mountains,

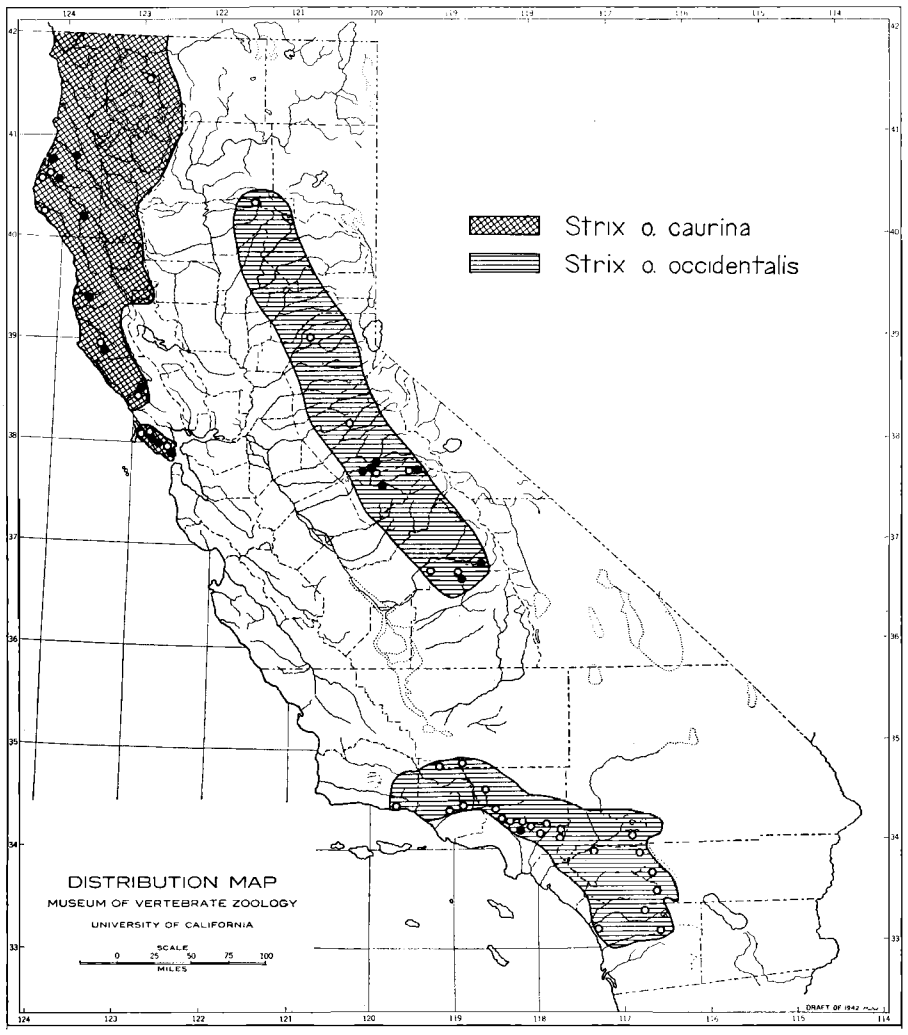

Fig. 11. Distribution of Spotted Owls, *Strix occidentalis*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:87, 91), is dubious. Life-zone, Transition.

Habitat—Heavy woodland and coniferous forest. Trees usually characterizing this owl's habitat: Douglas fir, redwood, golden oak, Garry oak, tan oak, madrone. The requisites of dense shade and protecting foliage screen are widely present in the range of this subspecies of Spotted Owl.

Strix occidentalis occidentalis (Xantus)
California Spotted Owl

Synonyms—Syrnium nebulosum; *Syrnium occidentale*; *Strix occidentalis*; *Strix occidentalis*

caurina, part; Barred Owl; California Barred Owl; Western Barred Owl; Spotted Owl, part; Northern Spotted Owl, part; Southern Spotted Owl.

Status—Resident. Numbers nowhere large; the species at best to be rated as only fairly common. No change in range or numbers apparent from data in hand.

Geographic range—In general, coastal slope of southern California from southern San Diego County northwest to Santa Barbara, Ventura and western Kern counties, and west flank of Sierra Nevada north from Tulare County to Tehama County. Thus, there are two apparently separated areas of occurrence, San Diegan district and Sierran foothill district. In detail, southernmost stations of record are Volcan Mountain and Oceanside, San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:90); northwesternmost in southern California, Romero Canyon, Santa Barbara County (Dawson, Jour. Mus. Comp. Ool., 2, 1921:45), and Fort Tejon (Xantus, Proc. Acad. Nat. Sci. Phila., 1859:190, 193) and somewhere else in western Kern County (Dawson, Birds Calif., 3, 1924:1095). Along Sierra Nevada, southernmost recorded occurrence, Redwood Mountain east of Badger, Tulare County (Marshall, Condor, 44, 1942:66); northernmost, near Mineral, 4000 to 5600 feet altitude, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:237). Recorded (Bent, U. S. Nat. Mus., Bull. 170, 1938:203), we think on questionable evidence, from San Luis Obispo County, however, occurrence in this sector seems likely. Life-zones, Upper Sonoran and Transition. Altitudes of occurrence, mostly from 2500 to 6000 feet; extremes, near sea level, as at Oceanside, up to 6300 feet on Mount Pinos (Willett, *loc. cit.*) and 6600 feet in General Grant Park area, Tulare County (H. C. Bryant, Condor, 42, 1940:307). More important accounts of habits: in Ventura and Los Angeles counties (Dickey, Condor, 16, 1914:193, and L. Peyton, Condor, 12, 1910:122); in Tulare County (Marshall, *loc. cit.*); in Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:304; C. W. Michael, Condor, 35, 1933:202; McLean, Fish and Game Comm., Teachers' Bull. No. 10, 1928:7); in general (Bent, U. S. Nat. Mus., Bull. 170, 1938:202ff.).

Habitat—Dense woodland or forest, especially where inclusive of, or adjacent to, cliffs; steep-sided, wooded canyons and shaded ravines are particularly favored and are used for daytime roosting. Trees most often present where this owl occurs: golden oak, big-cone spruce, incense cedar, black oak. Majority of recorded nesting sites, holes in rock walls.

Strix nebulosa nebulosa Forster
American Great Gray Owl

Synonyms—Syrnium cinereum; *Ulula cinerea*; *Scotiaptex cinerea*; *Scotiaptex nebulosa nebulosa*; *Scotiaptex nebulosa*; Great Cinereous Owl; Great Gray Owl.

Status—Resident, with some vagrancy in winter; possibly also at that season, in some years, an increment of individuals comes in from north. Numbers small, justifying term "rare."

Geographic range—Northern Sierra Nevada, and adjacent valleys to westward, south at least as far as Madera County. Records to date are as follows: "Sacramento Valley" (Newberry, Pac. R. R. Rept., 6, 1857:77); hills near Chico, Butte County (Belding, Land Birds Pac. Dist., 1890:50); specimen taken September 26, 1913, 6 miles south of McCloud, Siskiyou County (Grinnell, Condor, 16, 1914:94); vicinity of Quincy, Plumas County, three individuals taken, one of them on May 12, 1894 (H. C.

Bryant, Condor, 22, 1920:33); 3 miles south of Mount Ingalls, 6000 feet, Plumas County, September 17, 1937 (specimen, no. 73353 Mus. Vert. Zool); Ostrander Rocks, 7400 feet, Indian Rock, 7900 feet, etc., in Yosemite National Park, June 18, 1915, two specimens, also observed July 1, 1915 (Grinnell and Storer, Animal Life Yosemite, 1924: 305); elsewhere in Yosemite region (McLean, Calif. Fish and Game Comm., Teachers' Bull. No. 10, 1928:7); subsequent specific reports from Yosemite area, July, 1931 (Jensen, Yosemite Nature Notes, 10, 1931:65), July 22, 1941 (Webster, *ibid.*, 21, 1942:22), and September 17, 1941 (H. L. Cogswell MS); between Coarsegold and Finegold, 3200 feet, Madera County, May or June, 1930, specimen (Abbott, Condor, 45, 1943:37). Breeding life-zone, as judged from Yosemite occurrences, Canadian.

Habitat—Coniferous forest. Associated in summer with red fir, Jeffrey pine and lodgepole pine; but vagrants may frequent any sort of woods.

Asio wilsonianus (Lesson)
American Long-eared Owl

Synonyms—Otus wilsonianus; *Otus vulgaris wilsonianus*; *Otus brachyotus* var. *wilsonianus*; *Asio americanus*; *Nyctalops wilsonianus*; *Asio wilsonius*; *Asio otus wilsonianus*; Long-eared Owl.

Status—Resident within State, but with markedly irregular wanderings of individuals and groups. In general, numbers are so large as to warrant term "common," even "abundant" locally. Reduction of late years is apparent, in the main probably as result of clearing of bottomlands for farming.

Geographic range—Entire length of State east of northern humid coast belt; three centers of abundance, in northeastern Great Basin territory, in central valleys, and in San Diegan district. Peripheral stations: northernmost in coast belt, Bodega and Sebastopol, in Sonoma County (Cassin, Pac. R. R. Rept., 9, 1858:54; Belding, Land Birds Pac. Dist., 1890:48); northeasternmost, Goose Lake and Surprise Valley, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:301); to eastward on southern deserts, chiefly or perhaps entirely, in winter: Mohave River near Yermo, San Bernardino County, October 26 to November 16 (Lamb, Condor, 14, 1912:36); Essex, San Bernardino County, June [?] (Mus. Vert. Zool.); Palm Springs, Riverside County, January 28, April 1 (Dawson, Birds Calif., 3, 1924:1080; Calif. Acad. Sci.); Palo Verde, Imperial County, December 19, 1915 (Mus. Vert. Zool.). A northern station east of Sierra Nevada for winter: Litchfield, Lassen County, December 28, 1942 (Mus. Vert. Zool.). Has occurred on several of the islands: Farallones (Gruber, Zeitschr. für gesammte Ornith., 1, 1884:172); Santa Rosa Island, April 2 (Pemberton, Condor, 30, 1928:147); San Clemente Island, December (Linton, Condor, 11, 1909:194); Santa Catalina Island, breeding (Willett, Pac. Coast Avif. No. 7, 1912:50). Altitudinally, ranges normally up to 2000 feet west of Sierras, up to 7000 feet east of Sierra Nevada; exceptionally has reached 9000 feet on San Jacinto Peak, Riverside County, July 27 (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:238), and 10,500 feet on White Mountains, Mono County, May 26 (Dawson, *loc. cit.*). Breeding life-zone, characteristically Upper Sonoran; has nested locally in Transition and Lower Sonoran. Some accounts not cited above: Novato, Marin County, nesting (Ray, Condor, 6, 1904:139); Escondido, San Diego County, nesting (Sharp, Condor, 9, 1907:87); Fresno district, nesting (Tyler, Pac. Coast Avif. No. 9, 1913:48); Mono Lake, Mono County, nesting (Grinnell and Storer, Animal Life Yosemite, 1924:300); habits (E. L. Sumner, Jr.,

Condor, 31, 1929:103); Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:238); status in southern California (Willett, Pac. Coast Avif. No. 21, 1933:91); nesting at Victorville, San Bernardino County, and in general (Bent, U. S. Nat. Mus., Bull. 170, 1938:153ff.); return in Ontario, Canada, of bird banded at Escondido, San Diego County (Lincoln, Bird-Banding, 7, 1936:45).

Habitat—Typically, bottomlands grown to tall willows and cottonwoods; but also, west of Sierran divides, belts of live oaks, especially as paralleling stream courses. Adjacent open land productive of mice is requisite, as also presence of old nests of crows, hawks or magpies for breeding purposes. Indeed, east of Sierra Nevada, the breeding range of this owl is suggestively coincident with that of the Black-billed Magpie.

Note—Doubtfully conspecific with *Asio otus* of the Old World from which it is separated by large areas of arctic and subarctic terrain.

Asio flammeus flammeus (Pontoppidan)
Northern Short-eared Owl

Synonyms—Strigiceps uliginosus; *Otus brachyotus*; *Brachyotus cassinii*; *Brachyotus palustris*; *Brachyotus palustris* β. *cassini*; *Asio accipitrinus*; *Asio flammeus*; Marsh Owl; Short-eared Owl.

Status—Occurs in two rôles: (1) resident, in very small numbers, locally, and breeding; (2) winter visitant, common and widely distributed. Formerly abundant in winter, but of late years notably reduced; main cause of reduction, killing by duck-hunters.

Geographic range—As breeding, interruptedly entire length of State west of the deserts; in migrations and in winter, suitable ground whole length and breadth of State, but numbers largest west of Sierran divides. Records of actual nesting are as follows: Lava Beds National Monument, Siskiyou County (Dixon and Bond, Condor, 39, 1937: 99, 101); June Lake, 7600 feet, Mono County (J. B. Dixon, Condor, 36, 1934:36); McGee Creek, Mono County (Rowley, Condor, 41, 1943:248); Redwood City, San Mateo County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:84); Los Baños, Merced County (Bishop, Condor, 8, 1906:29); New Hope, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:49); Newport, Orange County, and National City, San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:91). Some desertward record stations are: Death Valley, Inyo County, December 8 (Gilman, Condor, 37, 1935:241); Brawley, Imperial County, December and January (van Rossem, Condor, 13, 1911:131). Has reached certain of the islands: Farallones, in May (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:45); Santa Catalina Island, December (Grinnell, Auk, 15, 1898:234). Altitudinally, occurs from sea level up to 11,000 feet, as on Mount Clark, Yosemite National Park, August 1 (Webster, Yosemite Nature Notes, 21, 1942:23). General range does not accord with life-zonation.

Habitat—Swamp lands, both fresh and salt; lowland meadows; in irrigated districts, alfalfa fields. Tule patches or tall grass needed for nesting and for day-time seclusion.

Cryptoglaux acadica acadica (Gmelin)
Nearctic Saw-whet Owl

Synonyms—Strix frontalis; *Nyctale* [or *Nyctala*] *acadica*; *Nyctale albifrons*; *Nyctala acadica scotaea*; *Cryptoglaux acadica*; *Aegolius acadicus acadicus*; Little Night Owl; Acadian Owl; Saw-whet Owl; Kirtland Owl.

Status—Resident within State, but apparently vagarious in manner of occurrence, both winter and summer. Birds which have bred at levels where winter snow is heavy likely remove to lower altitudes. Nowhere considered common; records many but geographically and chronologically scattered.

Geographic range—Not distinctly outlined; in general, central Sierra Nevada, San Francisco Bay region, and San Bernardino Mountain area; but the groupings of records thus indicated may merely mean centers of concentration of human observers. Most of the actually known and assumed breeding stations are in the Transition or Canadian life-zones. Altitudes of occurrence extend from near sea level, as at Point Reyes Station, Marin County, December 11 [= 10] and 23, 1901 (Mailliard, Condor, 4, 1902:18), up to 9200 feet, in Round Valley, San Jacinto Mountains, Riverside County, August 11, 1898 (Stephens, Condor, 4, 1902:40). Some marginal stations are: northwesternmost, South Fork Mountain, Trinity County, young (Mailliard, Condor, 29, 1927:161), and 5 miles northwest of Yorkville, Mendocino County, May 28 (Calif. Acad. Sci.); easternmost at north, Litchfield, Lassen County, November 21, 1942 (Mus. Vert. Zool.); centrally, near June Lake, about 8000 feet, Mono County, breeding (J. B. Dixon, Condor, 36, 1934:36), and 9 miles west of Benton, Mono County, June 21, 1942 (A. H. Miller MS; Mus. Vert. Zool.); southeasternmost, Chuckawalla Mountains, near Desert Center, Riverside County, March, 1932 (L. Miller, Condor, 34, 1932:258); southernmost, Cuyamaca State Park, San Diego County, young, July 4, 1939 (J. G. Peterson MS); only island record, Santa Cruz Island, April 15, 1931 (Hoffmann, Condor, 33, 1931:171). Further accounts, of habits and distribution: Oakland, Alameda County, November 8 to April 8 (Jencks, Condor, 32, 1930:212; Covel, Condor, 37, 1935:83); Spring Valley Lakes, San Mateo County, nesting (Granfield, Condor, 39, 1937:185; Santee and Granfield, Condor, 41, 1939:3ff.); Mount Hermon, Santa Cruz County, juvenile (C. P. Streator MS); near Hernandez, San Benito County, juvenile (A. H. Miller, Condor, 39, 1937:131); Fyffe, Eldorado County, breeding (Ray, Condor, 16, 1914:65, 67); Yosemite Valley, in summer (Grinnell and Storer, Animal Life Yosemite, 1924:307; Michael and Michael, Condor, 30, 1928:323); Florence Lake, 7340 feet, Fresno County, December to February (L. M. Lofberg, Condor, 30, 1928:314, and Condor, 37, 1935:172); Kings Canyon National Park, in summer (J. S. Dixon, Condor, 45, 1943:208); Mount Pinos, Ventura County, nesting (Hall, Condor, 42, 1940: 306); Bear Lake, San Bernardino Mountains (Pierce, Condor, 22, 1920:49).

Habitat—Typically, woodland or broken forest. However, individuals have been come upon also in brushland.

Chordeiles acutipennis texensis Lawrence
Texas Trilling Nighthawk

Synonyms—Chordeiles virginianus, part; *Chordeiles popetue*, part; *Chordeiles texensis*; *Chordeiles popetue henryi*, part; *Chordeiles virginianus henryi*, part; Night hawk, part; Texas Nighthawk, part; Western Nighthawk, part; Texas Sharp-winged Nighthawk.

Status—Summer resident; March (even mid-February on occasion at south) to August or September. Common, even abundant, under optimum conditions.

Geographic range—In general, most numerous in southern half of State, notably in San Diegan district, on parts of Colorado and Mohave deserts, and in San Joaquin Valley. In lesser numbers, extends northwest through inner coastal valleys as far as

vicinity of Gilroy and Coyote, Santa Clara County (Unglish, Condor, 31, 1929:223); north through Sacramento Valley to vicinity of Red Bluff, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:241); and north, east of Sierran axis, to Bishop, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:53), and Oasis, Mono County (Mus. Vert. Zool.). An unusual coastal locality: mouth of Big Sur River, Monterey County, May 16, 1925, two specimens (Ellis Coll.). Altitudes of breeding west of Sierras rarely exceed 1000 feet; but on Mohave Desert and in Inyo region, they go up to over 5000 feet. Life-zone, restrictedly Lower Sonoran. After the breeding season individuals may wander somewhat out of bounds; for example, to Dudley, 3000 feet, Mariposa County, August 14, 1921 (McLean, Condor, 38, 1936: 17). A far northwestward record, for Ukiah, Mendocino County, April 29, 1889 (Oberholser, U. S. Nat. Mus., Bull. 86, 1914:107), is doubtless of a vagrant. There is one island record: Santa Barbara Island, June 20, 1911 (Willett, Pac. Coast Avif. No. 7, 1912:58). There are two instances of possible wintering: Long Beach, January 31, 1911 (Dawson, Condor, 18, 1916:26); Calexico, Imperial County, January 23, 1922 (Howell, Condor, 24, 1922:97). Some additional references of major import: the species in general (Dawson, Birds Calif., 3, 1924:1064); Winslow, Glenn County, young (W. P. Taylor, Condor, 14, 1912:222); Coyote, Santa Clara County, breeding behavior (Pickwell and Smith, Condor, 40, 1938:193ff.); Lagrange, Stanislaus County, nesting (Grinnell and Storer, Animal Life Yosemite, 1924:347); Los Baños, Merced County, nesting and behavior (E. L. Sumner, Jr., Condor, 33, 1931:90); Fresno district, breeding (Tyler, Pac. Coast Avif. No. 9, 1913:56); near Azusa, Los Angeles County, nesting (Woods, Condor, 26, 1924:3); Colorado River valley south to Pilot Knob, Imperial County, where breeding (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:142).

Habitat—For nesting and daytime roosting, gravel-surfaced desert floor or broad, pebbly wash-bottoms with sparse shrubby vegetation such as affords but meager shade. When foraging, seeks airways far and wide, wherever insects most abound; for example, above marshlands, stream-bottoms, pastures, irrigated alfalfa fields and ricelands, and lower foothills.

Chordeiles minor hesperis Grinnell
Pacific Booming Nighthawk

Synonyms—Chordeiles virginianus, part; *Chordeiles popetue*, part; *Chordeiles texensis*, part; *Chordeiles popetue henryi*, part; *Chordeiles virginianus henryi*, part; *Chordeiles henryi*; *Chordeiles acutipennis texensis*, part; *Chordeiles virginianus virginianus*; *Chordeiles virginianus hesperis*; *Chordeiles minor*; Night hawk, part; Bull-bat; Western Nighthawk, part; Pacific Nighthawk; Pacific Virginia Nighthawk.

Status—Summer resident within breeding range; elsewhere detected sparingly as a transient, chiefly in September and October. In metropolis, common; even "abundant" in some favored places.

Geographic range—In general, Cascade-Sierra Nevada mountain area, north from Tulare County to Oregon line, and also the San Bernardino Mountains (strangely, these only) of southern California. At north, occurs from Cowhead Lake (Grinnell MS), Eagleville and Warner Mountains (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927: 305), Modoc County, and Honey Lake, Lassen County (Oates, Cat. Birds' Eggs Brit. Mus., 3, 1903:57) west to Mount Shasta (Merriam, N. Amer. Fauna No. 16, 1899: 116); rarely to Salmon Mountains (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:

83, 92), Siskiyou County. Recurs farther to westward, at least some years, in humid coast belt of Del Norte and Humboldt counties: Smith River, July 15, 1929, many (Grinnell MS); and Humboldt Bay and northward, in June, 1899, "abundant" (W. K. Fisher, Condor, 4, 1902:113, 132); Woodley Island in Humboldt Bay, June 27, 1929 (Mus. Vert. Zool.). Southernmost known station in Sierra Nevada, Trout Creek at 6000 feet, Tulare County (Mus. Vert. Zool.). Breeding life-zones, Canadian and Transition, more rarely, Hudsonian. A common thing, especially east of the Sierran axis, is for the birds to descend from the mountains for evening foraging in the valleys; this carries individuals down into Upper Sonoran, and even into Lower Sonoran, as at Lone Pine, Inyo County, June 19 (Dawson, Birds Calif., 3, 1924:1063). Altitudes of summer-time occurrence extend from as low as 600 feet, at Dale's, east of Red Bluff, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:240), up to 11,000 feet, at Cottonwood Lakes, Inyo County (Dawson, *loc. cit.*). Most records of "Western" Nighthawks from low altitudes in central and southern California have proven to be based on the Texas Trilling Nighthawk; excluding all these, and any others at all in doubt, there remain a very few definite stations for *hesperis* in transit: Live Oak, Sutter County, August 26, 1918 (Wetmore, Condor, 21, 1919:74); San Francisco, September 18 to 22, 1918 (Mailliard, Condor, 21, 1919:40); Berkeley, April 20, 1924 (Swarth, *in* Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:92), and Hayward, October 30, 1898 (Emerson, Bull. Cooper Ornith. Club, 1, 1899:28), Alameda County; Pasadena, Los Angeles County, October 27, 1896 (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:26); Death Valley, Inyo County, June 19, 1891 [nature of occurrence conjectural] (A. K. Fisher, N. Amer. Fauna No. 7, 1893:53). More extended accounts of nesting and behavior: in general (Dawson, *op. cit.*:1059ff.); at or near Lake Tahoe (Barlow and Price, Condor, 3, 1901:163; F. M. Bailey, Bird-Lore, 5, 1903:43; Ray, Condor, 14, 1912:14, and Condor, 20, 1918:73, 78); in Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:346); in San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:67; Pierce, Condor, 18, 1916:34, 179; Shepardson, Condor, 19, 1917:169; Stanford, Bird-Lore, 24, 1922:269ff.; Willett, Pac. Coast Avif. No. 21, 1933:93).

Habitat—As nesting and as roosting for daytime, open type of coniferous forest with exposed, usually rocky or gravelly ground for "nest sites." Most frequent associated trees: yellow pine, white fir, and lodgepole pine. As foraging, broad, open fly-ways, over mountain meadows, lakes, larger stream courses, and lower valleys adjacent to mountains.

Phalaenoptilus nuttallii nuttallii (Audubon)
Nuttall Poor-will

Synonyms—Antrostomus nuttallii, part; *Phalaenoptilus nuttallii*, part; *Phalaenoptilus nuttallii nyctophilus*; Nuttall Whip-poor-will, part; Poor-will, part; Frosted Poor-will, part.

Status—Summer resident to northward and at higher altitudes; winter visitant at low altitudes at south. Common.

Geographic range—In summer, eastern margin of State, east of Cascade-Sierra Nevadan axis, from Oregon line in Modoc County south to Mohave Desert in eastern San Bernardino County. Recorded at north from Cedarville and Eagleville, in Surprise Valley, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:304), west to Bray, Edgewood, base of Mount Shasta, and vicinity of Yreka, Siskiyou County

(Merriam, N. Amer. Fauna No. 16, 1899:116; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:83, 86, 92). Southward, summertime records are: Honey Lake, Lassen County (Hartert, Cat. Birds British Mus., 16, 1892:579); Stateline, Eldorado County (Mus. Vert. Zool.); vicinity of Mono Lake, Mono County (W. K. Fisher, Condor, 4, 1902:10; Grinnell and Storer, Animal Life Yosemite, 1924:343); near June Lake, at 7000 feet, Mono County, eggs (J. B. Dixon, Condor, 36, 1934:36); White, Inyo, Grapevine, Funeral, Panamint and Argus mountains, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:51; Mus. Vert. Zool.); Coso Valley [Mountains], Inyo County, breeding (Bendire, Life Hist. N. Amer. Birds, 2, 1895:155); Walker Creek, 5200 feet [near Olancha], same county (Mus. Vert. Zool.); Providence Mountains, eastern San Bernardino County [intermediate toward *hueyi*] (Mus. Vert. Zool.); Lavic, 1800 feet, San Bernardino County (Mus. Vert. Zool.). Breeding life-zone, typically Upper Sonoran; occurs in summer locally in Transition and Lower Sonoran. Altitudinal range, 1800 to 8300 feet (Mus. Vert. Zool.). As wintering, occurs from Death Valley, Inyo County (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:68), south to near Yermo, San Bernardino County, March 14 (Lamb, Condor, 14, 1912:36), and casually [?] to Mission Valley, San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:92); also along Colorado River valley, Riverside Mountain, Riverside County, to near Picacho, Imperial County (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:139).

Habitat—Characteristically, rocky or gravelly terrain grown scatteringly to bushes or trees. Often associated with sage-brush, antelope-brush, piñon pines, or junipers.

Phalaenoptilus nuttallii californicus Ridgway
Dusky Poor-will

Synonyms—Antrostomus nuttallii, part; *Phalaenoptilus nuttallii*, part; *Phalaenoptilus nuttallii nitidus*, part; Nuttall Whip-poor-will, part; Poor-will, part; California Poor-will; Frosted Poor-will, part; Nuttall Poor-will, part.

Status—In the main, summer resident; remains through winter sparingly in southern portion of range. Thus, migratory at higher altitudes and northerly. Numbers in most favorable places such as to justify term "common."

Geographic range—North, west of western margins of Great Basin and southeastern deserts, from Mexican line in San Diego County through coast belt to San Francisco Bay region and interiorly to head of Sacramento Valley. Some peripheral stations toward north: in coast belt, Guerneville and Sebastopol, Sonoma County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:92); in inner north coast ranges, Covelo, Mendocino County (J. S. Dixon, Condor, 25, 1923:79), and south Yolla Bolly Mountain, Tehama County (Ferry, Condor, 10, 1908:41); in head of Sacramento Valley and eastward, from Beegum and Red Bluff, Tehama County, to Eagle Lake, Lassen County, and even beyond on to margin of Great Basin (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:238; Mus. Vert. Zool.). Some additional eastward, marginal stations: Cisco, Placer County (Mus. Vert. Zool.); near Longbarn, Tuolumne County (Aldrich, Condor, 37, 1935:49); Kanawyers, Kings Canyon, Fresno County (J. S. Dixon, Condor, 45, 1943:209); Piute Mountains, Kern County (Richardson, Condor, 6, 1904:135); Doble, San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:66); Dos Palmos, Santa Rosa Mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:246). Life-zone, characteristically Upper

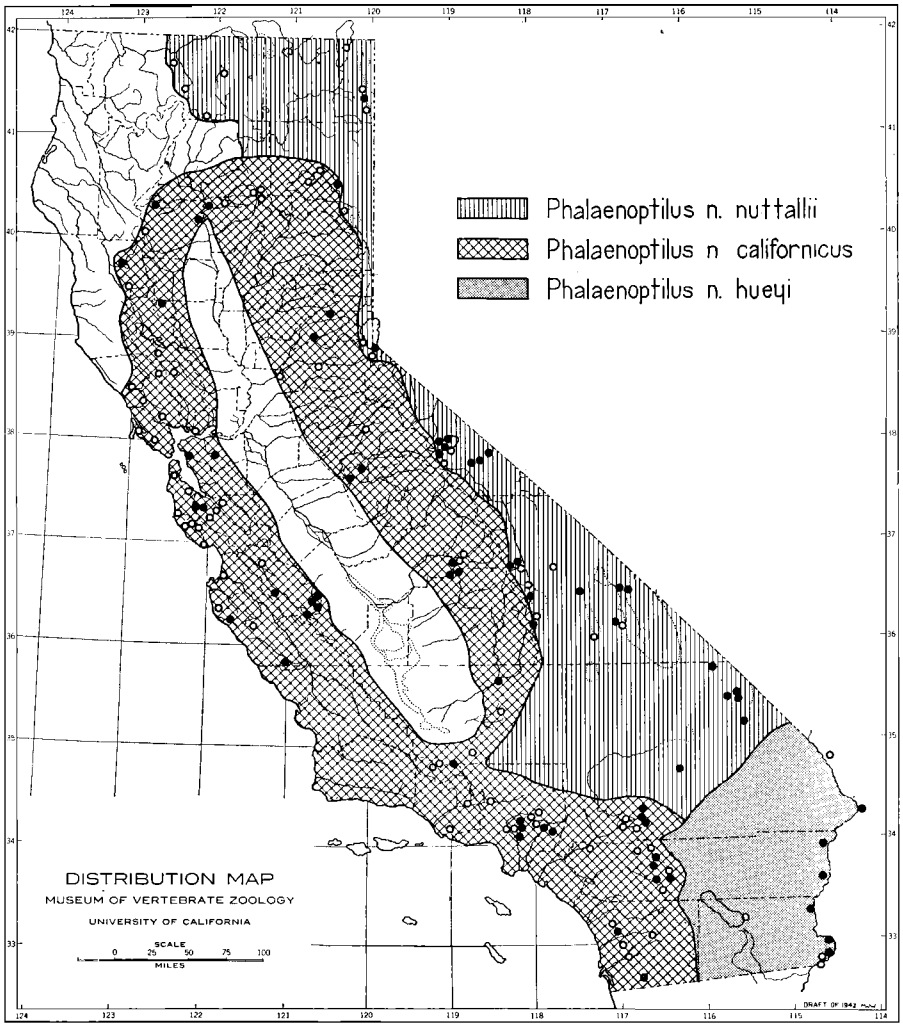

Fig. 12. Distribution in the breeding season of the subspecies of Poor-will, *Phalaenoptilus nuttallii*, in California. Dots mark stations from which breeding birds have been examined; circles, localities reported in the literature.

Sonoran; marginally, Transition and Lower Sonoran. Altitudes, near sea level, as at Morro Bay, San Luis Obispo County (Mus. Vert. Zool.), up to 8800 feet, as on Mount Pinos, Ventura County, in July (Grinnell, Auk, 22, 1905:383). A definite late-summer movement carries individuals up-mountain, well above the breeding zone. Winters at lower levels in San Diegan district (see Willett, Pac. Coast Avif. No. 21, 1933:92), and northward casually as far as Paicines, San Benito County (J. and J. W. Mailliard MS), Hayward, Alameda County, February 5, 8 (Calif. Acad. Sci.), near Lake Temescal, Alameda County, November 3 (Marshall, Condor, 40, 1938:127), and 30 miles east of Stockton, San Joaquin County (Belding, Land Birds Pac. Dist., 1890:76). A remarkable extra-limital occurrence, seasonally as well as geographically, is of a bird captured

December 7, 1931, at Crescent City, Del Norte County (no. 59134 Mus. Vert. Zool.). Found in April on Santa Catalina Island (Richardson, Condor, 10, 1908:66); and individuals have been reported in spring from Anacapa and San Clemente islands (Howell, Pac. Coast Avif. No. 12, 1917:61). Some general accounts are: Dawson, Birds Calif., 3, 1924:1055; Bent, U. S. Nat. Mus., Bull. 176, 1940:194ff.; Bendire, Life Hist. N. Amer. Birds, 2, 1895:158 (nesting at Monrovia, Los Angeles County); J. S. Dixon, *loc. cit.* (nesting at Escondido, San Diego County, etc.); van Rossem and Bowles, Condor, 22, 1920:61 (nesting near Saugus, Los Angeles County); Aldrich, *loc. cit.* (nesting near Longbarn, Tuolumne County); A. S. Allen, Condor, 37, 1935:254 (Santa Cruz Mountains, eye-shine); Mailliard, Condor, 11, 1909:45 (nesting near San Geronimo, Marin County).

Habitat—Typically, broken, Upper Sonoran chaparral, as clothing hillsides. Nesting and daytime roosting places are on bare ground in more or less complete shade of bushes, trees or rocks; forages low along openings, lanes, roads or trails. A very frequent plant associate is the chamise (*Adenostoma*); others are scrub-oak, coffee-berry (*Rhamnus*), and, in coast belt, coyote-brush (*Baccharis*).

Phalaenoptilus nuttallii hueyi Dickey
Desert Poor-will

Synonyms—Phalaenoptilus nuttallii, part; *Phalaenoptilus nuttallii nitidus*; Frosted Poor-will, part; Poor-will, part; Huey Poor-will.

Status—Resident. Locally, fairly common.

Geographic range—Valley of Colorado River, from Needles, San Bernardino County, at least to Bard, Imperial County (Howell, Condor, 29, 1927:76; Grinnell, Univ. Calif. Publ. Zool., 12, 1914:139; Dickey, Condor, 30, 1928:152). Also [probably this race] Imperial Valley, as at eastern end of Salton Sea (Abbott, Condor, 42, 1940:265 [nesting]). Intergrades with *P. n. nuttallii* occur in Providence Mountains area, San Bernardino County. Altitudes of definitely recorded places of capture, all below 1000 feet. Life-zone, Lower Sonoran. Several records of "*nitidus*" from localities north and west of Colorado Valley have turned out to pertain to other races of Poor-will; for example, the record from Witch Creek, San Diego County (Bishop, Condor, 7, 1905:142; Willett, Pac. Coast Avif. No. 21, 1933:92), pertains to *californicus*.

Habitat—Gravelly or stony desert floor or wash bottoms sparsely grown to bushes or small trees; when foraging, seeks sandy riparian ground or even mud-bars in the river.

Chaetura vauxi vauxi (J. K. Townsend)
Northern Vaux Swift

Synonyms—Acanthylis pelasgia; *Acanthylis vauxii*; American Swift; Chimney Swift; Oregon Swift; Oregon Chimney Swift; Vaux Swift.

Status—Summer resident or transient, according to locality. In metropolis of breeding area, common. As transient, scatteringly or irregularly common; great numbers sometimes appear briefly in some one place. Migration times, April-May and August-September.

Geographic range—In summer and breeding, narrow northwest coast belt south from Oregon line in Del Norte County as far as Santa Cruz, Santa Cruz County. Occasional in summer also in Sierra Nevada, but whether such occurrences mean actual nesting there is not known. In migrations, occurs practically throughout State. One winter record: December 22, 1940, Muir Beach, Marin County (A. H. Miller MS). Breeding life-zone, chiefly Transition. Altitudes of nesting, so far as now known, all below 1000 feet. Records of actual nesting: Eureka, Humboldt County, full account (Dawson, Birds Calif., 2, 1924:982ff.); "Humboldt County" (H. R. Taylor, Condor, 7, 1905:177); Marin County, probably vicinity of San Geronimo and Lagunitas (C. A. Allen, Bull. Nuttall Ornith. Club, 5, 1880:55; Mailliard, Condor, 2, 1900:64); Santa Cruz (Bendire, Life Hist. N. Amer. Birds, 2, 1895:183, 185). For summer-time status in San Francisco Bay region, see Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927: 30. Some occurrences of birds in summer months outside of definitely known breeding range: vicinity of Mount Shasta (Merriam, N. Amer. Fauna No. 16, 1899:117); Mineral, Tehama County, to Eagle Lake, Lassen County, in Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:242); Sierraville, Plumas County (Mailliard, Condor, 21, 1919:74); Gold Lake, Sierra County (A. S. Allen, Condor, 30, 1928:362); Kenawyers, Middle Fork Kings River, Fresno County (Dawson, Condor, 18, 1916:26); Pasadena, Los Angeles County, June 3 (H. L. Cogswell MS). For migrational data from southern California, see Willett, Pac. Coast Avif. No. 21, 1933:95; included are references to casual occurrence on Santa Cruz and Santa Catalina islands. Records of migrants elsewhere are many: Owens Valley, Death Valley, Colorado River Valley, Imperial Valley, etc. Night roosting en route has been recorded: South Pasadena, Los Angeles County, July 31 to September 22, in chimney (Cogswell, Condor, 46, 1944:33); Whittier, same county, in barn (Watson, Condor, 35, 1933:203); Santa Barbara, Santa Barbara County, and Orange, Orange County, in chimneys and houses (Robertson, *et al.*, *in* Michener, Condor, 35, 1933:211).

Habitat—For breeding season, forests of coast redwood and Douglas fir. Nesting sites in form of hollow, burnt-out tree-trunks, mostly redwood, seem to be prerequisite to presence of the birds through summer. Air-ways for foraging are comprised in natural openings in the forests, in "burns," and especially in openings along stream courses. However, both in summer and in the migrations, much foraging is carried on high above tree-tops. Preference for certain insects that fly at such heights might be a determining factor, as also the local distribution of these.

Note—Recognition of races of Vaux Swifts to southward of United States (Sutton, Wilson Bull., 53, 1941:231) requires use of the trinomial for the birds of California.

Nephoecetes niger borealis (Kennerly)
Northern Black Swift

Synonyms—Nephoecetes niger; *Cypseloides niger*; *Cypseloides borealis*; *Cypseloides niger borealis*; *Nephoecetes niger*; Black Swift.

Status—Summer resident, May to October. Relative numbers impossible to indicate, probably small in aggregate; only on rare occasions have more than a few individuals been reported from any one locality; and records of occurrence are far scattered through both time and space. At best, may be called fairly common locally.

Geographic range—As breeding, or possibly breeding, coast belt in Santa Cruz and

Monterey counties, central and southern Sierra Nevada, and, in southern portion of State, San Bernardino and San Jacinto mountains. Altitudes of summer-time occurrence extend from close to sea level, as at Point Lobos, Monterey County, and near Santa Cruz, Santa Cruz County (see below), up to at least 6000 feet, as on east side of Kearsarge Pass, Sierra Nevada, Inyo County (Mus. Vert. Zool.). Breeding life-zone, probably restrictedly Transition. Definitely determined breeding localities are as follows: sea-bluffs in vicinity of Santa Cruz, nesting and eggs (Vrooman, Auk, 18, 1901:394, and Condor, 7, 1905:176; Dawson, Condor, 17, 1915:8, and Birds Calif., 2, 1924:971); Berry Creek Falls, Redwood Park, Santa Cruz Mountains, nesting (E. Smith, Condor, 30, 1928:136); Yosemite Valley and vicinity, nesting and behavior (C. W. Michael, Condor, 27, 1925:111, Condor, 28, 1926:109, and Condor, 29, 1927:89; Grinnell and Storer, Animal Life Yosemite, 1924:349; E. Michael, Yosemite Nature Notes, 14, 1935: 69; G. C. Wood, *ibid.*, 5, 1926:80); Ella Falls, Kings Canyon National Park (J. S. Dixon, Condor, 45, 1943:209); Marble Fork of Kaweah River, Sequoia National Park, nests and young (J. S. Dixon, Condor, 37, 1935:265). Circumstantial evidence indicates that nesting has also taken place in San Bernardino Mountains (Bendire, Life Hist. N. Amer. Birds, 2, 1895:176; Willett, Pac. Coast Avif. No. 21, 1933:94) and San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:247; Willett, *loc. cit.*). Some other selections from available records, probably all of migrational or far-cruising nature: Pit River [probably in Shasta County] (Hartert, Cat. Birds Brit. Mus., 16, 1892:495); Owens Lake, Inyo County, and vicinity, June 2 to 12, 1891 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:54); Hayward, Alameda County, April 19, 1885, Webber Lake, Sierra County, August 1, 1889, and San Diego, May 21 and 22, 1881 (Belding, Land Birds Pac. Dist., 1890:79); Indian Wells, Colorado Desert, Riverside County, April 27, 1917 (Dawson, Jour. Mus. Comp. Ool., 2, 1921:27); San Juan Capistrano, Orange County, September 10, 1924, and other southwestern localities (Willett, *loc. cit.*).

Habitat—As breeding, sea-bluffs above surf, and cliffs behind or near waterfalls in deep canyons; as foraging, air-ways far and wide, often high, over forests, foothills, valleys and canyons; daily cruising distance must be great.

Aëronautes saxatilis saxatilis (Woodhouse)
Western White-throated Swift

Synonyms—Panyptila melanoleuca; *Micropus melanoleucus*; *Cypselus saxatilis*; *Aëronautes melanoleucus*; *Aëronautes saxatalis*; White-bellied Swift; Rock Swift; White-throated Swift.

Status—Resident, partially, within State; that is, part of population emigrates for winter, leaving a part (the smaller) remaining through winter at low altitudes, southerly. "Common" in vicinity of colonial roosting and nesting retreats.

Geographic range—Semi-arid and arid parts of State; in other words, major part of State east and south of humid coast belt; most numerous south of about latitude 38°. Breeding life-zones, chiefly Lower and Upper Sonoran, exceptionally Transition. Altitudinally, nests from within a few feet of sea level, as at Point Lobos, Monterey County, up probably to at least 6000 feet, as in Yosemite National Park and in certain mountain ranges of Inyo County. But individuals and groups cruise far and wide, skimming the lowest depressions, as in Death Valley and Salton Sink, or flying well above such a height as San Gorgonio Peak, 11,485 feet, San Bernardino Mountains (Grinnell,

Univ. Calif. Publ. Zool., 5, 1908:70). Has been reported from each of the Santa Barbara group of islands, mostly in spring; may nest on at least San Clemente and Santa Catalina (Howell, Pac. Coast Avif. No. 12, 1917:62). Citing some northward occurrences: in coast belt, breeding to San Mateo, Alameda and Contra Costa counties (records reviewed, Pitelka, Condor, 46, 1944:233); individuals reported rarely from Marin County (Stephens and Pringle, Birds Marin Co., 1933:15); in interior, to Mount Shasta, Siskiyou County, in August (Merriam, N. Amer. Fauna No. 16, 1899:117), and to vicinity of Lassen Peak, in Tehama, Shasta and Lassen counties, in June (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:242); northernmost station east of Sierra Nevada, White Mountains, Mono County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:55). Thence southward, record stations are many, along Colorado Valley and over Mohave and Colorado deserts to Mexican boundary in Imperial and San Diego counties. Northern stations for wintering are Hayward, Alameda County (Emerson, *in* Belding, Land Birds Pac. Dist., 1890:82) and Somerville, Contra Costa County (A. H. Miller MS). Some accounts of nesting and behavior: Pine Canyon, Mount Diablo, Contra Costa County (Little, Condor, 21, 1919:235); Alum Rock Canyon, near San Jose, Santa Clara County (Pickwell, Condor, 39, 1937:187); Yosemite Valley (Grinnell and Storer, Animal Life Yosemite, 1924:251; E. Michael, Condor, 28, 1926:111ff.); San Gabriel Canyon, Los Angeles County (Shepardson, Condor, 19, 1917:169); Slover Mountain, near Colton, San Bernardino County (Hanna, Condor, 11, 1909:77, and Condor, 19, 1917:3); San Juan Capistrano, Orange County (F. M. Bailey, Condor, 9, 1907:169; Skinner, Condor, 35, 1933:241; *et al.*); southwestern California, review of records (Willett, Pac. Coast Avif. No. 21, 1933:95); in general (Dawson, Birds Calif., 2, 1924:960ff.).

Habitat—For roosting and nesting, deep crevices in faces of cliffs, bluffs, canyon walls; preference seems shown for those of granite rock, perhaps because this assures best claw-holds and firmest attachment for nests. For foraging, air-ways far and wide, high and low, over valleys and desert mesas, foothills and highest mountains. Hardly a cubic yard of atmosphere anywhere south of latitude 38° and within a mile of the ground surface can have escaped traversement by one or more White-throated Swifts in any ten-year period. Possibly the daily cruising radius of this bird is greater than in any other species, even the California Condor.

Archilochus alexandri (Bourcier and Mulsant)

Black-chinned Hummingbird

Synonyms—Trochilus alexandri; *Mellisuga alexandri*; Purple-throated Humming Bird.

Status—Summer resident; March (at south) or April, to September. In most places of occurrence, common; sometimes "fairly swarming."

Geographic range—Roughly, southern and interior portions of State, mostly at lower levels and altogether east of humid coast belt north of San Francisco Bay. Most numerous in San Diegan district and in parts of San Joaquin and Sacramento valleys. Breeding life-zone, mainly Upper Sonoran, locally Lower Sonoran. Altitudes of nesting, near sea level at Santa Barbara, Santa Barbara County, up to 5600 feet, on Barley Flats, San Gabriel Mountains, Los Angeles County (Edwards, Condor, 16, 1914:210). An up-mountain post-breeding movement carries individuals as high as 8500 feet on south-

ern mountains (Willett, Pac. Coast Avif. No. 21, 1933:96). There is one winter record: Palm Springs, Riverside County, December 27, 1903 (Grinnell, Condor, 6, 1904:42). Northwesternmost authenticated breeding station toward San Francisco Bay, near Gilroy, Santa Clara County (Unglish, Condor, 34, 1932:228, and Condor, 35, 1933: 237); in migration to San Geronimo, Marin County, March 3 (Mailliard, Condor, 15, 1913:43); a nesting, apparently of this species, reported at Ross, Marin County (L. A. Stephens, Gull, 23, 1941:24). Interiorly, recorded north to Yreka, Siskiyou County, June 10 (Calif. Acad. Sci.); to lower McCloud River, Shasta County, breeding (Townsend, Proc. U. S. Nat. Mus., 10, 1887:207); to Dale's, east of Red Bluff, Tehama County, May (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:242); to Honey Lake, Lassen County, June, and Fort Bidwell, Modoc County, July (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. L, 1879 [1880]:312); and to Warner Mountains, same county, July and August (Dawson, Condor, 18, 1916:27; Mus. Vert. Zool.); to Mono Lake, Mono County, May 23 (Grinnell and Storer, Animal Life Yosemite, 1924:352). A few out of the many published accounts of nesting and behavior are: in general (Dawson, Birds Calif., 2, 1924:954); Olancha, near Owens Lake, Inyo County, etc., nesting (A. K. Fisher, N. Amer. Fauna No. 7, 1893:56; Bendire, Life Hist. N. Amer. Birds, 2, 1895:200); Colorado River valley south to Picacho, Imperial County, nesting (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:143); Dudley, Mariposa County (Grinnell and Storer, *loc. cit.*); Azusa, Los Angeles County (Woods, Auk, 44, 1927:298ff., Condor, 33, 1931:184, and Condor, 38, 1936:225); Buena Park, Orange County (Robertson, Condor, 35, 1933:133, 241); San Diego (Huey, Condor, 26, 1924:229).

Habitat—As nesting, therefore pertaining to females, chiefly tracts of deciduous trees along stream bottoms, especially in canyons; but also, latterly, planted orchards where irrigated. Near presence of water thus appears to be a requirement for nest location. Native trees usually, one or another, in this hummingbird's association, willow, cottonwood, alder, sycamore, valley oak. Habitat of males in general neighborhood of that of nesting females, but drier, as up canyon sides, often amid live oaks and chaparral plants, or on desert washes where mesquite and catclaw thickets occur. Both sexes, and young, forage about many kinds of flowering shrubs and vines, introduced and cultivated as well as native. The non-native tree-tobacco is notably attractive.

Calypte costae (Bourcier)
Costa Hummingbird

Synonyms—Ornismya costae; *Atthis costae*; *Trochilus costae*; *Selasphorus costae*; *Zephyritis costai*; Coste Humming Bird; Ruffed Hummingbird; Coast Hummingbird.

Status—Chiefly summer resident, March to September; but also relatively small numbers remain through winter on Colorado Desert. Common; "abundant" in some places.

Geographic range—Essentially, San Diegan district northwest through Ventura County, and Colorado and Mohave deserts. Breeding life-zone, restrictedly Lower Sonoran, save for rare invasion of Upper Sonoran. Altitudes of nesting, near sea level, as in Imperial Valley, up to at least 5500 feet, as in Providence Mountains, eastern San Bernardino County (Mus. Vert. Zool.). Breeds north, east of Sierra Nevada, as far as Silver Creek, Owens Valley [west base White Mountains], Inyo County (Dawson, Birds

Calif., 2, 1924:947; A. K. Fisher, N. Amer. Fauna No. 7, 1893:56). Also nests sparsely on west side of upper (southern) end of San Joaquin Valley and in inner arid valleys somewhat farther westward: due west of Dos Palos, Merced County (Tyler, Condor, 22, 1920:190), and north to San Ardo, upper Salinas Valley, Monterey County (Dawson, Jour. Mus. Comp. Ool., 1, 1919:22). Out-of-bounds vagrants or pioneers have reached Oakland, May 8, 1890, and Hayward, May 16, 1875, Alameda County (McGregor, Auk, 14, 1897:92; Cooper, Amer. Naturalist, 10, 1876:90). Certain of the islands have been reached: San Clemente Island, March 30, 1897 (Grinnell, Pasadena Acad. Sci., publ. 1, 1897:15), Santa Barbara Island, June 19, 1911 (Willett, Pac. Coast Avif. No. 7, 1912:60), Santa Catalina Island, March 25, 1927, and January 26, 1929 (Pemberton, Condor, 30, 1928:144; Meadows, Condor, 31, 1929:130). Besides wintering of a few individuals of this hummingbird on the Colorado Desert northwest to Palm Springs, Riverside County, we have instances of wintering still farther northwestward: Azusa, Los Angeles County, January 9, 1934 (Woods, Condor, 36, 1934:116); Santa Catalina Island, as above; and Point Mugu, Ventura County, January 5, 1935 (L. Miller, Condor, 37, 1935:177). Out of many accounts of nesting and habits, besides some cited above, there may be selected: Azusa and vicinity (Woods, Condor, 23, 1921:49; Condor, 24, 1922:189; Condor, 25, 1923:195; Bird-Lore, 26, 1924:3; Auk, 44, 1927:298ff., 564; Condor, 33, 1931:183; Condor, 36, 1934:31, 242; Condor, 38, 1936:119, 225); Palm Springs, Riverside County (Hutchinson and Hutchinson, Aud. Mag., 43, 1941:484); Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:145); Escondido, San Diego County (J. B. Dixon, Condor, 14, 1912:75); Colorado Desert (L. Miller, Condor, 36, 1934:168, and Condor, 37, 1935:177); southern California in general (Willett, Pac. Coast Avif. No. 21, 1933:96).

Habitat—Typically, deserts or desert-like washes, mesas or side-hills, especially where sages of different kinds, encelias, yuccas and cholla cactuses abound. Xerophilous in extreme degree, the antithesis of *Archilochus*. This holds in *costae* for both sexes and thus for nesting as well as for foraging. A great variety of blossoming plants is resorted to; on the deserts, for example, desert thorn (*Lycium*) of several species, the bee-sage (*Hyptis emoryi*), *Fouquieria*, and *Chilopsis*; on coastal side of southern California, the black sage (*Salvia mellifera*) and the white sage (*Salvia apiana*). (Regarding some ornithophilous plants visited especially by this hummingbird, see Pickens, Condor, 31, 1929:229ff.)

Calypte anna (Lesson)
Anna Hummingbird

Synonyms—Ornismya anna; *Trochilus anna* [or *annae*]; *Trochilus icterocephalus*; *Calliphlox anna*; *Selasphorus anna* [or *annae*]; *Mellisuga anna*; *Atthis anna*; *Zephyritis annae.*

Status—Resident. Common, but never concentrating in such great numbers locally as do certain others of our hummingbirds. Because of human settlement of open valleys and plains and the clearing of woodland, with extensive gardening and the planting of flowering, non-native trees, the numbers of Anna Hummingbirds now no doubt greatly exceed those comprised in original aggregate population. An important factor is the presence now of plants which flower abundantly all through the quiescent period for most native kinds of shrubs, roughly, October to January. This means that the rigors of a "minimum food period" in the annual cycle have been abated; a much larger population of wintering hummingbirds can carry over.

Geographic range—Central and southwestern parts of State almost altogether on Pacific drainage; northwest from Mexican boundary in San Diego County through coast district to and including counties bordering on San Francisco Bay; north on lower west flank of Sierra Nevada from Kern County, and along innermost coast ranges north of Carquinez Straits, to head of Sacramento Valley, in Tehama and Shasta counties. Life-zone, for breeding, restrictedly, and largely as affecting individuals throughout the year as well, Upper Sonoran. But a post-breeding, mid-summer movement of part of population carries individuals far up-mountain, then temporarily amid Transition and even Boreal vegetational surroundings. Also there is then a centrifugal "scouting" of some individuals, spatially, and such out-of-bounds places as Humboldt Bay, the more remote of the Santa Barbara Islands, the Farallones, and localities on the Colorado Desert are reached; quite often such vagrants remain in those places nearly or quite through the winter, but by spring they usually disappear. Altitudes of nesting extend from near sea level, as in most beach towns south from Marin County to San Diego, up to 2000 feet on middle western slopes of Sierra Nevada, even to 6000 feet on warm sides of higher mountains of southern California. Late summer finds individual vagrants up to 9000 feet in the south, as on San Jacinto Peak, July 9 (Willett, Pac. Coast Avif. No. 21, 1933:97; Mus. Vert. Zool.), and up to about 6000 feet on west flank of Sierra Nevada, as on Silver Creek, Eldorado County, in July (Price, Condor, 3, 1901:164). Some of the marginal, out-of-bounds stations of recorded occurrence are as follows: Mount Shasta at 5700 feet, July 22 (Merriam, N. Amer. Fauna No. 16, 1899:117), Edgewood, May (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:92), and Yreka, nesting [?] (Feilner, Ann. Rept. Smithsonian Inst., 1865:429), in Siskiyou County; Trinidad, Eureka, Ferndale and Carlotta, Humboldt County, in fall and winter (Wilder, Condor, 15, 1913:129, and Condor, 18, 1916:128, 204; Clay, Condor, 15, 1913:184; A. H. Miller MS); Sierra City, Sierra County, August 20 (Calif. Acad. Sci.); Farallon Islands [no date] (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:46); San Clemente, Santa Catalina, and most other islands of Santa Barbara group, in winter and spring, and possibly nesting on some of them (Howell, Pac. Coast Avif. No. 12, 1917:63; Pemberton, Condor, 30, 1928:147; *et al.*); Clark Mountain, eastern San Bernardino County, May 18, 1939 (Mus. Vert. Zool.); Palm Springs, January 1, Mecca, January 4, and Brawley, December 18, on Colorado Desert (Grinnell, Condor, 6, 1904: 42; van Rossem, Condor, 13, 1911:132); Fort Yuma, Imperial County, October 25, 1925 (Ellis Coll.). Of 205 published references at hand (in 1944) for this hummingbird, only a few will be cited here—those which set forth more significantly the conditions of existence for the species: in general (Dawson, Birds Calif., 2, 1924:935; Woods, *in* Bent, U. S. Nat. Mus., Bull. 176, 1940:371ff.); as studied in vicinity of Azusa, Los Angeles County (Woods, Auk, 44, 1927:299ff., Condor, 33, 1931:182ff., Condor, 34, 1932:238, and Condor, 36, 1934:31); flight (Hunt, Condor, 22, 1920:109; Rodgers, Condor, 42, 1940:86; L. Miller, Condor, 42, 1940:305); fly-catching and bathing (Bassett, Condor, 22, 1920:37, Condor, 24, 1922:63, and Condor, 26, 1924:227); caught in spider's web (Abbott, Condor, 33, 1931:169); roosting (Dyer, Condor, 38, 1936: 44); sipping at sapsucker drillings (Grinnell and Storer, Animal Life Yosemite, 1924: 353); pollination of flowers (Pickens, Condor, 31, 1929:232); nesting and miscellaneous (Abbott, Condor, 29, 1927:160; Gander, Condor, 29, 1927:171, and Condor, 30, 1928:363; Canterbury, Condor, 31, 1929:128; Robertson, Condor, 33, 1931:138, and Condor, 35, 1933:133; Unglish, Condor, 35, 1933:237; S. B. Peyton, Condor, 45, 1943:209).

Habitat—Broken chaparral or woodland; or, mixed woodland and chaparral, in open stand. This definition holds on an average in primitive situations for the breeding season (December to April); males tend to take territorial stands in the more open situations, as up canyon sides or hill slopes or out on level washes, while the females in their nesting activities adhere to tracts of evergreen trees, most commonly, perhaps, of the native trees, the live oak. When foraging, or at non-breeding seasons, the birds cruise far and wide; then, absence or presence controlled by kind and abundance of preferred flowers. Earliest in the year, perhaps, of native flowering plants attractive to the hummers are the Upper Sonoran kinds of manzanita and gooseberry of the mountain sides; then the currants, and later a successional host of "ornithophilous" plants, leading to the sticky money-flower (*Diplacus*) at the lower altitudes in August. In seeking these, all sorts of terrain are traversed. The blue-curls or camphor weed (*Trichostema*) attracts these birds even out onto the September stubble-fields of the valley floors. Among introduced plants, perhaps the most important for both winter-foraging and nesting, is the eucalyptus, of many varieties; then in southern California the tree-tobacco (*Nicotiana glauca*) is an all-year stand-by. Dependable in off-seasons to the northward, in gardens and often gone wild, are the "red-hot-poker" plants (*Tritoma*). The assumption is strongly supported by memory and by the records, that habitat conditions favorable to the Anna Hummingbird have vastly improved and spread in the past 50 years.

Selasphorus platycercus platycercus (Swainson)
Northern Broad-tailed Hummingbird

Synonyms—*Trochilus platycercus*; Broad-tailed Hummingbird, part.

Status—Summer resident. Sparse.

Geographic range—Higher mountains along central eastern boundary of State. Specifically, the White and Inyo mountains, in Mono and Inyo counties, the Grapevine Mountains, Inyo County, and Clark Mountain, eastern San Bernardino County. Records: Mazourka Canyon, 7500 feet, western slope of Inyo Mountains, opposite Independence, Owens Valley, May 24, 1912, male seen, and others heard on previous days (Swarth, Condor, 18, 1916:130); Wyman Creek canyon, east slope of White Mountains, at 9000 feet, close to Inyo-Mono county line, August 13, 1917, nest, female and young obtained (Grinnell, Condor, 20, 1918:87); Cottonwood Creek, east slope of White Mountains, 9000 feet, in Mono County, August 23, 1921, immature male taken (Dickey, Condor, 24, 1922:135); Grapevine Peak, close to state line, Inyo County, several males seen, June 9, 1940 (A. H. Miller MS); Clark Mountain, 6000 to 7500 feet, locally common in late May, five specimens (A. H. Miller, Condor, 42, 1940:162). Three previous ascriptions of this hummingbird to California proved faulty (see Grinnell, Pac. Coast Avif. No. 11, 1915:184); also a later one is erroneous, the one for Santa Catalina Island (Simon, Hist. Nat. Trochilidae, 1921:405; see Willett, Pac. Coast Avif. No. 21, 1933:99).

Habitat—Upper Sonoran belt of piñon, juniper and mountain mahogany, these trees of usual open stand, with xerophilous shrubbery interspersed. Especially favored is the vicinity of thickets, as of willow or *Garrya*, along wet or dry stream courses.

Selasphorus rufus (Gmelin)
Rufous Hummingbird

Synonyms—Ornismya sasin, part; *Calliphlox rufa*; *Selasphorus ruber*, part; *Selasphorus platycercus*, part; *Selasphorus henshawi*; *Trochilus rufus*, part; Nootka Sound Humming Bird, part; Red-backed Hummingbird; Broad-tailed Hummingbird, part; Rufous-backed Hummingbird, part.

Status—Migrant; in spring, February to May, according to latitude and altitude; in fall, July to September. Odd individuals nearly or quite span the summer. In southward migration, males appear first, even in numbers by last week of June, followed in two or three weeks by females and young. Aggregate numbers great; locally, common to abundant.

Geographic range—Whole length of State; in northward passage chiefly through lowlands and foothills of westward drainage, in southward movement chiefly along mountain ranges. Extremes of altitudinal occurrence, —200 feet in Death Valley, Inyo County, April 29 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:70), and 12,120 feet, on Parsons Peak, Mariposa-Tuolumne county line, September 6 (Grinnell and Storer, Animal Life Yosemite, 1924:354). The earlier literature contains many accounts of the supposed nesting of this species in the central and southern coast belt and in the Sierra Nevada; presence of *rufus* commonly at the time other species of hummingbirds were nesting probably accounted for the confusion (see Grinnell, Condor, 3, 1901:127). Even so, there is now (1943) increasingly strong, but not quite conclusive, evidence that *rufus* does breed in the northwestern part of the State, in the Trinity Mountain region. For some accounts of this species see: Dawson, Birds Calif., 2, 1924:930 (in general); Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:95 (in San Francisco Bay region); Willett, Pac. Coast Avif. No. 21, 1933:97 (in Los Angeles region); Tyler, Pac. Coast Avif. No. 9, 1913:58 (Fresno district); Woods, Auk, 44, 1927:299ff., Condor, 36, 1934:32, and Condor, 40, 1938:42 (Azusa, Los Angeles County); Storer, Condor, 32, 1930:189 (Carlotta, Humboldt County); Robertson, Condor, 33, 1931:138, and Condor, 35, 1933:133 (Buena Park, Orange County).

Habitat—All sorts of terrain providing melliferous flowers, from, according to month, lowland stream bottoms, through foothill brushland and heavy chaparral, to mountain ridges nearly or quite at timber line. Conspicuously visited native plants are the gooseberries, currants and manzanitas; non-native and cultivated ones are eucalyptus, tree-tobacco, fuchsia, red-hot-poker plant; in blossoming time in southern California, the orange groves and peach orchards often "swarm" with Rufous Hummingbirds.

Selasphorus sasin sasin (Lesson)
Migratory Allen Hummingbird

Synonyms—Ornismya sasin, part; *Selasphorus rufus*, part; *Selosphorus ruber*, part; *Selasphorus alleni*, part; *Trochilus rufus*, part; *Trochilus alleni*; *Selasphorus sasin*; *Selasphorus alleni alleni*; Nootka Sound Humming Bird, part; Rufous Hummingbird, part; Red-backed Hummingbird, part; Rufous-backed Hummingbird, part; Allen Hummingbird, part; Flame Bearer.

Status—Summer resident. South and interiorly of breeding area, transient; in northward migration, January (in San Diegan district) to April; southward, chiefly July and August. Common.

Geographic range—As breeding, narrow humid coast belt south from Oregon line

in Del Norte County regularly to vicinity of Morro, San Luis Obispo County, thus inclusive of San Francisco Bay region. Farther south, there are nesting records also from close to seacoast in Santa Barbara and Ventura counties, but these have not been checked on the basis of actual specimens (females with nests). Female taken June 15 at Santa Barbara (Calif. Acad. Sci.) is *S. s. sasin*. Two females intermediate between this race and *S. s. sedentarius* taken May 15 on Anacapa Island (Mus. Vert. Zool.). Lifezone, typically Transition; locally Upper Sonoran. Altitudes of known nestings, all below 800 feet. Restriction to the belt of summer fogs is very close; we know of no attested nesting instance farther inland than 20 miles air-line from the sea or a coastal bay. Migration also is chiefly coastwise, northward over the Pacific-slope lowlands of southern California; but southward, there is some spreading of individuals interiorward of coast belt and then general movement southeastward along the mountain ranges. Some accounts of behavior and habitat relations within breeding range: Crescent City, Del Norte County, and Humboldt Bay, Humboldt County (W. K. Fisher, Condor, 4, 1902:132); Carlotta, Humboldt County, nesting (Grinnell MS); Monte Rio, Sonoma County, and San Geronimo, Marin County (Mailliard, Condor, 15, 1913:205, and Condor, 21, 1919:212); San Francisco (Ray, Condor, 18, 1916:227; Bassett, Condor, 24, 1922:63; H. C. Bryant, Condor, 27, 1925:98; Mrs. H. J. Taylor, Condor, 29, 1927: 203; Orr, Condor, 41, 1939:17ff.); Oakland, Berkeley, Hayward, etc., Alameda County (Bassett, Condor, 23, 1921:37; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:95; Clabaugh, Condor, 38, 1936:176; Dyer, Condor, 41, 1939:62); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:31, 75); Santa Barbara, nesting (Bowles, Condor, 14, 1912:77; Dawson, Birds Calif., 2, 1924:924); Ventura and Sespe, Ventura County (Willett, Pac. Coast Avif. No. 21, 1933:98). J. S. Dixon (Condor, 40, 1938:264 and *ibid.*, 45, 1943:210) has found Allen Hummingbirds present throughout the late spring and summer in Kings Canyon and Sequoia national parks, southern Sierra Nevada. Some accounts and records relating to migration: easternmost stations north of San Francisco Bay, Forest Glen, South Fork Mountain, Trinity County, June 23 (Calif. Acad. Sci.), 2 miles south of South Yolla Bolly Mountain, Tehama County, August 1 (Mus. Vert. Zool.), and Howell Mountain, Napa County (Clark, Condor, 32, 1930:51); a little to southward, but much farther east, west slope of Sierra Nevada, at Dudley, 3000 feet, Mariposa County, August 5 and 10 (Grinnell and Storer, Animal Life Yosemite, 1924:355); Big Meadow [near Sirretta Peak], Tulare County, June 29 (Mus. Vert. Zool.); Walker Basin, Kern County, October 15 (Mus. Vert. Zool.); Mount Pinos, Ventura County, at 6500 feet, July 1 to 5 (Grinnell, Auk, 22, 1905:384); Azusa, Los Angeles County, as early as January 29, etc. (Woods, Auk, 44, 1927:299, Condor, 32, 1930:214, and Condor, 36, 1934:116); San Jacinto Peak at 8000 feet, Riverside County, July 10 to 21 (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:251); San Diego, San Diego County, January 26 (Torrey, Condor, 11, 1909:173); southern California in general (Willett, *loc. cit.*).

Habitat—In breeding season, as a rule ravines or canyons, wherein the males maintain territorial stations overlooking "soft chaparral," while the females resort to willows, blackberry tangles or beds of brakes along the bottoms for nesting. But departures are common, bringing in to use parks and gardens with many sorts of non-native trees and shrubbery for nesting, perching and foraging; eucalyptus and cypress are notable among the trees used for nesting. As summer advances, perhaps the sticky monkeyflower (*Diplacus*) is resorted to in the coast belt more generally than any other native plant. In migrations, a great variety of flowering herbs, shrubs and trees serves. The

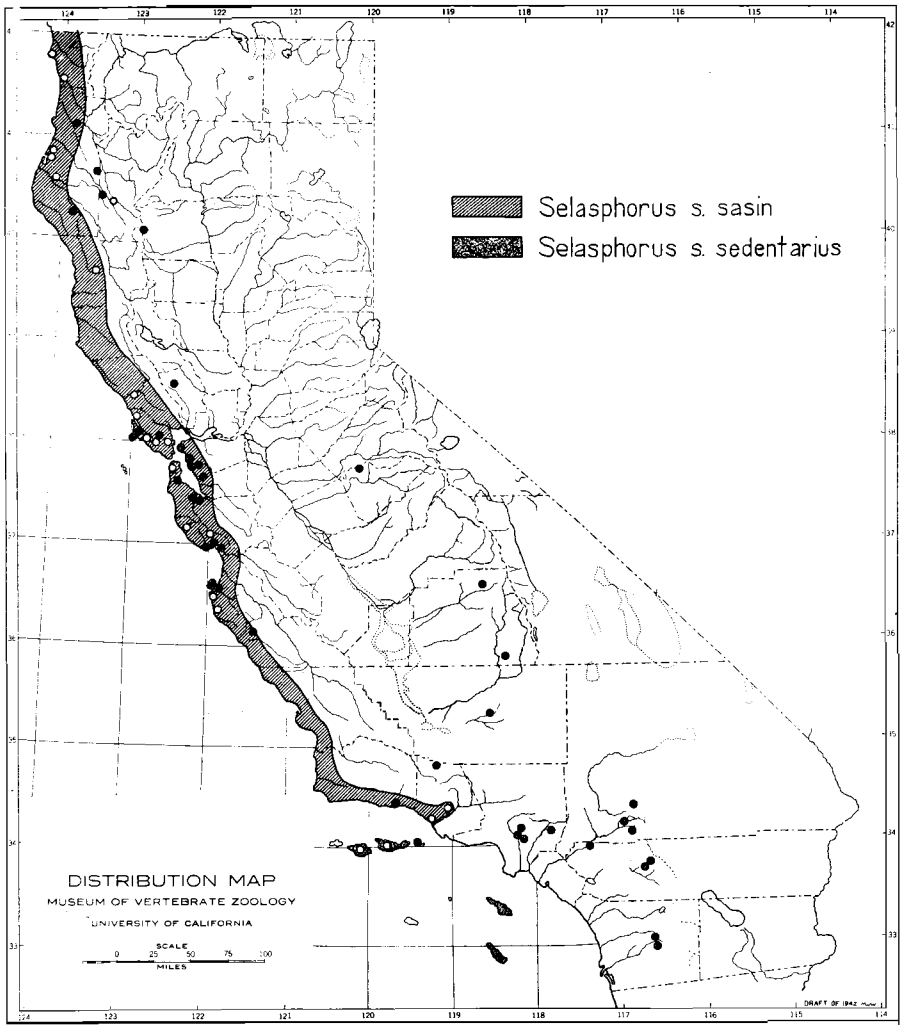

Fig. 13. Distribution of the subspecies of Allen Hummingbird, *Selasphorus sasin*, in California. Shaded areas indicate breeding ranges; stations outside these areas, points where migrants or vagrants have been taken. Dots mark localities from which specimens have been examined; circles, localities reported in the literature.

southward route, high along mountains, is probably guided by the burst of mid-summer bloom there.

Note—For nomenclature, see: Grinnell, Condor, 31, 1929:226, and *ibid.*, 33, 1931:77.

Selasphorus sasin sedentarius Grinnell
Non-migratory Allen Hummingbird

Synonyms—Selasphorus rufus, part; *Trochilus rufus*, part; *Selasphorus alleni*, part; *Selasphorus alleni sedentarius*; Red-backed Hummingbird, part; Rufous Hummingbird, part; Allen Hummingbird, part; Island Hummingbird.

Status—Resident. Locally common, even "abundant."

Geographic range—San Clemente and Santa Catalina islands, of Santa Barbara group; may also include Santa Cruz and Santa Rosa islands. Life-zone, Upper Sonoran. Some accounts, in various regards, from San Clemente and Santa Catalina islands: Cooper, Ornith. Calif., 1, 1870:356, part; Howell, Pac. Coast Avif. No. 12, 1917:63; Willett, Pac. Coast Avif. No. 21, 1933:98; Grinnell, Pasadena Acad. Sci., publ. 1, 1897:15, Auk, 15, 1898:235, and Condor, 31, 1929:226; Linton, Condor, 10, 1908:84; Shepardson, Condor, 17, 1915:130; Richardson, Condor, 10, 1908:66; Snyder, Condor, 16, 1914:182. Records from Santa Cruz Island [not, however, now certain as to race]: Mailliard, Bull. Cooper Ornith. Club, 1, 1899:42 (April); Blake, Auk, 4, 1887: 329 (July and August); Linton, Condor, 10, 1908:127 (November 24); Dawson, Jour. Mus. Comp. Ool., 2, 1922:45 (eggs); Ross, Condor, 28, 1926:241 (about April 1). From Santa Rosa Island: [race?] Pemberton, Condor, 30, 1928:147 (nesting). There is a "sight-record" from Santa Barbara Island (Cooper, Proc. Calif. Acad. Sci., 4, 1870: 78), but it is dubious even as to species of hummingbird. (For Anacapa Island, see under *S. s. sasin.*)

Habitat—In general, canyons and ravines where most heavily grown to brush and trees. Nest sites are in trees, such as cherry, above or near stream beds. In vicinity of Avalon, abundant in winter about blossoming eucalyptus trees; also, in spring, around tree-tobacco.

Stellula calliope (Gould)
Calliope Hummingbird

Synonyms—Selasphorus calliope; *Callothorax calliope*; *Stellura calliope*; *Trochilus calliope*; *Stellula calliope calliope.*

Status—Summer resident; March to September. Within normal breeding range, common; as northward transient, observed sparsely or irregularly.

Geographic range—As breeding, so judged on satisfactory evidence, higher mountains of northern portion of State eastward of humid coast belt (South Fork Mountain, Trinity County, east to Warner Mountains, Modoc County); Mount Shasta and Lassen Peak area; thence south along entire length of Sierra Nevada to Tulare County (Mus. Vert. Zool.); then, in southern California, Mount Pinos, Ventura County, San Gabriel Mountains, Los Angeles County, San Bernardino Mountains, and possibly also San Jacinto Mountains. Life-zones, Canadian and upper Transition. Ordinary altitudes of nesting, 4000 feet, as in Yosemite Valley, up to 9000 feet, at Mammoth Lakes, Mono County; in southward migration up to 11,000 feet, on White Mountains, Mono County, August 9 (Mus. Vert. Zool.). In northward migration, appears usually in April and early May along foothills and over adjacent lowlands of Pacific drainage; southward migration is apparently with rare exception [Los Angeles, August 19 (Mus. Vert. Zool.)] along higher mountain ranges, taking place in July and August. There is but one record, at any season, for the southeastern desert region proper: Cottonwood Springs, Riverside County, April 4, 1924 (Calif. Acad. Sci.). Some accounts of occurrence in summer, especially as nesting, cited from north to south: Siskiyou County, several localities west to Kidder Creek, Salmon Mountains (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:92); near Yreka, Siskiyou County (Feilner, Ann. Rept. Smiths. Inst., 1865:429); Lassen Peak region, Battle Creek Meadows, Tehama County, east to Eagle Lake, Las-

sen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:243); Gold Lake, Plumas County (M. W. Wythe, Condor, 29, 1927:63); Lake Tahoe (Ray, Condor, 20, 1918:70, 74; J. W. Mailliard, Condor, 23, 1921:75); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:356; C. W. Michael, Condor, 23, 1921:136, Condor, 27, 1925:111, and Condor, 40, 1938:93); vicinity of Virginia Creek and Mammoth, Mono County (Rowley, Condor, 41, 1939:248; Dawson, Birds Calif., 2, 1924: 917, 921); Kings Canyon National Park, Fresno County (J. S. Dixon, Condor, 45, 1943:210); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:72; Pierce, Condor, 18, 1916:179; Wyman, Condor, 22, 1920:206; Willett, Pac. Coast Avif. No. 21, 1933:99); San Jacinto Mountains, in May and June, but not surely nesting (Dawson, Condor, 18, 1916:27). Some records of this hummingbird in migration: Glenbrook, Lake County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919:283ff.); Berkeley, Oakland and Hayward, Alameda County (Belding, Land Birds Pac. Dist., 1890:89; Cooper, Proc. Calif. Acad. Sci., 6, 1875:200; Emerson, Zoe, 4, 1893:179; Palmer, Condor, 23, 1921:163; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927: 96); Gilroy, Santa Clara County, May 3 to 7 (Unglish, Condor, 35, 1933:237); La Panza, San Luis Obispo County, April 21 (Dawson, *loc. cit.*); Los Angeles, April 22 (Swarth, Condor, 2, 1900:37); Azusa, Los Angeles County, March 6 to May 4 (Woods, Auk, 44, 1927:299, 301, 305, Condor, 36, 1934:32, and Condor, 40, 1938:42); Riverside, Riverside County, "late March" (Willett, *loc. cit.*); Agua Caliente (=Palm Springs), Riverside County, April 13, and Volcan Mountains, San Diego County, April 15 (Belding, *loc. cit.*).

Habitat—For breeding, canyon bottoms, valley floors, and forest glades; in these, preferably, mixed brushland and forest, either of deciduous or coniferous trees, often as intermingled. Males are located in open places; females resort for nesting mostly to woods. Trees selected for nesting and roosting, lodgepole pine, white fir, Jeffrey and yellow pines, aspen, alder, and water-birch. Flowers prominently used are gooseberry and currant, the manzanitas, castilleja, and pentstemon.

Megaceryle alcyon caurina (Grinnell)
Western Belted Kingfisher

Synonyms—Alcedo alcyon; *Ceryle alcyon*; *Streptoceryle alcyon caurina*; *Ceryle alcyon caurina*; *Megaceryle alcyon*; Kingfisher; Belted Kingfisher; Northwestern Belted Kingfisher.

Status—Resident. But aggregate numbers increase greatly at seasons of migration, when also almost any water-affording locality is reached whether or not there are any fishes. Also there is winter withdrawal southward and down-mountain from areas of hard freezing. The marked reduction of numbers noticeable in late years may have resulted from the fishermen's disfavor, augmented actively by State Fish and Game policies; that is to say, from shooting, as "vermin."

Geographic range—In general, whole extent of State, chiefly west of Mohave and Colorado deserts; most breeding records are from localities north of about 37° latitude, most records of birds through midwinter are from south of that parallel. Breeding life-zone, chiefly Transition; scattering pairs nest below, even to Lower Sonoran. Altitudes of nesting, sea level up to 6250 feet at Lake Tahoe. Southernmost nesting stations: along seacoast, Oceanside, San Diego County (Carpenter, Condor, 19, 1917:22), and even San Diego (Willett, Pac. Coast Avif. No. 21, 1933:99); along west flank of

Sierra Nevada south through Yosemite region, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:313; C. W. Michael, Condor, 27, 1925:111) at least to northern Fresno County (L. N. Clark MS) and evidently to Kings Canyon area (J. S. Dixon, Condor, 45, 1943:210); east of Sierra Nevada south to Alvord [Big Pine], on Owens River, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:46). Some other references dealing with summer occurrence are: Nicasio Creek, Marin County (Mailliard, Condor, 23, 1921:194); Merced Lake, etc., in San Francisco Bay region (Ray, Condor, 18, 1916:227; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:88); Lake Tahoe, Placer and Eldorado counties (Ray, Auk, 22, 1905:370, Condor, 15, 1913:202, and Condor, 20, 1918:73; Coleman, Calif. Fish and Game, 13, 1927:147); near Port Harford, San Luis Obispo County (Willett, Condor, 11, 1909:185). In migrations or in winter reported from all the islands, from the Farallones southward; also summering and possibly breeding on Santa Cruz Island (see Dawson, Birds Calif., 3, 1924:1050). Winters north, interiorly, at least as far as Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:245) and Honey Lake Valley, Lassen County (A. H. Miller MS). Appears as a transient at many places east of Sierran divides; for example, Mono Lake, Death Valley, all along Colorado River, and at southeast end of Salton Sea in Imperial County (MMS in Mus. Vert. Zool.).

Habitat—Immediate vicinity of waters, fresh or salt, that furnish small fishes; in other words, lakes, ponds, larger streams, and the seacoast including bays, harbors, and even shores of islands. A requisite for breeding is presence of friable, earthern or sandy banks or bluffs above water.

Colaptes auratus borealis Ridgway

Boreal Yellow-shafted Flicker

Synonyms—Colaptes auratus, part; *Colaptes auratus luteus*; Flicker; Northern Flicker; Boreal Flicker; Yellow-shafted Flicker, part.

Status—Winter visitant. In "pure" form, relatively rare.

Geographic range—Scatteringly, probably almost entire length and breadth of State, as indicated by stations of record given below. In as much as many conspicuously yellow-shafted flickers are now interpreted to be in reality aberrantly colored examples of *Colaptes cafer collaris*, it becomes necessary to discard all records of "*auratus*," save as it has been possible critically to re-examine the basic specimen in each case. Records of *C. a. borealis* thus remaining are as follows: San Geronimo, Marin County, five specimens, December 15, 18, 1893, January 14, 1895, March 14, 1905, and January 5, 1907 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:91; Calif. Acad. Sci.); Berkeley, Alameda County, October 7, 1919 (Mus. Vert. Zool.); Hayward, Alameda County, October 12, 1906 (Calif. Acad. Sci.); 4 miles southwest of Madera, Madera County, November 18, 1942 (Mus. Vert. Zool.); Death Valley, Inyo County, April 12, 1917 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:67); Frazier Mountain, Ventura County, April 4, 1928 (Willett, Pac. Coast Avif. No. 21, 1933:100); Los Angeles, February 20, 1901 (Swarth, Condor, 3, 1901:66); "Warm Springs, San Diego County" [= Palm Springs, Riverside County] (J. A. Allen, Bull. Amer. Mus. Nat. Hist., 4, 1892:21); San Diego, December 4, 1931 (Huey, Condor, 34, 1932:140). Additionally, there are in collections undoubted hybrids or intermediates of varying degree of mani-

festation of *auratus* "blood," as well as aberrancies of *collaris*; it is not feasible, or perhaps useful, to try to deal with these in the present connection.

Habitat—Not noticeably different from that of Red-shafted Flicker in winter.

Colaptes cafer cafer (Gmelin)
Northwestern Red-shafted Flicker

Synonyms—Colaptes cafer saturatior, part; *Colaptes cafer*, part; Northwestern Flicker, part; Red-shafted Flicker, part.

Status—Resident. Fairly common. Probably an autumnal influx of birds from north augments resident population in winter and may account for individuals of this race outside confines of breeding range.

Geographic range—As breeding, extreme northern portion of humid coast belt, in Del Norte and Humboldt counties. Life-zones, Transition and Canadian. Some locality references are: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:22); Seiad Creek, Siskiyou Mountains, Siskiyou County, in winter (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:9; Mus. Vert. Zool.); Humboldt Bay and vicinity (Townsend, Proc. U. S. Nat. Mus., 10, 1887:206, part; W. K. Fisher, Condor, 3, 1901:91); Trinidad, Eureka, Fair Oaks, Ferndale and Carlotta, Humboldt County (Mus. Vert. Zool.). One well characterized bird from Berkeley, Alameda County, taken October 18, 1891 (Mus. Vert. Zool.).

Habitat—Chiefly interrupted or marginal forest or woodland; typically where trees, some of them dead and decaying at least in part, stand on or adjacent to grassland.

Note—Specimens of flickers ascribed to the present race from California are not all typical of *cafer* but are nearest that form; birds from the coast belt south of the breeding range, especially as taken in winter, are also intergradient, but with one notable exception (see above) are nearest *C. c. collaris*.

Colaptes cafer collaris Vigors
Monterey Red-shafted Flicker

Synonyms—Colaptes collaris; *Colaptes mexicanus*; *Colaptes mexicanoides*; *Colaptes ayresii*; *Picus mexicanus*; *Colaptes auratus mexicanus*; *Colaptes auratus hybridus*; *Colaptes cafer*, part; *Colaptes auratus*, part; *Colaptes cafer saturatior*, part; Red-shafted Flicker, part; Red-shafted Woodpecker; Orange-shafted Woodpecker; Red-moustached Woodpecker; Red-quilled Flicker; Mexican Flicker; Hybrid Flicker; Northwestern Flicker, part; California Flicker; Yellow-shafted Flicker, part; Flicker.

Status—Resident. But breeding population in favorable localities greatly augmented in winter by montane and, probably, out-of-State contingents of birds. Common, often "abundant," especially for a woodpecker. Numbers seem not to have fluctuated much through the years, at least not to have been reduced save in summer in areas closely settled by humans.

Geographic range—As breeding, major portion of State west and north of Mohave and Colorado deserts, and south and east of northern humid coast belt; in other words, from Oregon line in Siskiyou County and Modoc County south to Mexican line in San

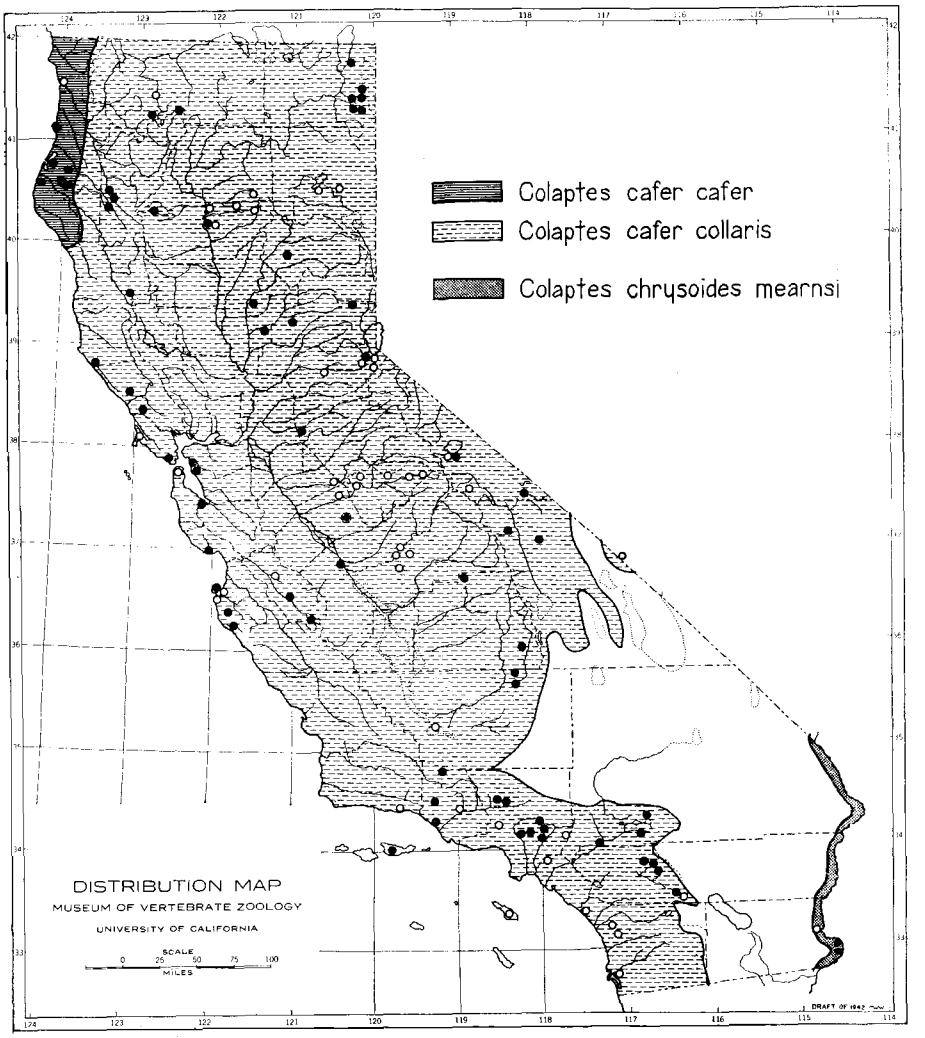

Fig. 14. Distribution in the breeding season of the species and subspecies of flickers, genus *Colaptes*, in California. Dots indicate localities from which breeding birds have been examined; circles, localities reported in the literature.

Diego County. Nesting life-zones, chiefly Upper Sonoran and Transition; but exceptionally, nests have been recorded in Canadian on our higher mountains, and down well into Lower Sonoran in the San Joaquin Valley and on the margins of the deserts. Nesting has been recorded up to 9200 feet, on Pyramid Peak, Eldorado County; in late summer and fall, individuals occur up nearly to timber line, 10,600 feet in Yosemite region. In winter, the birds from the north and up-mountain, move south and down and are then concentrated in areas below the level of heavy snow. At that season the species invades the deserts, reaches all the islands (some birds breed on Santa Cruz and Santa Catalina islands), and enters the breeding range of *C. c. cafer*. The literature concerning this species is extensive (243 references for California in 1944); selections

are offered here on score of natural history significance, and this means mostly the non-systematic and more recent ones: Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:245); Tahoe region (Barlow, Condor, 3, 1901:163; Ray, Condor, 20, 1918:72, 73); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:342; C. W. Michael, Condor, 38, 1936:37); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:55); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:91); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:76); southwestern California (Willett, Pac. Coast Avif. No. 21, 1933:100); status on islands (Howell, Pac. Coast Avif. No. 12, 1917:60; Dickey and van Rossem, Condor, 25, 1923:127; S. F. Blake, Condor, 30, 1928:249; Meadows, Condor, 36, 1934:40); Inyo County, October (Gilman, Condor, 38, 1936:41); Colorado River valley, in winter (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:134); nesting and breeding behavior, additional to some of above (Dawson, Birds Calif., 3, 1924:1039ff.; C. S. Thompson, Condor, 2, 1900:54; Pierce, Condor, 29, 1927: 158); food and feeding habits in addition to above (Beal, U. S. Dept. Agr., Biol. Surv. Bull. 37, 1911:59; Newkirk, Bird-Lore, 23, 1921:85; Woods, Condor, 34, 1932:237; von Bloeker, Condor, 37, 1935:289, and Condor, 38, 1936:90; Hooper, Condor, 38, 1936:43; Emlen, Condor, 39, 1937:192ff.); miscellaneous (J. J. Williams, Condor, 4, 1902:13; Law, Condor, 18, 1916:85; Little, Condor, 22, 1920:188; Gignoux, Condor, 23, 1921:33; Stoner, Condor, 24, 1922:54; Robertson, Condor, 33, 1931:205; Sampson, Condor, 34, 1932:140).

Habitat—Exceedingly varied, more so than for any other woodpecker. A definition involving seemingly optimum conditions for the species in spring and summer may be offered as follows: semi-open terrain, either stream bottom or hill- or mountainside, where trees, some of them dead and decaying, stand on or closely adjacent to grassland. A requisite for nesting, is a tree-trunk of relative softness of wood, either by reason of advanced stage of decay or because of natural softness. Cottonwood, aspen, willow and (introduced) poplar are thus most attractive; but oaks and conifers of several kinds are also used. Since the bird is vegetarian as well as insectivorous in diet, foraging extends to a wide variety of situations. Besides the branches and trunks of trees of many kinds, including those of planted orchards and parks, the ground beneath the trees is resorted to, as also, especially in winter, fields and open hillsides often far from any tree whatsoever. Then telephone poles, fence posts, earth banks, haystacks and buildings may serve for perching, night roosting, drumming posts, and even nesting sites—for one or another or all of these purposes. Remarkable "adaptability" is shown by the Red-shafted Flicker, which is reflected thus in the wide habitat as well as geographic range, and in the maintained large aggregate numbers of individuals.

Colaptes chrysoides mearnsi Ridgway
Mearns Gilded Flicker

Synonyms—Colaptes chrysoides; *Picus chrysoides*; *Colaptes chrysoides chrysoides*; Malherbe Flicker; Gilded Flicker.

Status—Resident. Fairly common locally.

Geographic range—In general, valley of Colorado River south from vicinity of Needles, San Bernardino County [specimens from Arizona side], to Mexican line below Yuma, in Imperial County. Verified metropolis is in a restricted area within a few miles

above Laguna Dam (Brown, Condor, 6, 1904:46; Grinnell, Univ. Calif. Publ. Zool., 12, 1914:135; Howell and van Rossem, Condor, 17, 1915:233). May also occur, or be spreading, northward along wooded distributaries of Colorado River into Imperial Valley (see Howell, Condor, 24, 1922:97). There is an out-of-bounds but authentic record of a bird in the tree-yucca belt near Cima, 4500 feet, eastern San Bernardino County, about 55 miles northwest of Needles, taken January 11, 1938 (no. 72703 Mus. Vert. Zool.); and there is suggestive evidence of the species breeding near there, with nest in a tree-yucca. Life-zone, restrictedly Lower Sonoran.

Habitat—As apparently preferred, the sahuaro belt, in which are provided diggable tree-trunks (giant cactus) for nesting and retreat from sun and night-time dangers, and also an attractive, supplementary type of food in the form of fruit. But also probably (see Grinnell, *loc. cit.*) uses other types of trees—willow and cottonwood, and even tree-yucca.

Ceophloeus pileatus picinus (Bangs)
Western Pileated Woodpecker

Synonyms—Dryocopus pileatus; *Hylotomus pileatus*; *Ceophloeus pileatus*; *Dryotomus pileatus*; *Ceophloeus pileatus abieticola*; *Phloeotomus pileatus abieticola*; *Phloeotomus pileatus picinus*; Black Woodcock; Log-cock; Pileated Woodpecker; Northern Pileated Woodpecker.

Status—Resident. Under most favorable conditions, fairly common. Local range diminishing about commensurately with extension of lumbering operations.

Geographic range—Roughly, northern half of State west of Great Basin territory. More specifically, from Oregon line in Siskiyou County, south in Coast Range region as far, rarely, as Seaview and Cazadero, Sonoma County; even, casually, to Larkspur and Lagunitas, Marin County (C. Hart Merriam, *in* Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:90), and to Howell Mountain, Napa County (Clark, Condor, 32, 1930:51); south, interiorly, from Mount Shasta and Lassen Peak region throughout Sierra Nevada as far as Greenhorn Mountains at 7000 feet, on Tulare-Kern County line (Grinnell, Condor, 37, 1935:45). South of San Francisco Bay, there are old records for "near" Mount Diablo, Contra Costa County (Cooper, Ornith. Calif., 1, 1870:396), and Hollister, San Benito County (Hargitt, Cat. Birds Brit. Mus., 18, 1890:515); if not faulty, these would indicate former or sporadic occurrence considerably south of present range in coast belt. Life-zones, Canadian and upper Transition. Extreme altitudes of occurrence, 500 feet, near Cazadero, Sonoma County, and 7500 feet, on Prospect Peak, Shasta County. Some additional references, supporting above statements and giving life history data: Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:249); near Big Meadows [Lake Almanor], Plumas County (Sheldon, Condor, 9, 1907:188); Keddie, Plumas County (A. P. Smith, Condor, 20, 1918:45); Cisco, Placer County (Carriger and Wells, Condor, 21, 1919:153); Fyffe, Eldorado County (Barlow, Condor, 3, 1901:163); Yosemite Valley and vicinity (Grinnell and Storer, Animal Life Yosemite, 1924:334; E. Michael, Condor, 27, 1925:174, and Yosemite Nature Notes, 19, 1940:35; C. W. Michael, Condor, 30, 1928:157); Kings Canyon region (J. S. Dixon, Condor, 45, 1943:210).

Habitat—Coniferous forest, especially of old trees some of which are dead and decaying, still standing or prone. Kinds of trees seemingly preferred are white and red firs and Douglas spruce; yellow pine is worked upon to lesser extent, but redwood of either species rarely if ever. Dead conifers and large aspens are used for nesting purposes.

Centurus uropygialis albescens van Rossem
Colorado River Gila Woodpecker

Synonyms—Centurus uropygialis; *Melanerpes uropygialis*; *Centurus uropygialis uropygialis*; Gila Woodpecker.

Status—Resident. Common. Apparently spreading up Imperial Valley from Colorado Delta.

Geographic range—Valley of Colorado River including Imperial Valley. Life-zone, Lower Sonoran. Altitudes of occurrence, all below 500 feet. Chief records: vicinity of Needles, San Bernardino County (Hollister, Auk, 25, 1908:458); Needles to vicinity of Yuma, habits, etc. (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:133; Howell and van Rossem, Condor, 17, 1915:233; Brown, Condor, 6, 1904:46; *et al.*); Imperial Valley, north from Calexico to Calipatria (Hoffmann, Condor, 29, 1927:162; van Rossem, Condor, 35, 1933:74). A vagrant individual reported from Griffith Park, Los Angeles, during January, 1927 (Willett, Pac. Coast Avif. No. 21, 1933:100).

Habitat—Mainly riparian cottonwoods and willows, of old growth; but also up desert washes where ironwood and palo verde reach large size. Notably, also, the belt of giant cactuses on desert mesa a few miles above Laguna Dam. Availability of diggable tree-trunks for nesting seems to be primary factor for presence; a favoring one is presence of berry-bearing mistletoe as parasitic especially on mesquite.

Note—For nomenclature, see van Rossem, Condor, 44, 1942:22.

Balanosphyra formicivora bairdi (Ridgway)
California Acorn Woodpecker

Synonyms—Picus formicivorus; *Melanerpes formicivorus*; *Picus melanopogon*; *Melanerpes formicivorus* var. *formicivorus*; *Melanerpes formicivorus bairdi*; *Melanerpes melanopogon*; *Balanosphyra formicivora*; Ant-eating Woodpecker; California Woodpecker; California Acorn-storing Woodpecker; Acorn-storing Woodpecker.

Status—Resident. Common. Reduction of range, locally, because of removal of old oak trees, seems to be about compensated for by spread of birds into neighborhoods where younger oaks have been preserved or planted and where certain non-native deciduous trees have furnished, in part at least, substitute food for acorns. Thus "colonies" of birds have remained in, or invaded, the suburbs of certain towns or formerly unwooded parts of interior valleys.

Geographic range—Main area of State west of Sierran divides, from near Oregon line in Siskiyou County south to Mexican boundary in San Diego County. Narrow humid coast belt north of San Francisco Bay region normally avoided, as also, of course, the well-nigh treeless portions of the Great Valley and inner Coast Ranges west of southern end of San Joaquin Valley. Life-zone, characteristically Upper Sonoran; but also, in lesser degree, Transition, and, yet less frequently, Lower Sonoran. Altitudes of nesting extend from near sea level, as at Santa Barbara, up to 7000 feet, in San Bernardino Mountains. Some marginal stations to northward: Willow Creek, Humboldt County, and valley of upper Mad River and South Fork Mountain, extreme western Trinity County (Grinnell MS; Mus. Vert. Zool.); valley of Scott River, Siskiyou County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:381); Sisson [= Mount Shasta City],

Siskiyou County, September (Merriam, N. Amer. Fauna No. 16, 1899:116). Eastwardly, the only trans-Sierran record is from Carroll Creek at 5500 feet, near Lone Pine, Inyo County, September 8 (Mus. Vert. Zool.). Easternmost station of all, near Campo, San Diego County (Belding, Land Birds Pac. Dist., 1890:69). Westwardly, to 3 miles north of Elk, Mendocino County, and 7 miles west of Cazadero, Sonoma County. Vagrants have reached two of the islands: Santa Cruz Island, several in 1930 and 1931 (Hoffmann, Condor, 33, 1931:171), same island, specimen, May 1, 1931 (Mus. Vert. Zool.), and Santa Rosa Island, April 2, 1927 (Pemberton, Condor, 30, 1928:147). Accounts of this species are very many (173 up to 1944), beginning in 1839; but the natural history value of all the earlier writings has been superseded by that of the recent ones. From these, the following are selections: in general (Henshaw, Condor, 23, 1921: 109; Ritter, Condor, 23, 1921:3, Condor, 31, 1929:160, Quart. Rev. Biol., 4, 1929:455, and The California Woodpecker and I, Univ. Calif. Press, 1938); in Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:250); in Yosemite Valley and vicinity (Grinnell and Storer, Animal Life Yosemite, 1924:337; C. W. Michael, Condor, 28, 1926:68, and Condor, 38, 1936:125; E. Michael, Yosemite Nature Notes, 18, 1939:105, *ibid.*, 19, 1940:35, and *ibid.*, 20, 1941:15); in San Jacinto Mountains, etc. (Dawson, Birds Calif., 2, 1924:1023ff.); in Cuyamaca Mountains, San Diego County (Ritter, Condor, 24, 1922:109); miscellaneous (Beal, U. S. Dept. Agr., Biol. Surv. Bull. 37, 1911:43; Gignoux, Condor, 23, 1921:118; Leach, Condor, 27, 1925:12, and Condor, 29, 1927:233; Mailliard, Condor, 26, 1924:30; Abbott, Condor, 32, 1930: 129; Trotter, Condor, 32, 1930:214; Burt, Univ. Calif. Publ. Zool., 32, 1930:462ff.; C. W. Michael, Condor, 38, 1936:37, 177; Emlen, Condor, 39, 1937:192ff.; Peyton, Condor, 19, 1917:103; Foreman, Bird-Lore, 24, 1922:345; Ashworth, Oologist, 45, 1928:154, 165; Adams, Condor, 43, 1941:268; Orr, Amer. Midl. Nat., 27, 1942:316; *et al.*).

Habitat—Woodland, or mixed woods, usually of scattering type, composed of, or at least including, oak trees of one kind or another. Kinds are, in order of seeming preference, valley oak (*Quercus lobata*), blue oak (*Q. douglasii*), live oak (*Q. agrifolia* and *Q. wislizenii*), golden oak (*Q. chrysolepis*), black oak (*Q. kelloggii*), and Garry oak (*Q. garryana*). The oaks provide food, shelter, perching places, sites for nesting holes, and storage sites; but for storage, the birds may use also other trees in the vicinity of the oaks—yellow pine, incense cedar, cottonwood and sycamore, and in excessive need, power or telephone poles, fence posts, and buildings.

Asyndesmus lewis (Gray)
Lewis Woodpecker

Synonyms—Picus torquatus; *Melanerpes torquatus*; *Asyndesmus torquatus*; *Melanerpes lewisi.*

Status—Resident within State; but erratic as to presence in any one locality even though seemingly continuously favorable; one year may be nesting commonly, the next year absent as nesting, though present in winter, or wanting altogether. In general, forsakes higher altitudes and more northern latitudes in winter season; and correspondingly, appears farther southward at that season. Evidently there is influx in some years from areas north of the State and definite migratory movements have been witnessed (C. F. Smith, Condor, 43, 1941:76; Adams, Condor, 43, 1941:119).

Geographic range—As breeding, from Oregon line, Del Norte County, east to Modoc

County, south at least to Kern County exclusive of narrow coastal fog belt; in fall and winter, south sporadically both on Pacific drainage and on the deserts, nearly or quite to Mexican line, in Imperial and San Diego counties. Breeding life-zones, essentially Transition and Upper Sonoran; an occasional nesting in Canadian. Altitudes of nesting, from within 300 feet of sea level, as in Santa Clara County, up to 8000 feet, as in Mono County. Individual birds have been seen at as high an altitude as 9500 feet, above Ten Lakes, Yosemite National Park (Grinnell and Storer, Animal Life Yosemite, 1924:341). Some breeding localities, with accounts pertaining thereto: Goose Lake, Modoc County (Dawson, Birds Calif., 2, 1924:1034); Eagle Lake, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:253); Big Meadows [Lake Almanor], Plumas County (Sheldon, Condor, 9, 1907:188); Lake Tahoe (Barlow, Condor, 3, 1901:163); Sardine Valley, Nevada County (J. J. Williams, Condor, 7, 1905:56); Walker Lake, Mono County (Grinnell and Storer, *loc. cit.*); Long Valley, Mono County (Dawson, Jour. Mus. Comp. Ool., 2, 1922:52); Bear Creek, Trinity County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:381); Niles, Sunol and Livermore, Alameda County, and Coyote, Santa Clara County (L. P. Bolander, Condor, 16, 1914:183, and Condor, 32, 1930:263; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:91); Paicines, San Benito County (Mailliard, Bull. Cooper Ornith. Club, 1, 1899: 53); upper Salinas Valley, San Luis Obispo County (C. S. Thompson, Condor, 2, 1900: 54); near Gustine, Merced County (H. M. Gladding, Condor, 44, 1942:226); Walker Basin and Fort Tejon, Kern County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:50). Some marginal or casual occurrences: Requa, Del Norte County, May 13 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:22); Horse Creek, Siskiyou Mountains, Siskiyou County, September (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:9); Death Valley, Inyo County, September 11 to November 1 (Robertson, Condor, 37, 1935:173; Gilman, Condor, 38, 1936:41, and Condor, 39, 1937:91); Providence Mountains at 5300 feet, eastern San Bernardino County, January 6 and 8 (Mus. Vert. Zool.); Bard, Imperial County, April 30 (Kimball, Condor, 24, 1922:96); Santa Cruz Island, April 4 and 12 (Dawson, Condor, 17, 1915:204; Mus. Vert. Zool.); Santa Catalina Island, November 11 and January 27 (Meadows, Condor, 31, 1929:130); La Jolla, San Diego County, September 24 (Abbott, Condor, 30, 1928:163); southwestern counties, many other occurrences (Willett, Pac. Coast Avif. No. 21, 1933:101). Some additional accounts, especially as concerning food habits and behavior: Welch, Condor, 2, 1900: 89; Marsden, Condor, 9, 1907:27; Beal, U. S. Dept. Agr., Biol. Surv. Bull. 37, 1911:45; Tyler, Pac. Coast Avif. No. 9, 1913:55; Gignoux, Condor, 27, 1925:208; C. W. Michael, Condor, 27, 1925:111, and Condor, 28, 1926:69; Law, Condor, 31, 1929:233; Linsdale, Condor, 38, 1936:245.

Habitat—Deciduous woodland or coniferous forest; in either case, of scattered or broken formation. Oaks of several kinds are attractive; but also "burns," and logged parts of forest areas where fire-seared boles stand, decaying, far apart above new-growth brushland; these provide foci for nesting, roosting and foraging. Following destruction of mature, solid forest, when most other woodpeckers have disappeared, the Lewis Woodpecker comes in. Marked association with oaks, especially with valley oak, blue oak and live oak in winter, shows semi-dependence upon acorns as food source at critical times. But this bird is not tied down; association is to be noted also with piñon and juniper east of Sierran divides, with sycamore, digger pine and Douglas spruce to westward, with yellow pine and even white fir anywhere these occur.

Sphyrapicus varius nuchalis Baird
Red-naped Yellow-bellied Sapsucker

Synonyms—Picus varius; *Sphyropicus nuchalis*; Yellow-bellied Woodpecker; Red-necked Woodpecker; Red-naped Woodpecker.

Status—Resident within State, but in two seasonal-geographic rôles: (1) in spring, summer and fall, and breeding commonly, in Modoc region of extreme northeastern corner of State; (2) as wintering commonly in valley of Colorado River and sparingly elsewhere in southern California, casually reaching also west-central points.

Geographic range—As breeding, Warner Mountains and near neighborhood, in Modoc County: Lassen Creek, nesting (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. L, 1879 [1880]:312; Bendire, Life Hist. N. Amer. Birds, 2, 1895:88); near Cedarville west to Canyon Creek, 11 miles west of Alturas, many localities, 4700 feet up to 9500 feet (Mus. Vert. Zool.); Jess Valley, nesting (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:303). Breeding life-zones, Canadian and Transition. In winter: Colorado River valley, Needles to Fort Yuma (Heermann, Pac. R. R. Rept., 10, pt. 4, no. 2, 1859:58; Grinnell, Univ. Calif. Publ. Zool., 12, 1914:132; Howell and van Rossem, Condor, 17, 1915:233); Mohave Desert, near Yermo, October 22 and November 28, 1910 (Lamb, Condor, 14, 1912:36); Redlands, San Bernardino County, January 16, 1941 (M. Moore, Condor, 45, 1943:233); Duarte, Los Angeles County, March 8, 1925, and Escondido, San Diego County, November 25, 1929 (Ellis Coll.); southern California otherwise, Ventura to San Diego counties, records listed by Willett (Pac. Coast Avif. No. 21, 1933:102), save that the one from San Clemente Island, by Linton (Condor, 10, 1908:84), turned out to be based on *S. v. daggetti*. For the region west of Sierran divides and north of latitude 35° we have definite occurrences as follows: Baird, Shasta County, November 13, 1883 (Townsend, Proc. U. S. Nat. Mus., 10, 1887:205); Applegate, Placer County, January 4, 1926 (Calif. Acad. Sci.); Yosemite Valley, November 19 and 24, 1915, and near Coulterville, Mariposa County, December 12, 14, 1915, January 27, 1933 (Grinnell and Storer, Animal Life Yosemite, 1924:330 (Mus. Vert. Zool.); San Geronimo, Marin County, winters of 1894, two birds, and 1897 (Mailliard, Auk, 15, 1898:196); Palo Alto, Santa Clara County, February 17, 1893 (Van Denburgh, Proc. Amer. Philos. Soc., 38, 1899:162); Scott Valley, Santa Cruz County, December 11, 1934 (Covel, Condor, 38, 1936:87); Walker Basin, Kern County, October 17, 18, 1933 (Mus. Vert. Zool.).

Habitat—Essentially, woodland. In summer, chiefly tracts of aspen, but also of willow and cottonwood. Nests are excavated in these trees, and also in adjacent conifers. Drilling for sap and cambium is done in deciduous trees of the kinds named, as also in pine and fir; in winter to southward, in orchard trees, apple especially; in desert areas, in mesquite. But main dependence is upon members of the willow family.

Sphyrapicus varius daggetti Grinnell
Sierra Yellow-bellied Sapsucker

Synonyms—Picus ruber; *Melanerpes ruber*; *Sphyrapicus ruber*; *Sphyropicus ruber*; *Cladoscopus ruber*; *Sphyrapicus varius ruber*; *Dyctiopicus ruber*; *Sphyrapicus ruber notkensis*; *Sphyrapicus ruber daggetti*; *Sphyrapicus ruber ruber*; *Sphyrapicus varius*; Red-breasted Woodpecker; Red-breasted Sapsucker; Sierra Sapsucker; Northern Red-breasted Sapsucker; Sierra Nevada Red-breasted Sapsucker; Southern Red-breasted Sapsucker.

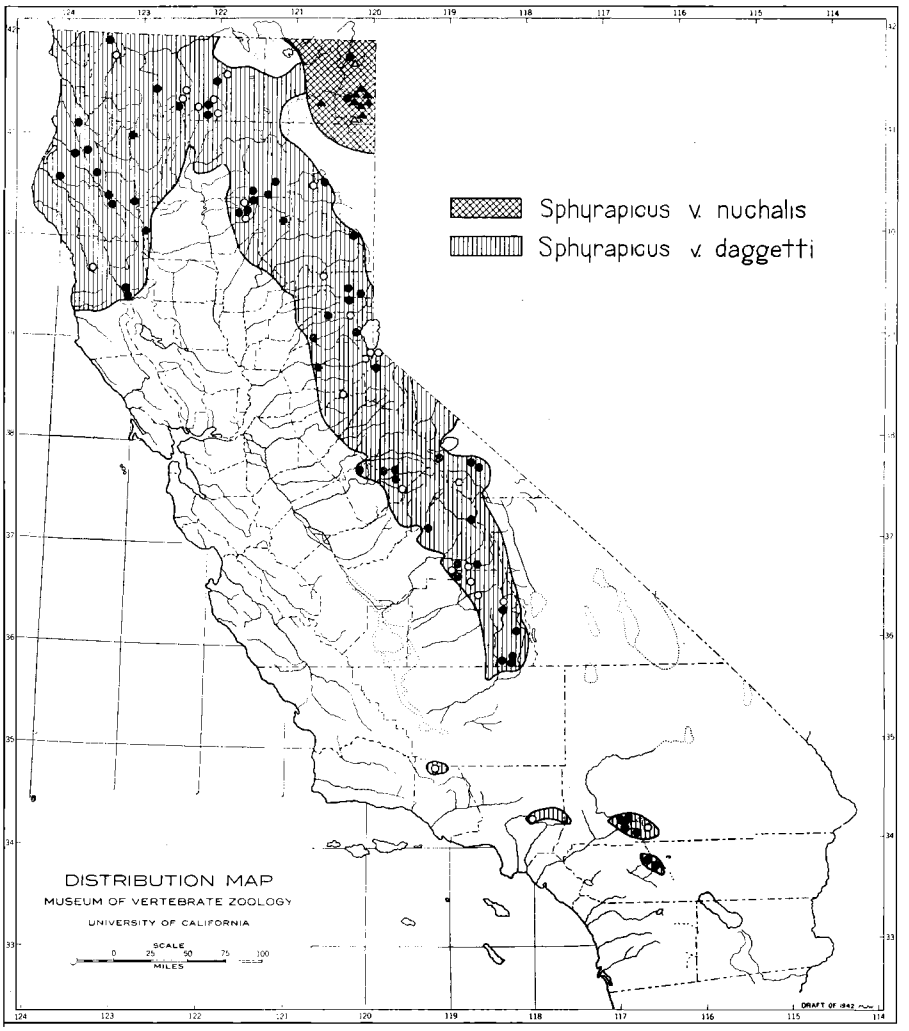

Fig. 15. Distribution in the breeding season of the subspecies of Yellow-bellied Sapsucker, *Sphyrapicus varius*, in California. Dots indicate stations from which breeding birds have been examined; circles, localities reported in the literature.

Status—Resident within State; but considerable down-mountain movement of individuals, amounting in part to dispersal over the lowlands, takes place for winter season. The higher altitudes of summer habitation may even be completely forsaken in winter. Winter period of presence in low country, ordinarily October to March. In favorable localities, summer or winter, common.

Geographic range—Through most of year including summer, widely spread over montane wooded areas, south from Oregon line through northern coast districts to Mendocino County, and along Sierra Nevada to Kern County; recurs restrictedly, as breeding, on highest mountains of southern California, south from Mount Pinos, Ventura County, to San Jacinto Mountains, Riverside County. At extreme north occurs

east to Warner Mountains, Modoc County, where peculiarly mixed and apparently to some extent interbreeding with *S. v. nuchalis*; but not known from mountain ranges of Inyo region. Breeding life-zone, Transition; extends into lower Canadian locally. Breeding localities range from near sea level, as at Carlotta, Humboldt County, up to 9000 feet at 9 miles west of Benton, Mono County. In winter, the partial down-mountain drift carries individuals to westward to seacoast, even to certain of Santa Barbara Islands, and southward to Mexican line in San Diego County; rarely does an individual of this race show up anywhere east or southeast of western margins of Mohave and Colorado deserts. Literature of more or less special significance: in general (Belding, Land Birds Pac. Dist., 1890:66; Grinnell, Pac. Coast Avif. No. 11, 1915:79; Dawson, Birds Calif., 2, 1924:1011); for San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:89); southern California (Willett, Pac. Coast Avif. No. 21, 1933:102); Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:254); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924: 327; C. W. Michael, Condor, 27, 1925:111); Mount Pinos, Ventura County (Miller and Benson, Condor, 32, 1930:101, 103); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:63; van Rossem and Pierce, Condor, 17, 1915:164; Pierce, Condor, 18, 1916:179); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:244); desertwards, Palm Springs, Riverside County, in December (Grinnell, Condor, 6, 1904:42); for islands: Santa Catalina, March 16, 1919, and January 29, 1920, and San Clemente, October 11, 1907, and Santa Cruz Island, March 23, 1920 (Howell, Pac. Coast Avif. No. 12, 1917:60; Harris, Condor, 21, 1919:172; Dickey and van Rossem, Condor, 25, 1923:127). For remarks on nesting habits, as not included above, see: Barlow, Condor, 3, 1901:163; Ray, Condor, 14, 1912:147, and Condor, 20, 1918:72, 73, 74 (in Tahoe region). For accounts of food and feeding habits, not covered above, see: Beal, U. S. Dept. Agr., Biol. Surv. Bull. 37, 1911:31; McAtee, *ibid.*, 39, 1911:16, 20, 28; Mrs. H. J. Taylor, Condor, 22, 1920:158; C. W. Townsend, Condor, 34, 1932:61; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:79; Fritz, Condor, 39, 1937:36; Danforth, Condor, 40, 1938:219; Bent, U. S. Nat. Mus., Bull. 174, 1939:146ff.

Habitat—In general, broken or mixed woodland and coniferous forest; available variety of tree hosts would seem to be one favorable factor. For nesting, excavations are made in such trees as cottonwood, aspen, lodgepole pine and yellow pine, completely dead and decaying or live-shelled; for drilling for sap, trees of the willow and birch families seem to be preferred; but also, here and there, a yellow pine or young white fir is chosen for concentrated attention, more rarely a young redwood. In winter, when birds are scattered over the lower country, trees commonly sought out for sap-tapping are, besides some of above, laurel, golden oak, live oak, occasionally digger pine and Monterey pine, and the non-native pepper-tree and various orchard trees, especially apple.

Note—The systematics of our Californian sapsuckers of the *varius* type would seem now to have been usefully simplified (see Swarth, Univ. Calif. Publ. Zool., 10, 1912:35, and Grinnell, Condor, 39, 1937:122).

Sphyrapicus thyroideus nataliae (Malherbe)
Rocky Mountain Williamson Sapsucker

Synonyms—Sphyrapicus thyroideus, part; Williamson Sapsucker, part.

Status—Rare winter visitant from northeastward. Known principally from four

specimens taken in Cedar Canyon, 5300 feet, Providence Mountains, eastern San Bernardino County, January 5, 7, 8, 1938 (Mus. Vert. Zool.). Only one of these is equivocal; that is, it falls in the zone of overlap in bill size between *S. t. nataliae* and *S. t. thyroideus* (see Swarth, Condor, 19, 1917:64; Cowan, Condor, 40, 1938:128). Two other specimens are at hand which are sufficiently small billed to warrant assignment to *nataliae*: near Susanville, Lassen County, January 1, 1943; 8 miles northeast of Hyampom, Trinity County, September 27, 1943 (Mus. Vert. Zool.).

Sphyrapicus thyroideus thyroideus (Cassin)
Pacific Williamson Sapsucker

Synonyms—Picus thyroideus; *Melanerpes thyroideus*; *Sphyrapicus thyroideus*, part; *Sphyrapicus williamsonii*; *Melanerpes rubrigularis*; *Cladoscopus williamsoni*; *Cladoscopus thyroideus*; *Sphyropicus williamsoni*; *Melanerpes williamsoni*; *Dyctiopicus thyroideus*; Black-breasted Woodpecker; Williamson Woodpecker; Brown-headed Woodpecker; Round-headed Woodpecker; Brown Woodpecker; Williamson Sapsucker, part.

Status—Resident. Some down-mountain drifting of part of population in autumn; and also occasional vagrancy, carrying individuals in winter to low altitudes toward seacoast. In typical breeding territory, "fairly common" to "common," according to one's concept.

Geographic range—Higher mountains of northern interior (Siskiyou and Trinity mountains [sparingly], Siskiyou and Trinity counties, east to Warner Mountains, Modoc County) and south along whole length of Sierra Nevada, recurring on highest, more southern ranges as far as San Jacinto Mountains, Riverside County. Breeding life-zone, Canadian, with meager "spilling" locally into Hudsonian and high Transition. Altitudes of recorded breeding, 5200 to 9800 feet; in autumn, birds descend west slope of central Sierra Nevada sparingly to 2500 feet (Belding, Land Birds Pac. Dist., 1890: 67; Richards, Condor, 26, 1924:100), and they may go up to 11,000 feet, as at Cottonwood Lakes, Inyo County (Mus. Vert. Zool.). Forests of northern coast belt appear to be avoided. Southernmost summer locality in main Sierra Nevada, Taylor Meadow, 7000 feet, Tulare County (Mus. Vert. Zool.). Localities of note, or whence more or less extended accounts of habits are available: Horse Creek, Siskiyou Mountains, December 19 (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:8); Mount Shasta and vicinity (Merriam, N. Amer. Fauna No. 16, 1899:116; Mus. Vert. Zool.); Warner Mountains (Mus. Vert. Zool.); Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:256); Gold Lake, Sierra County (M. W. Wythe, Condor, 29, 1927:65); Pyramid Peak, Mount Tallac and other points in Lake Tahoe region (Barlow, Condor, 2, 1900:107, and Condor, 3, 1901:163; Price, Condor, 6, 1904: 72; Wheelock, Auk, 22, 1905:68; Keyes, Condor, 7, 1905:42; Ray, Condor, 14, 1912: 147, Condor, 15, 1913:203, and Condor, 20, 1918:72ff.); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:331; C. W. Michael, Condor, 32, 1930:119, and Condor, 37, 1935:209); Virginia Lakes and Mammoth Lakes, Mono County (Dawson, Birds Calif., 2, 1924:1018ff.; Rowley, Condor, 41, 1939:248); Mount Pinos, Ventura County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:49; Miller and Benson, Condor, 32, 1930:103); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:64); San Jacinto Mountains (Bendire, Life Hist. N. Amer. Birds, 2, 1895:97; Willett, Pac. Coast Avif. No. 21, 1933:102). Vagrant occurrences: Santa Cruz, Santa Cruz County, "migrant" (McGregor, Pac. Coast Avif. No. 2, 1901:8); 9 miles west of

Jamesburg, Monterey County, November 23, 1940 (Russell, Condor, 43, 1941:119); Los Angeles, November 14, 1900 (Swarth, Condor, 3, 1901:66).

Habitat—Coniferous forests. In summer, for all purposes (nesting, shelter, drilling for sap, foraging for insects), especially those forests consisting of lodgepole pine, silver pine, and red fir, less commonly mountain hemlock and Jeffrey pine; in winter, these same trees and also the sugar pine and yellow pine of lower altitudes.

Dryobates villosus orius Oberholser
Modoc Hairy Woodpecker

Synonyms—Picus harrisi, part; *Picus villosus harrisi*, part; *Dendrocopus harrisi*, part; *Dryobates villosus harrisi*, part; *Dryobates villosus hyloscopus*, part; *Dryobates villosus*, part; Harris Woodpecker, part; Cabanis Woodpecker, part; Modoc Woodpecker; Sierra Woodpecker; Hairy Woodpecker, part; Sierra Hairy Woodpecker.

Status—Resident. Locally common. Has doubtless increased locally, with logging off of heavier forests.

Geographic range—Metropolis lies in northeastern corner of State; extends westwardly to vicinity of Mount Shasta and through Lassen Peak section, beyond which intergradation leads into race *hyloscopus*, and south over Sierra Nevada to about Yosemite section where merging begins also into *hyloscopus*. Outlines of racial ranges to westward and southward thus vague and impossible of defining precisely. Includes lifezones from Upper Sonoran to Hudsonian, but birds most numerous in breeding season in upper part of Transition and in Canadian. A slight, temporary down-mountain movement into Sierran foothill oak belt is manifest in some seasons. Some accounts dealing with natural history of this Hairy Woodpecker are: for Modoc plateau generally (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:303); Lassen Peak section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:257); Gold Lake, Sierra County (M. W. Wythe, Condor, 29, 1927:65); central Sierra Nevada (Belding, Land Birds Pac. Dist., 1890:59); Lake Tahoe region (Ray, Auk, 22, 1905:365, and Condor, 20, 1918:71, 72); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:315; C. W. Michael, Condor, 38, 1936:37).

Habitat—Broken or open forest, or mixed deciduous woodland and coniferous forest. Foraging seems to be done mostly in dead or unthrifty conifers; nesting, mostly in live-shelled cottonwood and aspen and dead boles of yellow pine.

Dryobates villosus hyloscopus Cabanis and Heine
Cabanis Hairy Woodpecker

Synonyms—Picus villosus; *Picus harrisi*, part; *Dryobates hyloscopus*; *Dryobates hyposcopus*; *Dryobates villosus harrisi*, part; *Dryobates harrisii*; *Picus villosus harrisi*, part; *Dendrocopus harrisi*, part; *Dryobates villosus*, part; Hairy Woodpecker, part; Harris Woodpecker, part; Cabanis Woodpecker, part.

Status—Resident within general range, but some down-mountain drift of individuals occurs in certain years. In most places whence occurrence is recorded at all, considered "common," sometimes "abundant."

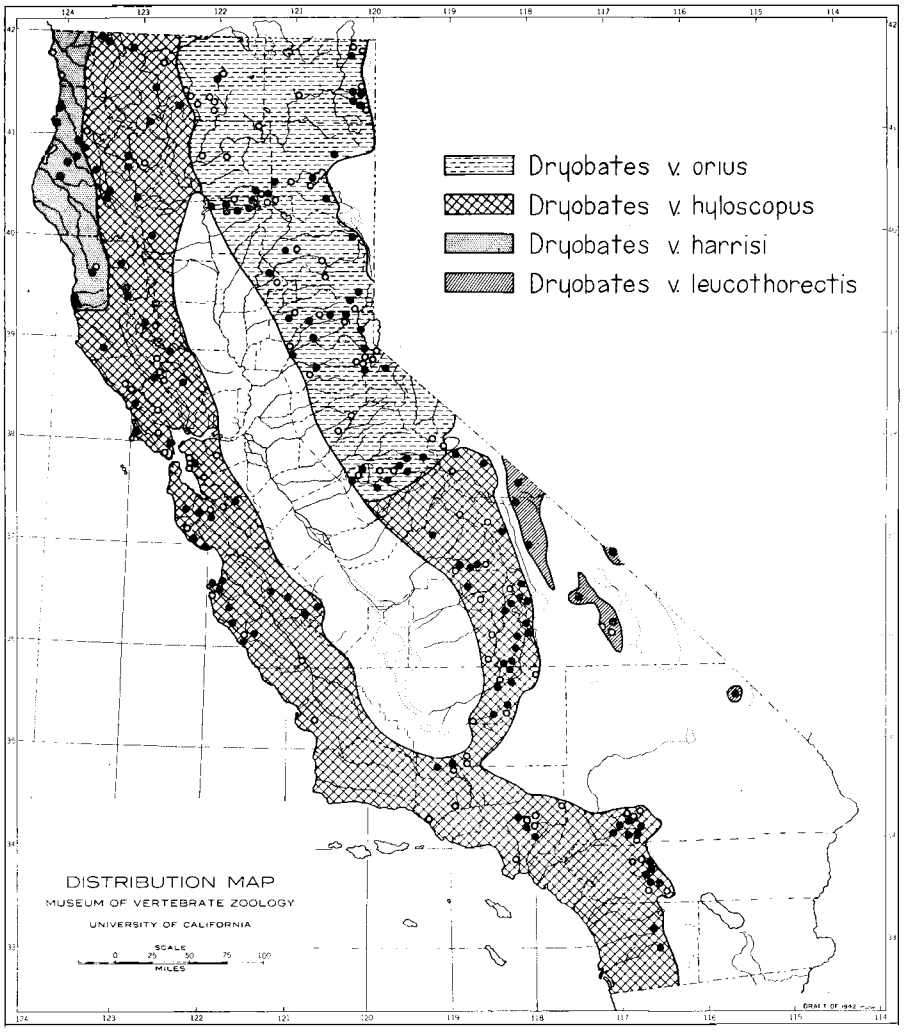

Fig. 16. Distribution of the subspecies of Hairy Woodpecker, *Dryobates villosus*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature. Excluded are records of vagrants outside areas of breeding residence.

Geographic range—Major portion of State east and south of northern humid coast belt, and west and south of northern and central Sierra Nevada nearly to Mexican line in San Diego County. In different phrasing, northwest, entirely west of deserts and Inyo region, from Mexican line through San Diegan district; through southern Sierra Nevada to a little beyond latitude 37°; north through central coast district to southeastern Mendocino County; and through inner coast ranges and Trinity Mountain area quite to Oregon line in Siskiyou Mountains, in extreme eastern Del Norte County and in Siskiyou County (Mus. Vert. Zool.). Of course, because of interruptions in favorable conditions through the extensive area indicated, the distribution of the Cabanis Hairy Woodpecker is discontinuous; large sweeps of open valley and hill country are

untenanted. Breeding life-zones, in the main Transition and Canadian; nestings have been reported from close to sea level, as at Point Lobos, Monterey County, up to 10,000 feet, in San Bernardino Mountains. Some locality ascriptions supporting above definitions: Florence Lake, Fresno County, 7400 feet (L. M. Lofberg, Condor, 30, 1928:311, and Condor, 35, 1933:243); Piute Mountains, Kern County, to 6700 feet (Richardson, Condor, 6, 1904:135; Mus. Vert. Zool.); Santa Cruz, Santa Cruz County (Skirm, Ornith. and Ool., 9, 1884:149); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:75); Santa Lucia Mountains, Monterey County (Pemberton and Carriger, Condor, 17, 1915:194); upper Salinas Valley, San Luis Obispo County (C. S. Thompson, Condor, 3, 1901:17); Mount Pinos, Ventura County (Grinnell, Auk, 22, 1905:383); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:61); Volcan Mountain, San Diego County (Belding, Land Birds Pac. Dist., 1890:59). A desert-side area of occurrence is vicinity of Victorville, on Mohave River, north of San Bernardino Mountains, "moderately common" in December (Mailliard and Grinnell, Condor, 7, 1905:75). Some more general accounts, or as concerned with habits: Bendire, Life Hist. N. Amer. Birds, 2, 1895:53, part; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:88; Willett, Pac. Coast Avif. No. 21, 1933:103; Beal, U. S. Dept. Agr., Biol. Surv. Bull. 34, 1910:15; Dawson, Birds Calif., 2, 1924:989.

Habitat—Roughly, montane forests; but within and adjacent to these, this species affects preferentially open or broken or burned woods of old growth, where there are many dead or partly dead trees. Both conifers, of almost all kinds, and deciduous trees are attractive, of the latter, especially cottonwood and large willow, as these line stream courses. The altitudinally lowest nesting stations interiorly, are along such riparian timber tracts that lead down far below the lower limit of the yellow pine belt.

Dryobates villosus harrisi (Audubon)
Harris Hairy Woodpecker

Synonym—Harris Woodpecker, part.

Status—Resident. Locally common.

Geographic range—Extreme north end of narrow foggy coast belt, chiefly within Del Norte and Humboldt counties. Intergradation with the race *hyloscopus* takes place gradually southward through Mendocino County, and to eastward, in western Siskiyou and Trinity counties. Southernmost station for a specimen we would call *harrisi*, Albion, Mendocino County (Mus. Vert. Zool.). [We now detect no good evidence of southward migratory movement in this race, such as would bring into California more extreme examples of *harrisi*, or carry individuals of it southward "as far as Monterey."] Published references to this race in California, as now restricted, are few; main ones: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:22); Humboldt Bay and Hoopa Valley, Humboldt County (W. K. Fisher, Condor, 4, 1902:132, and Condor, 6, 1904:51). Life-zone, mainly Transition.

Habitat—Forests, but not heaviest redwoods; rather, broken margins, logged areas, "burns," and riparian strips where conifers are mixed with deciduous trees. Douglas fir is a preferred tree for foraging; possibly also, when dead and decaying, for nesting.

Dryobates villosus leucothorectis Oberholser
White-breasted Hairy Woodpecker

Synonyms—Dryobates villosus hyloscopus, part; Cabanis Woodpecker, part; White-breasted Woodpecker; Hairy Woodpecker, part.

Status—Resident on White Mountains, in Mono and Inyo counties, Inyo, Panamint and Grapevine mountains, Inyo County (Grinnell, Condor, 20, 1918:86; A. H. Miller MS; Mus. Vert. Zool.), and on Clark Mountain, eastern San Bernardino County (A. H. Miller, Condor, 42, 1940:162); also, doubtless this race, on Coso Mountains, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:46). Numbers usually small; individuals widely scattered. Life-zones, Upper Sonoran to Hudsonian. Altitudes of capture of specimens examined, 6200 to 9000 feet.

Habitat—Broken or scattering forest. Has been found associated with piñon, juniper, white fir, foxtail, limber and hickory pines, mountain mahogany, cottonwood and aspen.

Dryobates pubescens leucurus (Hartlaub)
Rocky Mountain Downy Woodpecker

Synonyms—Picus homorus; *Picus pubescens gairdneri*, part; *Dryobates homorus*; *Dryobates pubescens oreoecus*, part; *Dryobates pubescens homorus*; Gairdner Woodpecker, part; Batchelder Woodpecker, part; Batchelder Downy Woodpecker.

Status—Resident within State. But some evidence indicates southward exodus from breeding range of at least part of population. Locally, on breeding ground, fairly common.

Geographic range—As breeding, extreme northeastern corner of State, in Modoc County. Specific localities, 4800 to 7500 feet in Warner Mountains and vicinity (Grinnell, Pac. Coast Avif. No. 11, 1915:77; Swarth, Univ. Calif. Publ. Zool., 24, 1924:341; Mus. Vert. Zool.); Eagleville, nesting (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:303). May breed also in eastern Lassen County: Secret Valley Creek (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:260). Breeding life-zones, evidently Upper Sonoran and Transition. Specimens of fall or winter capture have been identified as of this subspecies as follows: Eagle Lake, Lassen County, October 14, 1923 (Grinnell, Dixon and Linsdale, *loc. cit.*); Quincy, Plumas County, and Kernville, Piute Mountains, and Fort Tejon, Kern County (W. K. Fisher, Condor, 4, 1902:69; Ridgway, U. S. Nat. Mus., Bull. 50, pt. 6, 1914:236). Reports from Panamint and Grapevine mountains, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:47) may be erroneous and in any event cannot be allocated as to subspecies.

Habitat—Deciduous trees, chiefly of riparian growth, for both nesting and foraging; aspen, cottonwood and willow, of definite record.

Dryobates pubescens turati (Malherbe)
Willow Downy Woodpecker

Synonyms—Picus gardineri; *Picus gairdneri*; *Picus meridionalis*; *Picus turati*; *Dryobates turati*; *Picus pubescens gairdneri*, part; *Picus pubescens*; *Dryobates pubescens*; *Dendrocopus pubescens*; *Dendrocopus gairdneri*; *Dryobates pubescens oreoecus*, part; *Dryobates pubescens gairdneri*, part;

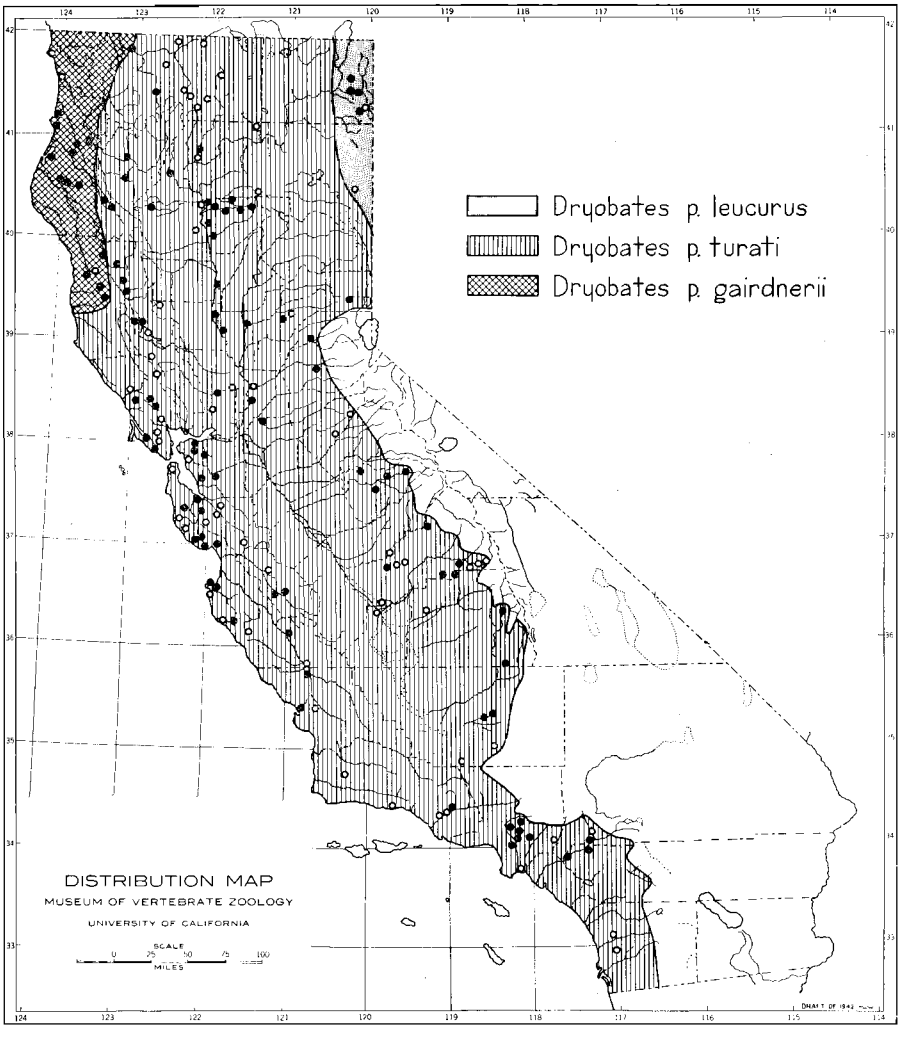

Fig. 17. Distribution of the subspecies of Downy Woodpecker, *Dryobates pubescens*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature. Excluded are records of vagrants outside of the areas of breeding residence.

Gairdner Woodpecker, part; Little Georgian Woodpecker; Downy Woodpecker; Batchelder Woodpecker, part; Willow Woodpecker.

Status—Resident, with about normal marginal vagrancy in autumn. Locally common.

Geographic range—Main part of State chiefly west of Sierran divides and deserts: northwest from San Diego County, in coast belt through Sonoma County, interiorly to eastern Mendocino County, Trinity County, and central and eastern Siskiyou County. Life-zone, characteristically Upper Sonoran; but at margins of general range, to north and up-mountain, Transition is entered. Altitudes of nesting extend up from near sea

level, as at Santa Cruz, Santa Cruz County, to 6100 feet, at Little Lake in Kern River Canyon, Tulare County. Some northern stations: Mount Sanhedrin and Covelo, Mendocino County (Stone, Proc. Acad. Nat. Sci. Phila., 1904:581; Mus. Vert. Zool.); South Fork Mountain, Trinity County (Mus. Vert. Zool.; intergrades); Scott River at 6 miles northwest of Callahan, Sisson [Mount Shasta City], Weed, Edgewood, near Yreka, and Bray, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:114; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:83, 91; Mus. Vert. Zool.); McCloud River and Baird, Shasta County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:205); Red Bluff east to Mineral, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:260). Some eastward stations are: Honey Lake, Lassen County, October 5, December 27 [resident?] (Mus. Vert. Zool.); Independence Lake, Nevada County (Mus. Vert. Zool.); Big Trees, Calaveras County, July 26 (Belding, Proc. U. S. Nat. Mus., 1, 1879:428); Fay Creek, near South Fork Kern River, Kern County, July 12 (Mus. Vert. Zool.). A desertwards station of vagrancy is Palm Springs, Riverside County, December (Grinnell, Condor, 6, 1904:42); another, Victorville, on Mohave River, San Bernardino County, March 28 (Mus. Vert. Zool.). Some accounts of nesting, food and habits, additional to those indicated above, are: Thompson, Condor, 2, 1900:53; Beal, U. S. Dept. Agr., Biol. Surv. Bull. 34, 1910:17; Dawson, Birds Calif., 2, 1924:994; Grinnell and Storer, Animal Life Yosemite, 1924:317; Grinnell, Condor, 30, 1928:253; C. W. Townsend, Condor, 34, 1932:61; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927: 89; Willett, Pac. Coast Avif. No. 21, 1933:103; Parratt, Yosemite Nature Notes, 20, 1941:101.

Habitat—Markedly restricted to riparian soft-woods, willow and cottonwood; this involves use for all purposes, foraging, nesting, roosting, shelter. Thus the lowland stream-bottoms constitute the main theaters of activity of this woodpecker. Possibly, available water is a factor for presence. But there is some invasion of the oak belts locally, even of tracts of conifers; and deciduous orchard trees, notably apple, satisfy the birds' needs. Branches or boles of any of these trees must be far advanced in decay to be excavatable for nest or shelter purposes. Repeatedly, elimination of all such diggable wood in a given neighborhood has been observed to be followed by disappearance of the birds.

Dryobates pubescens gairdnerii (Audubon)

Gairdner Downy Woodpecker

Synonym—Gairdner Woodpecker, part.

Status—Resident. Fairly common where it occurs at all, but extremely localized.

Geographic range—Northwestern corner of State, chiefly within humid coast belt. Extends east from Del Norte County to Horse Creek, Siskiyou County (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:7), and through Humboldt County to vicinity of South Fork Mountain where intergradation with *D. p. turati* occurs. South through Humboldt County as far as vicinity of Willits, Mendocino County (Mus. Vert. Zool.; specimens intermediate toward *turati*). Other specific localities of recorded occurrence are: Crescent City and Requa, Del Norte County (W. K. Fisher, Condor, 4, 1902:69, part, and *ibid.*: 132; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:22); Cahto, Mendocino County (McGregor, Nidologist, 3, 1896:129). Life-zone, Transition.

Habitat—Tracts of deciduous trees, such as cottonwood, willow and alder, occur-

ring along stream courses or at edges of coniferous forest; also tracts of tideland spruce (*fide* W. K. Fisher, *op. cit.*: 132) and, elsewhere, of Garry oak.

Dryobates scalaris cactophilus Oberholser

Cactus Ladder-backed Woodpecker

Synonyms—Dyctiopicus lucasanus; *Picus scalaris*, part; *Dryobates scalaris*; *Dendrocopus scalaris*; *Dryobates scalaris bairdi*; *Dryobates scalaris lucasanus*; *Dendrocopus lucasanus*; *Dryobates scalaris yumanensis*; *Dryobates scalaris mojavensis*; Barred Woodpecker; Arizona Woodpecker; Ladder-backed Woodpecker, part; Texan Woodpecker; Baird Woodpecker; Saint Lucas Woodpecker; Cactus Woodpecker; Yuma Ladder-backed Woodpecker; Mojave Ladder-backed Woodpecker.

Status—Resident. Common. Degree of abundance seems chiefly dependent upon scale of availability of appropriate nesting sites.

Geographic range—In general, Colorado and Mohave deserts. In detail, valley of Colorado River, from above Needles to Mexican line; thence west and northwest, to east slopes of mountains of San Diego County and of Santa Rosa Mountains and through San Gorgonio Pass as far as Banning, Riverside County, to Victorville, San Bernardino County, to Mohave, Kern County, and through Walker Pass to Onyx, Weldon, and Kelso Valley, in Kern County; north to Lone Pine (van Rossem, Condor, 44, 1942:24), and Argus Mountains, Inyo County (A. H. Miller MS) and Kingston Range, eastern San Bernardino County (Mus. Vert. Zool.). Life-zone, Lower Sonoran. Altitudes of normal occurrence, from 200 feet below sea level, as near Mecca, Riverside County, up to 6000 feet in Argus Mountains; as a vagrant up to 6800 feet at Bear Lake, San Bernardino Mountains, November 15 (Cogswell, Aud. Mag., 45, April, sect. 2, 1943:16). Has occurred (casually?) also farther westward, at Vallevista in San Jacinto Valley, Riverside County, August 29 to September 5, 1908 (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:242), and near Riverside, in April, 1895 (Heller, Condor, 3, 1901:100). Some further locality references: Banning, Riverside County (Hoffmann, Condor, 24, 1922:101); Whitewater, Riverside County (G. S. Miller, Auk, 11, 1894: 178); Cushenbury Springs, north base San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:61); Santa Rosa Mountains to 3500 feet, etc. (Grinnell and Swarth, *loc. cit.*); Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914: 132); in general (Dawson, Birds Calif., 2, 1924:998; Willett, Pac. Coast Avif. No. 21, 1933:103).

Habitat—Almost any kind of desert terrain providing fair-sized shrubby vegetation *and also* diggable woody stems or trunks of sufficient diameter for nesting excavations. The latter are afforded commonly by the trunks of the tree-yucca, by the trunks or the dead flower stalks of certain other kinds of yuccas, and by cottonwood and willow trunks, wherever these may reach sufficient size; also by telegraph poles. Foraging is done in the plants named, as also in cactus clumps, in bushes of wide variety, and in desert trees including mesquite, ironwood and palo verde.

Note—Racial subdivision of the Ladderback Woodpeckers occurring in California recently has been proposed by van Rossem (Condor, 44, 1942:24). In the rather large representation of this species at hand we find so many individuals that fail to conform to the characters of the newly described races that we hesitate to advocate their recognition at this time. Certainly we would be unable to outline their ranges with any assurance of accuracy.

Dryobates nuttallii (Gambel)
Nuttall Woodpecker

Synonyms—Picus nuttallii; *Picus scalaris*, part; *Picus wilsonii*; *Dyctyopipo nuttalli*; *Picus scalaris* var. *nuttallii*; *Dyctiopicus nuttallii*; *Dendrocopus nuttalli*; Nuttall Ladder-backed Woodpecker.

Status—Resident. Common. No appreciable change in numbers noted, save very locally, when in direction of reduction.

Geographic range—Main portion of State west of deserts and Sierran divides; northwest from San Diego County through coast range region as far as Sonoma and Mendocino counties, interiorly to head of Sacramento Valley. Life-zone, essentially Upper Sonoran. Altitudes of normal presence, from near sea level, as at Point Lobos, Monterey County, up to as high as 6000 feet, in mountains near Fort Tejon, Kern County. After breeding season, individuals go somewhat out-of-bounds, higher, up even to 8000 feet in southern Sierra Nevada, and also eastwardly toward the deserts. Some extreme peripheral occurrences to northward are: Bodega, Sonoma County (Baird, Pac. R. R. Rept., 9, 1858:94); Covelo, Mendocino County (Mus. Vert. Zool.); Yreka and Weed, in Shasta Valley, Siskiyou County (Baird, *loc. cit.*: Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:91). Easternmost stations of regular occurrence toward south: Walker Pass, Kern County (Mus. Vert. Zool.), Chino Canyon on east slope of San Jacinto Mountains, Riverside County (van Rossem, Condor, 44, 1942:26), and Volcan and Cuyamaca mountains, San Diego County (Mus. Vert. Zool.). Desert records: Olancha, Inyo County, December 28, 1933 (A. H. Miller, Condor, 36, 1934:252), and Victorville, on Mohave River, San Bernardino County, December 26, 1904 (Mailliard and Grinnell, Condor, 7, 1905:75). More important locality ascriptions and accounts of habits are: Red Bluff, etc., in Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:261); Oroville, Butte County (W. B. Davis, Oologist, 46, 1929:158); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:89); Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:319); upper Salinas Valley, in San Luis Obispo County (Thompson, Condor, 2, 1900:53, and Condor, 3, 1901:17); Kern County, etc. (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:258); San Bernardino Valley (Gault, Ridgway Ornith. Club, Bull. No. 2, 1887: 79); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:62); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:243); Escondido, San Diego County (Sharp, Condor, 9, 1907:87; Carpenter, Condor, 21, 1919: 235); in general (Bendire, Life Hist. N. Amer. Birds, 2, 1895:65ff.; Beal, U. S. Dept. Agr., Biol. Surv. Bull. 34, 1910:19, and *ibid.*, 37, 1911:23; Dawson, Birds Calif., 2, 1924:999; Willett, Pac. Coast Avif. No. 21, 1933:104).

Habitat—Typically, interior, rather dry, foothill belts of oaks, most especially of blue oak, but also of valley oak and, southward, live oak. Save for digger pines where mixed with oaks, seems to avoid conifers; at any rate, range stops short of main coniferous forest up-mountain and toward seacoast north of Monterey Bay. There is some attachment of this species to deciduous trees other than oaks, especially where latter are wanting or scarce; these other trees are cottonwood and sycamore, and orchard and large elderberry trees. The uses of these trees include nesting, roosting, and foraging.

Dryobates albolarvatus albolarvatus (Cassin)

Northern White-headed Woodpecker

Synonyms—Leuconerpes albolarvatus; *Melanerpes albolarvatus*; *Picus albolarvatus*, part; *Xenocraugus albolarvatus*; *Xenopicus albolarvatus*, part; *Xenopicus gravirostris*, part; *Xenopicus albolarvatus gravirostris*, part; *Xenopicus albolarvatus albolarvatus*; White-headed Woodpecker; Southern White-headed Woodpecker, part; San Bernardino White-headed Woodpecker, part.

Status—Resident. A slight down-mountain movement of some individuals observed in some winters. Within main range, common.

Geographic range—Entire Sierra Nevada; at south, west around head of San Joaquin Valley, discontinuously, as far as Mount Pinos and vicinity, in Ventura County. At north occurs, interruptedly, almost across State, from Warner Mountains, Modoc County, west to Siskiyou Mountains, Siskiyou County, and to South Fork Mountain, in Trinity County and extreme eastern edge of Humboldt County (Mus. Vert. Zool.); but does not enter humid coast belt proper. In higher northern, inner coast ranges, extends from Scott and Salmon mountains south as far as Snow Mountain, Colusa County. Life-zones, Transition and lower part of Canadian. Main altitudes of nesting, between 4000 and 7500 feet, exceptionally to 9700 feet, as at Virginia Lakes, Mono County, nesting (Rowley, Condor, 41, 1939:249) and to 10,000 feet on Lewis Creek, Kings Canyon National Park, Fresno County (J. S. Dixon, Condor, 45, 1943:211); individuals in winter go down to 3000 feet on west flank of Sierra Nevada (Belding, Land Birds Pac. Dist., 1890:63). Some locality ascriptions of import, especially as accompanied by accounts of habits: Trinity Mountain region (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:381; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:91); Mount Shasta (Merriam, N. Amer. Fauna No. 16, 1899:114); Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:261); Snow Mountain, Colusa County, etc. (Grinnell, Condor, 4, 1902:90); Blue Canyon, Placer County (Brewer, Bull. Nutt. Ornith. Club, 5, 1880:56); Eldorado County and Lake Tahoe region (Barlow and Price, Condor, 3, 1901:162; Ray, Auk, 20, 1903:183, and Condor, 16, 1914:60); Yosemite section (Grinnell and Storer, Animal Life Yosemite, 1924:320; E. Michael, Yosemite Nature Notes, 19, 1940:54; Maltby, Oologist, 57, 1940:32); Florence Lake, Fresno County (L. M. Lofberg, Condor, 30, 1928:311); Mount Whitney region and southwestward (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:259); Piute Mountains, Kern County (Richardson, Condor, 6, 1904:135; Mus. Vert. Zool.); Mount Pinos and Frazier Mountain, Ventura County (Grinnell, Auk, 22, 1905:383; Willett, Pac. Coast Avif. No. 21, 1933:104). Two instances of westward wandering of individual birds: near Point Bonita, Marin County, July 20, 1932 (Duncan, Condor, 35, 1933:123); Mission Canyon, near Santa Barbara, January 23, 1920 (Dawson, Jour. Mus. Comp. Ool., 2, 1921:45). For general account, see Bent, U. S. Nat. Mus., Bull. 174, 1939:97ff.

Habitat—Coniferous forest, of mid-altitude type. Perhaps most frequented tree is the yellow pine; then sugar pine, Jeffrey pine, white and red firs; more rarely lodgpole pine. Foraging is done mainly in the living trees, but for excavation of nest-holes, typically low down, dead trees are required, especially stubs which are still hard-shelled but decayed inwardly.

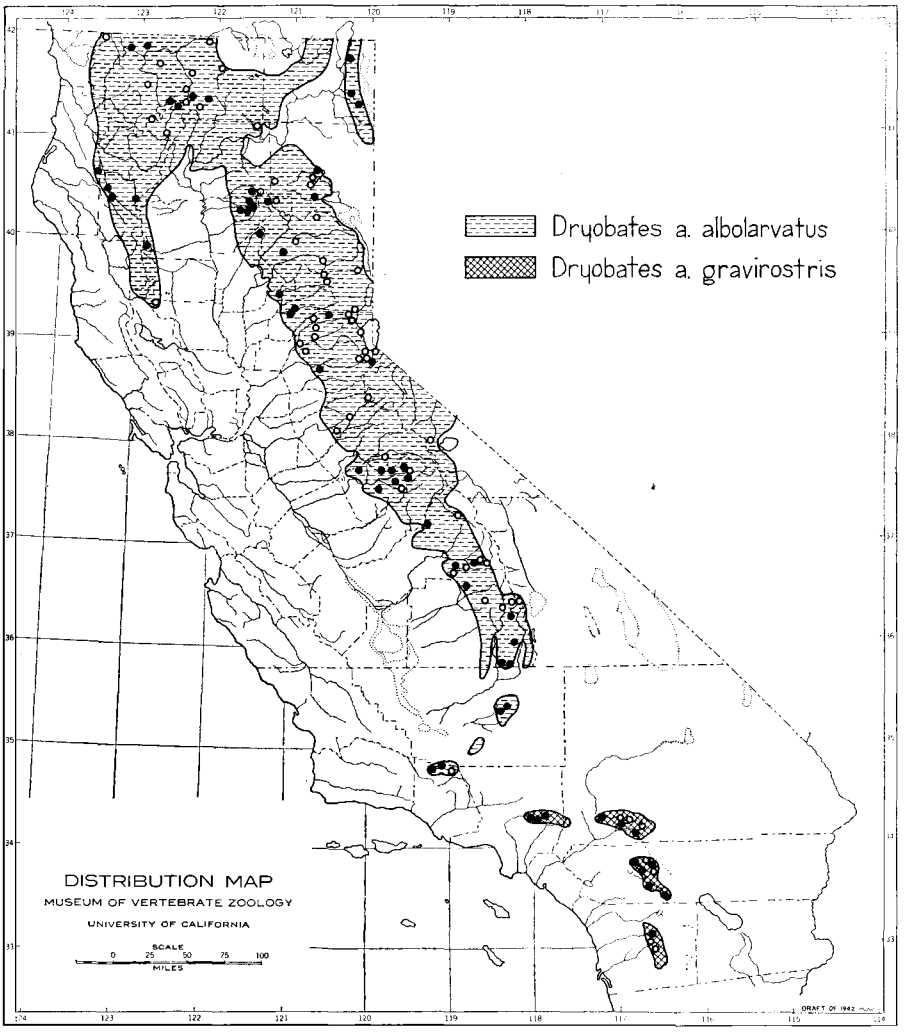

Fig. 18. Distribution of the subspecies of White-headed Woodpecker, *Dryobates albolarvatus*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature, exclusive of vagrant occurrences.

Dryobates albolarvatus gravirostris (Grinnell)
Southern White-headed Woodpecker

Synonyms—Picus albolarvatus, part; *Xenopicus albolarvatus*, part; *Xenopicus gravirostris*, part; *Xenopicus albolarvatus gravirostris*, part; White-headed Woodpecker, part; San Bernardino White-headed Woodpecker, part; Grinnell Woodpecker.

Status—Resident. Common.

Geographic range—Higher mountain masses (principally 6000 to 8500 feet) southeast of Ventura County; namely, San Gabriel, San Bernardino, San Jacinto and Santa Rosa mountains, south more sparingly as far as Volcan and Cuyamaca mountains in

San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:104; Mus. Vert. Zool.). Life-zone, Transition. Chief further accounts are: Pine Flats, San Gabriel Mountains (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:25); San Bernardino Mountains (Morcom, Ridgway Ornith. Club, Bull. No. 2, 1887:41; Grinnell, Univ. Calif. Publ. Zool., 5, 1908:62; Shepardson, Condor, 19, 1917:169); San Jacinto Mountains, Santa Rosa Mountains, and Thomas Mountain, Riverside County (Bendire, Life Hist. N. Amer. Birds, 2, 1895:71; Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:243; Dawson, Birds Calif., 2, 1924:1005); Volcan and Cuyamaca Mountains (Bendire, *loc. cit.*). Two records of vagrants to lowlands: Redlands, San Bernardino County, October 27, 1940 (M. Moore, Condor, 45, 1943:233); Alhambra, Los Angeles County, January 5 to April 5, 1941 (H. L. Cogswell MS).

Habitat—Open-type coniferous forest. Trees frequented, chiefly yellow, Jeffrey and sugar pines, and white fir. (See also under *D. a. albolarvatus*.)

Picoides arcticus (Swainson)
Arctic Three-toed Woodpecker

Synonyms—Picoides arcticus tenuirostris; *Picoides tenuirostris*; Black-backed Three-toed Woodpecker; Sierra Three-toed Woodpecker.

Status—Resident. Scarce generally; fairly common in but a few places.

Geographic range—Of small extent and interrupted nature; chiefly Cascade Mountains and high northern and central Sierra Nevada, south to about latitude 37° 30′; peripherally west through Siskiyou Mountains, east to Warner Mountains, Modoc County, and south to Tulare County. Life-zones, Canadian and Hudsonian; altitudes of recorded occurrence, 4000 to 10,168 feet. Localities of known occurrence: Poker Flat, 5000 feet, 12 miles northwest of Happy Camp, Siskiyou Mountains, Siskiyou County (Mus. Vert. Zool.); Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:115; Mus. Vert. Zool.); Warner Mountains, Modoc County, 7000 to 9000 feet (Mus. Vert. Zool.; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:303); Lassen Peak section, Battle Creek Meadows, Tehama County, east to near Merrillville, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930: 265); Gold Lake, Sierra County (England, Condor, 42, 1940:242); "Butte County" at 6700 feet, and vicinity of Blood's, east of Big Trees, Calaveras County (Belding, Land Birds Pac. Dist., 1890:64); Soda Springs and Summit Meadows, Placer County (Belding, Proc. U. S. Nat. Mus., 1, 1879:429); Pyramid Peak, etc., vicinity of Lake Tahoe (Cooper, Ornith. Calif., 1, 1870:384, and Proc. Calif. Acad. Sci., 4, 1868:7; Price, Condor, 3, 1901:163; Mrs. H. J. Taylor, Wilson Bull., 38, 1926:202); Yosemite region, Grouse Creek, Mariposa County, northeast to Tuolumne Meadows, Tuolumne County (Grinnell and Storer, Animal Life Yosemite, 1924:326; J. S. Dixon, Condor, 29, 1927:271; C. Michael, Yosemite Nature Notes, 19, 1940:57; E. Michael, *ibid.*:80); Reflection Lake, 10,168 feet [Bubbs Creek drainage], Tulare County (J. S. Dixon, Condor, 45, 1943:211).

Habitat—Boreal forest consisting of either red fir or lodgepole pine, or mixture of the two; sometimes, alpine hemlock.

Tyrannus tyrannus (Linnaeus)
Eastern Kingbird

Synonyms—Tyrannus tyrannus tyrannus; Common Kingbird.

Status—Summer resident and transient. Rare.

Geographic range—As probably breeding, eastern border of State, Modoc County south to Inyo County; elsewhere straggling transient. Records, from north to south, are as follows: Pit River, 8 miles above Alturas, Modoc County, one seen June 15, 1912, and Eagleville, same county, one seen June 30, 1912 (Dawson, Condor, 18, 1916:27); Eagleville, specimen taken September 4, 1926 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:306); Mono Lake, Mono County, one seen July 19, 1921 (Hoffmann, Condor, 23, 1921:195); Olancha, Inyo County, one seen June 29, 1891 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:59); Death Valley, Inyo County, one seen July 16, 1935 (Gilman, Condor, 38, 1936:41); two seen at Santa Barbara, Santa Barbara County, September 13, 1923 (Hoffmann, Condor, 26, 1924:75); Santa Monica, Los Angeles County, specimen taken August 31, 1895 (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:29); Laguna Beach, Orange County, specimen taken August 28, 1917 (L. Miller, Condor, 20, 1918:44).

Habitat—As breeding, open terrain with scattered trees or strips of riparian growth. Somewhere in the vicinity there usually is water, moist ground or green grass, although foraging may extend out over arid land.

Note—For opinion concerning taxonomy, see A. H. Miller, Condor, 43, 1941:260.

Tyrannus verticalis Say
Western Kingbird

Synonyms—Muscicapa verticalis; Arkansas Flycatcher; Arkansas Kingbird.

Status—Summer resident, late March to early September. Common; "abundant" locally, in interior valleys.

Geographic range—In general, almost entire area of State not heavily forested and below 5000 feet in altitude. However, rare, or absent save at migration time, on open deserts and in northern humid coast belt. Breeding life-zones, Lower and Upper Sonoran, with meager entry into Transition. Altitudes of summer residence extend from below sea level, as near Salton Sea, up to over 6400 feet, as at Mono Lake, Mono County. Post-breeding movement carries individuals up to 8500 feet; and in the spring migration the species has been recorded from Farallon and most of Santa Barbara islands. Out of the very many references in the literature, the following are cited as of special significance for distribution or ecology: Requa, Del Norte County, May 7, June 2 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:23); Van Duzen River, Humboldt County, nesting (Wilder, Condor, 18, 1916:205); Shasta Valley, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:117; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:92); Lassen Peak section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:268); Yosemite section (Grinnell and Storer, Animal Life Yosemite, 1924:359); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:59); Death Valley, Inyo County, April (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:70); Needles, San Bernardino County, nesting (Hollister, Auk, 25, 1908:459); Colorado River valley

(Grinnell, Univ. Calif. Publ. Zool., 12, 1914:146); in general (Belding, Land Birds Pac. Dist., 1890:90; Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:32; Dawson, Birds Calif., 2, 1924:858; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:96; Willett, Pac. Coast Avif. No. 21, 1933:105; Bent, U. S. Nat. Mus., Bull. 179, 1942:57ff.). The above afford "leads" to various other accounts.

Habitat—Dry open situations, but where one or two trees of some sort, living or dead, provide out-look posts and roosting and nesting sites. In lieu of trees, derricks, windmills, telephone or power poles, or even fence-posts are used for the same purposes. Expansive fly-way seems to be a requisite, as also much open ground within view. Woodland must be of far-scattered trees, to harbor this kingbird; oaks, cottonwoods, digger pines and tree-yuccas are attractive, if not growing too thickly.

Tyrannus vociferans vociferans Swainson
Northern Cassin Kingbird

Synonyms—Tyrannus vociferans; Cassin Flycatcher; Noisy Kingbird; Cassin Kingbird.

Status—Resident, but notably uncertain as to seasonal occurrence, one place or another, within general range. Has been appraised as "common" in but few localities. Aggregate numbers in recent years evidently smaller than back in the 1860's or even 1890's.

Geographic range—In general, southern coastal area, west of San Joaquin Valley and the deserts, southeast from Monterey Bay to San Diego County at Mexican line; and also, in summer, Providence Mountains, on Mohave Desert, eastern San Bernardino County. Formerly fairly numerous in San Diegan district; but center of abundance now (possibly always) seems to lie in inner coast-range valleys of San Benito, San Luis Obispo, Santa Barbara and Ventura counties. Life-zonal position marginal, apparently, as overlapping somewhat the Upper and Lower Sonoran. Altitudes of breeding extend from near sea level, as at San Diego (formerly), up to 5200 feet, in Providence Mountains. Northernmost recorded stations: Lonetree Canyon, 9 miles south of Tracy, San Joaquin County, July 15, 1937 (A. H. Miller, Condor, 39, 1937:258); 4 miles southwest of Alvarado, Alameda County, March 27, 1926 (Ellis Coll.); Redwood City, San Mateo County (Bent, U. S. Nat. Mus., Bull. 179, 1942:76); "Santa Clara Valley" [Santa Clara County?] in May, 1864, and Santa Cruz, "winter in small numbers" (Cooper, Ornith. Calif., 1, 1870:314) [also specimen in Mus. Vert. Zool. taken by Cooper in "Santa Cruz Mts.," May 14, 1864]; Point Lobos, Monterey County, October 10, 1935 (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:81); a photograph (Bent, *op. cit.*: pl. 7) of a nest purportedly of this species at Clear Lake [Modoc County] is that of a Western Kingbird (*fide* J. E. Patterson, the photographer). Easternmost at north: Dos Palos, western Merced County, nesting (Dawson, Birds Calif., 2, 1924:859). Easternmost at far south: Twentynine Palms, San Bernardino County, late March and early April (C. A. Harwell MS) and Mecca, Riverside County, and Brawley, Imperial County, in midwinter (van Rossem, Condor, 13, 1911:132). Providence Mountains, May and June, evidently breeding (Stephens, Condor, 5, 1903: 102; Grinnell MS; Mus. Vert. Zool.). One island record; Santa Cruz Island, one seen November 24, 1907 (Linton, Condor, 10, 1908:127). Some additional accounts of note: Paicines, San Benito County (Mailliard and Mailliard, Condor, 3, 1901:123); northeastern San Luis Obispo County, nesting (Dawson, Condor, 18, 1916:27); Buena Park,

Orange County, nesting (Robertson, Condor, 33, 1931:138); Twin Oaks, San Diego County, nesting (F. A. Merriam, Auk, 13, 1896:119); southern California in general, much other literature summarized (Willett, Pac. Coast Avif. No. 21, 1933:105).

Habitat—In western segment of geographic range: dry, open, interior valleys, with widely scattered trees of valley oak and old cottonwood; in Los Angeles and San Diego counties, similar terrain, interiorly and on coastal plain especially where Engelmann oak is, or was, present. Isolated trees are essential for look-out, roosting and nesting places; but these must be surrounded by wide-open spaces. In Providence Mountains, different only in that look-out and nesting sites are afforded in tall tree-yuccas and piñon pines, especially as these stand far scattered on hillsides overlooking "draws." It is notable that the belt occupied by *T. vocijerans* in these mountains is the vertically narrow one where tree-yucca and piñon are intermingled.

Muscivora forficata (Gmelin)
Scissor-tailed Flycatcher

Status—Casual visitant, probably from southeastward. Four records: specimen taken a little north of Boquet Canyon on road to Elizabeth Lake, northern Los Angeles County, June 26, 1915 (Swarth, Condor, 17, 1915:203); individual seen in Mint Canyon, in same section of Los Angeles County, October 2, 1937 (Philp, Condor, 40, 1938: 40); bird seen at La Jolla, San Diego County, November 24, 1933, and one noted daily, November 28 to December 5, 1934, two miles south of Cayucos, San Luis Obispo County (C. W. Michael MS). The birds were found flitting from perch to perch along roadside fences or foraging out over sea-beaches.

Myiarchus tyrannulus magister Ridgway
Arizona Crested Flycatcher

Synonym—Myiarchus magister magister.

Status—Marginal pioneer, doubtless from eastward. Known from one record station: two specimens (nos. J 1071-72 Dickey Coll.) obtained in Colorado River bottom near Bard, Imperial County, May 17, 1921 (Dickey, Condor, 24, 1922:134). Shot in willow-cottonwood association bordering cultivated fields; probably in migration.

Myiarchus cinerascens cinerascens (Lawrence)
Northern Ash-throated Flycatcher

Synonyms—Tyrannus crinitus; *Myiobius crinitus*; *Tyrannula cinerascens*; *Myiarchus mexicanus*; *Myiarchus cinerascens*; *Myiarchus crinitus cinerascens*; Great-crested Flycatcher; Ash-throated Flycatcher; Ash-colored Flycatcher.

Status—Summer resident; March, April or early May, according to latitude and altitude, to August or early September. Occasionally individuals remain through winter in southern California. Most widely spread at low levels in spring, when migrating; in late summer, higher altitudes than the breeding ones are invaded temporarily. Numbers in aggregate must be large, yet the impression of "common" or "fairly common" locally is gained, rather than "abundant."

Geographic range—In breeding season, lower, warmer and therefore more southern, parts of State north and northwest, both east and west of mountain divides, from Mexican line to southeastern Mendocino County, to western Trinity County, to Shasta Valley, Siskiyou County, and to eastern Modoc and Lassen counties. Nesting life-zones, essentially Lower and Upper Sonoran. Altitudes of breeding extend from near sea level, as in Imperial County, up to 7500 feet, as on Inyo Mountains, Inyo County. In migrations, individuals have reached nearly all the islands, from the Farallones southward. Some northward marginal occurrences are: 4 miles northeast of Bridgeville, Humboldt County, June 26, 1926 (Calif. Acad. Sci.); Mad River, near Ruth, in western Trinity County, May 26, 1933 (Mus. Vert. Zool.); Laytonville and Nash [=Nashmead], Mendocino County (Calif. Acad. Sci.; Mus. Vert. Zool.); Edgewood, 2900 feet, Siskiyou County, latter part of May (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:92); Eagleville, Modoc County, September 3 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:306). There are records of casual winter occurrence: Mill Creek in Chino Valley, San Bernardino County, February 10, 1940, and Pasadena, Los Angeles County, November 16 to 20, 1942 (H. L. Cogswell MS); 5 miles south of Needles, San Bernardino County, February 19, 1910 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:147); Alamoria, Imperial County, December 18, 1910 (van Rossem, Condor, 13, 1911:132). Other accounts, selected out of very many: Red Bluff, Tehama County, east interruptedly to near Ravendale, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:270); Hayward, Alameda County, nesting (Emerson, Ornith. and Ool., 8, 1883:36, and Condor, 7, 1905:113); Los Gatos, Santa Clara County (Van Denburgh, Proc. Amer. Philos. Soc., 38, 1899:166); Moraga Valley, Contra Costa County, nesting (L. P. Bolander, Condor, 31, 1929:249); Snelling, Merced County, east to Yosemite Valley (Grinnell and Storer, Animal Life Yosemite, 1924:360; C. W. Michael, Condor, 27, 1925:111); Pasadena, nesting (Bryant and Bryant, Condor, 18, 1916:230); Colton, San Bernardino County, nesting (Hanna, Condor, 21, 1919:88, and Condor, 33, 1931:216); valley of Colorado River south to Imperial County, nesting (Grinnell, 1914, *loc. cit.*); in general (Belding, Land Birds Pac. Dist., 1890:93; A. K. Fisher, N. Amer. Fauna No. 7, 1893:60; Bendire, Life Hist. N. Amer. Birds, 2, 1895:266; Dawson, Birds Calif., 2, 1924:862ff.; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:96; Willett, Pac. Coast Avif. No. 21, 1933:106).

Habitat—Typically, in breeding season, brushland or chaparral where relieved by an occasional tree. The brush may be scanty or scattering, but there must be present in the neighborhood a tree of some kind, affording a hole or hollow for nesting purposes; this cavity may be the result of a split or decay, or it may be woodpecker-excavated. Some trees so used are: live oak, blue oak, valley oak, sycamore, cottonwood, elderberry; in Great Basin country, juniper; on the deserts, tree-yucca, sahuaro, ironwood, mesquite. But always in the vicinity are bushes, furnishing perches and out-look posts for low-height aerial foraging. This is essentially a dry-country inhabiting flycatcher; when bottomlands are invaded, it is not because of accessible water but because nesting holes and tracts of bushes can be found there.

Sayornis phoebe (Latham)
Eastern Phoebe

Status—Casual visitant. Two records: specimen (now no. 39528 Calif. Acad. Sci.) obtained near San Fernando, Los Angeles County, February 14, 1901 (Swarth, Condor,

3, 1901:66); specimen (now no. 23461 Mus. Vert. Zool.) taken at Moss Beach, near Pacific Grove, Monterey County, March 7, 1913 (Brooks, Condor, 15, 1913:182).

Sayornis nigricans semiatra (Vigors)
California Black Phoebe

Synonyms—Muscicapa semiatra; *Muscicapa nigricans*; *Tyrannus nigricans*; *Myiobius nigricans*; *Tyrannula nigricans*; *Sayornis nigricans*; *Sayornis nigricans nigricans*; Rocky Mountain Flycatcher; Black Pewee; Black Flycatcher; Black Phoebe.

Status—Resident; essentially so, but individuals wander out-of-bounds in fall and winter, reaching points far from breeding stations, on islands, out on deserts, and in late summer up mountain slopes well above breeding levels. Never abundant, in any usual sense of that word; thinly scattered, save under most favorable conditions; only then meriting term "common."

Geographic range—As breeding, chiefly westward drainage slope of State below middle altitudes; northwest from Mexican line in San Diego County through central region west of Sierran divides, and farther, to head of Sacramento Valley; includes, though numbers distinctly lessen in that direction, northern humid coast belt at least to Humboldt County. Life-zone, characteristically Upper Sonoran; but breeds also in Lower Sonoran and, coastwise, northwardly, dilute Transition. Nesting altitudes extend from within a few feet of sea level, as at Point Lobos, Monterey County, up to an extreme of 6000 feet, in San Jacinto Mountains, Riverside County; in late summer, wandering individuals go up even to 9000 feet altitude. There is a sparse population in summer along east side of Sierra Nevada, in Inyo County, north as far as Bishop Creek (A. K. Fisher, N. Amer. Fauna No. 7, 1893:63); and in winter there is invasion of the southeastern desert areas, notably the Colorado River and Imperial valleys (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:149; van Rossem, Condor, 13, 1911:132, 135). Practically all the islands have been reached, and on at least two of them nesting has occurred: Santa Cruz Island and Santa Catalina Island (Howell, Pac. Coast Avif. No. 12, 1917:65; Meadows, Condor, 31, 1929:130). Some extreme northward, marginal occurrences are: 3 miles north of Trinidad, winter, and, Maple Creek, Carlotta and Ferndale, July and September, Humboldt County (Mus. Vert. Zool.); Benbow, on South Fork Eel River, Humboldt County, nesting (Fraser, Condor, 33, 1931:34); Crescent City, Del Norte County, October (Ferry, Condor, 10, 1908:41); Mad River at 2300 feet altitude, Trinity County, April (Mus. Vert. Zool.); Hayfork, Lowden, and Minersville, Trinity County, May 13 and 14 (Grinnell, Condor, 20, 1918:190); Baird, Shasta County, nesting (Townsend, Proc. U. S. Nat Mus., 10, 1887:209); vicinity of Red Bluff, Tehama County, below 1000 feet altitude (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:271). Other selections from the extensive literature: west slope central Sierra Nevada (Belding, Land Birds Pac. Dist., 1890:95); Snelling, Merced County, east, occasionally, to Yosemite Valley, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:362); Fresno district, nesting habits (Tyler, Pac. Coast Avif. No. 9, 1913:61); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:97); Point Reyes district, nesting habits (Kinsey, Condor, 37, 1935:277); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:82); San Gabriel and San Bernardino mountains (Shepardson, Condor, 19, 1917:169); San Jacinto Mountains (Grinnell and Swarth,

Univ. Calif. Publ. Zool., 10, 1913:253); Cuyamaca region, San Diego County (Holland, Condor, 25, 1923:131); general and miscellaneous (Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:36; Dawson, Birds Calif., 2, 1924:868ff.; Willett, Pac. Coast Avif. No. 21, 1933:106; Howell, Condor, 26, 1924:191; Cowles, Condor, 30, 1928: 327; Robertson, Condor, 35, 1933:134, 166; Stoner, Condor, 40, 1938:42; Oberlander, Condor, 41, 1939:133).

Habitat—Typically, close vicinity of running water where more or less shaded by riparian trees or by high banks or canyon walls. Food source is not only in the air-way above the water and above the adjacent moist bottomland, but also, in part, the actual surface of the water. This is much the most aquatic, or water-dependent, of our flycatchers; even for nesting, mud must be available, and nest sites, comprised naturally in protected rock faces, must be near if not above water. Similar sites chosen, as human-provided, are bridges, cement culverts, wells, and buildings of various sorts. A tolerated or second-choice habitat is that provided by any kind of open water, whether or not running, such as irrigation overflow, reservoirs, fish-ponds in gardens, or even a single watering trough at a cattle headquarters, with, when nesting time comes, near-by buildings. Sometimes sea-bluffs overlooking tide-pools or alga-littered and fly-producing strand suffice for nesting purposes. Throughout the summer, shade, at least through the mid-day hours, seems to be a desideratum, if not an absolute necessity, for this black-colored bird. Thus, in a dry or semi-arid country like California, and for a species like the Black Phoebe which is tied in, zonally, to the warmer parts of the State, the local distribution is decidedly spotty and the aggregate population is not large. But the birds are prone to wander in the wet season, ever ready to discover and stay by any new dry-season watering place.

Sayornis saya saya (Bonaparte)
Rocky Mountain Say Phoebe

Synonyms—Tyrannula saya; *Myiobius saya*; *Sayornis pallida*; *Sayornis sayi* [*saya* or *sayus*]; *Sayornis sayus yukonensis*; Black-tailed Flycatcher; Black-tailed Phoebe; Say Flycatcher; Say Pewee; Say Phoebe.

Status—In State as a whole, resident; but there is much shifting of populations: a large increment of individuals, probably from Great Basin, sweeps westwardly in autumn, these appearing in many localities in winter-visitant category where not present in summer at all. As a rule, under favorable conditions, winter or summer, common; in places in winter, "abundant."

Geographic range—In summer, arid interior; chiefly east of Sierran divides, but also westwardly onto Pacific slopes to include dry parts of San Joaquin Valley and interior parts of San Diegan and central coast-range districts. In winter, retreats from northern and higher portions of breeding range, and then occurs (September to March) westwardly to seacoast from Mexican line in San Diego County at least as far northwestwardly as Sonoma County and north to head of Sacramento Valley; also on all of Santa Barbara Islands. However, recorded December 31, near Standish, Lassen County (Mus. Vert. Zool.). Breeding life-zones, Lower and Upper Sonoran. Altitudes of breeding extend from 200 feet below sea level, in Death Valley, up to at least 4500 feet, in Round Valley, Inyo County (Van Denburgh, Proc. Acad. Nat. Sci. Phila., 1898:211), and higher on northeastern plateau from Sierra County northward. Northwesternmost

station of nesting, Moraga Valley, Contra Costa County (L. A. Stephens, Gull, 18, 1936: June [p. 3]; some other westward stations of breeding, from there south: Tesla, eastern Alameda County (Carriger *in* Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:97); Paicines, San Benito County (Mailliard and Mailliard, Condor, 3, 1901: 123); Painted Rock, San Luis Obispo County (Swarth, Condor, 13, 1911:162); Ventura (Hoffmann, Condor, 23, 1921:169) and Sespe, etc., Ventura County (Willett, Pac. Coast Avif. No. 21, 1933:106); Coyote Hills, Orange County (Calder, Condor, 28, 1926:50); near Elsinore, Riverside County (Hanna, Condor, 35, 1933:126); San Diego [formerly] (Belding, Land Birds Pac. Dist., 1890:94). We now know of no authentic breeding record for the Sacramento Valley. East of Cascade-Sierra divide has been recorded as nesting definitely at Loyalton, 5000 feet, Sierra County (Mailliard, Condor, 21, 1919:75); probably also breeds north through extreme eastern Lassen and Modoc counties (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:270; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:306). Some other northern occurrences, vagrant or in transit: Big Lagoon, Humboldt County, September 19 (Mus. Vert. Zool.); Horse Creek, Siskiyou County, September 16 (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:9); 8 miles northeast of Hyampom, Trinity County, September 26 (Mus. Vert. Zool.); Shasta Valley, Siskiyou County, September 19 (Merriam, N. Amer. Fauna No. 16, 1899:117). Winters southeast to Mexican line in Imperial County: Fort Yuma, Calexico, etc. (Willett, Condor, 36, 1934:117). Some other, general accounts: Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:35; Dawson, Birds Calif., 2, 1924:873; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:82.

Habitat—Open, sunny, arid terrain, with only occasional bush-tips, weed-tips, rocks or just clods to use for look-out perches; in areas invaded by human culture, fence-posts and wires, and corners of buildings, thus serve. For breeding, support-providing niches in rock walls or in undercut banks of firm earth or gravel must be available. Again, human-constructed buildings, especially as unoccupied and weathered, offer adequate substitute for "natural" nest sites. A requisite in any case is that the nest be in a position to be sheltered from the sun through the mid-day hours. This phoebe has the lowest air-way "beat" of all of our flycatchers; indeed, much of its insect food is retrieved from within a foot of the ground, when not from the actual ground surface. This ability may come from tenure of a habitat subject to prevailing strong winds. The look-out perches, significantly, are low; and lacking such, a bird is wont to "build" an effective inspection post a meter or less aloft, by the device of hovering. It is impressive to observe that the Say Phoebe, as regards relation to the water, shade and sunshine factors, is the very opposite of the Black Phoebe. The ecological ranges of the two species are altogether complementary to one another.

Note—As of this writing, we feel much uncertainty about the distinctness of the race *S. s. yukonensis* (see Swarth, Condor, 28, 1926:45). The coloration characteristic of *yukonensis* we suspect becomes altered in the direction of *S. s. saya* with age of the museum specimen. Thus some supposed *yukonensis* taken in California two decades ago seem less distinctive than formerly.

Sayornis saya quiescens Grinnell
San Jose Say Phoebe

Synonym—Lower California Say Phoebe.

Status—Northward winter visitant into southern counties from across Mexican border. Specimen-backed records: vicinity of Kane Springs, near Salton Sea, Imperial

County, eleven examples, November 26, 1933, to January 9, 1934, and Coachella Valley, Colorado Desert, Riverside County, two examples, January 23, 1934 (Willett, Condor, 36, 1934:117); Chula Vista, near San Diego, San Diego County, specimen, October 22, 1933 (Gabrielson, Condor, 36, 1934:249). Specimens are in Mus. Vert. Zool. as follows: Imperial County, near Laguna Dam, January 1 and 2, 1934, and 6 miles west of Fort Yuma, January 4, 1934; Kelso, San Bernardino County, January 3, 1938; 4 miles north of Needles, same county [winter] (Ellis Coll.).

Habitat—Probably quite the same as for *S. saya saya*.

Note—The status of the breeding population of southeastern deserts is uncertain because of lack of fresh-plumaged specimens of birds raised in these areas. There is suggestive evidence that this population may be closer to *quiescens* than to *S. saya saya* to which it currently is assigned.

Empidonax traillii brewsteri Oberholser
Western Traill Flycatcher

Synonyms—Myiobius pusilla; *Empidonax pusillus*; *Tyrannula traillii*; *Empidonax traillii*; *Empidonax traillii* var. *pusillus*; *Empidonax trailli trailli*; *Empidonax traillii adastus*; Little Pewee Flycatcher, part; Traill Flycatcher; Little Flycatcher; Brewster Flycatcher; Mountain Flycatcher.

Status—Summer resident; May to September. Where conditions are right, common. In spring migration, advances widely over lowlands of State; in southward migration, which begins by end of July, invades also the higher mountains, often far above highest breeding level.

Geographic range—Roughly, entire length of State, both east and west of Sierran axis. But as breeding, really very much restricted, to avoid in major part forested areas including northwest coast belt, the open deserts, and the higher mountains; positively speaking, this flycatcher exists in summer time practically wherever its special habitat exists (see following paragraph). Hence zonal predilections wide: Lower and Upper Sonoran zones, Transition, and even Canadian. Altitudes of known nestings extend from within a hundred feet of sea level, for example at Alviso and Palo Alto, Santa Clara County, up to at least 8000 feet, in the neighborhood of Mammoth, Mono County (*fide* Dawson, Birds Calif., 2, 1924:885). Some northernmost summer-season stations: Requa, Del Norte County, April 23 to May 30, yet possibly not breeding (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:23); Scott River valley, Siskiyou County, June 12 (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:382); Edgewood and Bray, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:92); Alturas, Goose Lake, Cedarville and Jess Valley, Modoc County (Mus. Vert. Zool.; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:307). Some southernmost summer-time stations: Colorado River valley, Potholes to Pilot Knob, up to May 15, but not necessarily breeding (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:151); "base of" Cuyamaca Peak, 3700 feet, San Diego County (Anthony, Auk, 12, 1895:390); San Diego, nesting (Friedmann, Wilson Bull., 46, 1934:30). Some other accounts, of habits and nesting as well as manner of occurrence: Lassen Peak section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:272); Cisco, Placer County (Ingersoll, Condor, 15, 1913:83); vicinity of Lake Tahoe (Ray, Auk, 20, 1903:185, and Condor, 15, 1913:202); Yosemite section and Mono Lake (Grinnell and Storer, Animal Life Yosemite, 1924:371; Dawson, Condor, 18, 1916:27; Bennett, Condor, 36, 1934:24); Owens Valley, Inyo County, etc. (A. K. Fisher, N. Amer. Fauna No. 7, 1893:65); Stockton, San Joaquin County, and

vicinity (Belding, Land Birds Pac. Dist., 1890:101); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:99; Barlow, Condor, 2, 1900:132); Colton, San Bernardino County (Hanna, Condor, 20, 1918:211); Escondido, San Diego County (Sharp, Condor, 8, 1906:75, and Condor, 9, 1907:88); southern California in general (Willett, Pac. Coast Avif. No. 21, 1933:107). A late fall record is for Minkler, Fresno County, October 11 (Mus. Vert. Zool.). Despite many out-of-breeding-area occurrences on the mainland in migration time, there seems to be only one good record of this species for any of the islands: southeast Farallon Island, May 29, 1911 (Calif. Acad. Sci.).

Habitat—In breeding season, strikingly restricted to thickets of willows, whether along streams in broad valleys, in canyon bottoms, around mountain-side seepages, or at the margins of ponds or lakes. The interiors of these thickets, through the annual period when full-foliaged, afford this species of flycatcher all the requirements of its existence; nest-sites, perching and roosting places, abundant insect food, and short-radius air-ways are all there within a few cubic yards. In migration, other kinds of woody plants, especially those growing on damp ground, are frequented as well as willows, just so they show about the same habit of growth.

Empidonax hammondii (Xantus)
Hammond Flycatcher

Synonym—Tyrannula hammondii.

Status—Transient widely, April to late May, August to October; summer resident restrictedly. Common in first indicated rôle; fairly common locally, or sparse, in last.

Geographic range—As provenly or very likely breeding, high mountain masses of northern end of State, south in Sierra Nevada as far as Tulare County. Life-zone, Canadian; extreme altitudes of settled occurrence, 4200 feet, on South Fork Mountain, Trinity County, and 8200 feet, near Lassen Peak. There has been great confusion in the identification of the small flycatchers; hence much of the literature has to be passed by. The following are well-based or authenticated stations of occurrence in breeding season: South Fork Mountain, 4200 to 5500 feet, in Humboldt and Trinity counties (Grinnell MS; Mus. Vert. Zool.); Salmon and Trinity mountains, Siskiyou and Trinity counties (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:382); Mount Shasta (Merriam, N. Amer. Fauna No. 16, 1899:118); Stewart's Springs, 4300 feet, 8 miles southwest of Weed, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:79, 92); Lassen Peak region: Mineral, Tehama County, east to Butte Lake and Bogard, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:273); Sierra Nevada at 7600 feet, in Eldorado County (R. C. Ray, Condor, 34, 1932:72); Big Trees, Calaveras County (Belding, Land Birds Pac. Dist., 1890:102; Bendire, Life Hist. N. Amer. Birds, 2, 1895:316); Yosemite region—Merced Grove and Chinquapin east to Porcupine Flat and Merced Lake (Grinnell and Storer, Animal Life Yosemite, 1924:370); Zumwalt Meadow, Kings Canyon, Fresno County (J. S. Dixon, Condor, 45, 1943:211; Whitaker's Forest, Tulare County (J. T. Marshall, Jr., MS; Mus. Vert. Zool.). After breeding season, there is up-mountain movement of individuals, to as high as 10,500 feet, in Yosemite section. Fall migration south through lowlands is not so conspicuous as spring migration, but it is seemingly more protracted. Birds in passage either way appear on both sides of Sierran axis, but to westward seem

mostly to avoid the immediate coast belt. Nor do they commonly reach the islands; only one "good" island record, San Clemente Island, April 9, 1915 (Howell, Pac. Coast Avif. No. 12, 1917:66). For San Francisco Bay region there are, to date, just two definite occurrences: Cotati, Sonoma County, April 21, 1895, and Pine Canyon, Contra Costa County, April 14, 1896 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:99). Some other records, in transit, selected for wide locality representation: Redwood Creek at 800 feet, Humboldt County, September 10, 1942 (Mus. Vert. Zool.); Cedarville, Modoc County, May 15, 1923 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:307); Grass Valley, Nevada County, September 14, 1917 and 1919 (Richards, Condor, 26, 1924:101; Mus. Vert. Zool.); Death Valley, Inyo County, April 11, 1917 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:72); lower Colorado River valley, near Cibola to Pilot Knob, April 3 to May 11 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:151); many southwestern records, south to San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:108). An extraordinary seasonal occurrence is of a bird taken near Livingston, Merced County, December 20, 1918 (Tyler, Condor, 22, 1920:190).

Habitat—On breeding ground, coniferous forest where consisting of red fir, dense lodgepole pine and associated tree species. The niche of this flycatcher within the forest is comprised in a relatively high stratum, 20 to upwards of 100 feet above the ground. Within this depth of stratum, foraging, singing (from lofty perches), roosting and nesting are carried on, a requirement being, apparently, besides insect food of desired kind, shaded air-ways of no great extent, within the branch-work of old trees or between rather close-standing younger trees. In migration, far less restricted; woods of deciduous as well as coniferous trees are frequented, even willow thickets and chaparral; but the tendency always is for the birds to keep in shade when perching for look-out purpose.

Empidonax wrightii Baird
Wright Flycatcher

Synonyms—Empidonax obscurus, part; *Empidonax griseus*, part; *Empidonax canescens*, part; *Empidonax oberholseri*; Gray Flycatcher, part.

Status—On breeding ground, summer resident, April to September; common, even "abundant" for a flycatcher. Elsewhere, a spring transient, sparse; in autumn apparently passes over the southward lowlands nearly or quite unobserved.

Geographic range—In general, as breeding, higher mountain masses of State; at north, from Warner Mountains, Modoc County, west through Shasta, Siskiyou and Trinity regions as far as South Fork Mountain, on Trinity-Humboldt county line, and even to Coyote Peak, Humboldt County; south from Trinity Mountains along high inner coast ranges as far as Mount Sanhedrin, Mendocino County; south from Mount Shasta and vicinity of Lassen Peak over entire Sierra Nevada to their southern terminus near Tulare-Kern county line; to eastward, on White Mountains, in Mono and Inyo counties; recurs on various isolated, higher ranges of southern California: Mount Pinos, San Gabriel, San Bernardino, San Jacinto, and Santa Rosa mountains. Life-zone, most characteristically Canadian; but nesting occurs more or less frequently also in upper Transition and in Hudsonian. [Above statements are drawn up anew after a review of the collections in Mus. Vert. Zool. and of the more recent literature. Much of the earlier literature, for a share of which the senior author was responsible, was faulty as to identification of species.] Altitudes of summer-time occurrence extend from 4000

feet in Yosemite Valley, up to as high as 11,300 feet, at Cottonwood Lakes, near Mount Langley, Inyo County (Dawson, Birds Calif., 2, 1924:892). Some accounts of special distributional and natural history bearing: Warner Mountains, Modoc County (Swarth, Condor, 26, 1924:196; Dawson, *op. cit.*:894); Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:275); central Sierra Nevada, including Lake Tahoe (Belding, Land Birds Pac. Dist., 1890:103; Keyes, Condor, 7, 1905:16; Ray, Condor, 20, 1918:78, and Condor, 34, 1932:73); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:367); Mount Pinos, Ventura County (Miller and Benson, Condor, 32, 1930:101, 103; Willett, Pac. Coast Avif. No. 21, 1933:108); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:78 [under "*griseus*"]; Pierce, Condor, 18, 1916:180, 181; San Jacinto and Santa Rosa mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:256); in general (Bent, U. S. Nat. Mus., Bull. 179, 1942:234ff.). As to records of transient Wright Flycatchers, there is none at all from the San Francisco Bay region, from the northwest coast belt, or from any island; from the Pacific slope of southern California, there are a few, most of which are given by Willett (*loc. cit.*). San Joaquin Valley: 20 miles east of Modesto, Stanislaus County, April 15 (Ellis Coll.). East of the Sierran axis: Inyo region [but part of the ascriptions probably pertain to *E. griseus*] (A. K. Fisher, N. Amer. Fauna No. 7, 1893:65; Swarth, *loc. cit.*); Death Valley, April 26 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:72); Clark Mountain, San Bernardino County, May 18 and 20, 1939 (Mus. Vert. Zool.); near Needles, San Bernardino County, February 19, 1910 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:152); Palm Springs, April 8, 10, Cottonwood Springs, April 15, and Mecca, April 26 and 29, Riverside County (Calif. Acad. Sci.; Mus. Vert. Zool.).

Habitat—Most characteristic, green chaparral (Canadian-Zone brushland) with trees scattered through it; in other words, mixed brushland and trees, either deciduous or coniferous ones. An attractive combination is snow-brush, green manzanita and chinquapin, with scrub black-oaks, or scattering red or white firs, or lodgepole pines, or Jeffrey pines. But departures bring in willow clumps (though not as forming jungles on swamp ground), *Amelanchier*, and other scrubby growth. The essential elements appear to be low-growing thickets for nesting and much of the foraging, and near-by high singing-posts and look-out stations. There is no apparent attraction to water; dry, gentle slopes of mountains, clothed in open fashion as above described, seem much preferred to shaded canyon bottoms or solid forest.

Empidonax griseus Brewster
Gray Flycatcher

Synonyms—Empidonax obscurus, part; *Empidonax wrighti*, part; *Empidonax canescens*, part; Wright Flycatcher, part.

Status—In two rôles: (1) summer resident to northeastward, locally common; (2) transient and winter visitant to southward, widely scattered and at best but "fairly common."

Geographic range—As breeding, elevated Great Basin area; in other words northeastern plateau region, entirely east of Sierra-Cascade axis, from Oregon line south, interruptedly, to Inyo and Grapevine mountains, Inyo County. In winter, entire length of Colorado River valley, Imperial Valley, and Pacific slope of San Diegan district,

from Mexican line northwest to Ventura County. Breeding life-zone, Upper Sonoran. Altitudes of known nesting, 5200 to 8400 feet. Some specific stations of summer-time record: Bray, eastern Siskiyou County [about June 1, but not provenly nesting] (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:83, 92); Alturas and Eagleville, Modoc County (Swarth, Condor, 26, 1924:196; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:308); Eagle Lake, Ravendale and Red Rock [nesting], eastern Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:281); vicinity of Mono Lake, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:373); Mono Craters, Mono County, nesting commonly (Dawson, Birds Calif., 2, 1924:897); White Mountains, Mono and Inyo counties (Dickey and van Rossem, Condor, 24, 1922:137; Swarth, *loc. cit.*); Waucoba Pass, 7500 feet, Inyo Mountains, Inyo County (Grinnell MS); 6 miles west and 3 miles south of Lone Pine, 6300 feet, Inyo County (Mus. Vert. Zool.; Pitelka MS). Winter-time records: Colorado River valley, Needles, San Bernardino County, to Potholes, Imperial County (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:153; Howell and van Rossem, Condor, 17, 1915:233); Mecca, Riverside County, January and March (van Rossem, Condor, 13, 1911:132, 135); localities in Los Angeles County, November 7 to May 8 (Willett, Pac. Coast Avif. No. 21, 1933: 109); Saticoy and Ventura, Ventura County (Cooper, Auk, 4, 1887:85, 92; Baird, Brewer and Ridgway, Hist. N. Amer. Birds, 3, 1874:520). Some verified records of transients or vagrants: Grass Valley, Nevada County, May 13 (Richards, Condor, 26, 1924:101); Amador County, April 26 (Calif. Acad. Sci.); Tuolumne County, 3000 feet, May 20 (Calif. Acad. Sci.); Dudley, 3000 feet, Mariposa County, May 20 (Grinnell and Storer, *loc. cit.*); Paicines, San Benito County, April 15 (Calif. Acad. Sci.); Santa Barbara, Santa Barbara County, May 5 (Calif. Acad. Sci.); Redlands, San Bernardino County, April 20, 22 (Bishop, Condor, 7, 1905:142); Cabezon, Riverside County, May 4 and 16 (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:259); Death Valley, Inyo County, February 1, April 16, 26, and May 4 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:73); Goffs, eastern San Bernardino County, April 15 (Hollister, Auk, 25, 1908:459); Lavic, San Bernardino County, May 1 (Mus. Vert. Zool.); Hesperia, San Bernardino County, April 17 (Mus. Vert. Zool.); Palm Springs, Riverside County, April 26 (Mus. Vert. Zool.).

Habitat—On breeding ground, distinctive for an *Empidonax*: typically, tracts of large-sized sage-bushes (*Artemisia tridentata*). However, there may be more or less mixture of the seemingly important sage-brush with other woody plants: antelope brush (*Purshia*), rabbit brush (*Chrysothamnus*), juniper, piñon, and mountain mahogany (*Cercocarpus ledifolius*). Nest sites are low, usually within four feet of ground in sage-bushes; nests also up to 6 feet in piñons; forage-beat, singing posts, and look-out perches low, corresponding to prevailing vegetation of habitat. Clearly, this flycatcher has no affinity whatsoever for water or for damp lands. On wintering grounds, most often frequents thickets and tracts of willow and cottonwood, these in winter being as a rule leafless.

Empidonax difficilis difficilis Baird

Northern Western Flycatcher

Synonyms—Tyrannula pusilla; *Empidonax difficilis*; *Empidonax flaviventris*; *Empidonax flaviventris difficilis*; *Empidonax hammondi*, part; *Empidonax cineritius*; *Empidonax insulicola*; *Empidonax difficilis cineritius*; *Empidonax difficilis insulicola*; Little Pewee Flycatcher, part; Western Flycatcher; Yellow-bellied Flycatcher; Western Yellow-bellied Flycatcher; Hammond Flycatcher,

part; Baird Flycatcher; San Lucas Flycatcher; Island Flycatcher; Santa Barbara Flycatcher; Yellow-bellied Western Flycatcher.

Status—Summer resident, March to September. Common. Also, transient commonly almost everywhere.

Geographic range—In general, nearly entire length and breadth of State. As breeding, more restricted, almost altogether the area west of the main Sierran axis; exception, Warner Mountains, Modoc County. Center of abundance lies within the coast belt, in both the northern, humid division of it and in the central and southern segments, in the latter nearly to the Mexican boundary. Life-zones, Transition and Upper Sonoran. Altitudes of nesting extend from within a few feet of sea level up to 6000 feet as in higher mountains of southern California. In migrations reaches greater altitudes (up to 9700 feet), as also many desert localities (as late as early June), and practically all the islands. On some of the Santa Barbara Islands (Santa Rosa, Santa Cruz, San Clemente and Santa Catalina), populations remain through summer and breed. Individuals occasionally remain at south late into autumn; there are two records even for December, in San Diego and Santa Barbara (Belding, Land Birds Pac. Dist., 1890:99; Willett, Pac. Coast Avif. No. 21, 1933:109), and one for February, San Gabriel River, Los Angeles County (Comby, Condor, 45, 1943:199). Selections from the extensive literature, especially as bearing on distribution and habitat relations: in general (Dawson, Birds Calif., 2, 1924:878ff.; Bent, U. S. Nat. Mus., Bull. 179, 1942:246ff.); Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:23); Manton, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:281); San Geronimo, Marin County (Mailliard, Bull. Nutt. Ornith. Club, 6, 1881:119, and Condor, 26, 1924:14); Farallon Islands, May 29, 1911 (Dawson, Condor, 13, 1911:181); Yountville, Napa County (Stoner, Auk, 49, 1932:482); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:99; Reynolds, Gull, 24, 1942:24; A. S. Allen, Condor, 45, 1943:154); Carmel and Point Lobos, Monterey County (Williams, Wilson Bull., 54, 1942:238; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:84); Yosemite section (Grinnell and Storer, Animal Life Yosemite, 1924:372); Santa Rosa Island (Pemberton, Condor, 30, 1928:147); Santa Barbara Islands (Howell, Pac. Coast Avif. No. 12, 1917:65); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:77, and Shepardson, Condor, 19, 1917:169); southwestern California, in summary (Willett, *loc. cit.*). Some of the above accounts give citations to earlier important literature, hence latter is not dealt with here.

Habitat—Characteristically, places near running water that are well shaded, by tall trees or by steep canyon walls or by both. In the northwest coast belt, woods, coniferous or deciduous, almost anywhere afford these requisites; but toward the southeast, the water factor as well as that of shade looms more and more importantly; and significantly the local occurrence of the birds becomes more restricted, the range more and more interrupted or spotty. A typical nesting locality in Los Angeles County would thus be the bottom of a foothill canyon or ravine carrying running water at least in spring, with more or less over-arching canopy of large-sized alders, laurel, sycamore, big-leaf maple, and with trees of golden oak and big-cone spruce on the canyon sides above. Here and elsewhere, foraging is conducted beneath the crowns of the trees; look-out and singing posts, even though up to 40 feet above the ground, are still well beneath the leafy canopy and hence shaded; but they must afford fair extent of cruising clearance. Nesting sites must be available, of firm foundation, as exemplified by crevices in earth or rock walls or banks, by cavities or cracks in living or dead tree-trunks, or by protected beams or posts under bridges and about buildings.

Myiochanes richardsonii richardsonii (Swainson)
Western Wood Pewee

Synonyms—Tyrannula virens; *Contopus richardsonii*; *Contopus virens* var. *richardsoni*; *Contopus richardsonii saturatus*; *Horizopus richardsoni*; *Contopus richardsoni richardsoni*; *Horizopus richardsonii richardsonii*; *Myiochanes richardsonii*; *Myiochanes virens richardsonii*; *Myiochanes virens*; Short-legged Pewee; Richardson Pewee; Alaskan Wood Pewee; Common Western Wood Pewee; Wood Pewee.

Status—Summer resident, April to September. Common to "abundant," according to locality and observer's concept, but probably more widely numerous than any other of our tyrannids. A transient almost everywhere, where not also summer resident; in spring migration, individuals may still be passing northward over lowlands as late as June 8.

Geographic range—As breeding, entire length of State, and toward north, its entire breadth also. Dependence upon trees means absence, save when in migration, from deserts and plains; but also, heaviest forest is avoided, so that numbers are low in northwest coast belt. Metropolis lies in the main mountain masses, Del Norte County east to Modoc County at north, southward both coastwise and interiorly to Cuyamaca Mountains, southern San Diego County. Life-zonal span great: Upper Sonoran, locally, to Hudsonian; but Transition and Canadian most plentifully populated. Altitudes of nesting extend from close to sea level, as in San Francisco Bay region, up to at least 11,000 feet, as on southern Sierra Nevada. Eastwardly, summers on Warner Mountains, Modoc County, and White Mountains, Mono and Inyo counties (Mus. Vert. Zool.). In migrations, especially during May, appears widely over southeastern desert areas, both in mountains and on open plains, from valley of Colorado River westward; reaches then, also, the coastal lowlands and all the islands, but there is no nesting record for any of the latter. Some locality references, as treating more significantly of habitat relations and distribution: migration dates for many localities (Belding, Land Birds Pac. Dist., 1890:98); Santa Ysabel, San Diego County, nesting (Bendire, Life Hist. N. Amer. Birds, 2, 1895:291); central Sierra Nevada, including Lake Tahoe (Barlow, Condor, 2, 1900:109, and Condor, 3, 1901:166; Ray, Auk, 20, 1903:184; J. W. Mailliard, Condor, 23, 1921:76; Gignoux, Condor, 23, 1921:191); Crescent City, Del Norte County, and Humboldt Bay (W. K. Fisher, Condor, 4, 1902:133); Inyo region south to Panamint Mountains, "breeding" (A. K. Fisher, N. Amer. Fauna No. 7, 1893: 64); Escondido, San Diego County (Sharp, Condor, 9, 1907:88); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:77; van Rossem and Pierce, Condor, 17, 1915:164; Shepardson, Condor, 19, 1917:169); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:254); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:62); Santa Lucia Mountains, Monterey County (Pemberton and Carriger, Condor, 17, 1915:195); Farallon Islands, May 29, 1911, many (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:46; Dawson, Condor, 13, 1911: 180); in general (Dawson, Birds Calif., 2, 1924:905ff.); Yosemite section of Sierra Nevada (Grinnell and Storer, Animal Life Yosemite, 1924:365); San Diego, nesting (Gander, Condor, 29, 1927:271); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:98); Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:282); southern California in general (Willett, Pac. Coast Avif. No. 21, 1933:110). Other literature is referred to in some of above-cited articles.

Habitat—Typically, woodland or broken coniferous forest, or a mixture of the two. Latitude as regards kinds of trees is almost all-inclusive; in order of preference among

conifers, perhaps, yellow pine, lodgepole pine, white fir (of old, scraggly growth), spruce, cedar; among broad-leafed trees, black oak, Garry oak, sycamore, alder, cottonwood, blue oak. The birds forage mostly out into the open, at a rather high level, 20 to 75 feet above the ground; and trees, to use for outlook perches, as also for singing posts, must be of wide-open pattern of branch-work. Dead trees or dead parts of trees often serve, but heavy-foliaged trees like coast redwood and live oak are avoided. Nesting sites, on the larger horizontal branches, are of similar elevation and exposure. This flycatcher is not particularly shade-seeking, nor does it seem to be attracted to vicinity of water, save as, in an arid region, the trees grow where there is water.

Nuttallornis borealis (Swainson)
Olive-sided Flycatcher

Synonyms—Tyrannus borealis; *Tyrannus cooperi*; *Contopus borealis*; *Nuttallornis borealis majorinus*; *Nuttallornis mesoleucus majorinus*; *Nuttallornis mesoleucus borealis*; *Nuttallornis mesoleucus*; Cooper Flycatcher; Olive-sided Pewee; Greater Olive-sided Flycatcher; Western Olive-sided Flycatcher.

Status—Summer resident, late April through September. Rated "common," because conspicuous; actual numbers in aggregate probably far less than those of most other "common" birds. In migrations, occurs scatteringly far and wide outside of breeding area, in spring as late as June 5, in fall to October 7.

Geographic range—Forested areas almost entire length of State; at extreme north, from close to sea coast in Del Norte County east to Warner Mountains, Modoc County; from Oregon line south, through Sierra Nevada and higher coast ranges, as far as Cuyamaca Mountains, San Diego County. Breeding life-zones, Canadian and Transition. Apparently breeds sparingly in White Mountains (Mus. Vert. Zool.). Altitudes of known nestings, close to sea level, as at Pacific Grove, Monterey County, up to 9400 feet, as in White Mountains. In migrations, passes along mountain ranges and over low country both east and west of Sierran axis, but detected on east side only rarely south of Mono County, for example: Panamint and Coso mountains, May 21 and 23 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:63); Palm Springs, Riverside County, April 8 (Calif. Acad. Sci.); southeast end of Salton Sea, Imperial County, May 13 (Mus. Vert. Zool.); near Pilot Knob, on Colorado River, Imperial County, May 6 and 10 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:150). To westward, there is but one island record: Farallones, June 2, 1911, "several" (Dawson, Condor, 13, 1911:180). The breeding range is indicated from the following references, selected in part also for general natural history purport: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:23); Salmon Mountains, etc., Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:92); Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:283); Cisco, Placer County, Ingersoll, Condor, 15, 1913:83); Fyffe, Eldorado County, etc. (Barlow, Osprey, 2, 1897:47, and Condor, 3, 1901:165; Kaeding, Nidologist, 4, 1896:20); Yosemite section of Sierra Nevada (Grinnell and Storer, Animal Life Yosemite, 1924:364; C. W. Michael, Condor, 38, 1936:86); San Francisco Bay region (J. S. Dixon, Condor, 22, 1920:200; C. P. Smith, Condor, 29, 1927:120; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:98); Santa Lucia Mountains, Monterey County (Pemberton and Carriger, Condor, 17, 1915: 195); Santa Ynez Mountains, Santa Barbara and Ventura counties (Pemberton, Condor, 12, 1910:19; Dawson, Condor, 18, 1916:27); Santa Barbara, etc. (Dawson, Birds

Calif., 2, 1924:901ff.); San Gabriel Mountains, within San Bernardino County (Hanna, Condor, 35, 1933:241); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:76); San Jacinto and Santa Rosa mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:254); Cuyamaca Mountains, San Diego County (Bendire, Life Hist. N. Amer. Birds, 2, 1895:283); southern California in general (Willett, Pac. Coast Avif. No. 21, 1933:110).

Habitat—Typically, coniferous forest of mature but of open or interrupted stand. Lofty perches are required, for forage take-offs and singing posts; such perches are often provided by dead tips or uppermost branches of otherwise living trees that are the tallest in the vicinity, overlooking lesser growth such as young trees or expanses of green chaparral. The aerial forage beat is thus high, indeed highest of all our flycatchers. In some localities tall trees standing on mountain slopes or steep canyon walls appear to be specially chosen, the available productive air-way being increased thereby. Nesting sites required are half-tree height or lower (which is still relatively high), on out-swaying, living branches of conifers, so situated as to have wide open outlook and approach. Native trees that have been observed in use by the Olive-sided Flycatcher for one or another, or all, of the above purposes are: white and red firs, yellow and Jeffrey pines, Douglas and big-cone spruces, lodgepole pine, Monterey pine; and submarginally, planted trees of old growth such as cypress and eucalyptus.

Note—For use of the specific name *borealis*, see van Rossem (Trans. San Diego Soc. Nat. Hist., 7, 1934:350-352; for abandonment of racial subdivision, see Zimmer (Am. Mus. Nov. No. 1043, 1939:13-14).

Pyrocephalus rubinus flammeus van Rossem
Northwestern Vermilion Flycatcher

Synonyms—Pyrocephalus rubineus; *Pyrocephalus rubinus mexicanus*; *Pyrocephalus mexicanus*; Red Flycatcher; Scarlet-crowned Flycatcher; Vermilion Flycatcher; Western Vermilion Flycatcher.

Status—Resident; fairly common on breeding ground. But also partially emigrant, reaching in winter and spring territory outside of breeding range, though in about same latitude.

Geographic range—As breeding, Colorado Desert; north from Mexican boundary in Imperial County, along valley of Colorado River to the Nevada line north of Needles, in eastern San Bernardino County, and northwest through Imperial Valley at least to vicinity of Coachella, Riverside County. Life-zone, Lower Sonoran; altitudes of known nestings all below 500 feet. Published accounts dealing with distribution and habits in breeding season pertain to localities as follows: Colorado River valley (Baird, Pac. R. R. Rept., 9, 1858:202; Stephens, Condor, 5, 1903:102; Hollister, Auk, 25, 1908:459; Grinnell, Univ. Calif. Publ. Zool., 12, 1914:153; Wiley, Condor, 18, 1916:231); vicinity of Salton Sea northwest to Coachella and Indian Wells, Riverside County (van Rossem, Condor, 13, 1911:132, 135; Hanna, Condor, 31, 1929:75, Condor, 37, 1935: 173, and Condor, 38, 1936:174; Stevenson, Condor, 34, 1932:229). Occurrences outside of known breeding area: Death Valley, Inyo County, March 15 to April 16 of different years (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:73; Gilman, Condor, 37, 1935:241); Cushenbury Ranch, on Mohave Desert at north base San Bernardino Mountains, June 28 (Hoffmann, Condor, 23, 1921:166); Twentynine Palms, San Bernardino County, February 6 to April 5 (F. Carter, Condor, 39, 1937:214; Mus. Vert. Zool.); and for Pacific slope of southern California, onto which by a westward move-

ment from the breeding range a portion of the population shifts in winter, some thirty records, representing low-country localities from San Diego northwest to vicinity of Santa Barbara, and dates from September 26 to May 24 (Rett, Condor, 42, 1940:218; Willett, Pac. Coast Avif. No. 21, 1933:111; Huey, Condor, 38, 1936:121, and Condor, 40, 1938:90; Hanna, Condor, 39, 1937; *et al.*).

Habitat—For all purposes, concerned with both nesting and foraging, low-lying areas in vicinity of accessible water and where mesquite and screwbean dominate in the vegetation; willows and cottonwoods are also used, at least in connection with foraging. The forage level of this flycatcher, using the vegetational "ceiling" in comparison, is medium to low; and the lookout posts correspond in position; but singing posts are higher. Many of the westward occurrences of this species are definitely known to have been in association with bottomland tracts of willows, these at the season involved, for the most part leafless.

Otocoris alpestris arcticola Oberholser
Pallid Horned Lark

Status—Rare winter visitant in northeastern corner of State. One record: specimen obtained two miles south of Reno Junction, extreme southeastern Lassen County, February 27, 1935 (McLean, Condor, 38, 1936:17). The bird was a member of a flock of Horned Larks of another subspecies.

Otocoris alpestris enthymia Oberholser
Saskatchewan Horned Lark

Status—Winter visitant to southeastern section of State. Specimens recorded as follows: from Imperial County: Fort Yuma, January 29, 1913, Salton Sea, February 1, 1913, Kane Spring, January 13, 1923 (Dickey and van Rossem, Condor, 26, 1924:110); San Bernardino County: Newberry Springs, December 8, 1917 (Dickey and van Rossem, *loc. cit.*); northern Los Angeles County: 4 miles southeast of Rosamond, November 12, 1928 (von Bloeker, Condor, 32, 1930:162).

Otocoris alpestris leucolaema (Coues)
Desert Horned Lark

Synonyms—Otocoris alpestris arenicola, part; *Chionophilos alpestris leucolaema*; Pallid Horned Lark, part.

Status—Winter visitant, commonly to southeastern section of State, southward from Inyo County; casually to points on westward drainage in San Bernardino and Kern counties. Places and dates of capture of critically determined specimens: Deep Spring Valley, September 20 and 26, 1921, and Keeler, October 21, 1921, in Inyo County; Buena Vista Lake, Kern County, September 16, 1921; Palmdale, northern Los Angeles County, January 5, 1921; Newberry Spring, December 8, 1917, and Victorville, September 25, 1921, in San Bernardino County; 10 miles south of Ontario, December 3, 1919, and December 11, 1920, and Thermal, January 27, 1918, in Riverside County;

Kane Spring, October 15, 1921, Holtville, March 21, 1916, and Fort Yuma, January 28, 1913, and January 29, 1921, in Imperial County (Dickey and van Rossem, Condor, 24, 1922:94). Records of "*leucolaema*" by Oberholser (Proc. U. S. Nat. Mus., 24, 1902: 824) are dubious in light of present-day understanding of races.

Otocoris alpestris utahensis Behle
Salt Lake Horned Lark

Synonyms—Otocoris alpestris leucolaema, part; Desert Horned Lark, part.

Status—Winter visitant southeastwardly, on or near Mohave Desert. Specimens definitely so identified (Behle, Univ. Calif. Publ. Zool., 46, 1942:241): from Walker Basin, 3300 feet, Kern County, of dates November 2 to 16, 1933; near Junction Ranch, 5700 feet, Argus Mountains, Inyo County, October 21, 1934; Surveyors Well, —60 feet, Death Valley, Inyo County, October 24, 1933 (recorded as "*leucolaema*," Grinnell, Condor, 36, 1934:67). Also near Manix, San Bernardino County, January 13, 1938 (Mus. Vert. Zool.).

Habitat—On Mohave Desert, found on playas covered with low annual vegetation or sparsely grown to salt-grass.

Otocoris alpestris lamprochroma Oberholser
Warner Horned Lark

Synonyms—Otocoris alpestris arenicola, part; *Otocoris alpestris praticola*, part; *Otocoris alpestris merrilli*, part; *Otocoris alpestris leucolaema*, part; *Otocoris alpestris rubea*, part; *Chionophilos alpestris merrilli*, part; Prairie Horned Lark, part; Dusky Horned Lark, part; Desert Horned Lark, part; Ruddy Horned Lark, part; Columbian Horned Lark, part; Oregon Horned Lark.

Status—Resident, in part or locally; in part, at least, emigrates or spreads out in winter, in westward, southward and southeastward directions. On breeding grounds, locally common, even abundant.

Geographic range—As breeding and more or less resident throughout the year, northeastern border of State, in Surprise Valley, east of Warner Mountains, in Modoc County, Honey Lake Valley and Long Valley, in Lassen County, and, southward (through Nevada) to vicinity of Mono Lake, Mammoth, and White Mountains, in Mono County. Northernmost breeding station, Cowhead Lake, Modoc County; southernmost, Big Prospector Meadow, 10,500 feet, White Mountains, Mono County; westernmost, Honey Lake Valley, Lassen County (*fide* Behle, Univ. Calif. Publ. Zool., 46, 1942:237). Altitudes, from 4000 feet, as around Honey Lake, up to 13,000 feet, above timber line on the White Mountains; life-zone, mainly Upper Sonoran, but on the White Mountains, certainly the birds nest up into Alpine-Arctic. In winter, individuals or groups frequently reach points in Sacramento and San Joaquin valleys, rarely farther, toward Mexican line. Specimens of various winter dates have been taken near or at places as follows (Behle, *op. cit.*:233): Corning, Tehama County; Chico and Richvale, Butte County; Sacramento; Coulterville, Mariposa County; Planada, Merced County; Hanford and Corcoran, Kings County; Long Beach, Los Angeles County; Olancha, Inyo County; Imperial Valley, Imperial County. Also taken at Santa Cruz, Santa Cruz County (Mus. Vert. Zool.). Some accounts relating to this race as now de-

fined, though published under other names, are: Surprise Valley, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:308); eastern Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:285, in part).

Habitat—In summer, arid open terrain of two main types: (a) Flat valley floor, often centered by playas; vegetation sparse, if shrubby consisting of small examples of grease-wood (*Sarcobatus*), sage-brush (*Artemisia*) and rabbit-brush (*Chrysothamus*). (b) Untimbered, rolling high montane plateau (White Mountains); vegetation that of grassland, prairie-like, interspersed with tracts of dwarfed sage-brush.

Otocoris alpestris merrilli Dwight
Dusky Horned Lark

Synonyms—Eremophila alpestris, part; *Otocoris alpestris*, part; *Otocoris alpestris rubea*, part; *Chionophilos alpestris merrilli*, part; Columbian Horned Lark, part; Ruddy Horned Lark, part; Horned Lark, part.

Status—Resident; winter vagrancy carries at least a few individuals southward. On suitable ground, common to abundant.

Geographic range—Resident in extreme mid-northern section of State, from Shasta Valley, Siskiyou County, east to west base of Warner Mountains, Modoc County; southeast to vicinity of Eagle Lake, Lassen County. Westernmost breeding station, Yreka, Siskiyou County; easternmost, Davis Creek, Modoc County; southeasternmost, Petes Valley, Lassen County. Altitudes vary from 2600 to 5400 feet; life-zone, characteristically Upper Sonoran. In winter, vagrant individuals or groups reach points south through Sacramento Valley; specific localities of winter occurrence are: Oroville Junction and Gridley, Butte County; Norman, Glenn County; Cotati, Sonoma County; Modesto, Stanislaus County (*fide* Behle, Univ. Calif. Publ. Zool., 46, 1942:226); also near Drytown, Amador County (Calif. Acad. Sci.). Some published accounts relating to the race *merrilli* as now restricted: Shasta Valley, including Yreka (Merriam, N. Amer. Fauna No. 16, 1899:118; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:18); Clear Lake, Modoc County (Willett, Condor, 21, 1919:204); Norman, Glenn County, in February (Grinnell, Condor, 25, 1923:172).

Habitat—Open valleys or untimbered portions of the lava plateaus where occur cultivated fields, native meadows, or native grassland; in places, prairieland where grown sparsely to sage-brush.

Note—Many references in the literature to winter occurrences of Horned Larks cannot now be placed subspecifically. Only when specimens were preserved and are available for re-examination is this possible with any assurance.

Otocoris alpestris sierrae Oberholser
Sierra Horned Lark

Synonyms—Eremophila alpestris, part; *Otocoris alpestris merrilli*, part; *Otocoris alpestris rubea*, part; *Otocoris alpestris strigata*, part; *Otocoris alpestris leucolaema*, part; *Chionophilos alpestris merrilli*, part; Horned Lark, part; Dusky Horned Lark, part; Ruddy Horned Lark, part; Streaked Horned Lark, part.

Status—Only partially resident on breeding grounds; thence extensively emigrant or vagrant in various directions for winter season. Numbers locally in summer rarely large enough to warrant term "common."

Geographic range—Breeds at higher altitudes in northern Sierra Nevada and extreme southern Cascade Mountains, but entirely within California. Northernmost station of verified occurrence in summer, vicinity of Pittville, in Fall River Valley, Lassen County; southernmost, valley of Truckee River, Nevada County (Behle, Univ. Calif. Publ. Zool., 46, 1942:246ff.). Breeding range "spotty," by reason of interrupted character of habitat. Life-zone chiefly Transition; altitudes from 2300, in Fall River Valley, to 7000 feet, at Summit, Placer County (Belding, Land Birds Pac. Dist., 1890:107 [*fide* Behle]). In winter, authenticated specimens have been taken in Honey Lake Valley, Lassen County, and at points in Sacramento Valley as follows: Red Bluff, Tehama County, Oroville, Gridley, and Enterprise, Butte County, and in Solano County six miles south of Davis, Yolo County (Oberholser, Condor, 22, 1920:35; Behle, *loc. cit.*).

Habitat—Open flats and mountain meadows of large extent surrounded by coniferous timber. In the breeding season these grass- or weed-covered flats and meadows are in most years moist. The environment of nesting birds of the race *sierrae* is thus decidedly wetter than that of the neighboring races to the north and east, *merrilli* and *lamprochroma* (Behle, *loc. cit.*).

Otocoris alpestris strigata Henshaw
Streaked Horned Lark

Synonyms—Otocorys strigata, part?; *Chionophilos alpestris strigatus*?

Status—Winter visitant or vagrant from north; irregular and scattering. Known definitely only from collected specimens that have been critically determined; localities and dates of these are as follows: Red Bluff, Tehama County, December (Townsend, Proc. U. S. Nat. Mus., 10, 1887:210, part); San Francisco (Oberholser, Proc. U. S. Nat. Mus., 24, 1902:838, part, and Condor, 22, 1920:35). There are records in the literature of "*strigata*" south even to Santa Barbara; but each such record pertains either probably or provenly to another race, to *actia*, to *rubea*, to *sierrae*, or to *merrilli* (*fide* Behle, Univ. Calif. Publ. Zool., 46, 1942:256).

Otocoris alpestris insularis C. H. Townsend
Island Horned Lark

Synonyms—Phileremos cornutus, part; *Eremophila alpestris* var. *chrysolaema*, part; *Otocoris alpestris*, part; *Otocoris alpestris rubea*, part; *Otocoris alpestris strigata*, part; *Otocoris insularis*; *Otocorys insularis*; *Chionophilos alpestris insularis*; Horned Lark, part; Mexican Horned Lark, part; Ruddy Horned Lark, part; Streaked Horned Lark, part.

Status—Essentially resident; not completely so because of a partial exodus of individuals, in some years at least, to seaboard of adjacent mainland. Abundant on suitable parts of most of the islands; on some, only common or fairly common.

Geographic range—The Santa Barbara archipelago of islands, namely, San Miguel, Santa Rosa, Santa Cruz, Anacapa, Santa Barbara, San Nicolas, San Clemente and

Santa Catalina. All of the information concerning this race was summarized to 1917 by Howell (Pac. Coast Avif. No. 12, 1917:67); subsequent summaries: Bent (U. S. Nat. Mus., Bull. 179, 1942:361ff.); Behle (Univ. Calif. Publ. Zool., 46, 1942:261). The mainland occurrences (specimens taken) have been summarized by Willett (Pac. Coast Avif. No. 21, 1933:111) as follows: Goleta, Santa Barbara County, one, November 26, 1915; La Patera Point, near Santa Barbara, flock, November 6 to November 17, 1918; Oxnard, Ventura County, one, August 22, 1922; Alamitos Bay, Los Angeles County, one, January 18, 1908. Later mainland ascriptions are to Long Beach, Los Angeles County, January 30, 1914, and to San Diego and Imperial Beach, San Diego County, August 12 and 20, 1914 (Behle, *op. cit.*:261).

Habitat—Open, exposed portions of the islands; bleak, wind-swept mesas and hillsides, clothed meagerly with grass and low herbage. The terrain is damp much of the year as a result of fog.

Otocoris alpestris rubea Henshaw
Ruddy Horned Lark

Synonyms—Alauda rufa, part; *Otocoris alpestris*, part; *Eremophila cornuta*, part; *Eremophila chrysolaema*; *Eremophila alpestris chrysolaema*, part; *Otocorys rubea*; *Otocorys alpestris rubeus*; *Otocoris alpestris rubida*; *Eremophila alpestris rubea*; *Otocoris berlepschi*; *Chionophilos alpestris rubeus*, part; Sky Lark; Shore Lark, part; Horned Lark, part; Mexican Horned Lark, part.

Status—Resident. Locally abundant.

Geographic range—Essentially, floor of Sacramento Valley; north to vicinity of Red Bluff, Tehama County, and south to northern shores of Suisun Bay, Solano County. Southernmost breeding station for birds definitely of this race, 4 miles southeast of Suisun, Solano County; southeasternmost, 5 miles west of Drytown, Amador County (Behle, Univ. Calif. Publ. Zool., 46, 1942:263). Specimens from Stockton, San Joaquin County, are intergradient toward the race *actia*. Life-zone, chiefly Lower Sonoran; altitudes of verified occurrence, all below 800 feet. Recorded in winter north to Battle Creek, Shasta County (Oberholser, Proc. U. S. Nat. Mus., 24, 1902:853), but not verifiedly from any point south of breeding range. Some literature concerning the natural history of this race: in vicinity of Red Bluff, Tehama County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:210; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:284); Norman, Glenn County (Grinnell, Condor, 25, 1923:172); Lincoln, Placer County (Adams, Placer Co. Inst. Res., 1909:35).

Habitat—Most barren, short-grass, "sheep-pasture" or "goose-land" type of valley and foothill terrain; low mesa land, strewn with rocks (as east of Red Bluff), often where the soil is much exposed most of the year and is of a conspicuously reddish hue; in rice-growing country, roadways and dike-tops.

Otocoris alpestris actia Oberholser
California Horned Lark

Synonyms—Alauda rufa, part; *Alauda alpestris*; *Phileremos cornutus*, part; *Otocoris rufa*; *Eremophila cornuta*, part; *Otocoris alpestris*, part; *Eremophila minor*; *Eremophila alpestris chrysolaema*, part; *Otocorys chrysolaema*; *Otocorys rubea*; *Otocoris alpestris chrysolaema*; *Otocoris alpestris rubea*, part; *Otocoris alpestris arenicola*, part; *Otocorys strigata*, part; *Otocorys actia*; *Otocoris alpestris*

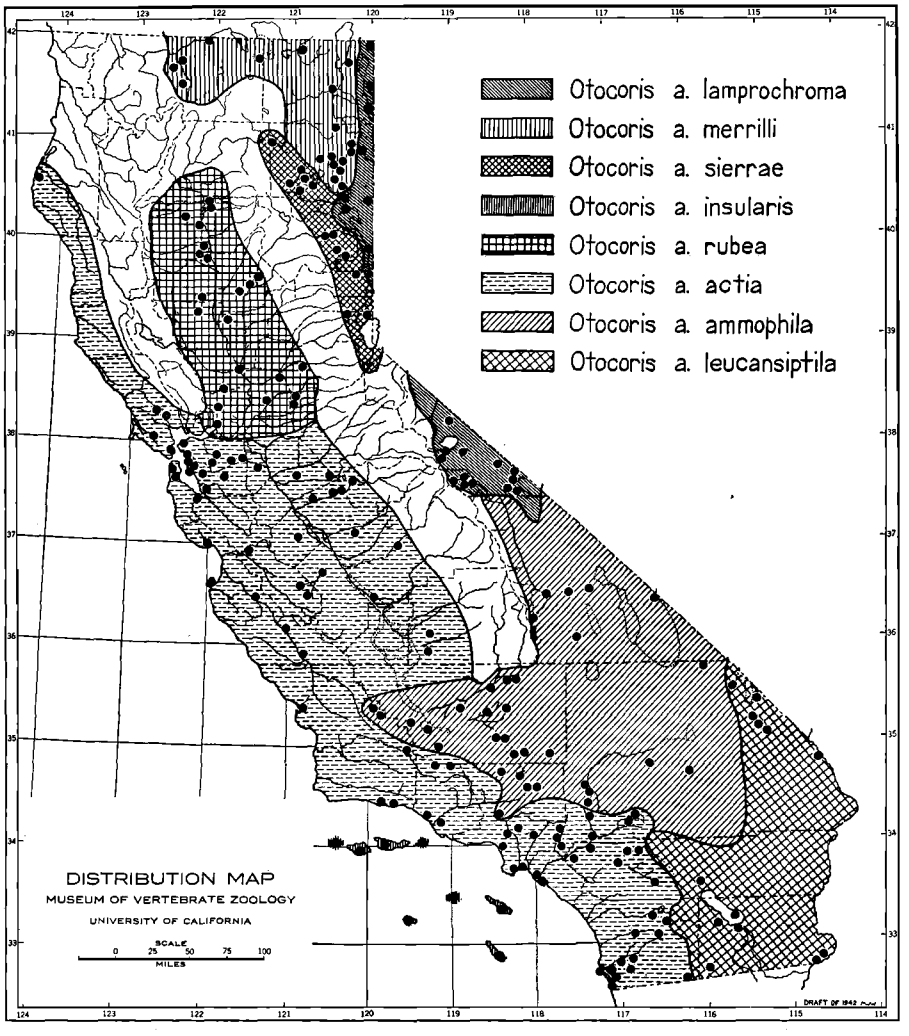

Fig. 19. Distribution of the subspecies of Horned Lark, *Otocoris alpestris*, in California in the breeding season. Dots indicate localities represented by specimens determined (with few exceptions) by Behle (Univ. Calif. Publ. Zool., 46, 1942:205-316).

strigata, part; *Otocoris alpestris pallida*, part; *Chionophilos alpestris rubeus*, part; *Chionophilos alpestris actius*; Horned Lark, part; Shore Lark, part; Sky Lark; Western Shore Lark; Mexican Horned Lark, part; Ruddy Horned Lark, part; Streaked Horned Lark, part; Desert Horned Lark, part.

Status—Resident. On suitable terrain, abundant. Wanderings carry groups in late summer and winter to localities within general range of race where Horned Larks do not occur in summer.

Geographic range—Coastal region of State, chiefly from Sonoma County southeast to Mexican boundary in San Diego County; also main part of San Joaquin Valley (save for extreme upper [southern] end where merges into race *ammophila*), east to foothills of Sierra Nevada. North of Sonoma County, there are sequestered colonies, on "bald"

hills, as far as divide at 1800 feet, 7 miles east of Capetown, Humboldt County (Grinnell, Condor, 33, 1931:74, recorded as *strigata*). Eastward margin of range, along foothills of Sierra Nevada from Calaveras County southeast to and including Tulare County; in San Diegan district, easternmost station is, at north, Doble, San Bernardino County, and at south, Jacumba, San Diego County. Life-zones, nearly altogether Upper and Lower Sonoran; altitudes of nesting extend from near sea level up to 8500 feet, and post-breeding movements of groups extend to 11,500 feet, on San Gorgonio Peak, San Bernardino Mountains. General accounts, or such as treat especially of habitat relations, include the following: for counties around San Francisco Bay (Ray, Condor, 18, 1916:227; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:100); in Merced County (Grinnell and Storer, Animal Life Yosemite, 1924:374); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:62); southwestern California (Willett, Pac. Coast Avif. No. 21, 1933:112); in general (Bendire, Life Hist. N. Amer. Birds, 2, 1895:341; Dawson, Birds Calif., 2, 1924:837ff., part; Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910: 44, part; Behle, Univ. Calif. Publ. Zool., 46, 1942:266).

Habitat—Typically, level or rolling short-grass prairie; otherwise, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.

Otocoris alpestris ammophila Oberholser
Mohave Horned Lark

Synonyms—*Eremophila cornuta*, part; *Otocoris alpestris*, part; *Otocoris alpestris arenicola*, part; *Otocoris alpestris chrysolaema*, part; *Otocoris alpestris actia*, part; *Otocoris alpestris pallida*, part; *Chionophilos alpestris ammophilus*; Shore Lark, part; Horned Lark, part; Desert Horned Lark, part; Mexican Horned Lark, part; Sonoran Horned Lark.

Status—Resident. Locally, common to abundant.

Geographic range—Chiefly, Mohave Desert; north, in typical form, to vicinity of Owens Lake (Keeler) and Amargosa River valley (Kelley's Well), in Inyo County; southeast to vicinity of Ludlow, San Bernardino County; south to vicinity of Hesperia (on Mohave River), San Bernardino County, and of Lancaster, northern Los Angeles County; and west through passes of Tehachapi Mountains and Walker Pass to include region of Buena Vista Lake, in southern end of San Joaquin Valley, in Kern County, and, still farther west, Carrizo Plains, interior San Luis Obispo County (Mus. Vert. Zool.; Behle, Univ. Calif. Publ. Zool., 46, 1942:272; Dickey and van Rossem, Condor, 24, 1922:68). Three June-taken birds (Mus. Vert. Zool.) from San Fernando Valley, Los Angeles County, are considered by Behle nearest in characters to *ammophila*. Life-zone characteristically Lower Sonoran; altitudes of breeding, 400 feet, in southern end of San Joaquin Valley, up to 5700 feet, near Junction Ranch, Argus Mountains, Inyo County. In winter, individuals have been taken south of the breeding range, in Imperial County, at south end of Salton Sea and east of Holtville (Dickey Coll.). Some additional published references to this race: Coso Valley, etc., Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:663; Victorville, San Bernardino County (Mailliard and Grinnell, Condor, 7, 1905:76); distribution (Oberholser, Proc. U. S. Nat. Mus., 24, 1902:849ff.).

Habitat—Level portions of desert mesas, where shrubby vegetation is sparsest; especially preferred are the margins of the many playas.

Otocoris alpestris leucansiptila Oberholser
Yuma Horned Lark

Synonyms—Eremophila cornuta, part; *Eremophila alpestris chrysolaema*, part; *Otocoris alpestris pallida*, part; *Chionophilos alpestris leucansiptilus*; Horned Lark, part; Bleached Horned Lark; Sonora Horned Lark, part.

Status—Resident. In only a few places within general range, really common.

Geographic range—Floor of Colorado Desert; recorded west from vicinity of Fort Yuma, Imperial County, to Coyote Well, same county; northwest from Mexican Boundary to vicinity of Mecca, Riverside County; north in Colorado River valley to vicinity of Needles, San Bernardino County, and west to Providence Mountain area, same county, where intergradation with *ammophila* occurs. Casual occurrences extend west to near Ramona, April 21, 1934, and to Jacumba, March 17, 1921, San Diego County (Behle, Univ. Calif. Publ. Zool., 46, 1942:266ff.), and to Redlands, San Bernardino County, February 13, 1903 (Bishop, Condor, 17, 1915:186; Willett, Pac. Coast Avif. No. 21, 1933:112). Breeding life-zone, Lower Sonoran; altitudes of occurrence, —246 feet to 5167 feet. Some additional references: localities in Imperial Valley (van Rossem, Condor, 13, 1911:132); Potholes, Imperial County (Howell and van Rossem, Condor, 17, 1915:233); in general (Dawson, Birds Calif., 2, 1924:842).

Habitat—Lowest desert levels, in places where shrubby vegetation is of smallest stature and sparse if not wanting; margins of playas; areas of sand-dunes. At times, invades cultivated fields of Imperial Valley. Occurrences at higher elevations as cited above are atypical for the race and concern populations in which some intergradation is perceptible.

Tachycineta thalassina lepida Mearns
Northern Violet-green Swallow

Synonyms—Hirundo thalassina; *Petrochelidon thalassina*; *Tachycineta thalassina*; *Tachycineta lepida*; Violet-green Swallow; Green Swallow.

Status—Essentially summer resident, March to September. Common; locally abundant. Also transient widely; and a few, probably not every year, present in midwinter months, southerly, and coastwise northwest to San Francisco Bay region.

Geographic range—Nearly entire length of State, from Siskiyou County to San Diego County, and at north also its full breadth, from coast of Del Norte County east to Warner Mountains and Surprise Valley, in Modoc County. As breeding, less common in northwest humid coast belt and on desert mountains than along Sierra Nevada and in higher southern Coast Ranges. Southeasternmost breeding station, Clark Mountain, San Bernardino County (A. H. Miller, Condor, 42, 1940:162). Zonal metropolis, Transition, with frequent nesting, locally, in Upper Sonoran. Altitudes of nesting extend from near sea level, as at Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:85), up, very exceptionally, to 10,000 feet, in Granite Basin, eastern Fresno County (Dawson, Birds Calif., 2, 1924:544). The occasional records of wintering extend northwest from vicinity of Salton Sea, in Imperial County (van Rossem, Condor, 13, 1911:133), to Monterey County, for example along Salinas River, December 31 to January 9, 1936-37 (Silliman and von Bloeker, Condor, 39, 1937:129), and even to Sebastopol, Sonoma County, January 1, 1885 (Belding, Land

Birds Pac. Dist., 1890:191). Transient occurrences are of abundant record throughout the lowlands of the State, from valley of Colorado River and Death Valley westward and northwestward. Strangely, however, there are but two island records: the Farallones, June 1, 1911 (Dawson, Condor, 13, 1911:182); San Clemente Island, April 9, 1915 (Howell, Pac. Coast Avif. No. 12, 1917:88). Some literature additional to that already cited: Yosemite section (Dawson, Jour. Mus. Comp. Ool., 2, 1922:53; Grinnell and Storer, Animal Life Yosemite, 1924:501; C. W. Michael, Condor, 38, 1936:86); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:128); Santa Lucia Mountains, Monterey County (Pemberton and Carriger, Condor, 17, 1915:196); Fresno district (Tyler, Condor, 13, 1911:168, and Pac. Coast Avif. No. 9, 1913:92); southern California generally (Willett, Pac. Coast Avif. No. 21, 1933:112); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:106).

Habitat—Of rather wide amplitude when the birds are settled for breeding; to be indicated by two pictures: (1) Vicinity of cliff-faces or precipitous canyon walls, these affording in crevices or blow-out holes of properly small dimensions the required nesting sites. From these or from perches on neighboring dead-topped trees the birds range out in rather long cruising radius for aerial foraging, low or high according to wind-rate, degree of cloudiness or other factors controlling presence of preferred insects or ability of the swallows to capture them. (2) Broken or open type of woods, or margins of heavy forest, on either level, rolling or steep-sloping terrain, where there are trees containing woodpecker excavations available to the swallows for their own nesting. Perching places close-by are afforded by tips of dead branches, whence the birds forage far and near, over the tree-tops or low in glades. In this species of swallow there appears to be no special preference for the presence of water; indeed, nesting birds are to be found in rock-walled canyons of desert mountains, where in summer there is no visible water. Shade is, however, there seen to be sought, and it is under these circumstances doubtless a requirement. This swallow is solitary or weakly colonial, apparently as according with the number of nesting sites available in any one place. An interesting frequent association is that of the Violet-green Swallow with the White-throated Swift, both in cliff-nesting and in aerial forage beat. In post-breeding gatherings and in migrations, it may associate with other kinds of swallows, though probably in merely incidental fashion.

Iridoprocne bicolor (Vieillot)
Tree Swallow

Synonyms—Chelidon bicolor; *Hirundo bicolor*; *Petrochelidon bicolor*; *Hirundo bicolor* var. *vespertina*; *Tachycineta bicolor*; *Tachycineta bicolor vespertina*; *Iridoprocne bicolor vespertina*; White-bellied Swallow; Western Tree Swallow.

Status—In the main, summer resident, March (or even February) to October. Passes the winter, irregularly or locally, in the lowlands of southern and west-central California. This is climatically the hardiest of our swallows. As to relative numbers in summer, locally common to abundant.

Geographic range—As breeding, nearly entire length of State west of the deserts; at north, east as well as west of Sierra-Cascade axis. Some extreme northern breeding stations of record: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:25), and Camp Bidwell, in Surprise Valley, Modoc County (Henshaw, Ann. Rept. Geog. Surv.... Wheeler, App. L, 1879 [1880]: 290). Southernmost recorded breed-

ing stations: Henshaw and Hodges lakes, San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:113). Altitudes of nesting extend from close to sea level, as in Santa Barbara, and at Suisun, Solano County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:128), up to an extreme of 9000 feet at lakes along Sierra Nevada (Dawson, Birds Calif., 2, 1924:540). Life-zones, mainly Transition and Upper Sonoran, but zonal limitation weak. A few of the northern records for midwinter are: Santa Cruz, Santa Cruz County (Cooper Ornith. Calif., 1, 1870:106); various points in San Francisco Bay region (Grinnell and Wythe, *loc. cit.*); Marysville, Yuba County, and Stockton, San Joaquin County (Belding, Land Birds Pac. Dist., 1890:189 [at latter place "hundreds or thousands" seen on January 18, 1885]). Southeastern wintering stations are 5 miles north of Needles, San Bernardino County (Ellis Coll.) and Yuma district, in Colorado River valley (Monson, Condor, 46, 1944:21). Occurs over southeastern deserts in migration, for example in Imperial Valley and in Death Valley; but there is no record from any island. Some natural history accounts of more or less distributional significance, cited from a rather large literature, are: Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:287); Lake Tahoe and vicinity (Keyes, Condor, 7, 1905:42, and Ray, Condor, 15, 1913:113); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:500); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:92); Buena Vista Lake, Kern County (Linton, Condor, 10, 1908:198); San Onofre, San Diego County (J. S. Dixon, Condor, 8, 1906:97); in general (Belding, *loc. cit.*, and Dawson, *loc. cit.*).

Habitat—Vicinity of bodies of fresh or brackish water such as lakes, ponds, sloughs, large streams, stagnant meadow creeks, or marshes. The seemingly required aerial forage beat is above water or at least over ground that is damp, if not swampy. A further essential, for presence through breeding season, is presence of trees or stubs containing woodpecker-excavated holes, these to be used for nesting places. Nest trees or stubs most in demand are those whose bases are surrounded by water, or which at least stand at the water's edge. The relative abundance of Tree Swallows in a given locality otherwise favorable is clearly determined by the number of such nest trees available as also by the prior activity of woodpeckers in them. Kinds of trees used for nesting are naturally those which grow adjacent to water, namely, willow, cottonwood, aspen, and sycamore; also dead coniferous trees in the mountains where drowned in the margins of artificial reservoirs. Kinds of woodpeckers serving to excavate holes subsequently used by Tree Swallows are: Downy Woodpecker, Hairy Woodpecker, Red-shafted Flicker, Nuttall Woodpecker and Red-breasted Sapsucker. Perching places for the swallows are provided by the naked twig-tips of dead trees or, where available, overhead wires along roads or dikes.

Riparia riparia riparia (Linnaeus)

Common Bank Swallow

Synonyms—Cotyle riparia; *Cotile riparia*; *Clivicola riparia*; *Riparia riparia*; Bank Swallow; American Bank Swallow.

Status—Summer resident, late March to September. Because of colonial nesting, has been considered "fairly common" or "common" locally. But colony sites are few, and in aggregate numbers this species is the least numerous of all the species of swallow in the State. Even as migrating, records are relatively few.

Geographic range—As breeding, "spotty"; in general, low-lying country southerly. Locations of nesting colonies, at one time or another, are definitely known only as follows: Alvord, on Owens River near Big Pine, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:112); vicinity of Sacramento (Ridgway, Rept. Geol. Expl. Fortieth Parallel, pt. 3, 1870:330); Placerville, Eldorado County (Emerson, Ornith. and Ool., 13, 1888:82); Lake Merced, San Francisco (Ray, Condor, 18, 1916:225; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:129); coast of San Mateo County opposite Año Nuevo Island (Ray, Condor, 9, 1907:176); vicinity of Santa Cruz, Santa Cruz County (McGregor, Pac. Coast Avif. No. 2, 1901:17; *et al.*); Paicines, San Benito County (Grinnell, Pac. Coast Avif. No. 11, 1915:139); San Ardo, on Salinas River, Monterey County (Dawson, Birds Calif., 2, 1924:533); Seaside, Monterey County (Mus. Vert. Zool.); Santa Barbara (Dawson, *loc. cit.*); Sespe, Santa Clara River valley, Ventura County (Willett, Pac. Coast Avif. No. 21, 1933:113); Los Angeles River, Port Los Angeles, San Pedro and Long Beach, Los Angeles County (Mus. Vert. Zool.; Grinnell MS; Shepardson, Condor, 11, 1909:174); Whittier, Los Angeles County (Willett, *loc. cit.*); Huntington Beach and Newport, Orange County (Willett, *loc. cit.*, Burnham, *et. al.*, Jour. Ent. Zool. [Pomona College], 9, 1917:60); Oceanside, San Diego County (Carpenter, Condor, 20, 1918:90). Most of the above records of breeding are from near sea level and pertain to the Upper Sonoran Life-zone; the main exception is the one from Owens Valley, at 4000 feet altitude and in Lower Sonoran. Records of migrants are mostly from the general area outlined by the breeding stations. There is one (probably a migrant) to the northward, from the Eel River, eastern Mendocino County (Stone, Proc. Acad. Nat. Sci. Phila., 1904:584). There is known to us no well-substantiated record from any of the islands, from the northern humid coast belt north of Sonoma County, nor from the southeastern deserts south of Owens Valley (as above) and east of Cushenbury Springs, San Bernardino County, August 13, and southern end of Salton Sea, in Imperial County, April 29 to May 3 (Mus. Vert. Zool.). From northeastern California there is only the vague statement of Henshaw (Ann. Rept. Geog. Surv. . . . Wheeler, App. L, 1879:291) that the Bank Swallow is "present in . . . Eastern California [along his route], but apparently less numerous than the" Rough-winged Swallow. The chance of confusion of these two kinds of swallows in sight-identification casts doubt on some of the published records not cited here.

Habitat—As summering, extremely restricted because of the bird's specialized nesting habits and requirements. Apparently the birds of a colony instinctively must dig their own holes, in the vertical faces of banks or bluffs; and to do this with their weak digging equipment there must be in the banks or bluffs layers of sand or sandy loam, of diggable consistency and hence penetrable the requisite horizontal distance. Such nesting sites are wanting in most parts of California and are far scattered elsewhere; hence the peculiar distributional pattern indicated by the above list of breeding localities. Sea bluffs and banks of the lower courses of large streams are represented. Foraging is carried on, with no such apparent degree of restriction, low over meadow, prairie, marshland, or fresh-water surface. The cruising radius of the Bank Swallow being shorter than in most species, this factor can be pointed out as another to account for its extreme localization save when migrating.

Stelgidopteryx ruficollis serripennis (Audubon)
Northern Rough-winged Swallow

Synonyms—*Cotyle serripennis*, part; *Stelgidopteryx serripennis*, part; *Stelgidopteryx ruficollis*; *Stelgidopteryx ruficollis aphractus*; Rough-winged Swallow, part; Rough-winged Bank Swallow; Western Rough-winged Swallow.

Status—Summer resident, April to August or September. Because scarcely or not at all colonial, hence not present in any given locality in concentrated numbers as with most swallows, the Rough-wing is usually rated as but "fairly common." However, it is widespread, and it includes in its general range great arid areas where other species are mostly wanting; its aggregate numbers are likely relatively large.

Geographic range—In general, lower-lying, portions of State north of Tehachapi Mountains and San Bernardino County. Life-zones, essentially Lower and Upper Sonoran; but there are marginal instances of nesting in Transition. Altitudes of midsummer occurrence extend from below sea level, as in Death Valley (A. K. Fisher, N. Amer. Fauna No. 7, 1893:112), up to an extreme of 5400 feet, at Jones', eastern Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:289). Northern limits of regular occurrence: in coast belt, Marin County; interiorly, head of Sacramento Valley. But there are more northern records: Humboldt Bay and even Trinidad Head, Humboldt County (W. K. Fisher, Condor, 4, 1902:134); near Happy Camp, Siskiyou County (Calif. Acad. Sci.); South Fork and Hayfork of Trinity River, Trinity County (Mus. Vert. Zool.); Baird, Shasta County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:222); Edgewood, Shasta Valley, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:127); near Hornbrook, same county (Mus. Vert. Zool.); and eastern Lassen County, as above. In migrations, pairs or small groups appear at places where nesting is unknown and within breeding range of *S. r. psammochrous* in southern California. Some published accounts, of special distributional significance and not cited above: in general (Dawson, Birds Calif., 2, 1924:529); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:129); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:93); Yosemite section (Grinnell and Storer, Animal Life Yosemite, 1924:503; C. W. Michael, Condor, 27, 1925:113, and Condor, 38, 1936:86).

Habitat—During nesting period, neighborhood of rather low earthen (sand or friable clay) banks, as along slow-flowing streams, but quite as often vicinity of waterless barrancas or even small gullies. Such banks are needed for the nesting burrows; but these burrows as a rule are modified holes already dug by rodents or kingfishers, or are "natural" ones. Vicinity of water is not an essential, unless it be as within daily cruising radius. Pairs operate solitarily; rarely, where nesting and forage requirements are plentifully met in a locality, will there be two or a few pairs settled for breeding within sight of one another's precincts. It thus appears that the Rough-winged Swallow can tolerate, indeed seems often to choose, localities that are extremely arid within the nesting period, and so, among swallows, exhibits somewhat the same micro-climatic predilections as does the Say Phoebe among flycatchers. Foraging of the Rough-winged Swallow is carried on rather low, over water or adjacent terrain; in arid areas up and down barrancas or gullies, mornings and late afternoons, much of the time in the shade of the banks.

Note—The separation of a northwestern race (*S. r. aphractus* Oberholser) of this swallow seems unjustified (see A. H. Miller, Condor, 43, 1941:259).

Stelgidopteryx ruficollis psammochrous Griscom
Sonora Rough-winged Swallow

Synonyms—Cotyle serripennis, part; *Stelgidopteryx serripennis*, part; Rough-winged Swallow, part.

Status—Summer resident, March (even February) to October. Fairly common.

Geographic range—Lowlands of southern section of State from San Bernardino County and Tehachapi Mountains southward to Mexican line. Birds of Ventura County and even some from Los Angeles County indicate intergradation toward *S. r. serripennis* to northward. Breeds here and there across the southern deserts from valley of Colorado River (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:186) westward to coast. There is no island record, however. At San Diego, birds have been noted as late as November 9 and as early as January 27 (Cooper, Ornith. Calif., 1, 1870:110). Life-zones, Lower Sonoran and Upper Sonoran. Nesting stations chiefly, or perhaps entirely, below elevation of 2000 feet. Some general references: Belding, Land Birds Pac. Dist., 1890:193, part; Willett, Pac. Coast Avif. No. 21, 1933:113.

Habitat—As breeding, vicinity of low banks of sand or clay, either near streams or in desert barrancas (see also under *S. r. serripennis*).

Note—For nomenclature, see Wetmore (Proc. U. S. Nat. Mus., 86, 1939:203) and Brodkorb (Condor, 44, 1942:214).

Hirundo rustica erythrogaster Boddaert
American Barn Swallow

Synonyms—Hirundo rufa; *Hirundo horreorum*; *Hirundo erythrogaster* [or *erythrogastra* or *erythrogastris*!]; *Hirundo erythrogastra horreorum*; *Chelidon erythrogaster*; *Hirundo erythrogaster palmeri*; *Hirundo erythrogaster erythrogaster*; Barn Swallow.

Status—Summer resident; early April (or March at south) to September or early October. Locally common. With extension of irrigation in Great Valley and elsewhere, building of bridges, etc., no doubt now far more widespread as to nesting range, and more numerous as to aggregate numbers, than originally.

Geographic range—Chiefly non-mountainous country north of about parallel 35°. More exactly, east of Sierran axis, breeds in Owens Valley and thence north along and over lake region to Oregon line; west of Sierra-Cascade axis, San Joaquin, Sacramento and Shasta valleys; San Francisco Bay region, including Napa and lower San Benito valleys; entire seacoast, interruptedly and but sparingly at extreme south; around most of the islands. Some southern nesting stations are: Coronado and Point Loma, San Diego County (Gander, Auk, 44, 1927:574; Grinnell, Pac. Coast Avif. No. 11, 1915: 138); Laguna Beach, Corona del Mar, Newport, and Cypress, Orange County (Gardner, Jour. Ent. Zool. [Pomona College], 6, 1914:238, and Condor, 17, 1915:99; Shepardson, Condor, 17, 1915:130; Willett, Pac. Coast Avif. No. 21, 1933:114; Robertson, Condor, 34, 1932:259); Santa Monica, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:42); points in Owens Valley, south to Lone Pine and Keeler, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:110). Some northern stations are: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:24); Yreka, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:93); Davis

Creek and Eagleville, Modoc County (Dawson, Condor, 18, 1916:29). As to life-zone, breeding occurs mainly in Upper Sonoran and Transition, sparingly in Lower Sonoran; altitudes vary from sea level up to as high as 7900 feet, at Mammoth, Mono County (A. H. Miller MS). In migrations, appears at almost any place, for example, in Death Valley, Inyo County, April 2 to 28 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923: 95), and at Summit, Placer County, May 15 (Belding, Condor, 3, 1901:31). Individuals may occasionally remain through winter in Imperial County: Brawley, December 18, 1910 (van Rossem, Condor, 13, 1911:133). Some selected citations additional to above: Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:290); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:127); Lake Tahoe (Ray, Auk, 20, 1903:190); Tulare and Fresno counties (Tyler, Condor, 13, 1911:168, and Pac. Coast Avif. No. 9, 1913:91); Santa Catalina, Santa Cruz and others of Santa Barbara Islands (Howell, Pac. Coast Avif. No. 12, 1917:87; Ross, Condor, 28, 1926:241); in general (Beal, U. S. Biol. Surv., Bull. No. 30, 1907:30; Belding, Land Birds Pac. Dist., 1890:186; Dawson, Birds Calif., 2, 1924:536).

Habitat—If birds are to settle in a locality for breeding, the place must afford water, in part probably to drink, but also to provide mud for nest-building purposes, and indirectly, preferred kinds of food or, possibly, the sort of surface above which foraging can be carried on most effectively. Also, there must be nest sites of a special sort: "natural," overhung hollows in banks of streams or lakes (these if not of rock must be almost as solid, to make possible firm fixation of the mud nests), and sea-caves. Simulating these in essential character are now "artificial" sites (even more acceptable, perhaps) in the form of bridges over streams, canals, and irrigation ditches, and buildings such as barns and garages. The critical necessity to the Barn Swallow in this special kind of nesting site is proven by the quick extension of the breeding occurrence of the species to new areas (watered, also, of course) where man's activities have supplied it. This species according to our observations is not characteristically "colonial" like the Cliff or Bank swallows; pairs are, as a rule, sequestered.

Petrochelidon albifrons albifrons (Rafinesque)
Common Cliff Swallow

Synonyms—Hirundo fulva; *Hirundo lunifrons*; *Petrochelidon lunifrons*, part; *Hirundo fulva*, var. *lunifrons*; *Petrochelidon pyrrhonota pyrrhonota*; *Petrochelidon albifrons*, part; Republican Swallow; Eave Swallow; Cliff Swallow, part; Northern Cliff Swallow, part.

Status—Summer resident and migrant; mid-March to September (or October at south). Dates of arrival and departure are greatly variable with year and locality. Numbers very large; the most abundant and widespread swallow in our avifauna. Colonial. With little doubt considerably more numerous in the aggregate now than under original conditions.

Geographic range—Entire length and breadth (except parts of central eastern border) of State; interrupted somewhat by heavy forests, mountain masses above middle altitudes, and unwatered deserts. Nesting takes place where habitat conditions are suitable, from Lower Sonoran Zone up through Transition, rarely higher; altitudes from close to sea level up to as high as 9000 feet (in Sierra Nevada of Eldorado County). In migrations, especially in spring, sweeps over all sorts of terrain. However, only one record from any island: Santa Catalina, May 12, 1918 (Wyman, Condor, 21, 1919:

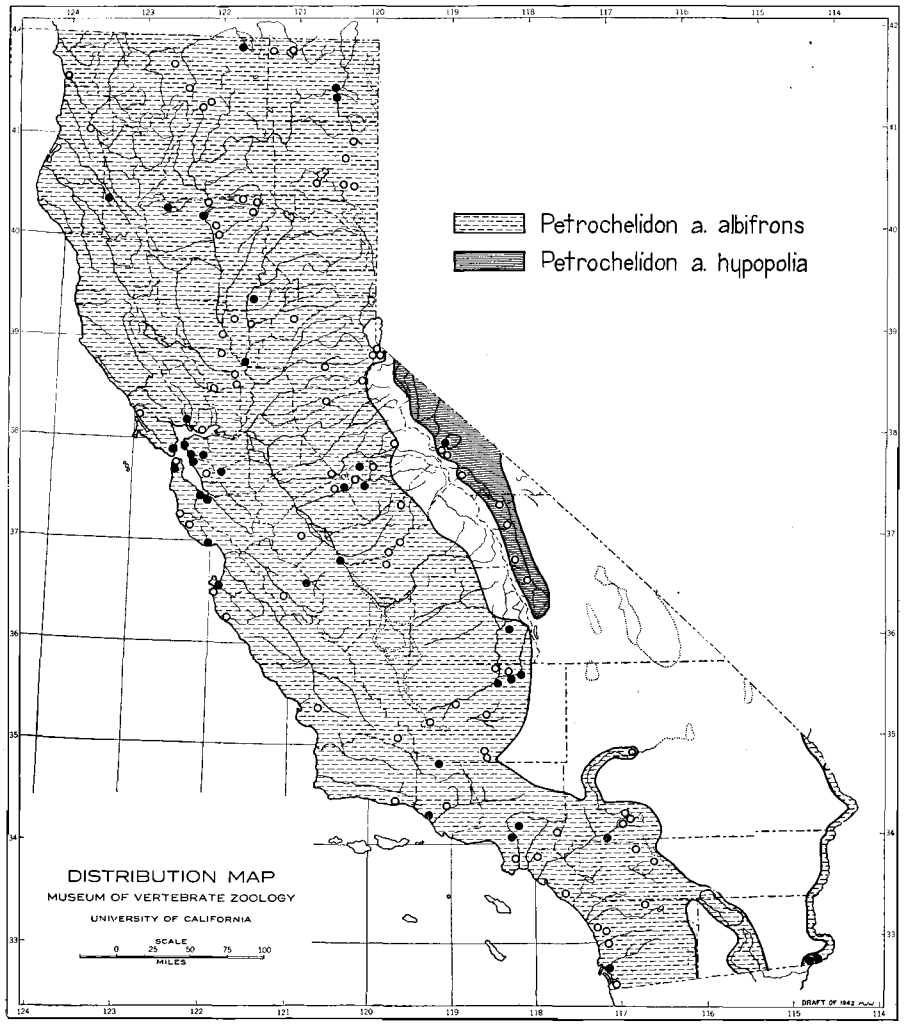

Fig. 20. Distribution of the subspecies of Cliff Swallow, *Petrochelidon albifrons*, in California in the breeding season. Dots indicate localities from which summer resident birds have been examined; circles, localities reported in the literature.

172). Occurs in midwinter in Imperial County: Brawley (van Rossem, Condor, 13, 1911:133). From the 149 formal accounts (in 1944) relating to the Cliff Swallow in California, the following are selected as bearing most significantly on manner of occurrence and natural history: Belding, Land Birds Pac. Dist., 1890:184; A. K. Fisher, N. Amer. Fauna No. 7, 1893:110; Van Denburgh, Proc. Acad. Nat. Sci. Phila., 1898: 216; Beal, U. S. Biol. Surv., Bull. No. 30, 1907:28; F. M. Bailey, Condor, 9, 1907:169; Grinnell, Univ. Calif. Publ. Zool., 5, 1908:106, and same, 12, 1914:183; Shepardson, Condor, 17, 1915:101; Tyler, Pac. Coast Avif. No. 9, 1913:90; Carpenter, Condor, 20, 1918:91; Bonnot, Condor, 23, 1921:136; Anthony, Condor, 25, 1923:133; Dawson, Birds Calif., 2, 1924:523ff.; W. S. Wright, Condor, 26, 1924:153; Grinnell and Storer, Animal Life Yosemite, 1924:497; Storer, Condor, 29, 1927:104; Grinnell and Wythe,

Pac. Coast Avif. No. 18, 1927:127; Lee, Oologist, 46, 1929:94-95; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:291; Chaney, Calif. Fish and Game, 17, 1931:492; Willett, Pac. Coast Avif. No. 21, 1933:114; Murie and Bruce, Condor, 37, 1935:259; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:87; Dixon and Bond, Condor, 39, 1937:100; Grinnell, Condor, 39, 1937:206; Sibley and Hemphill, Condor, 42, 1940:224; Emlen, Condor, 43, 1941:248; Orr, Amer. Midl. Nat., 27, 1942: 320; Bent, U. S. Nat. Mus., Bull. 179, 1942:463ff.

Habitat—Requirements for presence through breeding season include at least: (1) availability of rough rock surfaces as comprised in cliffs, stream-cut banks, sea-bluffs, or rimrock, or of rough cement, or unpainted, preferably weathered, boarding of walls of buildings, to which the mud nests will adhere; (2) availability of mud for nest material; (3) presence of at least some smooth-surfaced fresh water for drinking; (4) insect-carrying airways, over water, marshes or grassland, for forage purposes. Sizes of colonies as locally established are probably controlled by the minimal quantity of one or another factor of the kinds above indicated. There seems to be, as a rule, *dis*continuity in occupation of any given colony site, no matter how exceptionally favorable it may look to us to be; rotation of use of "rancheria" sites is possibly a necessity in long-time course. (For speculation in this regard, see Grinnell, *loc. cit.*)

Note—Hellmayr (Field Mus. Nat. Hist., zool. ser., 13, 1935:29) advocates the use of the name *pyrrhonota* Vieillot for this species. There still seems to be doubt whether Vieillot's description applied to this species and it is impossible to determine which of the northern races might have been involved. Much confusion is avoided by regarding the name as unidentifiable.

Breeding Cliff Swallows of the lower Colorado River at the Mexican boundary (near Pilot Knob) show irregularly some of the characters of *P. a. melanogaster* (or *P. a. minima* recently proposed by van Rossem and Hachisuka, Trans. San Diego Soc. Nat. Hist., 9, 1933:5) of Sonora. However, the population as a whole does not seem referable to that form, but to *P. a. albifrons*.

Petrochelidon albifrons hypopolia Oberholser

Greater Cliff Swallow

Synonyms—*Petrochelidon lunifrons*, part; *Petrochelidon albifrons*, part; *Petrochelidon albifrons albifrons*, part; Cliff Swallow, part; Northern Cliff Swallow, part; Great Basin Cliff Swallow.

Status—Summer resident and migrant.

Geographic range—As breeding, eastern border of State in Mono County and presumably also Inyo County. Definite stations of record based on critically determined specimens: Mono Lake and Mammoth (van Rossem, Pac. Coast Avif. No. 24, 1936: 33; Dickey and van Rossem, Field Mus. Nat. Hist., zool. ser., 23, 1938:405); Clearwater [near Bodie], Mono County (Calif. Acad. Sci.). A migrant individual is on record from Laguna Station [near Seeley, Imperial County], taken May 4, 1894 (Oberholser, Canadian Field-Naturalist, 33, 1919:95). Other records of migrants based on recently determined specimens (Mus. Vert. Zool.) are: Furnace Creek Ranch, Death Valley, Inyo County, April 29, 1917; 8 miles northwest of Calipatria, Imperial County, May 1, 1937. Doubtless this race occurs regularly in migration over southeastern California.

Habitat—Relations probably much the same as for the Common Cliff Swallow.

Note—This race, most constantly characterized by large size, occupies the Great Basin region. However, except as indicated above, known breeding populations in California immediately east of

the Cascade-Sierran divide and in Modoc County are intergradient and closer to *P. a. albifrons*. *P. a. aprophata* (Oberholser, Sci. Publ. Cleveland Mus. Nat. Hist., 4, 1932:6) described from Oregon just north of Modoc County, California, appears to represent similar intergrades at the western edge of the Great Basin (A. H. Miller, Condor, 43, 1941:261).

Progne subis subis (Linnaeus)
Northern Purple Martin

Synonyms—Progne purpurea; *Progne chalybea*; *Progne subis*; *Progne subis hesperia*; *Progne hesperia*; Purple Martin; Martin; Western Martin.

Status—Summer resident; April or late March (rarely early March) to September. Ordinarily considered fairly common, but many seemingly suitable localities lack this swallow; "colonies" or established pairs are widely scattered. There is some indication of spreading to occupy certain districts built up by people in recent years. Probably the aggregate number of Purple Martins is increasing.

Geographic range—As breeding, entire length of State, in its wooded parts, spottily, from Oregon line in Del Norte County to Mexican boundary in San Diego County. Life-zones, Transition and Upper Sonoran; even Lower Sonoran locally, but only west of desert divides. Altitudes of nesting extend from near sea level, as at Pacific Grove, Monterey County, up to 5900 feet, in San Jacinto Mountains, Riverside County. In migrations, relatively little in evidence; only two records known to us from the southeastern deserts: near Yermo, San Bernardino County, August 28, 1910 (Lamb, Condor, 14, 1912:39); Coachella Valley, April 4, 1942 (C. A. Harwell MS). Reported from only one island: Santa Catalina, May 10, 1933 (Meadows, Condor, 36, 1934:40). Some selected references bearing on manner and extent of occurrence: Sacramento, nesting (Heermann, Pac. R. R. Rept., 10, pt. 4, no. 2, 1859:35); Sierra Valley [nesting in bird houses], Chico, Marysville, Stockton, etc. (Belding, Land Birds Pac. Dist., 1890:183, and Condor, 7, 1905:113); Loyalton, Sierra County (Mailliard, Condor, 21, 1919:76); Honey Lake, Lassen County, etc. (Dawson, Condor, 18, 1916:29, and Birds Calif., 1, 1924:520); Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:293); Weed, Siskiyou County, etc. (H. C. Bryant, Condor, 26, 1924: 195); Crescent City, Del Norte County, etc. (W. K. Fisher, Condor, 4, 1902:134); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:127); Fort Tejon, Kern County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:109); Los Angeles, nesting (Perez, Condor, 12, 1910:133); Santa Barbara, Balboa, etc., nesting (Ross, Condor, 27, 1925:209); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:286); Escondido, San Diego County (Hatch, Auk, 13, 1896:347); southwestern California in general (Willett, Pac. Coast Avif. No. 21, 1933:114).

Habitat—As breeding, typically, areas where large trees occur, and where these afford in their trunks or branches, holes dug by large-sized woodpeckers—Acorn Woodpecker, Lewis Woodpecker, Red-shafted Flicker. Kinds of trees so used are oaks of several species, sycamore, yellow pine, Monterey pine, Douglas spruce, white fir—decaying, or at least partly dead and naturally just those trees the named woodpeckers would choose in making their own nesting places. Thus the Purple Martin is dependent for its presence in summer primarily upon the presence of trees, but not heavy forests; rather, marginal or isolated trees, or such as remain on lumbered territory. While show-

ing colonial tendency, by resorting to a given neighborhood affording sufficient nesting sites in numbers up to twenty pairs, this seldom occurs; often only one pair is to be found in a locality. A departure on a par with that shown by some other swallows is the adoption by the martin of human-provided nesting niches, incidentally, in the eaves or cornices of buildings, or, so far rarely, purposely supplied "martin-houses." This adoption has brought the birds into localities, such as certain lowland cities, where they were not known to breed before.

Perisoreus canadensis griseus Ridgway
Gray Canada Jay

Synonyms—Perisoreus canadensis, part; *Perisoreus canadensis obscurus*, part; *Perisoreus obscurus*, part; *Cractes obscurus griseus*; *Perisoreus obscurus griseus*; Canada Jay, part; Oregon Jay, part; Gray Jay.

Status—Resident. Fairly common, but only so in a few places, far apart.

Geographic range—High mountain masses of extreme northern part of State, east of humid coast belt. Life-zone, Canadian. Altitudes of known residence extend from about 4000 feet, at 10 miles northwest of Happy Camp, Siskiyou County (Calif. Acad. Sci.), to 7300 feet, on the Warner Mountains (Parker Creek), Modoc County (Mus. Vert. Zool.). Additional localities, whence definitely known, are: South Fork Mountain, Humboldt County (Mus. Vert. Zool., see p. 283); Siskiyou Mountains, near Deer Camp (Doggett Creek), 5800 feet, Siskiyou County (Grinnell MS; Mus. Vert. Zool.); Spanish Springs Camp, near Beswick, Siskiyou County (Ferry, Condor, 10, 1908:42); Mount Shasta, Siskiyou County (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. L, 1879 [1880]:308); Merriam, N. Amer. Fauna No. 16, 1899:119); Medicine Lake, Siskiyou County (Calif. Acad. Sci.); Warner Mountains, Modoc County, near Fort Bidwell (Feilner, Ann. Rept. Smiths. Inst. 1864 [1865]:421, 427); 12 miles southwest of Eagleville, Modoc County (Calif. Acad. Sci.); Carberry's Ranch, Pit River valley, Shasta County, specimen in U. S. Nat. Mus. [vagrant?] (Aldrich, Wilson Bull., 55, 1943:200, and letter of February 8, 1944). The records from Mount Lassen (Feilner, *loc. cit.*), from Summit and Castle Peak, Nevada County (Belding, Proc. U. S. Nat. Mus., 1, 1879:423) and from Lake Tahoe (A.O.U. Check-list, 1910:227) are all now thought to have been based on misidentifications of other birds (see, for example, Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:295). Aldrich's (*loc. cit.*) plotting of a locality for a specimen taken south of Lassen Peak is evidently an error; the bird is one taken by Henshaw at Camp Bidwell, Modoc County [not Butte County].

Habitat—Forests, broken or solid, of red fir, lodgepole pine, and silver pine.

Perisoreus canadensis obscurus Ridgway
Southwestern Canada Jay

Synonyms—Perisoreus canadensis, part; *Perisoreus obscurus*, part; *Cractes obscurus obscurus*; *Perisoreus obscurus obscurus*, part; Canada Jay, part; Oregon Jay, part.

Status—Resident. Fairly common where present at all, but range "spotty."

Geographic range—Extreme northern end of humid coast belt, in Del Norte and Humboldt counties; probably also in extreme northwestern Mendocino County. Life-

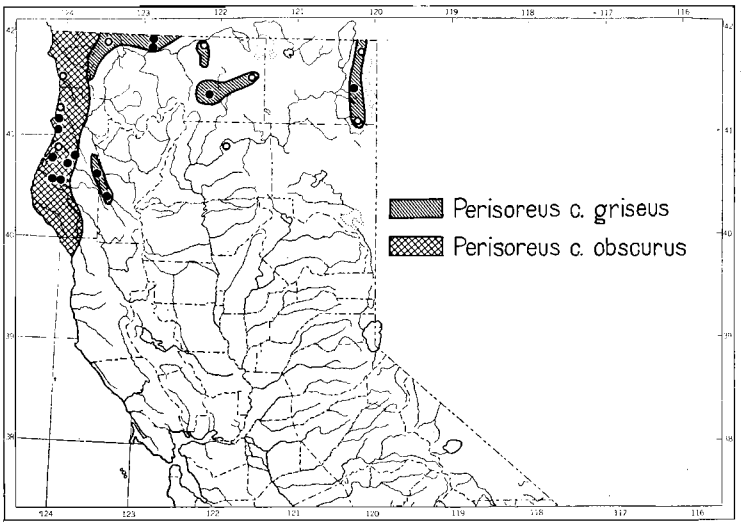

Fig. 21. Distribution of Canada Jays, *Perisoreus canadensis*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

zone, Canadian or high Transition. Occurs from near sea level up to about 2000 feet (J. S. Dixon MS). Chief references relating to occurrences and natural history: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:23); Orick, Humboldt County (Ferry, Condor, 10, 1908:42); Arcata and Eureka, Humboldt County, nesting (J. M. Davis, Condor, 40, 1938:182); Humboldt Bay region in general (Townsend, Proc. U. S. Nat. Mus., 10, 1887:211; W. K. Fisher, Condor, 4, 1902:133; Swarth, Univ. Calif. Publ. Zool., 10, 1912:49, 50, and Condor, 20, 1918:84; Grinnell, Amer. Nat., 51, 1917:120); Carlotta, Humboldt County (Mus. Vert. Zool.; Grinnell MS). The record from Mendocino, Mendocino County (Heller, Condor, 4, 1902:46) has not been corroborated and may have been faulty. Birds from South Fork Mountain, on the Humboldt-Trinity county line and interior from the humid coast belt, are closer to *P. o. griseus*, although intermediate.

Habitat—Forests of coast redwood and lowland fir, sometimes with mixture of Douglas spruce.

Note—This form of jay and *P. c. griseus* have long been considered specifically distinct from *P. canadensis*, although it has been guessed, but unsatisfactorily demonstrated (Hellmayr, Cat. Birds Amer., 7, 1934:69), that they were conspecific. The evidence of intergradation, which appropriately has been awaited, has finally been brought to light by Aldrich (Wilson Bull., 55, 1943:217).

Cyanocitta stelleri frontalis (Ridgway)
Blue-fronted Steller Jay

Synonyms—Cyanocorax stelleri, part; *Cyanocitta stelleri*, part; *Cyanura stelleri*, part; *Cyanura stelleri frontalis*, part; *Cyanocitta stelleri syncolla*; Steller Jay, part; Sierra Jay, part; Blue-fronted Jay, part; California Mountain Jay; Crested Jay; Warner Jay.

Status—Essentially resident, but implying the fact of more or less autumnal vagrancy. In most years this vagrancy leads to a partial movement down-mountain along

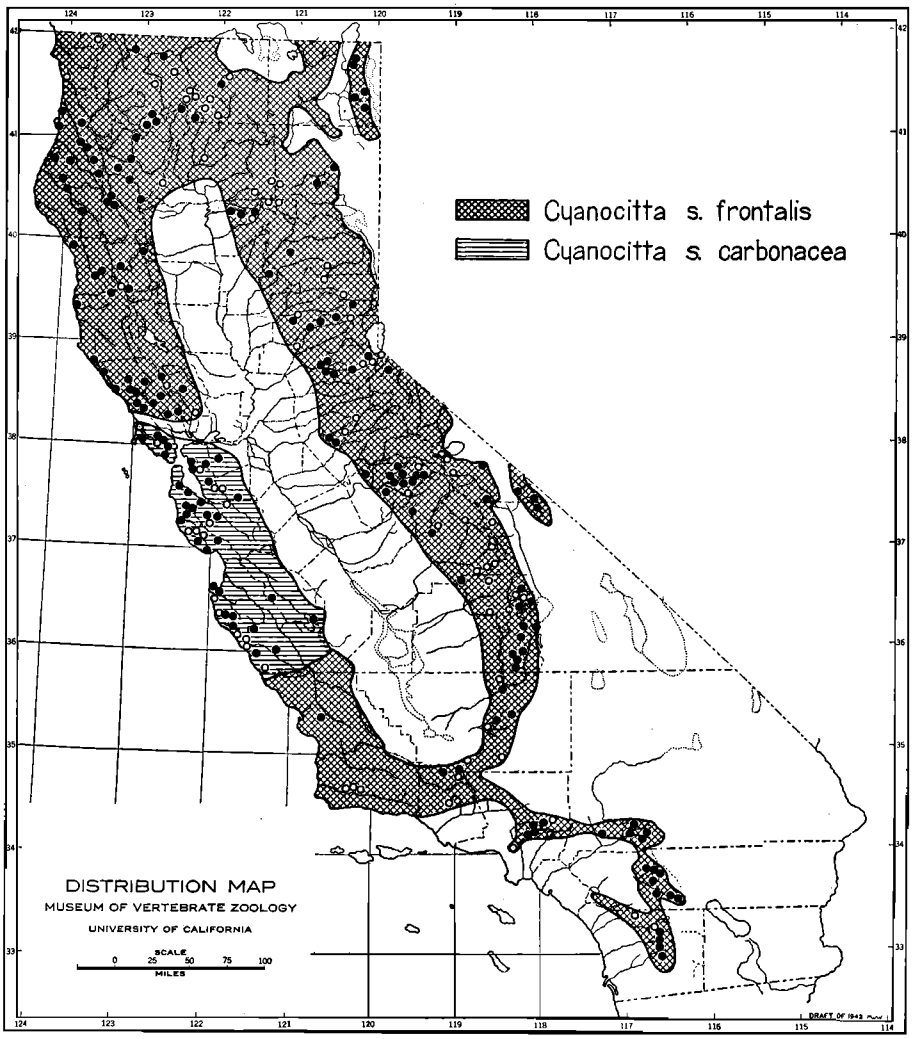

Fig. 22. Distribution of the subspecies of Steller Jay, *Cyanocitta stelleri*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature; excluded are winter vagrants.

Sierra Nevada and in southern California, which carries birds sometimes far out onto westward lowlands. As to aggregate numbers, usually where occurring at all, common to abundant. A single "jay shoot" seems to have only temporary effect upon any local population; recovery is rapid.

Geographic range—In general, mountainous parts of State except central segment of coast belt and southeastern desert region. At north, reaches Oregon boundary from Del Norte County east interruptedly to Warner Mountains in Modoc County; coastwise extends south as far as vicinity of Freestone, Sonoma County, Sonoma Mountain, same county, and to vicinity of Napa, Napa County; includes entire length of Sierra Nevada; also higher coastward mountains from San Luis Obispo and Kern counties

southeast as far as Cuyamaca Mountain region in San Diego County. Not recorded east of Owens Valley south of White Mountains, Mono County (Mus. Vert. Zool.), except as an autumnal vagrant, October 2, 1917, near Jackass Springs, 6200 feet, Panamint Mountains, Inyo County (Mus. Vert. Zool.). Life-zones of breeding, Transition and Canadian; altitudes, usually 2000 feet (lower on north coast and, sporadically, in Griffith Park, Los Angeles) up to 8000 feet (in San Bernardino Mountains). Late summer finds birds up to 11,000 feet (as at Big Cottonwood Meadows, Inyo County); and in some winters, individuals occur down nearly to sea level, for example, Santa Barbara (Dawson, Condor, 18, 1916:28), Fresno (Tyler, Pac. Coast Avif. No. 9, 1913: 66), Stockton (Sampson, Condor, 3, 1901:37), and Marysville (Belding, Proc. U. S. Nat. Mus., 1, 1879:422). The literature for this jay is extensive (158 references in 1944); a few selections are here given on basis of natural history value: Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:309); Lassen Peak section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:293); Mount Shasta (Merriam, N. Amer. Fauna No. 16, 1899:118); Cisco, Placer County (Ingersoll, Condor, 15, 1913:84); Lake Tahoe and region to westward (Barlow, Condor, 3, 1901:167; Price, Condor, 6, 1904:72; Ray, Condor, 12, 1910:129; Gignoux, Condor, 23, 1921: 191); Calaveras County, "jay shoots" (M. M. Erickson, Condor, 39, 1937:112; Hooper, Condor, 40, 1938:163); Yosemite region (Evermann, Condor, 17, 1915:58; Grinnell and Storer, Animal Life Yosemite, 1924:379; many brief but excellent articles in Yosemite Nature Notes, 1929-43, by the Michaels, Beatty and others); Florence Lake, Fresno County (L. M. Lofberg, Condor, 30, 1928:310); Los Angeles region, invasions of lowlands (M. M. Miller, Condor, 22, 1920:188; Little, Condor, 22, 1920:190; W. I. Allen, Condor, 28, 1926:172); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:83; Pierce, Condor, 18, 1916:34; San Jacinto Mountains (Moody, Condor, 4, 1902:91); Julian, San Diego County (Goss, Auk, 2, 1885:217); southern California in general (Willett, Pac. Coast Avif. No. 21, 1933:115); some general accounts (Bendire, Life Hist. N. Amer. Birds, 2, 1895:365, part; Dawson, Birds Calif., 1, 1924: 65ff., part; Beal, U. S. Biol. Surv., Bull. No. 34, 1910:47).

Habitat—Within the Transition and Canadian life-zones, coniferous forest, whether continuous or broken, and whatever the kinds of constituent trees. These and the ground beneath them evidently meet all the requirements for nesting and subsistence. Locally, marginally, or sporadically, other kinds of trees and their environs may be inhabited: golden oak, live oaks, laurel, and even eucalyptus. The occasional winter invasions of low country carry individuals at that season into all sorts of woodland, of artificial planting as well as native. At that season, too, wherever the birds go or remain, more of their foraging is done on the ground, even well out in open spots. But early spring sees returning restriction to shadowy places; intense summer sunshine is not to the liking of this jay.

Note—There seems no sufficient reason for using any separate subspecific name in connection with the slight darkening of color tones shown in birds toward the north, either in the coast belt of Humboldt and Del Norte counties, or in the Warner Mountains of Modoc County. The trend is in the direction of races the centers of whose differentiation lie much farther to the north and northeast. (For descriptions of this situation, see Stevenson, Condor, 36, 1934:72ff.; A. H. Miller, Condor, 43, 1941:261.)

Cyanocitta stelleri carbonacea Grinnell
Coast Steller Jay

Synonyms—Garrulus stelleri; *Cyanocorax stelleri*, part; *Cyanocitta stelleri*, part; *Cyanura stelleri*, part; *Cyanura stelleri frontalis*, part; *Cyanocitta stelleri frontalis*, part; Steller Jay, part; Sierra Jay, part; Blue-fronted Jay, part; Coast Jay; Southern Coast Steller Jay.

Status—Resident. Varying in numbers locally from uncommon to, for a jay, abundant. Numbers appear to have held their own nearly everywhere, despite hunters' actively expressed antipathy.

Geographic range—Central segment of coast belt; San Francisco Bay region, from, and including, Marin County, south to southern Monterey County; east to include, sparsely, Mount Diablo, Contra Costa County, Mount Hamilton Range, Santa Clara County, and Gabilan Mountains to Laguna Mountain, San Benito County. In these interior areas, the birds are restricted to cool, wooded canyons or shaded slopes, and the general distribution is therefore "spotty." Life-zone, chiefly Transition. Altitudes of occurrence extend from near sea level, as on the coast of Santa Cruz County, up at least to 5600 feet, on Santa Lucia Peak, Monterey County (H. G. White MS). For important account of the restricted distribution of this race, see Mailliard, Condor, 24, 1922:127ff. In this article, the probable effectiveness is suggested of the barrier, to the northward, of the east-west stretch of open, originally treeless country in northern Marin County and part of Sonoma County, from Tomales Bay to Napa Valley. Interbreeding of *carbonacea* with *frontalis* is likely infrequent in this direction. But to the south, from San Benito and southern Monterey counties to Ventura County, even though the population in that district is small, and the "colonies" far separated, intergradation between the same two races appears to be gradual and complete. Some published accounts, especially as bearing on distribution and habitat relations of this race, are: in Marin County (Mailliard, Condor, 2, 1900:64, 126, and Condor, 10, 1908: 134); Berkeley, Alameda County (von Bloeker, Condor, 37, 1935:289); Calaveras Valley, Santa Clara County (Carriger and Ray, Condor, 13, 1911:73, 74); Santa Cruz Mountains (Ray, Condor, 9, 1907:174, Condor, 10, 1908:219, 221, and Condor, 11, 1909:18, 21; and Orr, Amer. Midl. Nat., 27, 1942:321); San Francisco Bay region generally (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:101); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:30, 88); Monterey County otherwise (Chapman, Camps and Cruises, 1908:267; Pemberton and Carriger, Condor, 17, 1915:198); miscellaneous (Bendire, Life Hist. N. Amer. Birds, 2, 1895:365ff., part; Dawson, Birds Calif., 1, 1924:66ff., part).

Habitat—Typically, heavy evergreen woods, as consisting of coast redwood, Douglas spruce, Monterey and Bishop pines, cypress, madrone, laurel, or any of these mixed. A large amount of shade in spring and summer seems to be required by this jay; it is, then, a bird of gloom and seclusion. Interiorwards from the narrow coastal fog-belt, the few scattered "colonies" find such conditions afforded on north-facing walls of canyons clothed with dense live oak as well as, usually, laurel, or in the canyon bottoms overarched by laurel and alder. In winter, the birds spread out into more open types of country, but still adhere to wooded territory. The trees, and the ground immediately under them, apparently furnish all the requirements for subsistence and reproduction.

Cyanocitta stelleri diademata (Bonaparte)
Long-crested Steller Jay

Synonym—Long-crested Jay.

Status—Casual winter visitant to extreme southeastern border of State. One record: Colorado River valley near Blythe, Riverside County, February 23, 1935; flock seen and specimen taken [now no. 72522 Mus. Vert. Zool.] (Reis, Condor, 40, 1938:44).

Aphelocoma californica superciliosa (Strickland)
Interior California Jay

Synonyms—Cyanocitta superciliosa; *Cyanocorax californicus*, part; *Cyanocitta californica*, part; *Cyanocitta floridana californica*, part; *Aphelocoma floridana* var. *californica*, part; *Aphelocoma californica*, part; *Aphelocoma woodhousei*, part; *Aphelocoma californica immanis*; *Aphelocoma coerulescens immanis*; California Jay, part; California Ground Jay, part; California Valley Jay; Woodhouse Jay, part; Long-tailed Jay; Grinnell California Jay.

Status—Resident. As a rule, common. To some of the changes in conditions caused by human settlement, has responded favorably, with result that certain lowland areas not probably originally populated by this jay now carry goodly numbers.

Geographic range—Northern and central segment of State, east of humid coast belt, from Oregon line southeast to include southern rim of San Joaquin Valley and eastern base of extreme southern Sierra Nevada. At north, extends east to Nevada line as far south as Little Truckee River and Independence Lake, Nevada County. Some marginal stations of occurrence westwardly are: Yreka, in Shasta Valley, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:77, 92); Scott River, Siskiyou County, and Helena, Trinity County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:382; Swarth, Univ. Calif. Publ. Zool., 17, 1918:415); Lower Lake, Lake County (Swarth, *op. cit.*: 416); Vacaville, Solano County (Swarth, *loc. cit.*). Southernmost localities of occurrence: Caliente and Tehachapi, Kern County (Swarth, *op. cit.*:415; Mus. Vert. Zool.). Along the east slope of the Sierra Nevada there are scattered records from Walker Pass, Kern County, north to the head of Owens River (A. K. Fisher, N. Amer. Fauna No. 7, 1893:70). Some of the sight records from this region may be of *A. c. woodhousei*, but as far north as the vicinity of Kearsarge Pass, Inyo County, breeding birds (Swarth, *loc. cit.*; Mus. Vert. Zool.) are referable to *A. c. superciliosa*. Another way of designating the range of this race is to say that in maximum numbers it occupies almost the entire circumference and parts of the floor of the Great Valley of California (Sacramento plus San Joaquin), with spill-over northeastwardly to take in parts of Great Basin plateau region and westwardly into certain valleys among the inner northern Coast Ranges. Life-zone typically Upper Sonoran; enters Transition and Lower Sonoran marginally or locally. Altitudes of known breeding extend from near sea level, as in Solano County, up to 7000 feet, in western Inyo County. Some published articles, additional to these cited above, which bear importantly on distribution and natural history of this subspecies are: Modoc, Tehama and Lassen counties (Grinnell, Condor, 20, 1918:190; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:310; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:296); casual in autumn and spring at Summit, Placer County, and at Lake Tahoe (Belding, Land Birds Pac. Dist., 1890: 110; Ray, Condor, 20, 1918:71); Davis, Yolo County, etc. (Emlen, Condor, 39, 1937: 192ff.); Stockton, San Joaquin County (Sampson, Condor, 34, 1932:140); Angels

Camp, etc., Calaveras County, "jay shoots" (Erickson, Condor, 39, 1937:112; Hooper, Condor, 40, 1938:163); Yosemite section (Grinnell and Storer, Animal Life Yosemite, 1924:387); Raymond, Madera County (Grinnell, Condor, 13, 1911:109); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:66); Kaweah River valley, Tulare County (Grinnell, Condor, 38, 1936:80); vicinity of Walker and Tehachapi passes, in Kern County, and localities in Inyo County (Fisher, *loc. cit.*, part).

Habitat—Essentially, mixed woodland and chaparral. This is typically represented in the great Upper Sonoran belt of "blue" vegetation, on foothills and lower mountain slopes, composed in part of scrub oak, buck-brush, gray-leafed manzanitas, blue oak, digger pine, interior live oak, knob-cone pine. An extension of this sort of habitat into the lowlands brings in stream-bottom willow-thickets, cottonwood, wild grape, elderberry, valley oak; on the Modoc plateau, willow-thickets and tracts of juniper and mountain mahogany. Habitat of this general aspect affords widely varying sources of vegetable food (nuts and fruits, made long-continuing by reason of this bird's well-developed storing habits), as also, on and in the ground, insect food. Ground-foraging is a conspicuous occupation, but seems to be carried on by the birds most "comfortably" within but a few yards of some sort of cover, into which they can take quick refuge in emergency. The most frequent association almost throughout its range is of this jay with oak trees of one kind or another; the acorns of these furnish the most reliable plant food-source, and the trees themselves furnish, also, indirectly, animal food, shelter, safety, and suitable nesting sites. Approximations to these conditions, adequate in degree to support local populations of the birds are now found in human-occupied territory, especially in orchard districts where nut-bearing trees are cultivated.

Note—For use of name *superciliosa* for this subspecies, see van Rossem, Trans. San Diego Soc. Nat Hist., 7, 1933:345.

Aphelocoma californica oocleptica Swarth
Northwestern California Jay

Synonyms—Cyanocitta californica, part; *Aphelocoma californica*, part; *Aphelocoma coerulescens oocleptica*; California Jay, part; Nicasio Jay; Swarth Jay; Swarth California Jay.

Status—Resident. Common, even "abundant," southerly; but more and more interrupted in distribution, and local numbers fewer, toward northern limit of range.

Geographic range—Northwestern coast strip from Del Norte and Humboldt counties south through Marin County to Golden Gate, and, on east side of San Francisco Bay, through Alameda and Contra Costa counties to Mount Diablo. Life-zones Upper Sonoran and Transition; altitudes of occurrences extend from close to sea level up to 4500 feet, as on Mount Sanhedrin, Mendocino County. Northernmost record station, 6 miles east Smith River, Del Norte County (Mus. Vert. Zool.). Some eastern stations for this race north of San Francisco Bay are: vicinity of Ruth, Trinity County (Mus. Vert. Zool.; Mount Sanhedrin (as above; Mus. Vert. Zool.); near Benicia and Cordelia, Solano County (Stoner, Condor, 30, 1937:133; Mus. Vert. Zool.). There is a sight record (Gruber, Zeitschr. Gesammte Ornith., 1, 1884:17) of a California Jay, probably of this race, from the Farallon Islands. Other references bearing on distribution or natural history: Del Norte and Humboldt counties (W. K. Fisher, Condor, 6, 1904: 51; Mailliard, Condor, 18, 1916:199; Clay, Condor, 19, 1917:25; Jewett and Gabrielson, Murrelet, 15, 1934:50); Mendocino, Lake and Napa counties (McGregor, Nidolo-

gist, 3, 1896:130; J. Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919:294, 296, part); Marin County (J. Mailliard, Condor, 2, 1900:58, 64, 126, Condor, 6, 1904:94, and Condor, 34, 1932:189; J. W. Mailliard, Condor, 14, 1912:42, part); Alameda County (H. R. Taylor, Condor, 2, 1900:45; Cohen, Condor, 3, 1901:185; Storer, Condor, 21, 1919:214; von Bloeker, Condor, 37, 1935:289); Contra Costa County (Leach, Condor, 29, 1927:234); in general (Bendire, Life Hist. N. Amer. Birds, 2, 1895:374, part; Beal, U. S. Biol. Surv. Bull., No. 34, 1910:50, part; Swarth, Univ. Calif. Publ. Zool., 17, 1918:411, 414; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:101).

Habitat—Interrupted woodland; mixed trees and brushland. Present in greatest numbers in localities in which live oaks grow, these and the ground beneath or near by providing food and shelter throughout the year, and an instinctively desired kind of nest site for the breeding season. However, other plants may serve in one or another of these ways: willow, elderberry, hazel, spruce, and larger brush plants, such as ceanothus and coffee berry.

Aphelocoma californica californica (Vigors)
Southern California Jay

Synonyms—Corvus ultramarinus; *Garrulus ultramarinus*; *Garrulus californicus*; *Cyanocitta californica*, part; *Cyanocorax californicus*, part; *Aphelocoma californica*, part; *Aphelocoma floridana* var. *californica*, part; *Cyanocitta floridana* var. *californica*, part; *Aphelocoma californica obscura*; *Aphelocoma coerulescens californica*; Ultramarine Jay; Blue Jay; California Jay, part; California Ground Jay, part; Belding Jay.

Status—Resident. Common to abundant. With human settlement of open valley lands, has probably come to occupy more territory than originally; hence aggregate numbers, despite some human dislike of these birds actively expressed, probably now greater than 100 years ago.

Geographic range—Central and southern coast district, almost entirely west of San Joaquin Valley and western margins of southeastern deserts, from south side of Golden Gate in San Francisco and from eastern Santa Clara County southeast to Mexican boundary in San Diego County. Life-zone, essentially Upper Sonoran; but birds breed locally in Transition and also Lower Sonoran. Altitudes of nesting extend from near sea level, as in many coastal neighborhoods, up to at least 6000 feet, as in San Jacinto Mountains; while postbreeding vagrancy has carried birds up to 8500 feet, as on Mount Pinos, Ventura County. (See Swarth, Univ. Calif. Publ. Zool., 17, 1918: 410ff.; Willett, Pac. Coast Avif. No. 21, 1933:116.) The literature pertaining to this race of jay is extensive; a few citations are here given as representing range, from north to south: San Francisco (Ray, Condor, 8, 1906:43); San Mateo County (Ray, Osprey, new ser., 1, 1902:25; Orr, Amer. Midl. Nat., 27, 1942:321); Los Gatos, Santa Clara County, and Santa Cruz, Santa Cruz County, etc. (Bendire, Life Hist. N. Amer. Birds, 2, 1895:377, part); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:28, 31, 88); San Benito County (J. W. Mailliard, Condor, 14, 1912:42, part; H. C. Bryant, Calif. Fish and Game, 7, 1921:115); Los Angeles County (Woods, Condor, 34, 1932:238; Sumner and Cobb, Condor, 30, 1928:317); Orange County (Robertson, Condor, 33, 1931:204); southern border of Mohave Desert, in San Bernardino County (Hanna, Condor, 38, 1936:39); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:84); Joshua Tree National Monument and

Morongo Valley, San Bernardino County (C. A. Harwell MS); San Diego County (F. A. Merriam, Auk, 13, 1896:120; Sharp, Condor, 9, 1907:88); in general (Belding, Land Birds Pac. Dist., 1890:110, part; A. K. Fisher, N. Amer. Fauna No. 7, 1893:70, part; Beal, U. S. Biol. Surv., Bull. No. 34, 1910:50, part; Dawson, Birds Calif., 1, 1924:44ff.).

Habitat—Primarily, the Upper Sonoran chaparral belt; more narrowly, those portions of that belt that possess more or less mixture of trees with the chaparral plants. Canyons and ravines lined with live oaks and with "pure" chaparral or some open ground on their upper walls present the most typical picture for this jay. In other words, a mixture of oak trees, brush-plants or thickets, and some bare ground meets best all its requirements—open ground and plant growths for foraging, thicket-like tangles near the ground for emergency refuge and night roosting, close branch-work and foliage of large bushes and trees for nest sites. Satisfying simulations of such a set-up are afforded in suburban districts. Food for such an omnivorous animal as the California Jay, in a climate of tempered winters, does not seem to be the limiting factor for spatial spreading, or for limiting population size, that the factors of available cover and the right kind of nest site do.

Aphelocoma californica woodhouseii (Baird)
Woodhouse California Jay

Synonyms—*Aphelocoma woodhouseii*, part; *Aphelocoma coerulescens woodhouseii*; Woodhouse Jay, part.

Status—Resident. Locally, rare or fairly common, to decidedly "common," at least in some years.

Geographic range—Great Basin mountain ranges, east of Sierra Nevada, from Mono County south through Inyo County to extreme eastern San Bernardino County. The mountains known to be included are: those east of Mono Lake, and the White, Inyo, Grapevine, Argus, Coso, Panamint, Kingston, Clark and Providence (the latter including the "New York Mountains") ranges. Interbreeds with *A. c. superciliosa* along eastern slopes of Sierra Nevada in Inyo County (Mus. Vert. Zool.). Altitudinal extremes, for breeding-season occurrence, 4500 feet (in Providence Mountains) and 7500 feet (at Waucoba Pass, Inyo Mountains). Life-zone, essentially Upper Sonoran. Chief non-systematic literature: Panamint Mountains, etc. (A. K. Fisher, N. Amer. Fauna No. 7, 1893:69); Providence and New York mountains (Stephens, Condor, 5, 1903: 102; Hollister, Auk, 25, 1908:460). Autumnal vagrancy has carried groups or individuals somewhat out of breeding bounds: Williams Butte, west of Mono Lake, Mono County, September 21 and 22, 1915 (Grinnell and Storer, Animal Life Yosemite, 1924: 392); near Carroll Creek at 8500 feet, west of Owens Lake, Inyo County, September 7, 1911 (Mus. Vert. Zool.); Keeler, east side Owens Lake, Inyo County, September 25, 1917 (Mus. Vert. Zool.); Death Valley, Inyo County, October 19, 1933 (Grinnell, Condor, 36, 1934:68).

Habitat—Normally delimited by presence versus absence of piñon and juniper, these two xerophilous trees usually as forming mixed growth. These trees seems to furnish the basic year-long requirements for this jay, as regards food, shelter and nesting site. Also frequents willow thickets in canyon bottoms.

Note—Subspecific status of the Woodhouse California Jay has been dealt with by Swarth (Univ.

Calif. Publ. Zool., 17, 1918:417), Dawson (Birds Calif., 1, 1924:64), Linsdale (Condor, 40, 1938:36), and others. More conclusive than any of the partial evidence discussed by these authors are samples of a mixed, interbreeding population recently collected on the east slopes of the southern Sierra Nevada. Distinct as the two forms are, they evidently interbreed and presumably are fully fertile. Details of this situation and other taxonomic problems in this genus are the subject of revisionary studies now in progress (by F. A. Pitelka) and cannot be properly taken up in this writing. The inclusion of the whole group of California Jays in the same species with *A. coerulescens* (A.O.U. Check-list Supplement, Auk, 61, 1944:453) of Florida seems to represent a dubious guess that these two fully differentiated and widely separated forms would interbreed if thrown together. They might react as species, and we prefer to await a fuller presentation of the case before altering the classification. One should keep in mind such instances as the similar *Dryobates nuttallii* and *D. scalaris* which meet and fail to interbreed.

Aphelocoma insularis Henshaw
Santa Cruz Island Jay

Synonyms—Cyanocitta floridana var. *californica*, part; *Aphelocoma coerulescens insularis*; California Ground Jay, part; Santa Cruz Jay; Island Jay.

Status—Resident. Common; some observers say "abundant."

Geographic range—Exclusively, Santa Cruz Island, of Santa Barbara group. Life-zone, Upper Sonoran. Chief references furnishing life history information: Blake, Auk, 4, 1887:329; Beck, Bull. Cooper Ornith. Club, 1, 1899:6; Mailliard, Bull. Cooper Ornith. Club, 1, 1899:42; Linton, Condor, 10, 1908:127; Howell and van Rossem, Condor, 13, 1911:209; Howell, Pac. Coast Avif. No. 12, 1917:68; Dawson, Jour. Mus. Comp. Ool., 1, 1920:26, fig., col. pl.; Dawson, Birds Calif., 1, 1924:58; Ross, Condor, 28, 1926:241; Willett, Pac. Coast Avif. No. 21, 1933:116.

Habitat—Woodland and brushland, of the open or interrupted type characteristic of the greater portion of Santa Cruz Island. Nesting, perching, roosting and foraging places are afforded by "heavy brush" or "large bushes" (so reported by some persons), ironwood, live oak, pines of two sorts, holly-leaf cherry, Christmas berry, manzanita; adjacent open ground provides for the terrestrial level of foraging. Evidently, the habitat requirements of this jay are quite like those of the closely related mainland species.

Note—Concerning the merging of this jay, specifically, with *A. californica*, see discussion of the related problem pertaining to *A. coerulescens* (under account of *A. c. woodhousei*); the same principles of action seem to apply here.

Pica pica hudsonia (Sabine)
American Black-billed Magpie

Synonyms—Pica hudsonica; *Pica pica*; *Pica melanoleuca hudsonica*; *Pica pica hudsonica*; Common Magpie; Black-billed Magpie; American Magpie.

Status—Resident. Locally common.

Geographic range—"Great Basin" area of State; that is, northeastern plateau, entirely east of Cascade-Sierra Nevada axis. Recorded as breeding south from Goose Lake, in Modoc County, as far as upper part of Owens Valley, near Bishop and Big Pine, in Inyo County; west at north from vicinity of Cowhead Lake and Fort Bidwell, near Nevada line in Modoc County, as far as vicinity of Bray, in eastern Siskiyou County. Altitudes of known nesting extend from about 4000 feet, in Owens Valley,

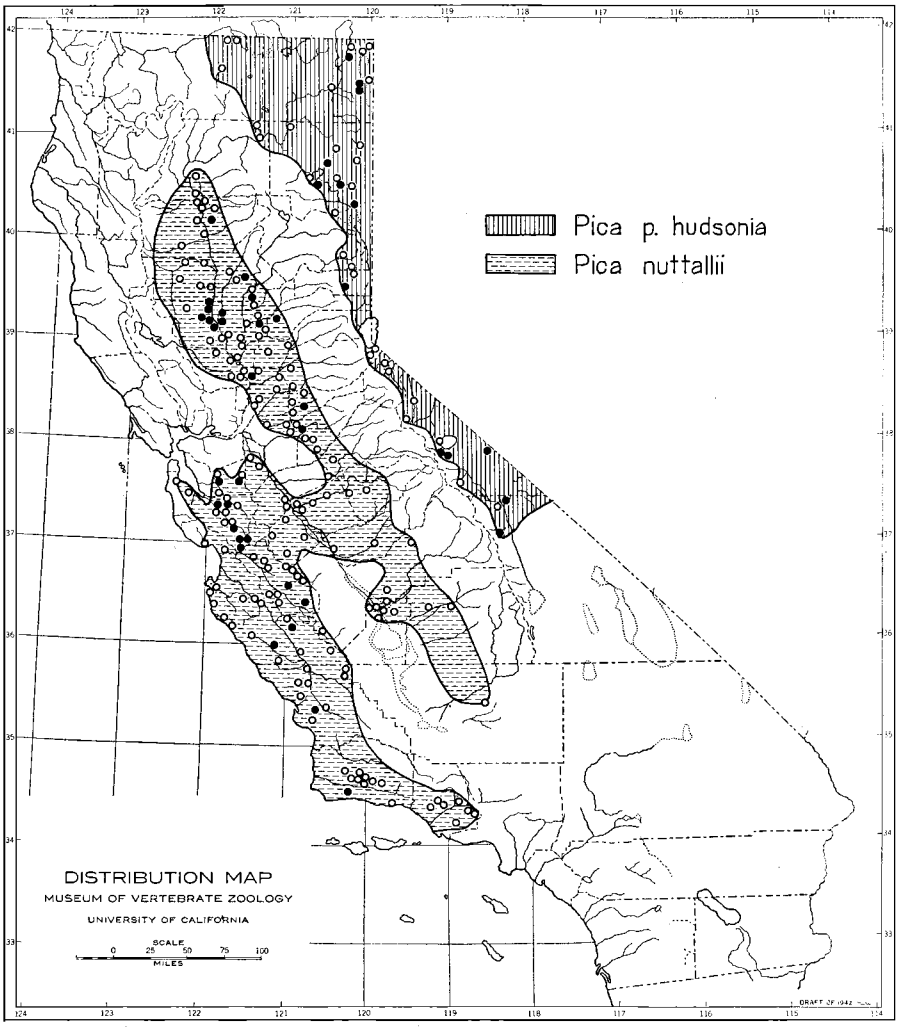

Fig. 23. Distribution of magpies, genus *Pica*, in California. Dots indicate localities represented by specimens; circles, localities reported in the literature, exclusive of vagrants.

up to at least 7000 feet, in vicinity of Mono Lake. Life-zones, Upper Sonoran and Transition. Individual vagrancy or sporadic eruption of whole companies carries birds out-of-bounds, westwardly and southward; examples: east side Shasta Valley, near Sheep Rock, Siskiyou County, September 29, 1898 (Merriam, N. Amer. Fauna No. 16, 1899:118); Summit, Placer County, September 30, 1875, and November 16, 1884 (Belding, Land Birds Pac. Dist., 1890:107); near Mount Lyell, 9600 feet, Tuolumne County, September 26, 1937 (Beatty, Yosemite Nature Notes, 16, 1937:86); Florence Lake, 7300 feet, Fresno County, one all of each winter, 1932-33 and 1933-34 (L. M. Lofberg, Condor, 35, 1933:198, and same, 36, 1934:217); Olancha, Inyo County, December 27 and 28, 1933 (A. H. Miller MS); Death Valley, Inyo County, general invasion, October 25 to December 29, 1919, also present October 21, 1933, to February

13, 1934 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:74; Grinnell, Condor, 36, 1934:68; Gilman, Condor, 37, 1935:241). Chief authorities: Siskiyou and Modoc counties (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:15, and same, 16, 1927: 309; Grinnell MS, 1938); northeastern Shasta County (Linsdale, Pac. Coast Avif. No. 25, 1937:24); Lassen County, from Eagle Lake eastward (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:298); Lake Tahoe (Ray, Auk, 20, 1903: 185); Mono Lake region (Grinnell and Storer, Animal Life Yosemite, 1924:376); in general (Dawson, Birds Calif., 1, 1924:31; Kalmbach, U. S. Dept. Agr., Tech. Bull. No. 24, 1927:1, 3, 4, 29; Linsdale, *op. cit.*: 22-24, 35ff., etc.).

Habitat—Within arid Great Basin area, chiefly stream and lake valleys where are afforded clumps or tracts of willow or of buffalo berry (*Shepherdia*), for refuge places and nest sites, with open ground in vicinity for foraging. Nesting or perching or hiding places otherwise may include extra large antelope-bushes (*Purshia*), trees of mountain mahogany, cottonwood and juniper. Foraging may extend to take in sage brush flats, where the bushes are of scattered manner of growth; but always the birds seem instinctively to keep within short flying distance of the more impenetrable type of thicket. However, open country rather than forest or woodland is preferred; the birds in flight apparently must keep to routes affording expansive view of terrain. Presence of water, through dry periods, is likely essential, not only for drinking but because the instinctive nest building technique requires in part the use of mud. Neighborhood of ranches, despite frequent human belligerency toward the birds, holds magpies, perhaps more particularly because of continuing food supply at "short" seasons. Omnivorous in food habits, the birds are widely resourceful as to food and fare well most of the year; at such times others of the factors above indicated dominate to restrict local occurrence.

Pica nuttallii (Audubon)
Yellow-billed Magpie

Synonyms—*Corvus pica*; *Corvus nuttallii*; *Pica melanoleuca*; *Cleptes nuttallii*; *Pica melanoleuca nuttallii*; *Pica caudata* var. *nuttallii*; *Pica pica nuttalli*; Nuttall Magpie; Nuttall Yellow-billed Magpie.

Status—Resident; extraordinarily sedentary. Locally common, even abundant. With some, perhaps in magnitude normal, fluctuations, has held its own, areally and probably as to aggregate numbers, remarkably well in face of heavy human settlement. Small retractions in range have occurred locally, as in San Francisco Bay counties (San Mateo, Santa Clara), and at extreme south, in Santa Barbara and Ventura counties.

Geographic range—Entirely west of Sierra Nevadan axis; chiefly floor and lower adjacent foothills of Sacramento and San Joaquin valleys, and valleys among Coast Ranges southeast from San Francisco Bay to and including Ventura County. There is no good record from coast belt north of San Francisco Bay, nor from San Diegan district south of extreme southwestern Los Angeles County. Northernmost limit of range, in vicinity of Redding, in head of Sacramento Valley, Shasta County; southernmost in San Joaquin Valley, base of Breckenridge Mountain, east of Bakersfield, in Kern County; southernmost in coast counties, formerly, Conejo Valley near Ventura-Los Angeles county line; recently, to Goleta, Santa Barbara County (Bond, Condor, 43, 1941:247). Life-zones, Upper and Lower Sonoran; altitudes of known nestings, from close to sea level up to 1800 feet, as in Carmel Valley, Monterey County; rarely higher as vagrants (Yosemite Valley, September 5, 1931, 4000 feet, E. Michael, Yosemite

Nature Notes, 10, 1931:85). There is a large literature for this bird, now completely summarized, and a great amount of new information in all respects added, in Linsdale's "The Natural History of Magpies" (Pac. Coast Avif. No. 25, 1937:234 pp., 29 ills.), to which monograph the enquiring reader is referred. A few of the preceding references of a general nature may perhaps usefully be cited here: nesting, etc. (Dawson, Birds Calif., 1, 1924:38; Bendire, Life Hist. N. Amer. Birds, 2, 1895:355); food (Kalmbach, U. S. Dept. Agr., Tech. Bull. No. 24, 1927:28); in Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:299); in Colusa County (Grinnell, Condor, 25, 1923:172); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:100); southern San Joaquin Valley (Tyler, Pac. Coast Avif. No. 9, 1913:65); Santa Barbara County to Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:116).

Habitat—Localities where are present broad expanses of open ground, of valley floors or hills of gentle slope, and large trees either scattering, in linear arrangement as where bordering stream courses, or as forming open park-like groves. The trees are temporary refuge, for roosting places, and for nesting sites of sufficiently safe situation; where such conditions are most favorable, marked colonial tendency is shown. Kinds of trees used most frequently are valley oak, blue oak, sycamore and cottonwood. For winter roosting, tracts of heavy willow growth may be sought out by the then notably gregarious birds as safest night-time havens. The needed terrestrial forage beat is now characteristically comprised in pasture lands, and it may extend locally to include cultivated fields and orchards. Although this magpie is omnivorous, food in adequate amount inclusive of large insects, seemingly, must be present all the way through the annual cycle to hold a local population. Aside from climate of the proper kind, a further probably essential factor in habitable environment is presence of accessible water in dry seasons, needed not only to drink but in certain phases of nest building; another is relatively gentle winds rather than regular, strong winds, which factor seems in itself to bar this magpie from certain otherwise suitable areas. The total of requirements for the Yellow-billed Magpie is thus distinctly different from that of the American Black-billed Magpie, as clearly demonstrated by Linsdale (*loc. cit.*); neither species would likely thrive for long within the range of the other.

Corvus corax sinuatus Wagler
American Holarctic Raven

Synonyms—Corvus corax; *Corvus catatotl*; *Corvus cacalotl*; *Corvus carnivorus*; *Corvus corax carnivorus*; *Corvus corax clarionensis*; American Raven; Raven; Mexican Raven; Western Raven; Colorado Raven; Clarion Island Raven.

Status—Resident. Locally common; more widely so formerly than now (1944); indeed, now scarce or absent in all settled parts of State. The humanly traditional feeling of hostility against "crows" includes also ravens, but it is weathered by that sagacious bird in amazing degree; there is little chance of extinction, despite its large size and conspicuousness of behavior and general aspect.

Geographic range—Phenomenally extensive; practically all parts of State, at least formerly, from most arid southeastern deserts to rainiest parts of northwest coast belt, and from Nevada line and Colorado River valley westward to outermost of the islands. Present centers of abundance lie in semi-arid hills and mountains around southern

(upper) end of San Joaquin Valley, on parts of Mohave Desert, on larger of Santa Barbara Islands, and along seacoast of north coast counties. Least numerous in heavily forested country and on higher, northern Sierra Nevada; but in summer and fall, foraging flocks or individuals are often observed up among the highest peaks, as at Cottonwood Pass, 11,000 feet, Inyo County (Grinnell MS). Nesting has been noted from below sea level, in Death Valley, up to 7500 feet, near Waucoba Pass, Inyo Mountains (both points in Inyo County). Breeding life-zones, from Lower Sonoran to Transition. The literature concerning ravens in California is large; a relatively few selections, as bearing most especially on distributional facts and factors: in general (Gambel, Proc. Acad. Nat. Sci. Phila., 1847:203; Bendire, Life Hist. N. Amer. Birds, 2, 1895:396; Dawson, Birds Calif., 1, 1924:1); Del Norte County, etc. (Ferry, Condor, 10, 1908: 42); Marin County (Cushing, Condor, 43, 1941:103); Farallon Islands (Barlow, Nidiologist, 2, 1895:166; *et al.*); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:102); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:66);McKittrick, Kern County (Pemberton, Condor, 27, 1925:35); Mohave Desert, etc. (A. K. Fisher, N. Amer. Fauna No. 7, 1893:70); Death Valley (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:75; Gilman, Condor, 37, 1935:242); Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:117); San Onofre, San Diego County (J. S. Dixon, Condor, 8, 1906:97); Santa Barbara Islands (Howell, Pac. Coast Avif. No. 12, 1917:69 [with summary of preceding literature]; Ross, Condor, 27, 1925: 172; Pemberton, Condor, 31, 1929:37).

Habitat—Inclusive of two important features: (1) great areas of open or semi-open terrain for foraging; (2) faces of cliffs, bluffs or sea-walls which provide niches for nests safe from quadrupeds. The cruising radius of the raven is many miles in extent; the bird is somewhat vulture-like in its method of scrutinizing ground for food; while omnivorous, it is more on the carnivorous side, bringing into its objective carrion of all sorts, living vertebrates of suitable sizes, and, in season, large insects, notably grasshoppers. The seashore provides a productive forage beat comparable to desert floor, open upland, or sequestered mountain meadow. While the nesting instincts require cliff sites as first choice, substitutes are afforded by trees (not commonly), deserted barns and windmills, and oil derricks.

Note—Willett (Auk, 58, 1941:246) in a preliminary report on variation in the raven shows that birds of the Great Central Valley and southwestern coast are as small as *C. c. clarionensis*. Birds elsewhere in the State apparently are larger, but perhaps are only intermediate either toward *C. c. sinuatus* or *C. c. principalis*. Inability at present to delimit the ranges of races within the State and doubt regarding actual identity of small California birds with those of Clarion Island, Mexico, leads us to continue use of the name *sinuatus* for all California birds until the races are better known.

Corvus brachyrhynchos hesperis Ridgway
Western American Crow

Synonyms—Corvus americanus; *Corvus ossifragus*; *Corvus caurinus*; *Corone americana*; *Corvus americanus caurinus*; *Corvus frugivorus*; *Corvus frugivorus caurinus*; *Corvus americanus hesperis*; *Corvus hesperis*; *Corvus brachyrhynchos*; *Corvus corone hesperis*; Common Crow; Fish Crow; American Crow; Western Crow; Northwestern Fish Crow; Western Fish-Crow; Northwest Crow; California Crow.

Status—Resident. Discounting for the factor of gregariousness, locally fairly common to better than common. Aggregate numbers seem, both from published records and

memory impressions, to remain fairly constant, this despite, on the one hand, general human belligerence toward this bird, expressed sporadically in crow shoots and even bombings of winter roosts, and on the other hand increase of suitable habitat in some agricultural areas.

Geographic range—Metropolises of it comprised in Great Central Valley, Tehama County south to Kern County, in southwestern coastal slope southeast to Mexican boundary, and in northern coast belt, north from Monterey County to Oregon line. Present also, though less numerous, in northeastern plateau region, whence wholly emigrant southward in autumn. In other words, absent or of but vagrant occurrence in heavily forested or mountainous country and on deserts. Subject to suitable habitat conditions, breeds in Lower Sonoran, Upper Sonoran and Transition life-zones; altitudes, from close to sea level, as around San Francisco and Monterey bays, up to 5000 feet, near Goose Lake, eastern Modoc County; but reported at Mono Lake, 6400 feet, June 3, 1919 (Dawson, Birds Calif., 1, 1924:16). Has been recorded sporadically from the Farallon Islands, in June, 1885, and May, 1887 (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:46), but from no other island. Southeast of Sierran axis has been recorded only as follows: Death Valley, Inyo County, April and October (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:76; Grinnell, Condor, 36, 1934:68; Gilman, Condor, 37, 1935:242); Brawley, Imperial County, winter of 1910-11 (van Rossem, Condor, 13, 1911:132). As relating to manner of occurrence and natural history of the crow in California, the following are some selected references: in general (Barrows and Schwarz, U. S. Dept. Agr., Bull. No. 6, 1895:21, 68, 84; Bendire, Life Hist. N. Amer. Birds, 2, 1895:405; Dawson, *loc. cit.*); winter distribution and habitat fully summarized (Emlen, Condor, 42, 1940:287ff.); Humboldt and Del Norte counties (W. K. Fisher, Condor, 4, 1902:133); Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:311); Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:301); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:103); Solano County, etc. (Emlen, Condor, 38, 1936:100, and same, 39, 1937:192; Stoner, Auk, 54, 1937:394); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:66); southwestern California (Willett, Pac. Coast Avif. No. 21, 1933:117).

Habitat—Notably restricted to valleys and rolling hills affording both extensive tracts of bare ground and tracts of woodland; two factors are clearly involved: (1) presence of large areas of open, chiefly alluvial ground producing food of both animal and vegetable nature in amounts and magnitude of items suited to a bird of such large size and of gregarious habits; (2) in the breeding season, trees for supporting nests, of such size as to put these out of reach of ground-prowling enemies and at the same time of such arrangement of branches as to provide firm foundation insuring against dislodgment by wind. Trees used for nesting by crows in California are known to be live oak, blue oak, Douglas spruce (in northwest coast belt), cottonwood, willow, sycamore, eucalyptus (latterly, in southwestern portion of State). Coastwise, from San Francisco Bay northward, the tide-flats and even sea-beaches are included in the open-ground type of forage beat. There is another possible factor for maintenance of a large population through the winter; namely, presence of a tract or grove of close-growing tall trees, for community night-roosting, situated within daily cruising radius of a surrounding, sufficiently large forage territory. (See also Emlen, *loci cit.*)

Cyanocephalus cyanocephalus (Wied)
Piñon Jay

Synonyms—Gymnokitta cyanocephala; *Gymnorhinus cyanocephalus rostratus*; Maximilian Jay.

Status—Resident within State, though subject to many irregular, local shiftings of population. Because persistently and conspicuously gregarious, where and when present at all, usually considered "common" or even "abundant."

Geographic range—As most nearly continuously resident, and probably if not surely breeding, parts of elevated Great Basin area, west to east base of Cascade-Sierra Nevada mountain system, and south along this system to vicinity of Walker Pass, Kern County; also south along all higher desert ranges as far as Providence Mountains, eastern San Bernardino County (Mus. Vert. Zool.); recurs in resident status in San Bernardino Mountains area, San Bernardino County, and on San Jacinto Mountains, Riverside County. Altitudes of known or probable nesting extend from 4500 feet on San Jacinto Mountains up to 7500 feet in Waucoba Pass, Inyo Mountains, Inyo County (Grinnell MS). Life-zone, characteristically arid Upper Sonoran; arid Transition invaded also where adjacent to Upper Sonoran. Some published accounts indicative of extent of normal geographic range as also of natural history are, as pertaining to localities from north to south: base of Mount Shasta and Tecnor, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:121; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:14); Straw, near Tule Lake, and Eagleville, Modoc County (Grinnell, Condor, 20, 1918: 190; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:312); east of Lassen Peak, in Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:303); eastern part of Yosemite section, in Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:397); White, Inyo, Grapevine, Panamint, Argus and Coso mountains, in Mono and Inyo counties (A. K. Fisher, N. Amer. Fauna No. 7, 1893:72); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:85; Willett, Pac. Coast Avif. No. 21, 1933:118); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:263; Cowles, Condor, 34, 1932:263; Willett, *loc. cit.*). Flocks or individuals of this species are prone to wander in fall and winter west and south of breeding areas; some of such sporadic occurrences are: Eureka, Humboldt County, February 2, 1912 (Mus. Vert. Zool.); Grass Valley, Nevada County, December, 1914, to May 25, 1915 (Richards, Condor, 26, 1924:101); Clipper Gap, Placer County, in December, 1908 (Adams, Placer Co. Inst. Res., 1909:36); Summit, Nevada County, November 14, 1884, September 25 to 30, 1885 (Belding, Land Birds Pac. Dist., 1890: 116); Lake Tahoe, September, 1889 (Belding, *loc. cit.*), and June 5, 1911 (Ray, Condor, 20, 1918:73); Berkeley, Alameda County, October 5, 1911 (Grinnell, Condor, 16, 1914:33); Pacific Grove, Monterey County, December, 1895 (Mailliard, Auk, 15, 1898:198); Paso Robles, San Luis Obispo County, April 1, 1902 (Calif. Acad. Sci.); Santa Barbara, October 9, 1914 (Dawson, Condor, 18, 1916:28); Los Angeles, December to March, 1914-15 (L. H. Miller, Condor, 17, 1915:166); Pasadena, fall of 1894 (Gaylord, Nidologist, 3, 1896:106) and September 1 to 21, 1895 (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:32); San Bernardino, October 4 and 6, 1914 (Wall, Condor, 17, 1915:59); San Onofre, San Diego County, in March (Willett, *loc. cit.*); Laguna Mountain, San Diego County, February 21, 1877 (Willett, *loc. cit.*).

Habitat—Essentially characterized by presence of piñon and juniper, the seeds of the former, at least, or of some sort of conifer, supplying an apparently necessary component of the diet in the year-long program. The species is omnivorous, however, and

foraging for insects and other food often carries the flocks far out onto sage flats, over grasslands, and into open-growing forests of entirely different character from the piñon-juniper type. The nesting needs of the Piñon Jay, however, seem to be met exclusively by the latter. We cannot help but infer that the dry, Great Basin type of climate has vitally to do with the geographic restriction observed.

Note—Existence of three races of the Piñon Jay in the western United States (Brodkorb, Occ. Papers Mus. Zool. Univ. Mich. No. 332, 1936:1-3) will, if substantiated, affect nomenclatural usage for the species in California. The stability of the characters ascribed to these races is not great enough in material available to us from Colorado, Arizona, Nevada, and California to warrant our use of new names at this time, although there is apparently some geographic variation. We follow the A.O.U. code of nomenclature as a basis for continuing the generic name *Cyanocephalus* as against *Gymnorhinus*.

Nucifraga columbiana (Wilson)
Clark Nutcracker

Synonyms—Picicorvus columbianus; American Nutcracker; Clarke Crow; Fremont Crow; Jackdaw.

Status—Resident. Common; appraised as even "abundant" locally. While main population remains on breeding range through winter, despite boreal conditions, there are frequent though irregular wanderings which carry individual birds or small companies in late summer and autumn far and wide, to lowest altitudes and farthest confines of State.

Geographic range—Roughly, all the higher mountain masses, those which reach an altitude of 8000 feet or more. In detail, from north to south: Siskiyou and Scott mountains, in Siskiyou and Trinity counties, to South Yolla Bolly Mountain, in extreme western Tehama County; Warner Mountains, Modoc County; Cascade-Sierra Nevada system, from Mount Shasta, Siskiyou County, and Lassen Peak, Shasta County, south interruptedly to vicinity of Sirretta Peak, Tulare County; White, Inyo and Panamint mountains, in Mono and Inyo counties; Mount Pinos, Ventura County; San Gabriel Mountains, Los Angeles County; San Bernardino Mountains, San Bernardino County; San Jacinto and Santa Rosa mountains, Riverside County. The records from Laguna Mountains, San Diego County (Willett, Pac. Coast Avif. No. 7, 1912:69, and Fortiner, Condor, 22, 1920:190) may or may not indicate regular residence of the species there. Life-zones, Hudsonian and Canadian; nesting has occurred also in arid Transition. Altitudes of visitation extend up to over 14,000 feet, over summits of highest mountains; for example, Mount Langley, Tulare County (Dawson, Birds Calif., 1, 1924: 23ff.); also wanders down to below sea level, as in Death Valley, Inyo County (Gilman, Condor, 38, 1936:41, and same, 39, 1937:90). Some westward instances of sporadic occurrence are: Point Reyes, Marin County, November 19, 1900 (Mailliard, Condor, 3, 1901:16); Mount Tamalpais, Marin County, October 22, 1922, and vicinity of Hayward, Alameda County, February 16, 1923, and March 29, 1924 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:103); Santa Cruz, Santa Cruz County, November, 1935 (C. P. Streator MS; Mus. Vert. Zool.); Pacific Grove, Carmel and Point Lobos, Monterey County, November 2, 1919, to "last week in April," 1920, February 2 to 8, 1923, and October 12, 1935 (W. K. Fisher, Condor, 22, 1920:36, and *ibid.*, 25, 1923:106; J. L. Schlesinger, Condor, 22, 1920:41; Mailliard, Condor, 22, 1920:160; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:90); near Pinnacles, San

Benito County, September 10, 1935 (Unglish, Condor, 39, 1937:39); Coalinga, southwestern Fresno County, October 15, 1935 (J. R. Arnold, Condor, 39, 1937:33); Santa Cruz Island, October, 1919, to April, 1920 (Hoffmann, Condor, 22, 1920:187; Dickey and van Rossem, Condor, 25, 1923:127); Santa Barbara and vicinity, January 28, 1917, October 15, 1919, September 24 to October 16, 1935 (Dawson, *loc. cit.*; Rett, Condor, 40, 1938:125); at sea off Los Angeles, "in September," 1919 (Ferris, Condor, 22, 1920: 39). Southeastwardly, near Indio, October 17 and 18, 1919, and near Coachella, September 24, 1935, on Colorado Desert, Riverside County (Esterly, Condor, 22, 1920:40; Clary and Clary, Condor, 38, 1936:119). The near coincidence of some of these occurrences at far separated points would seem to indicate a general exodus of numbers of the birds in certain years from their regular range. Some noteworthy accounts of the species other than as included in above citations: Mount Shasta (Merriam, N. Amer. Fauna No. 16, 1899:119); Lassen Peak section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:304); central Sierra Nevada (Belding, Land Birds Pac. Dist., 1890:115; Price, Condor, 6, 1904:73; *et al.*); Yosemite National Park (Muir, Our National Parks, 1901:228; Grinnell and Storer, Animal Life Yosemite, 1924:393); Florence Lake, Fresno County, habits (L. M. Lofberg, Condor, 30, 1928:308, Condor, 31, 1929:201, and Condor, 35, 1933:243); near June Lake, Mono County, nesting at 8000 feet (J. B. Dixon, Condor, 36, 1934:229); desert mountain ranges (A. K. Fisher, N. Amer. Fauna No. 7, 1893:72); San Bernardino Mountains, etc. (Bendire, Life Hist. N. Amer. Birds, 2, 1895:419; Grinnell, Univ. Calif. Publ. Zool., 5, 1908:84; Willett, Pac. Coast Avif. No. 21, 1933:118).

Habitat—Typically, upper forest belt, where timber becomes relatively small of stature and interrupted by rocky slopes and mountain meadows. Prime dependence of this bird is upon seeds of various conifers, white-bark, limber, foxtail, Jeffrey and yellow pines. On the east declivity of the central and southern Sierra Nevada, the birds regularly go down-mountain for the nuts of the piñon. However, the nutcracker is almost as omnivorous as the crow; and its foraging leads into all sorts of avian environments short of aquatic. For nesting, coniferous trees, usually of rather small size such as juniper, appear to be required. It is difficult to discern any external factor restricting this bird to its characteristic breeding zone other than cold winter and spring temperature, and the apparent need of pine seeds as a component of its diet.

Parus atricapillus occidentalis Baird
Oregon Black-capped Chickadee

Synonyms—Parus carolinensis (?); *Parus occidentalis*, part (?); *Parus atricapillus* (?); *Penthestes atricapillus occidentalis*, part; Western Titmouse, part (?); Western Chickadee; Oregon Chickadee, part.

Status—Resident. Population small and far spread.

Geographic range—Northwestern section of State, in western Siskiyou, Humboldt and probably Del Norte counties. Life-zone, Transition. Altitudes of known occurrence, near sea level up to about 3000 feet. Attested records: Eureka, Humboldt County, two specimens, March 31, 1920, and October 23, 1924 (J. M. Davis, Condor, 26, 1924: 105, and Condor, 42, 1940:222); Scott River, 6 miles northwest of Callahan, Siskiyou County, June 10 and 13, 1911, four specimens, two of these partly grown young (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:387; Grinnell, Pac. Coast Avif. No. 11,

1915:163); Seiad Valley, June 19, 1935, and Klamath River, 2 miles south of Hornbrook, May 28, 1935, Siskiyou County (Mus. Vert. Zool.). This chickadee was attributed to California several times in earlier years, in all cases most likely through misidentification of *P. gambeli*, as shown by Belding (Condor, 7, 1905:82).

Habitat—Chiefly deciduous timber, especially willows and alders, along large or small water courses.

Parus gambeli abbreviatus (Grinnell)
Short-tailed Mountain Chickadee

Synonyms—Parus montanus, part; *Parus occidentalis*, part; *Penthestes gambeli*, part; *Parus gambeli*, part; *Parus atricapillus occidentalis*, part; *Penthestes gambeli baileyae*, part; *Parus gambeli gambeli*; *Penthestes gambeli gambeli*, part; *Penthestes gambeli abbreviatus*; Rocky Mountain Titmouse; Mountain Titmouse, part; Western Titmouse, part; Mountain Chickadee, part; Gambel Chickadee; Oregon Chickadee, part; Bailey Mountain Chickadee, part; Short-tailed Chickadee.

Status—Resident, save for slight or partial and irregular movements down-slope in fall and winter. As to numbers, fairly common to abundant, naturally varying with locality according to subsistence available.

Geographic range—The main Cascade-Sierra Nevada mountain chain, from Piute Mountains, Kern County to Oregon line, together with, at north, suitable country eastward to Nevada line, and westward toward coast to include Siskiyou, Trinity, and high inner coast ranges such as South Fork Mountain and Horse Mountain south of Hoopa, Humboldt County, south to Yolla Bolly Mountain and Mount Sanhedrin, Mendocino County, and Snow Mountain, Colusa County (Mus. Vert. Zool.; Grinnell, Univ. Calif. Publ. Zool., 17, 1918:506, 510, 511; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919: 295). Not found in any part of humid coast belt proper, save as a rare straggler; for example, at Eureka, Humboldt County, December 6, 1924 (J. M. Davis, Condor, 35, 1933:119). Birds in extreme southern Sierra Nevada intergradient toward *P. g. baileyae*. Breeding life-zones, Transition up into Hudsonian; most numerous in Canadian. Altitudes of known occurrence in summer, 2400 feet, as at Hayfork, Trinity County, up to 11,000 feet, as at Cottonwood Lakes, Inyo County, southern Sierra Nevada. Additional records of distributional significance are, beginning at northwest: Siskiyou Mountains, west at least to Horse Creek, Siskiyou County (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:13; Mus. Vert. Zool.); Trinity Mountain region (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:387; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:94); Yolla Bolly Mountain and Mount Sanhedrin, Mendocino County (Ferry, Condor, 10, 1908:43; Stone, Proc. Acad. Nat. Sci. Phila., 1904:585); Warner Mountains, etc., Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:335); Mount Shasta (Merriam, N. Amer. Fauna No. 16, 1899:132); Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:305); Gold Lake, Plumas County (M. W. Wythe, Condor, 29, 1927:63); Cisco, Placer County (Bassett, Condor, 25, 1923:70); Lake Tahoe district (Barlow, Condor, 3, 1901:111, 183; Keyes, Condor, 7, 1905:43; Ray, Auk, 20, 1903:192, and Condor, 20, 1918:71, 73, 76); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:574); western Mono County (Rowley, Condor, 41, 1939:250); Florence Lake, Fresno County (L. M. Lofberg, Condor, 30, 1928:309); in general (Dawson, Birds Calif., 2, 1924:611ff., part).

Habitat—Coniferous forests, especially those of more open type; also the margins

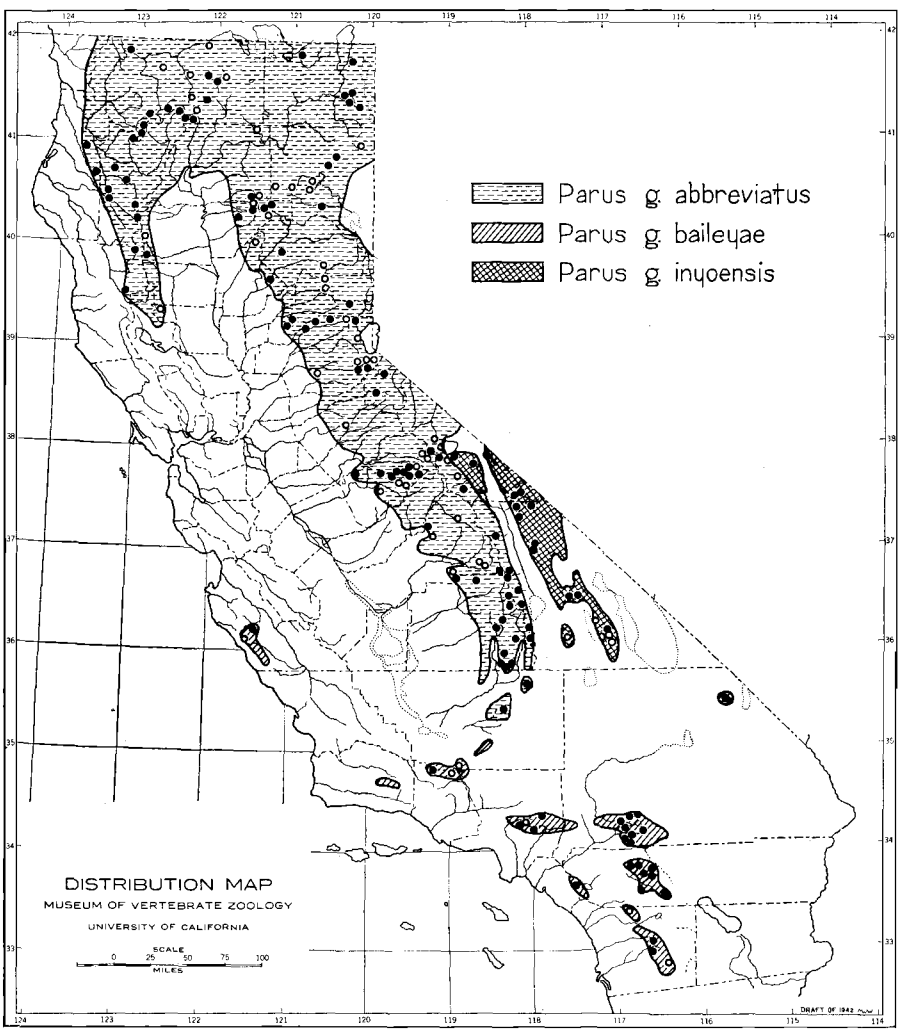

Fig. 24. Distribution of the subspecies of Mountain Chickadee, *Parus gambeli*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature; excluded are winter vagrants.

of dense stands. Kinds of trees known to be frequented are, perhaps in order of use, lodgepole pine, yellow pine, white fir, sugar pine, Jeffrey pine, red fir, alpine hemlock, silver pine, and juniper. Foraging is conducted 6 to 50 feet above the ground, about the ends of living branches and through the dead twiggery within. Deciduous trees, such as black oak and aspen, may be included in the daily forage beat and are even used for nesting. Successful breeding requires the presence of proper-sized cavities, usually in dead trees, snags or stumps, as dug by woodpeckers or formed through decay; cavities selected are usually those less than twelve feet above the ground.

Parus gambeli inyoensis (Grinnell)
Inyo Mountain Chickadee

Synonyms—Parus gambeli, part; *Penthestes gambeli*, part; *Penthestes gambeli baileyae*, part; *Penthestes gembeli inyoensis*; Mountain Chickadee, part; Bailey Mountain Chickadee, part.

Status—Resident. Locally common.

Geographic range—Higher mountain masses lying east and southeast of Sierra Nevada; in other words, southern Great Basin ranges. In detail, from vicinity of Mono Craters and eastward to include White Mountains, in Mono County, south along Inyo Mountains to and including Grapevine, Panamint and Argus mountains, in Inyo County, and Clark Mountain, eastern San Bernardino County. Life-zones, high Upper Sonoran to Hudsonian. Altitudes, 6500 feet up to 11,500 feet on White Mountains. Descends to at least 5600 feet in autumn as near Benton, Mono County. Chief references: A. K. Fisher, N. Amer. Fauna No. 7, 1893:139 (nesting on Argus Mountains, etc.); Grinnell, Univ. Calif. Publ. Zool., 17, 1918:509 (distribution); A. H. Miller, Condor, 42, 1940: 162 (southern outpost).

Habitat—Coniferous trees, from piñons, even where fairly open, up to stunted limber pines at timber line (on White Mountains); also tracts of mountain mahogany.

Parus gambeli baileyae Grinnell
Bailey Mountain Chickadee

Synonyms—Parus montanus, part; *Parus gambeli*, part; *Penthestes gambeli*, part; *Penthestes gambeli baileyae*, part; *Penthestes gambeli gambeli*, part; Rocky Mountain Chickadee; Mountain Titmouse, part; Mountain Chickadee, part; Bailey Chickadee.

Status—Resident. Usually common, sometimes abundant. There is a slight, irregular, down-mountain spread of individuals in fall and winter; the low country is occasionally reached.

Geographic range—Higher mountains of southern California. In detail, southeast from high parts of Santa Lucia Mountains, Monterey County, interruptedly, to Tejon Mountains, Kern County, and through mountainous parts of intervening counties as far as Cuyamaca and Laguna mountains, in San Diego County. Breeding life-zones, Transition, Canadian and Hudsonian; altitudes of known nesting, 3000 feet in Santa Lucia Mountains up to 10,600 feet on San Bernardino Peak, San Bernardino County. Main published locality ascriptions, especially as also presenting facts on natural history: Mount Pinos and Frazier Mountain, Ventura County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:139, part; Grinnell, Auk, 22, 1905:391; Miller and Benson, Condor, 32, 1930:103); Santa Lucia Mountains, Monterey County (Jenkins, Condor, 8, 1906:129; Pemberton and Carriger, Condor, 17, 1915:198; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:29); Santa Ynez Mountains, Santa Barbara County, but reported only in winter (Dawson, Condor, 18, 1916:29); San Gabriel Mountains, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:49; Edwards, Condor, 16, 1914:208, 210; Willett, Pac. Coast Avif. No. 21, 1933:119); San Bernardino Mountains (Morcom, Ridgway Ornith. Club, Bull. No. 2, 1887:55; Grinnell, Univ. Calif. Publ. Zool., 5, 1908:124; Storer, Condor, 31, 1929:227); San

Jacinto and Santa Rosa mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:311); Santa Ana Mountains, Orange County (Grinnell, Pac. Coast Avif. No. 11, 1915:163); Palomar Mountain, San Diego County (McGregor, Bull. Cooper Ornith. Club, 1, 1899:68); Cuyamaca, Volcan and Laguna mountains, San Diego County (Belding, Land Birds Pac. Dist., 1890: 241, part; Willett, *loc. cit.*). Some lowland stations of fall or winter vagrancy: Calabasas Hills, Los Angeles, Pasadena, Azusa, and Pomona, in Los Angeles County (Willett, *loc. cit.*; L. Miller, Condor, 22, 1920:78); Victorville (on Mohave Desert) and Redlands, San Bernardino County (Mailliard and Grinnell, Condor, 7, 1905:102; Zech, Condor, 22, 1920:111); Mecca, —197 feet altitude, Riverside County (Clary and Clary, Condor, 38, 1936:89); Poway, San Diego County (Belding, *loc. cit.*).

Habitat—Coniferous trees, especially as growing in open stands. These may be mixed with such deciduous trees as black oak, used also for foraging and even nesting, but coniferous trees must also be within daily cruising radius. For nesting, the pines or other trees must be, at least in part, dead and decaying; at any rate they must afford suitable-sized cavities, woodpecker-excavated or "natural," in which the chickadees can ensconce their nests. Low rotting stumps often suffice.

Parus rufescens rufescens (J. K. Townsend)
Northern Chestnut-backed Chickadee

Synonyms—Parus rufescens, part; *Parus rufescens neglectus*, part; *Penthestes rufescens*, part; *Penthestes rufescens rufescens*; Chestnut-backed Chickadee, part.

Status—Resident. Common at north and coastwise; only fairly common to southward, and sparse interiorly, within general range.

Geographic range—Mainly, northern humid coast belt, south from Oregon line in Del Norte County as far as vicinity of Freestone and Sebastopol, Sonoma County. A relatively treeless belt eastward from the seacoast south of these places apparently intervènes between range of race *rufescens* and race *neglectus* (see Mailliard, Condor, 10, 1908:181). Life-zones, Transition and Canadian. Altitudes of occurrence, close to sea level up to at least 4500 feet on Mount Sanhedrin, Mendocino County (Mus. Vert. Zool.). Occurs east of coastal fog belt proper, scatteringly, along Siskiyou Mountains, Siskiyou County, to Seiad Valley and Horse Creek (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:13; Mus. Vert. Zool.); to "west base of" Mount Shasta, July 14, one specimen (Townsend, Proc. U. S. Nat. Mus., 10, 1887:229); to near McCloud, south of Mount Shasta, August 2, "family" (Kimball, Condor, 24, 1922:97); to Helena, and 12 miles north of North Yolla Bolly Mountain, May 11 to 21, Trinity County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:387; Mus. Vert. Zool.); to Lakeport, Lake County, October 20 (Fleming, Condor, 32, 1930:69); to Mount Sanhedrin, Mendocino County, and Mount Saint Helena, Napa County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919:295; *et al.*); and to Howell Mountain, Napa County (Clark, Condor, 32, 1930:51; Mus. Vert. Zool.). An exceptional vagrant, far eastward: 4 miles southeast of Sterling City, 3000 feet, Feather River Canyon, Butte County, specimen taken by R. L. Rudd, July 3, 1939 (Mus. Vert. Zool.). Some additional citations of distributional import: points in Del Norte and Humboldt counties (W. K. Fisher, Condor, 4, 1902:135; Ferry, Condor, 10, 1908:43; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:25); points in Sonoma County (Grinnell and Wythe, Pac. Coast Avif. No. 18,

1927:143); in general (Grinnell, Auk, 21, 1904:364; A. H. Miller, Amer. Nat., 76, 1942:27).

Habitat—Coniferous forest and adjacent woodland. All the conifers of the humid coast belt seem to be frequented to about equal degree, as also such deciduous trees as alder, tanbark oak, and willow. In the dense redwood forests, these chickadees forage through the peripheral branch-work of the loftiest spires, as well as low down; but the birds are most plentiful in the mixed growth of the forest margins and along stream courses. Cavities for nesting seem most often chosen in dead or partly dead deciduous kinds of trees.

Parus rufescens neglectus Ridgway
Marin Chestnut-backed Chickadee

Synonyms—Parus rufescens, part; *Penthestes rufescens neglectus*; *Penthestes rufescens*, part; Chestnut-backed Chickadee, part; Californian Chickadee, part; Nicasio Chickadee; Marin Chickadee.

Status—Resident. Fairly common; really numerous in but a few places.

Geographic range—Southwestern portion of Marin County. Includes Point Reyes neighborhood, as around Inverness and Olema; east to Nicasio and vicinity of San Anselmo; entire Mount Tamalpais area; Mill Valley and south to Sausalito. Life-zone, Transition. Altitudes of occurrence, from near sea level up to at least 2000 feet on Mount Tamalpais. Literature concerning the natural history of this race is fragmentary: Brewster, Bull. Nuttall Ornith. Club, 3, 1878:20; Mailliard, Condor, 2, 1900:67, and Condor, 10, 1908:182; Grinnell, Auk, 21, 1904:364ff.; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:143; Pitelka, Condor, 43, 1941:295.

Habitat—Forest and woodland. Trees used for foraging include coast redwood, Douglas fir, Bishop pine, tanbark oak, live oak, alder, laurel, planted cypress, and ceanothus and other large brush-plants. Cavities in dead trees, or dead parts of living trees, within, usually, 20 feet of the ground, seem requisite for nesting.

Parus rufescens barlowi Grinnell
Santa Cruz Chestnut-backed Chickadee

Synonyms—Parus rufescens, part; *Parus rufescens neglectus*, part; *Parus barlowi*; *Penthestes rufescens barlowi*; *Penthestes barlowi*; *Penthestes rufescens*; Chestnut-backed Chickadee, part; Chestnut-backed Titmouse; California Chickadee, part; Barlow Chickadee; Santa Cruz Chickadee.

Status—Resident. Locally common.

Geographic range—Essentially, Santa Cruz faunal area; that is, narrow central coast belt south from Golden Gate and San Francisco Bay as far as Cambria, San Luis Obispo County. Eastward margin of range scarcely reaches western shore of south arm of San Francisco Bay near San Mateo and Palo Alto; in later years seen regularly in and about San Jose, where they breed (D. McLean MS). Only vagrants have been reported from the "East Bay district," for example, once at Berkeley, and a few times in Hayward area (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:144; L. Miller MS; *et al.*). Life-zone, essentially Transition; altitudes of occurrences mostly low, but they extend to at least 3000 feet in Monterey County (Turner Creek, A. H. Miller MS). Chief references, as relating to localities from north to south: Golden Gate Park, etc.,

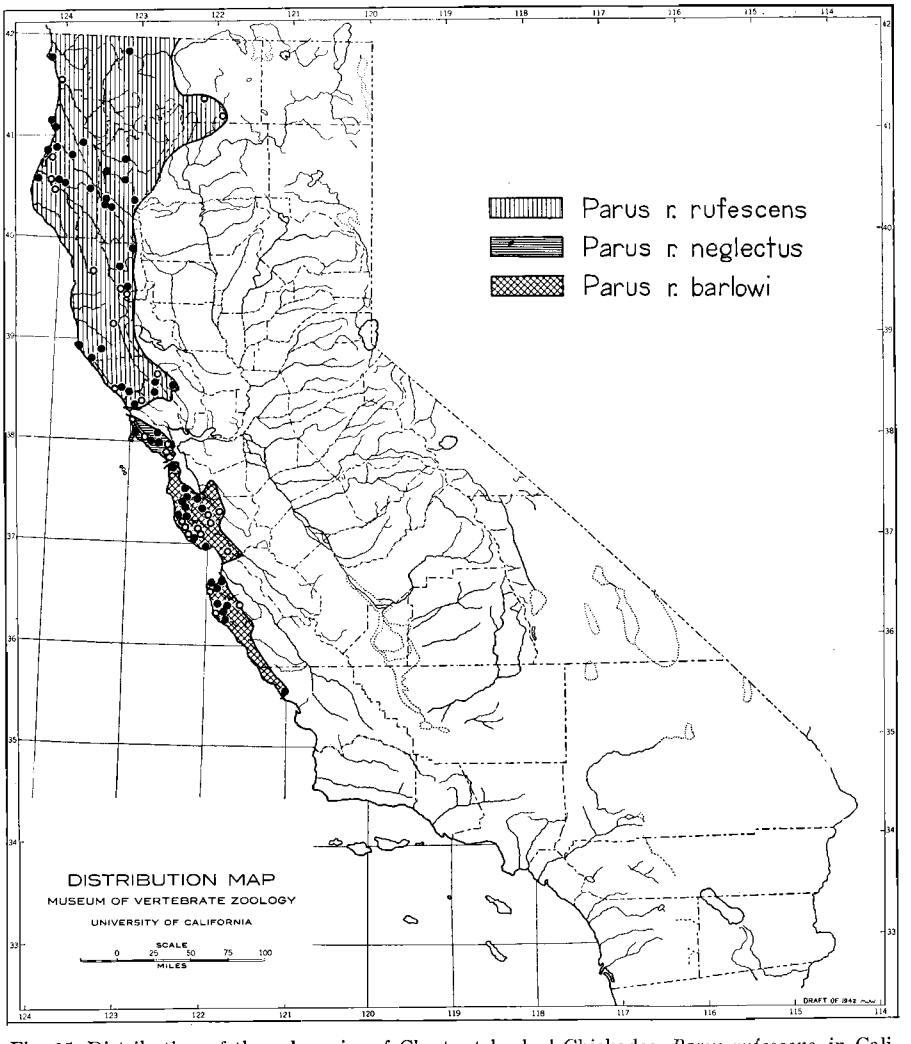

Fig. 25. Distribution of the subspecies of Chestnut-backed Chickadee, *Parus rufescens*, in California. Dots indicate localities from which specimens have been examined, exclusive of vagrants; circles, localities reported in the literature.

in San Francisco (Ray, Condor, 18, 1916:226; Hansen and Squires, Condor, 19, 1917: 61; Mailliard, Condor, 33, 1931:220; *et al.*); San Mateo County (Ray, Condor, 13, 1911:211); Boulder Creek, Big Basin, etc., in Santa Cruz County (Ray, Condor, 9, 1907:173, Condor, 10, 1908:221, and Condor, 11, 1909:21; Orr, Amer. Midl. Nat., 27, 1942:322); Santa Cruz (Baird, Brewer and Ridgway, Hist. N. Amer. Birds, 3, 1874: 502, part; *et al.*); Los Gatos and Gilroy (vagrant), Santa Clara County (Van Denburgh, Proc. Amer. Philos. Soc., 38, 1899:178; Grinnell, Auk, 21, 1904:374); Monterey and Carmel, Monterey County (Gambel, Proc. Acad. Nat. Sci. Phila., 3, 1847: 155; Williams, Condor, 43, 1941:274; *et al.*); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:29, 90); vicinity of Jamesburg, Monterey County (Linsdale MS); Little Sur River, Monterey County (Jenkins,

Condor, 8, 1906:129; *et al.*); Cambria, San Luis Obispo County (Grinnell, Condor, 24, 1922:183).

Habitat—Coniferous forest and intermixed or adjacent woodland. Trees frequented are coast redwood, Douglas fir, Monterey pine, Monterey cypress, tanbark oak, golden oak, live oak, madrone, alder, and willow. Also, as at Stanford University, this chickadee is established in planted groves of eucalyptus and cypress. For nesting, there must be available, cavities in trees, woodpecker-made or the result of decay; those chosen are usually in dead trees within 10 feet of the ground. Forage requirements carry the birds mostly through the crowns and peripheral branch-work of evergreen trees; in redwoods and firs, they may thus be seen over 150 feet above the ground. Also they frequently work through ceanothus brush within 10 feet of the ground.

Parus inornatus zaleptus (Oberholser)
Warner Plain Titmouse

Synonyms—Parus inornatus griseus; *Baeolophus inornatus griseus*, part; *Parus inornatus ridgwayi*, part; *Baeolophus inornatus zaleptus*; Gray Titmouse, part; Warner Valley Titmouse.

Status—Resident. Distribution much interrupted and population usually sparse.

Geographic range—Northeastern and eastern arid portions of State, entirely east of Cascade-Sierran divides. Two areas of occupancy: (1) Modoc region from near Nevada line west at least to Clear Lake and south from Oregon line at least to Secret Valley, Lassen County (Willett, Condor, 21, 1919:206; Grinnell, Condor, 25, 1923: 135; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:334; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:312; A. H. Miller MS); (2) Inyo region from "head of Owens River" and Benton, Mono County, south into White, Inyo, Grapevine and Panamint mountains of Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893: 138; Grinnell, *loc. cit.*; Grinnell and Behle, Condor, 39, 1937:226). Life-zone, Upper Sonoran. Altitudes of known occurrence range from 4400 feet near Alturas, Modoc County, to 7500 feet at Waucoba Pass, Inyo Mountains.

Habitat—Sharply limited to tracts of piñon and (or) juniper of rather old growths, whether these be on nearly level terrain, as in Modoc County, or on steep mountain sides, as in Inyo County.

Note—It is possible that populations toward the south, in Mono and Inyo counties, are more properly referable to the race *P. i. ridgwayi* than to *zaleptus*; specimens in fresh fall plumage, from which this point could be decided, are not available to us.

Parus inornatus ridgwayi Richmond
Gray Plain Titmouse

Synonyms—Baeolophus inornatus griseus, part; Gray Titmouse, part.

Status—Resident. Under optimum conditions of habitat, common.

Geographic range—Providence Mountains (in broad sense, inclusive of "New York Mountains") and Clark Mountain, in extreme eastern San Bernardino County (Stephens, Condor, 5, 1903:105; Hollister, Auk, 25, 1908:461; van Rossem, Pac. Coast Avif. No. 24, 1936:36). Life-zone, Upper Sonoran. Altitudes of known occurrence, 4500 to 6500 feet.

Habitat—Normal stands of piñon and juniper, typically where these two kinds of trees are intermixed. Nesting crevices often are provided in the partly decayed, split and twisted trunks of junipers, near the ground.

Parus inornatus sequestratus (Grinnell and Swarth)
Oregon Plain Titmouse

Synonyms—Baeolophus inornatus sequestratus; Oregon Titmouse.

Status—Resident. Very local in occurrence within the State, and aggregate numbers small.

Geographic range—Shasta Valley, Siskiyou County, and valley of South Fork of Trinity River, western Trinity County; probably occurs scatteringly in intervening valleys. Three definite localities: near Bogus at 2500 feet, Siskiyou County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 30, 1926:166); the Caves, 11 miles northeast of Weed, at 3600 feet, same county (Mus. Vert. Zool.); 1 mile west of Hyampom, 1200 feet, Trinity County (Mus. Vert. Zool.). A single example (Mus. Vert. Zool.) in badly worn plumage from a point in Scott River valley, Siskiyou County, 6 miles northwest of Callahan, may belong to this race. It was recorded under the name *Baeolophus i. inornatus* (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:387). Life-zone, Upper Sonoran.

Habitat—Mixed association of juniper, Garry oak and *Ceanothus cuneatus* and Garry oak woodland.

Parus inornatus inornatus Gambel
California Plain Titmouse

Synonyms—Parus inornatus, part; *Lophophanes inornatus*, part; *Baeolophus inornatus restrictus*; *Baeolophus inornatus*; *Baeolophus inornatus inornatus*; *Parus inornatus ridgwayi*, part; Plain Titmouse, part; Plain Chickadee, part; Plain-crested Titmouse, part; Gray-tufted Titmouse, part; Plain-crested Tit; Plain Tit; San Francisco Titmouse; Gray Titmouse, part.

Status—Resident. Ordinarily common. Retraction of range has taken place locally, where oaks have been felled to clear land for agriculture; on the other hand, tree-planting, even in suburbs of towns, has brought favoring conditions in previously unoccupied neighborhoods.

Geographic range—In general, western California below about the 3000-foot level, from Mendocino County and head of Sacramento Valley south to Santa Barbara and Tulare counties. Northernmost stations in northwest coast region (where altogether wanting in narrow coastal fog belt north of Marin County), Cahto and Covelo, Mendocino County (McGregor, Nidologist, 4, 1896:8; Grinnell, Pac. Coast Avif. No. 11, 1915:162); northernmost around head of Sacramento Valley, Tower House and Baird Station, Shasta County (L. Kellogg, Condor, 13, 1911:121; Mus. Vert. Zool.). Easternmost stations; Nevada City, Nevada County (Nelson, Proc. Boston Soc. Nat. Hist., 17, 1875:356); Yosemite Valley, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:572); Three Rivers, Tulare County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:138). Intergrades southward with *P. i. kernensis* in westward foothills of Sierra Nevada in Fresno and Tulare counties; in coast belt with *P. i. transpositus* in

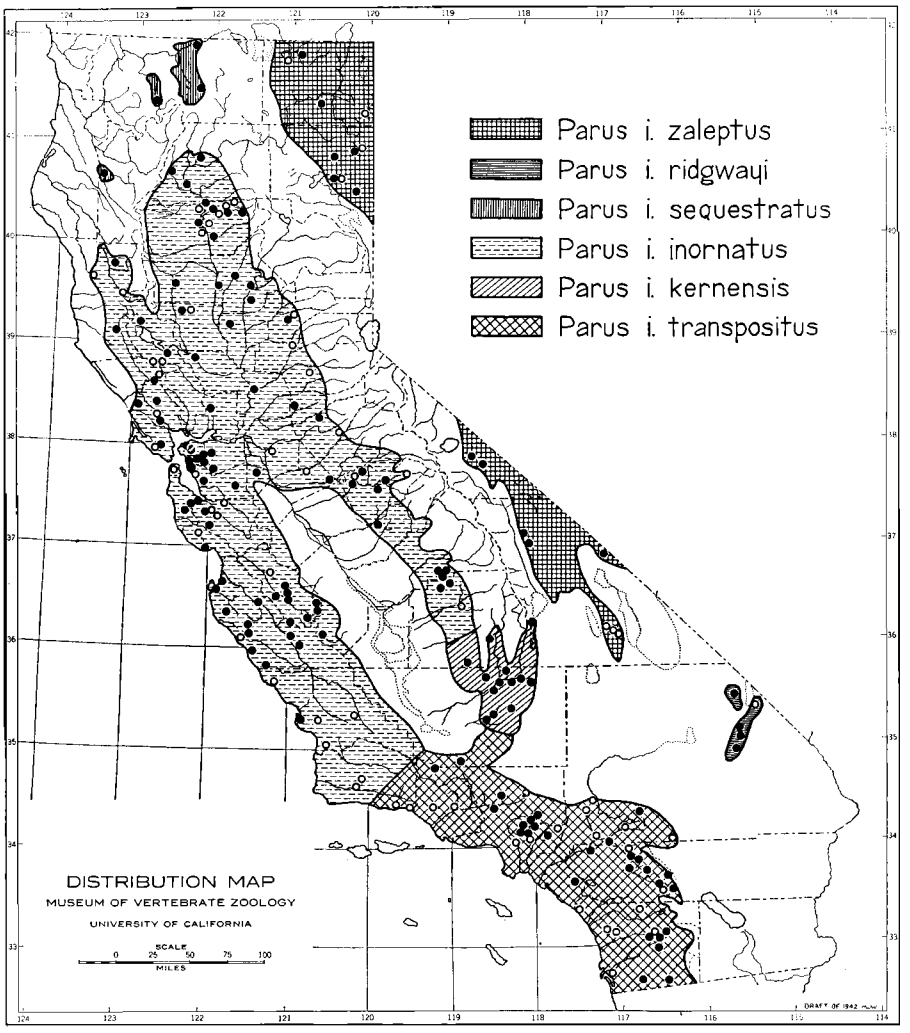

Fig. 26. Distribution of the subspecies of Plain Titmouse, *Parus inornatus*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Santa Barbara and Ventura counties; southernmost station for "good" *inornatus*, as shown by specimens in hand, Morro, San Luis Obispo County (Mus. Vert. Zool.). Life-zone, Upper Sonoran; invades Transition sparsely and but locally. Altitudes of known occurrences, from sea level, as in San Francisco Bay region, up to 4400 feet, as on San Benito Mountain, San Benito County. Some additional references selected for natural history content: E. Adams, Osprey, 2, 1898:81; Beal, U. S. Dept. Agr., Biol. Surv., Bull. No. 30, 1907:68; Grinnell, Condor, 25, 1923:176; Dawson, Birds Calif., 2, 1924:601; Price, Condor, 38, 1936:23; Sibley and Hemphill, Condor, 42, 1940:224; A. S. Allen, Condor, 45, 1943:155.

Habitat—Characteristically, open-type woodland of which oaks of one kind or an-

other are exclusive or dominant constituents. Most frequented species of oaks are blue oak, live oak and valley oak. Rotted out knot holes, split stubs and cavities excavated by woodpeckers usually are abundantly available as nest sites in "unimproved" oak woodland, but the birds are versatile in utilization of a large variety of natural and artificial cavities when conditions demand.

Parus inornatus kernensis (Grinnell and Behle)
Kern Plain Titmouse

Synonyms—Lophophanes inornatus, part; *Parus inornatus*, part; *Baeolophus inornatus*, part; *Baeolophus inornatus kernensis*; Plain Titmouse, part; Gray-tufted Titmouse, part; Kern Basin Plain Titmouse.

Status—Resident. Where most favorable habitat conditions prevail, common.

Geographic range—Drainage basin of Kern River, within southeastern rim of San Joaquin Valley, in Kern County and extreme southern Tulare County, and adjacent eastern slopes of Sierra Nevada, Inyo County. Northernmost recorded station, Walker Creek, 4 miles southwest of Olancha, 5200-5700 feet, Inyo County; southernmost, Rankin Ranch, Walker Basin, Kern County (Mus. Vert. Zool.). Intergradation with adjacent races takes place to northward and to westward. Life-zone, Upper Sonoran. Altitudes of known occurrences, 2400 up to 6700 feet (latter in Piute Mountains). Pertinent references: Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:229; Richardson, Condor, 6, 1904:137; A. K. Fisher, N. Amer. Fauna No. 7, 1893:138; Grinnell and Behle, Condor, 39, 1937:225.

Habitat—Primarily, open oak woods of mountain sides, but also often where oaks are mixed with digger pines or even with piñons.

Parus inornatus transpositus (Grinnell)
San Diego Plain Titmouse

Synonyms—Lophophanes inornatus, part; *Parus inornatus*, part; *Baeolophus inornatus murinus*; *Baeolophus inornatus*, part; *Parus inornatus murinus*; *Baeolophus inornatus inornatus*, part; *Baeolophus inornatus transpositus*; Plain Titmouse, part; Plain Chickadee, part; Plain-crested Titmouse, part; Gray-tufted Titmouse, part; San Diego Titmouse.

Status—Resident. Common, even abundant locally.

Geographic range—Southern California, chiefly west of the desert divides, southeast from Santa Barbara and Ventura counties (where intergrading with race *inornatus*) to Mexican boundary. Specimens (Mus. Vert. Zool.) from extreme southwestern Kern County (Fort Tejon), just over Ventura County line, are included under the name *transpositus*, but specimens from Buellton, Santa Barbara County, are nearest *inornatus* (Willett, Condor, 36, 1934:86). Extreme eastward, marginal stations are: Palmdale, northern Los Angeles County (Dickey and van Rossem, Condor, 24, 1922:63); Hesperia, San Bernardino County (Law, Condor, 18, 1916:81); Cactus Flat, 6000 feet, and Quail Spring, north and east of San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:124; C. A. Harwell MS); Santa Rosa Mountains at 6000 feet, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:310); Campo, San Diego County (Mus. Vert. Zool.). Life-zone, essentially Upper Sonoran.

Altitudinal extremes: close to sea level, as at San Onofre, San Diego County, and 6000 feet, as on San Bernardino and Santa Rosa mountains. Not reported from any island.

Habitat—As a rule, open woodland where consisting chiefly of oaks, whether on level terrain or on mountain sides.

Auriparus flaviceps acaciarum Grinnell
California Verdin

Synonyms—Aegithalus flaviceps; *Paroides flaviceps*; *Auriparus flaviceps*; *Auriparus flaviceps flaviceps*; *Auriparus flaviceps ornatus*; *Auriparus flaviceps lamprocephalus*; Yellow-headed Tit; Yellow-headed Titmouse; Yellow-headed Bush-titmouse; Verdin; San Lucas Verdin; Arizona Verdin; Grinnell Verdin.

Status—Resident. Common and widespread.

Geographic range—In general, the Colorado and Mohave deserts. In detail, north along Colorado River from Mexican line in Imperial County to vicinity of Needles, San Bernardino County; on Colorado Desert, west from Fort Yuma, Imperial County, as far as La Puerta Valley, in eastern San Diego County, and northwest to Palm Springs and Whitewater, Riverside County; on Mohave Desert north to Death Valley, Inyo County, and west up course of Mohave River as far as Victorville, San Bernardino County. Altitudinally, occurs from 240 feet below sea level in Death Valley up to 3000 feet on Carrizo Creek near Dos Palmos, northeast slope of Santa Rosa Mountains, Riverside County. Life-zone, Lower Sonoran. Published authorities for preceding statements: Grinnell, Univ. Calif. Publ. Zool., 12, 1914:211; van Rossem, Trans. San Diego Soc. Nat. Hist., 6, 1930:200; Gilman, Condor, 4, 1902:88; Grinnell, Condor, 33, 1931: 163ff., and Condor, 36, 1934:68; Mailliard and Grinnell, Condor, 7, 1905:102; Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:312.

Habitat—Stiff-twigged, thorny bushes and (or) trees, in the main of mesquite, screw-bean, catclaw, palo verde, and ironwood. Since these plants often grow conspicuously adjacent to water courses, as along the Colorado River, though not necessarily so, the verdins may appear locally to be water-dependent. But there is no indication that this is the case; the species is strictly xerophilous.

Psaltriparus minimus plumbeus (Baird)
Lead-colored Bush-tit

Synonyms—Plumbeous Bush-tit, part; Bush-tit, part.

Status—Essentially resident. Locally, fairly common.

Geographic range—Extreme northeastern border of State. Records for this race are chiefly from Modoc and Lassen counties; possibly is resident south to Alpine County. Life-zone, Upper Sonoran. Altitudes of known residence, 4500 to 5600 feet. Records are as follows: in Modoc County, Eagleville, Cedarville (not typical) and Shields Creek at 5000 feet, east of Alturas, the latter from a region in which the population is prevailingly of *californicus* type (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:335; Mus. Vert. Zool.); in Lassen County, near Red Rock P. O., near Ravendale, Secret Valley, and Litchfield, populations of mixed character (Grinnell, Dixon and Linsdale,

Univ. Calif. Publ. Zool., 35, 1930:315; Mus. Vert. Zool.). Interbreeding between *californicus* and *plumbeus* is discussed at length in the last-cited publication. Vagrants taken in Tahoe area: near Tahoe Tavern, December 7, 1926, and Emerald Bay, November 6, 1926 (Calif. Acad. Sci.). A specimen (Mus. Vert. Zool.) from Woodfords, Alpine County, taken June 20, is not racially determinable as between *plumbeus* and *providentialis*.

Habitat—Tracts of juniper, mountain mahogany and associated brush-plants. Foraging carries birds into thickets of willow.

Psaltriparus minimus providentialis Arvey
Providence Mountains Bush-tit

Synonyms—Psaltriparus plumbeus; *Psaltriparus minimus plumbeus*, part; *Psaltriparus minimus cecaumenorum*; Lead-colored Bush-tit, part; Plumbeous Bush-tit; Bush-tit, part; Sonora Lead-colored Bush-tit.

Status—Resident. Locally common. Some fall or winter vagrancy occurs, carrying birds below breeding zone.

Geographic range—Eastern base of southern Sierra Nevada and mountains to southeastward, in Mono, Inyo and eastern San Bernardino counties. Life-zone, Upper Sonoran. Altitudes of regular occurrence 4500 to 8500 feet. Locality references: Bridgeport, Mono County (Dawson, Birds Calif., 2, 1924:637); Williams Butte, west of Mono Lake, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:582); east base Sierra Nevada, at Kearsarge Pass, Lone Pine Creek, and Carroll Creek (intermediate toward *californicus*), Inyo County (Swarth, Auk, 31, 1914:521); White, Inyo, Grapevine and Panamint mountains, Mono and Inyo counties (A. K. Fisher, N. Amer. Fauna No. 7, 1893:141); Argus Mountains, Inyo County (van Rossem, Condor, 38, 1936:170); Kingston Range, Clark Mountain and Providence Mountains, including New York Mountains, San Bernardino County (A. H. Miller MS; Stephens, Condor, 5, 1903:105; Hollister, Auk, 25, 1908:461). A vagrant occurrence: in Death Valley at —178 feet, April 6, 1917 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:105). For characterization of this race, see Arvey, Condor, 43, 1941:74; for extended discussion of interbreeding with *californicus*, see Swarth, *loc. cit.*

Habitat—Piñon and juniper trees, and mountain mahogany, with intermixed bushes of various larger kinds.

Psaltriparus minimus californicus Ridgway
California Bush-tit

Synonyms—Psaltria minima, part; *Psaltriparus minimus*, part; *Aegithalos minimus californicus*; Least Chickadee, part; Least Titmouse, part; Least Tit, part; Sacramento Bush-tit, part; Interior Bush-tit; Bush-tit, part.

Status—Resident. Common, as a rule, where present at all. Settlement of open valley territory by people, with concurrent planting of shrubbery and trees, has obviously affected this subspecies favorably.

Geographic range—From the Oregon line (there sparsely distributed), eastward from middle Siskiyou County nearly to Nevada boundary, south along western flank

of Sierra Nevada and over suitable parts of Great Central Valley to southern rim of San Joaquin Valley. Reaches north along east side of southern high Sierra from Walker Pass sparingly to opposite Owens Lake, Inyo County (intergrades). In segment of range in Sacramento Valley, extends westward to include innermost northern coast ranges, south to Napa and Solano counties. (Main authority for this statement: Swarth, Auk, 31, 1914:516.) Life-zone, typically Upper Sonoran; takes in Transition and Lower Sonoran locally. Breeding stations involve altitudes from near sea level, for example in Solano County, up to 7500 feet, on Walker Creek, Inyo County. Some marginal stations of occurrence are: at north: Hornbrook, Yreka, etc., in Shasta Valley, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:132; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:94; Calif. Acad. Sci.); several points in Modoc County, both west and east of Warner Mountains [mixed populations] (Grinnell, Pac. Coast Avif. No. 11, 1915:165; Dawson, Condor, 18, 1916:29; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:335). To westward: Harbin Springs, Lake County, Mount Saint Helena, Napa County, and Benicia, Solano County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919: 296; Stoner, Auk, 48, 1931:430); Panoche, southeastern San Benito County (Mus. Vert. Zool.); Coalinga, western Fresno County (J. R. Arnold, Condor, 39, 1937:33). To eastward: Lassen Peak section, interruptedly to near Ravendale and Litchfield [mixed populations] (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930: 312; A. H. Miller MS); Yosemite section east to Yosemite Valley, recurring, possibly as autumn vagrant, at Williams Butte, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:579; Michael and Michael, Condor, 23, 1921:35, and Condor, 27, 1925:113); Sierran foothills east of Fresno (Tyler, Pac. Coast Avif. No. 9, 1913:106). To southeastward: Carroll Creek, near west side of Owens Lake, Inyo County (Swarth, *op. cit.*:520); vicinity of Walker Pass and Piute Mountains, Kern County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:141; Richardson, Condor, 6, 1904:137).

Habitat—Territory providing bushes and small trees of kinds which bear broad-leafed, evergreen foliage—this being essential especially in winter for food production and for the gathering of the food items in the Bush-tit's own manner of foraging. The live oak and the evergreen brush-plants of the Upper Sonoran Life-zone seem to constitute the optimum conditions, and their use extends to the provision of preferred nest sites. With a nucleus of such plants present, almost every other shrubby and arboreal kind in a neighborhood will be more or less used. Marginally, conifers such as juniper and piñon with associated shrubs, suffice to support a small or temporary population of the birds.

Psaltriparus minimus minimus (J. K. Townsend)
Coast Bush-tit

Synonyms—Parus minimus; *Psaltria minima*, part; *Psaltriparus minimus*, part; *Acredula minima*; *Psaltriparus minimus californicus*, part; *Aegithalos minimus californicus*, part; Chestnut-crowned Titmouse; Least Titmouse, part; Least Chickadee, part; Least Tit; Least Bush-titmouse; California Bush-tit, part; Sacramento Bush-tit, part; Pacific Coast Bush-tit; Bush-tit, part.

Status—Resident. Common to abundant. Human occupancy of open valleys and plains, at the south, with resultant widespread growths of shrubbery and evergreen trees, has affected this race favorably; there has been both great increase of area inhabited and, undoubtedly also, of aggregate numbers.

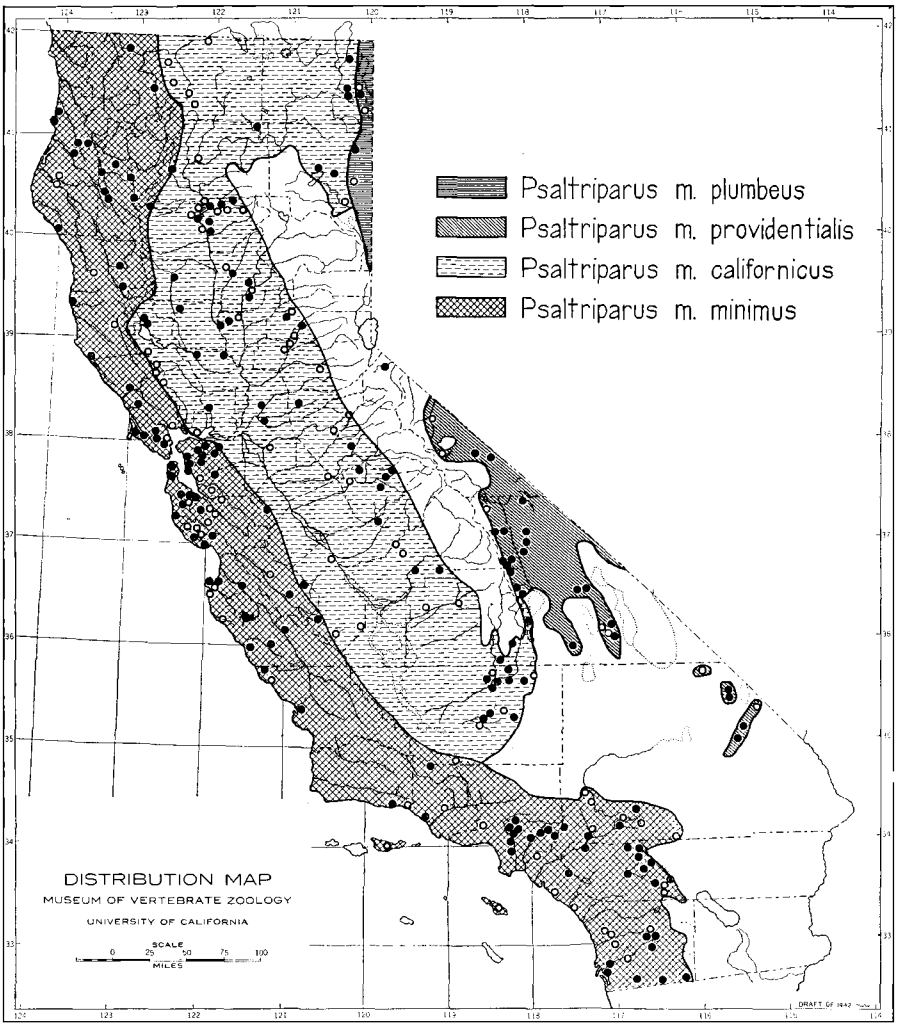

Fig. 27. Distribution of the subspecies of Bush-tit, *Psaltriparus minimus*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Geographic range—"Coast belt," entire length of State, from near Oregon line in western Siskiyou County south to San Diego County. Width of this belt varies; it is widest, though there most broken-up or "spotty," at the north; narrowest in San Francisco Bay region, widening again in San Diegan district. Easternmost stations: at north: Horse Creek, valley of Klamath River, Siskiyou County; Callahan, valley of Scott River, Siskiyou County; Tower House, western Shasta County; Covelo and Mount Sanhedrin, Mendocino County. In San Francisco Bay region: points in eastern Sonoma County and vicinity of Mount Diablo, Contra Costa County. Toward south: Orestimba Peak, western Stanislaus County; Waltham Creek, western Fresno County (intergrades?); Fort Tejon, southwestern Kern County; Victorville (perhaps case of eastward

vagrancy); Cactus Flat and Quail Spring, northern and eastern flanks of San Bernardino Mountains, San Bernardino County; Cabezon, Palm Springs (vagrant), and Piñon Flat, San Jacinto Mountains, Riverside County; and Cuyamaca Mountains and Jacumba, San Diego County. Includes also two of the islands, Santa Cruz and Santa Catalina. Life-zones, Transition, Upper Sonoran (mostly), and (locally) Lower Soran. Altitudinal range of nesting, close to sea level up to 6000 feet, in San Jacinto Mountains; post-breeding wanderings carry birds in July up as high as 9000 feet, as in San Jacinto Mountains. Literature is extensive; that which gives evidence supporting most of preceding statement of range, or which bears most on habitat relations, is as follows: in general (Swarth, Auk, 31, 1914:510; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:144; Willett, Pac. Coast Avif. No. 21, 1933:120; Dawson, Birds Calif., 2, 1924: 628ff.; Beal, U. S. Biol. Surv., Bull. No. 30, 1907:74, part); Horse Creek, Siskiyou County (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:13); Scott River, Siskiyou County, and Tower House, Shasta County (L. Kellogg, Condor, 13, 1911:121, and Univ. Calif. Publ. Zool., 12, 1916:387); San Francisco (Swarth, Condor, 30, 1928: 359, and Condor, 36, 1934:87); Berkeley (R. C. Miller, Condor, 23, 1921:121, 183, and Ecology, 3, 1922:122; Grinnell, Auk, 48, 1931:27); Stanford University, etc., Santa Clara County (Van Denburgh, Proc. Amer. Philos. Soc., 38, 1899:178; Blake, Condor, 30, 1928:250; A. B. Addicott, Condor, 40, 1938:49); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:91); Santa Cruz and Santa Catalina islands (Howell, Pac. Coast Avif. No. 12, 1917:100); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 10, 1913:311); Palm Springs, tains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:311); Palm Springs, Riverside County (Grinnell, Condor, 6, 1904:45); Buena Park, Orange County (Robertson, Condor, 33, 1931:205, and Condor, 37, 1935:257); San Diego, San Diego County (Abbott, Condor, 33, 1931:169).

Habitat—Typically, "hard" chaparral, especially where of tall growth and mixed with dense-foliaged evergreen trees. Of all the many tree and shrub species which provide forage, roosting and nesting places for Bush-tits, the live oak and scrub oak, and the various species of deer brush (*Ceanothus*), seem to be most preferred. Willows festooned with vines, certain low-growing conifers, and garden trees and shrubbery of many non-native sorts, come into plentiful use locally. In southern California, orange groves seem to meet all the Bush-tit's requirements.

Sitta carolinensis nelsoni Mearns

Rocky Mountain White-breasted Nuthatch

Synonyms—Sitta carolinensis aculeata, part; Slender-billed Nuthatch, part.

Status—Resident. Some down-mountain or slight southward movement of individuals in autumn. Fairly common, locally.

Geographic range—Extreme northeastern, Great Basin, section of State. Recorded definitely only from Modoc, Lassen, Plumas, and extreme eastern margins of Shasta and Tehama counties. Life-zones, Transition and Canadian. Altitudes of occurrence, 4900 to 9000 feet. Stations of record: Warner Mountains, Modoc County, many localities south to Jess Valley (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:334; Mus. Vert. Zool.); Lassen Peak section, from Battle Creek Meadows, Tehama County, east

to Eagle Lake, and Susanville, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:321; Mus. Vert. Zool.).

Habitat—Coniferous forest. Birds frequent chiefly yellow pine, but also white fir, and lodgepole pine; these provide all the requisites of subsistence. There must be present dead or partly dead trees, to furnish nesting sites, as well as living ones in part for foraging.

Sitta carolinensis aculeata Cassin
Slender-billed White-breasted Nuthatch

Synonyms—Sitta carolinensis, part; *Sitta aculeata*; Carolina Nuthatch; Western Nuthatch; Slender-billed Nuthatch, part; White-breasted Nuthatch.

Status—Resident. There is some late summer and autumn wandering of individuals out of breeding range, both uphill and down slope. As to numbers, usually common.

Geographic range—Entire length of State from Oregon line, east of northern humid coast belt and west of Great Basin plateau, south, west of southeastern deserts, to Mexican line; that is, wherever suitable habitat conditions obtain. As to life-zone, the metropolis of this subspecies lies in Upper Sonoran; somewhat smaller numbers extend up through Transition, a few locally even into Canadian and Hudsonian. Altitudes of known or suspected nesting extend from close to sea level, as in Napa and Santa Clara counties, up to at least 8500 feet, as at Carson Pass, Alpine County; occurs up to 11,000 feet in late summer in southern Sierra Nevada. Post-breeding vagrancy has carried individuals not only west over the seaward lowlands, but out on the deserts; for example, to Barstow and Victorville, San Bernardino County (Grinnell, Condor, 3, 1901: 70; Mailliard and Grinnell, Condor, 7, 1905:102), and Coachella Valley, Riverside County (Clary and Clary, Condor, 38, 1936:89). There is one record for the islands: Santa Cruz Island, April 1, 1920 (Dickey and van Rossem, Condor, 25, 1923:129). A selection from the extensive literature, involving natural history of this subspecies as well as localities of situation significant for general range: Bray and near Yreka, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:94); Klamath River and Siskiyou Mountains, near Horse and Seiad creeks, Siskiyou County (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:13); Scott River valley, Siskiyou County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:387); Humboldt Bay, one specimen [the only coastwise record north of Sonoma County] (Townsend, Proc. U. S. Nat. Mus., 10, 1887:227); Ukiah and Cahto, Mendocino County (Belding, Land Birds Pac. Dist., 1890:237; McGregor, Nidologist, 4, 1896:8); Red Bluff east to 3500-foot contour, beyond Payne Creek P.O. (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:319); Lake Tahoe region (Barlow and Price, Condor, 3, 1901: 182; Ray, Condor, 20, 1918:75); Yosemite section (Grinnell and Storer, Animal Life Yosemite, 1924:564; C. W. Michael, Condor, 27, 1925:113, and Condor, 38, 1936:86); Florence Lake, 7400 feet, Fresno County (L. M. Lofberg, Condor, 30, 1928:311); Piute Mountains and Walker Pass region, Kern County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:136; Richardson, Condor, 6, 1904:136; Mus. Vert. Zool.); Woodacre, Marin County, nested once (Stephens and Pringle, Birds Marin Co., 1933:6); interior parts of San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:142); southern Monterey County (Pemberton and Carriger, Condor, 17, 1915: 197); southwestern California in general (Willett, Pac. Coast Avif. No. 21, 1933:120

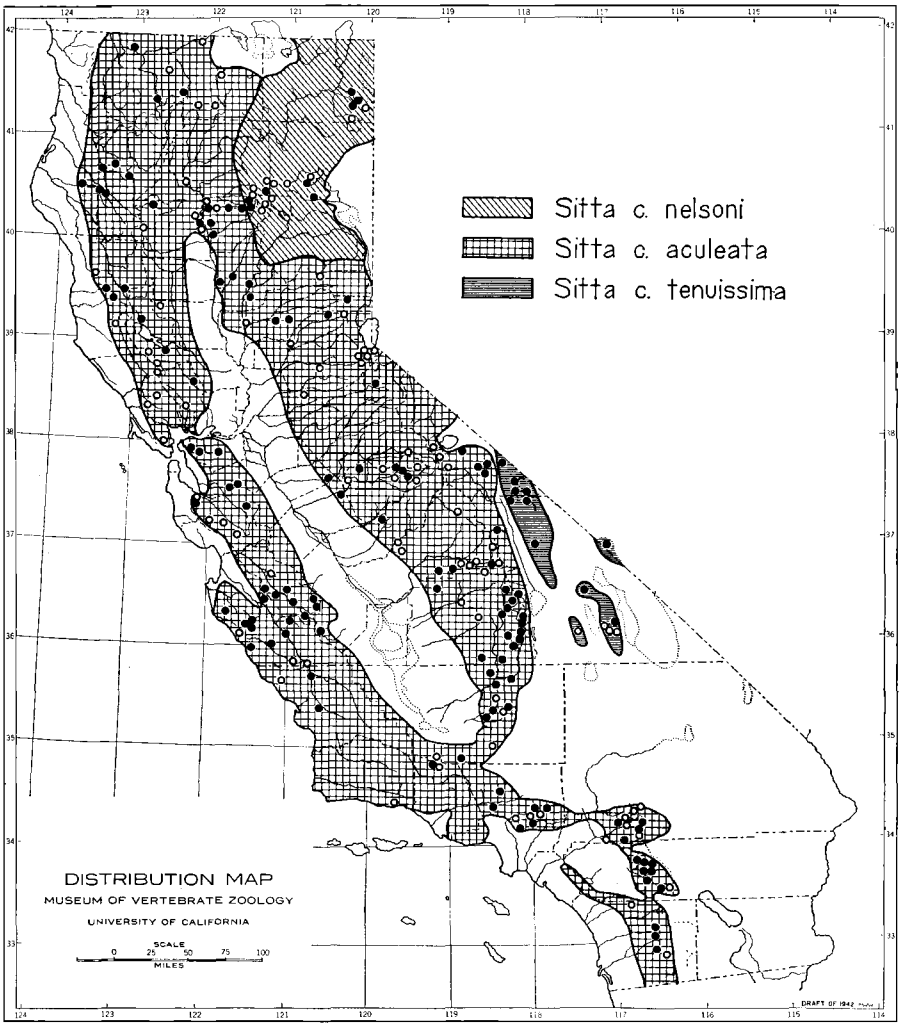

Fig. 28. Distribution of the subspecies of White-breasted Nuthatch, *Sitta carolinensis*, in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

[with several further references]). Birds from the crest and east slope of the central and southern Sierra Nevada show an approach in characters to *S. c. tenuissima.*

Habitat—Open-branched trees with trunks and larger branches that are rough-barked, upon which, by characteristic method, most of the foraging is done. In the Upper Sonoran Life-zone, the blue oak, white oak, and digger pine are preferred. Curiously, the live oaks seem for the most part not to be used. In Transition, black and Garry oaks are preferred, with alternate resort to yellow and other pines, and Douglas fir. There must be present dead, or partly dead, trunks, providing cavities for nesting purposes.

Sitta carolinensis tenuissima Grinnell
Inyo White-breasted Nuthatch

Synonyms—Sitta carolinensis aculeata, part; *Sitta carolinensis*, part; Slender-billed Nuthatch, part; Inyo Slender-billed Nuthatch; Inyo Nuthatch.

Status—Resident. Some autumnal and winter dispersal. Fairly common, though only in a few localities.

Geographic range—Higher mountain ranges east and southeast of Sierra Nevada, in Mono and Inyo counties. Recorded from White, Inyo, Panamint, Grapevine and Argus mountains. Life-zones, high Upper Sonoran, Transition, Canadian, and even Hudsonian. Altitudes of probable or known nesting extend from 7000 to 10,600 feet (in White Mountains). Chief literature: A. K. Fisher, N. Amer. Fauna No. 7, 1893:136, part; Dawson, Birds Calif., 2, 1924:642; Grinnell, Condor, 20, 1918:88. Taken as a vagrant in winter in Colorado River valley: 29 miles south of Needles, San Bernardino County, December 21, 26, 1926 (Ellis Coll.). A stray White-breasted Nuthatch reported from Death Valley, Inyo County, at —178 feet altitude, October 12, 1935 (Gilman, Condor, 38, 1936:40); subspecies probably the present one, but not certainly so.

Habitat—Coniferous trees of the region: chiefly piñon and limber pine, but also white fir, and lodgepole and hickory pines.

Sitta canadensis Linnaeus
Red-breasted Nuthatch

Synonyms—Sitta canadensis canadensis; Canada Nuthatch; Red-bellied Nuthatch.

Status—Taking State as whole, resident. But within breeding range only partially so, considerable numbers in early fall descending to lower levels or scattering westward to seacoast and southward to Mexican line. This exodus is irregular both as to numbers and as to localities traversed and reached in any given year. Within breeding area, save marginally, the species is common.

Geographic range—As breeding, mainly higher parts of northern half of State, but also south continuously along southern Sierra Nevada and scatteringly on highest mountains farther south, as far as San Jacinto Mountains, Riverside County. At north, breeding range extends to Oregon line on Warner Mountains, Modoc County, and on Siskiyou Mountains, in western Siskiyou County. Life-zone, characteristically Canadian; represented meagerly in Transition and, rarely, in Hudsonian. Altitudes of nesting lie for the most part between 2500 feet (as in western Trinity County) up to 8800 (in Yosemite region); up to 10,000 feet in southern Sierra Nevada (as near Olancha Peak). Occurs in summer throughout the Trinity Mountains, of Siskiyou and Trinity counties (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:387), and thence south scatteringly along inner northern coast ranges to vicinity of Mount Sanhedrin, Mendocino County, and Mount Cobb, Lake County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919:295). There is also record of occurrence in summer near Cazadero, at 900 feet, Sonoma County (Grinnell, Pac. Coast Avif. No. 11, 1915:161), on Mount Tamalpais, Marin County (Orr, Condor, 39, 1937:38), and of actual nesting at Berkeley and in Dimond Canyon near Oakland, Alameda County (W. Fox MS; Cain, *in* H. W. Grinnell, Condor, 35, 1933:210). There is no record of this nuthatch known to us for the

narrow coastal fog belt north of Sonoma County. The vagrant tendency of this species, even as to attempted or completed nesting, is further illustrated by the presence of numbers, at least in certain years, on Santa Cruz Island (Howell, Pac. Coast Avif. No. 12, 1917:99; Dickey and van Rossem, Condor, 25, 1923:129). Otherwise, vagrants or "migrants" have reached the Farallon Islands, in at least two different years, September, 1885 ["numbers"], and May 24, 1911, one bird (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:50; Dawson, Birds Calif., 2, 1924:644, 646). Records for fall and winter in lowlands of western and southwestern California south to San Diego are many (see especially Willett, Pac. Coast Avif. No. 21, 1933:121). Not known to breed in any of mountain ranges southeast of main Sierran axis; but for autumn, winter and even late spring, there are scattering desert records: Fort Yuma, Imperial County (Baird, Rept. Colo. River . . . Ives, part 5, 1861:6); near Coachella, Riverside County, October 8, 1935 (Clary and Clary, Condor, 38, 1936:89); Vallecito Creek, eastern San Diego County, October 2, 1908 (Mus. Vert. Zool.); Providence Mountains, 5300 feet, San Bernardino County, December 28, 1937-January 8, 1938 (Mus. Vert. Zool.); Clark Mountain, 7100 feet, San Bernardino County, May 24, 1939 (A. H. Miller, Condor, 42, 1940:163). Some additional locality ascriptions, especially as accompanied by facts on natural history: Warner Mountains, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:334); Lassen Peak section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:322); Fyffe, Eldorado County (Ray, Condor, 16, 1914:59); Stanislaus River, 5500 feet, Tuolumne County (A. Gunderson, Condor, 41, 1939:259); Yosemite section (Grinnell and Storer, Animal Life Yosemite, 1924:568; E. Michael, Yosemite Nature Notes, 9, 1930:60, and *ibid.*, 19, 1940:20; C. W. Michael, Condor, 36, 1934:113); Florence Lake, 7400 feet, Fresno County (L. M. Lofberg, Condor, 30, 1928:311); Mount Pinos, Ventura County (Miller and Benson, Condor, 32, 1930: 101); San Jacinto Mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:309).

Habitat—Coniferous forest, mainly of Canadian Life-zone. The single type of tree most frequented is the fir (*Abies*), both red and white, on the loftier branches of which most of the foraging is carried on. As contrasted with most other insectivorous foragers in such forest, this nuthatch appears to hold to the highest belt of branch-work, that including the highest third of the trees, quite to their summits. But foraging extends to practically every other type of conifer, and, in winter especially, to some deciduous trees. For use in the breeding season, trunks of dead trees or dead parts of living trees are required, of degree of decay permitting the birds to do their own drilling of complete nest-holes. Such trunks are usually also of conifers, but at the lower altitudes cottonwood and black oak are also used.

Sitta pygmaea melanotis van Rossem
Black-eared Pigmy Nuthatch

Synonyms—*Sitta pygmaea*, part; *Sitta pygmaea leuconucha*, part; *Sitta pygmaea pygmaea*, part; Pygmy Nuthatch, part; California Nuthatch, part; White-naped Nuthatch, part; Northern Pigmy Nuthatch, part.

Status—Resident. Usually but fairly common in northern part of range; that is to say, population far-scattered, whether in foraging flocks in fall and winter, or in pairs in breeding season. Common, even locally abundant southerly.

Geographic range—Principally, Sierra Nevada, inner coast ranges of northern California, and mountains of southern California north of San Gorgonio Pass. At north extends interruptedly to include Warner Mountains, Modoc County, and margins of Shasta Valley, Siskiyou County; at south includes detached higher portions of Tehachapi Mountains and thence west to Mount Pinos and vicinity, in Ventura County, and southeast to San Gabriel and San Bernardino mountains. Life-zone, strictly Transition, save for forage cruises of greater radius in late summer and fall. Altitudes of nesting, 2000 to 9000 feet, according to latitude, slope exposure and other factors. Main locality ascriptions, vicinity of Mount Shasta and Shasta Valley (Merriam, N. Amer. Fauna No. 16, 1899:131; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:94); Salmon Mountains, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921: 94); Mount Sanhedrin, Mendocino County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919:290); Cobb P. O., Lake County (Calif. Acad. Sci.); Howell Mountain, Napa County (Clark, Condor, 32, 1930:51; D. V. Hemphill MS, racial determination); Lassen Peak section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:325); Lake Tahoe and other parts of Eldorado County (Barlow and Price, Condor, 3, 1901: 183; Ray, Condor, 20, 1918:73; Gignoux, Condor, 26, 1924:31); Big Trees, Calaveras County (Belding, Land Birds Pac. Dist., 1890:239); Yosemite section east to 9 miles west of Benton, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:571; C. W. Michael, Condor, 27, 1925:113; Mus. Vert. Zool.); Florence Lake, Fresno County (L. M. Lofberg, Condor, 30, 1928:311); Walker Basin, Piute Mountains, near Tehachapi, Kern County, etc. (A. K. Fisher, N. Amer. Fauna No. 7, 1893:137; Belding, *loc. cit.*; Richardson, Condor, 6, 1904:136; *et al.*); Frazier Mountain and Mount Pinos, Ventura County (A. K. Fisher, *loc. cit.*; Grinnell, Auk, 22, 1905:391; Miller and Benson, Condor, 32, 1930:103; Willett, Pac. Coast Avif. No. 21, 1933:122); San Gabriel Mountains (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:49); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:123; Law, Condor, 31, 1929:45). A rare, indeed doubt-provoking, instance of nesting apart from high mountains: Simi, at 650 feet altitude, extreme southern Ventura County (Willett, *loc. cit.*). An out-of-bounds drifter was observed near Clovis, Fresno County, November 1, 1903 (Tyler, Pac. Coast Avif. No. 9, 1913:106) and an immature was taken near Jackass Spring, Panamint Mountains, Inyo County, October 6, 1917 (Mus. Vert. Zool.).

Habitat—Open forest of large yellow or Jeffrey pines. This is typical; but the birds forage also in other conifers, sugar pine, Douglas fir, and big-tree. The customary forage beat is high above the ground, usually above the height of 75 feet. Nesting holes are dug by the birds usually at lower elevations in dead tree-trunks or stubs; and these must be not only present but at the right stage of decay to presage successful completion of the breeding cycle.

Sitta pygmaea pygmaea Vigors
Monterey Pigmy Nuthatch

Synonyms—*Sitta pygmaea*, part; California Nuthatch, part; Pigmy Nuthatch, part; Northern Pigmy Nuthatch, part.

Status—Resident. Locally common to even abundant (in vicinity of Monterey). Strays rarely outside restricted breeding range.

Geographic range—Middle segment of coast belt, from Fort Bragg, Mendocino County, south interruptedly as far as Cambria, San Luis Obispo County (Grinnell,

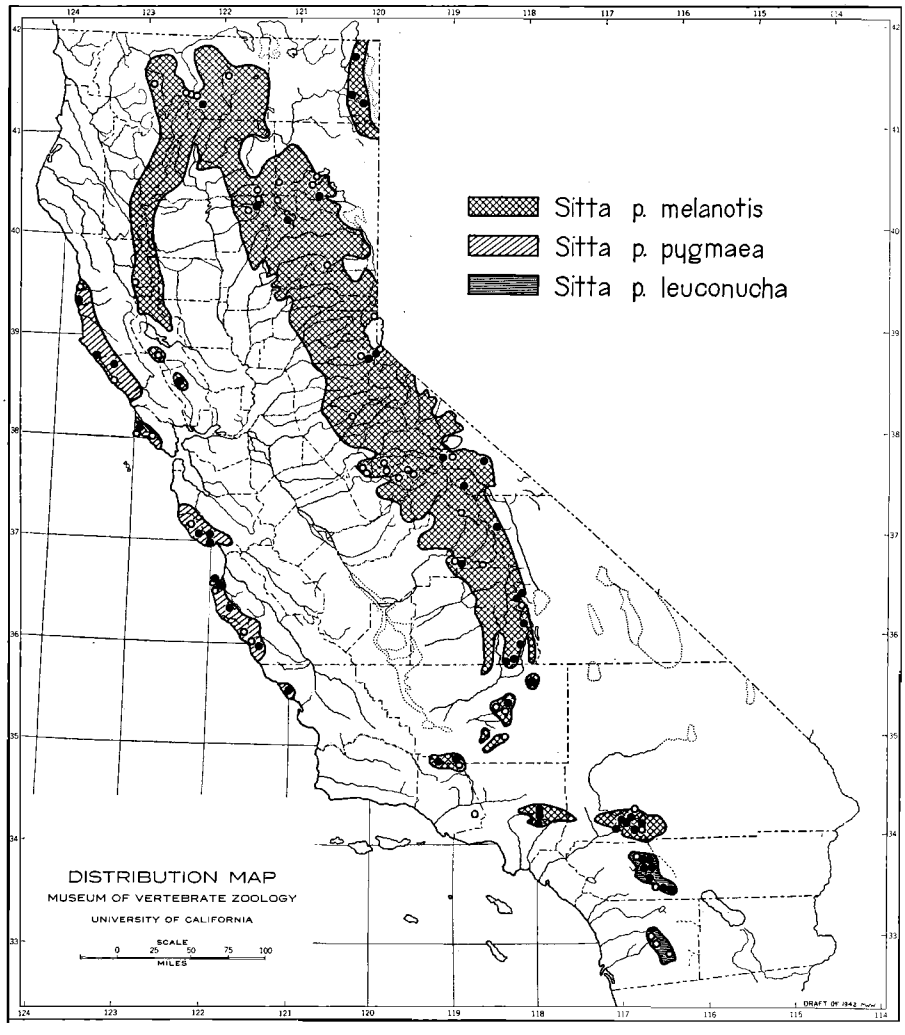

Fig. 29. Distribution of the subspecies of Pigmy Nuthatch, *Sitta pygmaea*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Pac. Coast Avif. No. 11, 1915:162, part; van Rossem, Proc. Biol. Soc. Wash., 42, 1929: 175; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:30, 95; A. H. Miller, Condor, 35, 1933:36). This race seems to adhere for the most part to the fog belt. Life-zone Transition. Altitudes of occurrence, mostly below 1000 feet, often within only a few score feet of sea level; but also resident in higher tracts of pines in Monterey County up to 4000 feet. Only two records east of south arm of San Francisco Bay: North Berkeley, in Contra Costa County, August 6 to 26, 1935 (S. C. Brooks, Condor, 37, 1935:288), and Berkeley, Alameda County, about 1900 (L. Miller MS). Some other locality references, within normal range: Plantation, Sonoma County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:143); vicinities of Point Reyes, Inverness and

Olema, Marin County (Mailliard, Condor, 2, 1900:67; Bolander and Bryant, Condor, 32, 1930:70; Stephens and Pringle, Birds Marin Co., 1933:6); Santa Cruz County (McGregor, Pac. Coast Avif. No. 2, 1901:20; Orr, Amer. Midl. Nat., 27, 1942:324); Monterey (Gambel, Proc. Acad. Nat. Sci. Phila., 3, 1846:112; *et al.*); Point Lobos, Monterey County (Grinnell and Linsdale, *loc. cit.*); Big Creek and Lime Kiln Creek, Monterey County (Pemberton and Carriger, Condor, 17, 1915:197).

Habitat—Pine trees, mainly of two kinds, Bishop pine (*Pinus muricata*) and Monterey pine (*P. radiata*); the combined range of these species of trees (dominant elements of the Monterey flora) coincides remarkably well with that of this race of Pigmy Nuthatch. However, the birds use other conifers: yellow pine, Douglas fir, knob-cone pine, Monterey cypress and redwood. Foraging carries the birds chiefly through the upper parts of the trees, with their attention not only to branches and twigs, but to needle clumps and cones. To provide nesting holes, dug by the birds themselves, dead and decaying trunks must be available, with diggable sites averaging about 30 feet above the ground.

Sitta pygmaea leuconucha Anthony
White-naped Pigmy Nuthatch

Synonyms—*Sitta pygmaea*, part; *Sitta pygmaea pygmaea*, part; Pigmy Nuthatch, part; White-naped Nuthatch, part.

Status—Resident. Common almost wherever favorable habitat exists.

Geographic range—Mountains of southwestern California, from San Jacinto Mountains, Riverside County, south to Laguna Mountains, San Diego County. Life-zone, characteristically Transition. Altitudes of main breeding occurrence, between 5000 and 9000 feet. Literature, by localities, selected for citation here, especially if accompanied by natural history notes: San Jacinto and Santa Rosa mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:310; Dawson, Birds Calif., 2, 1924:647ff.); Cuyamaca Mountains and vicinity (Cooper, Amer. Nat., 8, 1874:17; Belding, Land Birds Pac. Dist., 1890:238; van Rossem, Proc. Biol. Soc. Wash., 42, 1929:176); Laguna Mountains, San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:122). There have been low winter occurrences: Riverside, Riverside County (Willett, *loc. cit.*); Poway, San Diego County (Belding, *loc. cit.*).

Habitat—Open forest, chiefly as consisting of yellow or Jeffrey pines; but white firs and other conifers also patronized in foraging. Dead and decaying tree trunks required for hole-digging at nesting time.

Note—There is a gradient in subspecific features of Pigmy Nuthatches north from the Mexican border through the Sierra Nevada. A recent plotting by us of the gradient in size of wing and bill shows that the greatest change takes place between the populations of the San Jacinto and San Bernardino mountains. The increase north of the latter area is slight. It also appears that the most definite change in the color gradient occurs at this same point. Thus we accord with van Rossem (*loc. cit.*) in setting the northern limit of *leuconucha* at Mount San Jacinto, a designation of boundary which in the nature of the case is somewhat arbitrary.

Certhia familiaris montana Ridgway
Rocky Mountain Brown Creeper

Status—Two verified records of winter visitants: specimen taken in cottonwoods in Colorado River valley, Riverside County, February 9, 1939 (Stager, Condor, 43, 1941:158; specimen now in Max M. Peet Coll., Univ. Michigan); specimen taken 29 miles south of Needles, San Bernardino County, December 30, 1926 (Ellis Coll.). This race has several times been reported in winter from points farther west in southern California, but some of the specimens concerned have since proved referable to *C. f. zelotes* (which see). There is still doubt whether *montana*-like birds from that part of the State represent extreme variants of the population of *zelotes* or individuals that have actually migrated from the breeding range of *montana*.

Certhia familiaris zelotes Osgood
Sierra Nevada Brown Creeper

Synonyms—Certhia familiaris, part; *Certhia americana*; *Certhia mexicana*; *Certhia familiaris fusca*; *Certhia familiaris americana*, part; *Certhia familiaris occidentalis*, part; *Certhia americana zelotes*; *Certhia familiaris montana*; *Certhia americana montana*; *Certhia brachydactyla montana*; *Certhia brachydactyla zelotes*; *Certhia americana occidentalis*, part; Brown Tree Creeper; Brown Creeper, part; Mexican Creeper; Western Creeper, part; American Brown Creeper; Sierra Creeper; California Creeper, part; Rocky Mountain Creeper, part.

Status—Resident. There is partial and irregular emigration in autumn to lower levels, which may mean sporadic occurrences well out on deserts and plains where a few trees offer refuge. Under optimum habitat conditions, common. Removal of old forest likely has reduced aggregate population.

Geographic range—In suitable habitat, almost entire length of State, east of narrow humid coast belt and west of southeastern deserts. At north extends east to Warner Mountains, Modoc County; west to include Siskiyou and Salmon mountains, Siskiyou County; thence extends south along inner coast ranges, including South Fork Mountain, Trinity and extreme eastern Humboldt counties, nearly to Strait of Carquinez, in Napa and Solano counties. Includes entire Sierra Nevada continuously, but south of Tehachapi, only interruptedly, on higher mountains as far as Cuyamaca Mountains, San Diego County. Breeds sparingly on White Mountains, Mono County. Life-zones, Transition and Canadian. Altitudes of nesting extend from about 500 feet, as 5 miles northwest of Cordelia, Solano County (Stoner, Condor, 40, 1938:86), up to at least 9500 feet, as at Sirretta Meadow, Tulare County (Mus. Vert. Zool.). A selection of references, of distributional and ecologic bearing, is as follows: Sugar Hill, Warner Mountains, Modoc County (Dawson, Birds Calif., 2, 1924:651-657; *et al.*); points in Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:131; Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:12; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:78, 94); Trinity Mountain region, in Trinity and Siskiyou counties (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:387); Mount Saint Helena, Napa County, and Alpine Valley, Sonoma County [area of intergradation] (Mailliard, Condor, 22, 1920: 158; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:142); Lassen Peak section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:327); Fyffe, etc., in Eldorado County (Barlow, Condor, 2, 1900:59, and Condor, 3, 1901:182; Ray, Condor, 20, 1918:76); Big Trees, Calaveras County (Belding, Land Birds Pac. Dist.,

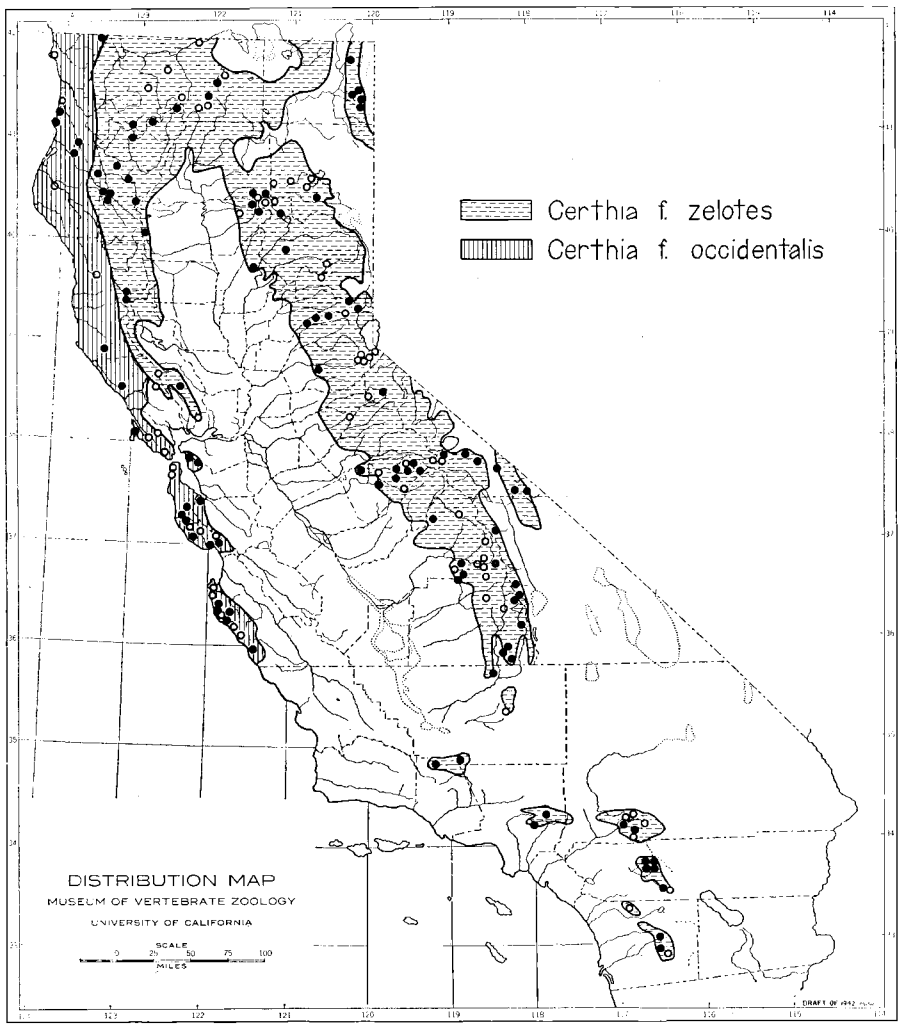

Fig. 30. Distribution of the subspecies of Brown Creeper, *Certhia familiaris*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

1890:235); Yosemite section (Grinnell and Storer, Animal Life Yosemite, 1924:561; E. Michael, Yosemite Nature Notes, 11, February, 1932:2, and *ibid.*, 17, 1938:123; Borell, *ibid.*, 11, January, 1932:5); Florence Lake, Fresno County (L. M. Lofberg, Condor, 30, 1928:311); Mount Pinos, Ventura County (Grinnell, Auk, 22, 1905:391); San Bernardino Mountains (Grinnell, Condor, 9, 1907:59, and Univ. Calif. Publ. Zool., 5, 1908:120); San Jacinto and Santa Rosa mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:308); Laguna Mountains, San Diego County, etc. (Willett, Pac. Coast Avif. No. 21, 1933:122). Some winter records from places more or less far outside of breeding range: Hayward, Alameda and Berkeley, Alameda County (Grinnell and Wythe, *loc. cit.*); Clovis, Fresno County (Tyler, Pac. Coast

Avif. No. 9, 1913:105); Santa Barbara (Bowles, Auk, 28, 1911:177); near Yermo, on Mohave Desert, San Bernardino County (Lamb, Condor, 14, 1912:40); Victorville, San Bernardino County (Mailliard and Grinnell, Condor, 7, 1905:101); Hollywood and Whittier, Los Angeles County (Willett, *loc. cit.*); San Diego, San Diego County (Abbott, Condor, 46, 1944:34).

Habitat—As a rule, mature forest, wherein trees are rather close set. While the trunks and larger branches of conifers seem preferred for all purposes, those of broad-leafed trees also provide forage ground, especially so in winter. For successful nesting, crevices or spaces in or beneath bark must be available. A tree occurring in much of the range of this race of creeper, that perhaps most often furnishes the requisite type of nest site, is the incense cedar. Other conifers used for foraging or nesting, or both, are: white, red and Douglas firs, and yellow, Jeffrey, and lodgepole pines. Some deciduous trees so used: black oak, aspen, cottonwood, alder; in winter, valley, live and blue oaks.

Certhia familiaris occidentalis Ridgway
Tawny Brown Creeper

Synonyms—Certhia familiaris, part; *Certhia familiaris americana*, part; *Certhia americana occidentalis*, part; *Certhia brachydactyla occidentalis*; Western Creeper, part; Brown Creeper, part; California Creeper, part; California Brown Creeper; Tawny Creeper.

Status—Resident. Fairly common locally; the impression is of small numbers as compared with the population of our other race of creeper within much of its range.

Geographic range—Narrow humid coast strip south from Oregon line in Del Norte County as far as southern Monterey County. Includes coastal parts of San Francisco Bay region, rarely reaching interiorly of belt of heavy summer fogs with their influence on character of tree growth. Easternmost breeding station: Redwood Canyon, Contra Costa County (M. Seibert MS; Mus. Vert. Zool.). Life-zone, Transition and, at north, Canadian. Altitudes of occurrence, from near sea level up to 3700 feet in Monterey County, but chiefly below 1500 feet. Some locality references: Crescent City, Del Norte County (W. K. Fisher, Condor, 4, 1902:135); places in Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:227; Ferry, Condor, 10, 1908:43, part); Cahto, Mendocino County (McGregor, Nidologist, 4, 1896:8); Marin County (Mailliard, Condor, 2, 1900:67); Santa Cruz and Santa Cruz Mountains (McGregor, Pac. Coast Avif. No. 2, 1901:20; Torrey, Field-Days Calif., 1913:142); Carmel and Point Lobos, Monterey County (Williams, Wilson Bull., 54, 1942:240ff.; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:30, 97); Little and Big Sur rivers and Big Creek, Monterey County (Grinnell, Condor, 4, 1902:126; Jenkins, Condor, 8, 1906:129; Pemberton and Carriger, Condor, 17, 1915:199).

Habitat—Densest and oldest forests available; for this race, typically original stands of coast redwood. But other conifers also used, especially in absence of redwoods, namely, Douglas fir, Monterey pine, and locally, yellow pine. Alders of large size also patronized. Trunks and larger branches of old trees furnish resources in the way of insect food, shelter, and niches in which nests are placed.

Chamaea fasciata henshawi Ridgway
Pallid Wren-tit

Synonyms—Chamaea fasciata, part; *Chamaea fasciata phaea*, part; *Chamaea fasciata fasciata*; Ground Wren, part; Wren Tit-mouse; Ground Tit, part; Southern Wren-tit.

Status—Resident. Common to abundant, save toward extreme north of general range and marginally, where of sparse and interrupted occurrence.

Geographic range—Greater portion of west-central California eastward of humid coast belt, and southern California west of desert divides. Extends north from Sacramento Valley as far as valley of Scott River (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:387) and neighborhood of Hornbrook and Yreka, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:94; Calif. Acad. Sci.). Some westernmost stations of verified occurrence (Mus. Vert. Zool.): Hyampom, Trinity County; Covelo, Mendocino County; Howell Mountain, Napa County; Vacaville, Solano County; Jolon and San Lucas, Monterey County; Santa Margarita, San Luis Obispo County. Some easternmost, marginal stations, from head of Sacramento Valley to Mexican boundary (Mus. Vert. Zool., unless otherwise indicated): lower McCloud River, Shasta County, Townsend, Proc. U. S. Nat. Mus., 10, 1887:229); Lyman's, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:328); Rackerby, Plumas County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:36); Yosemite Valley, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:582; Mowbray, Condor, 42, 1940:127); Walker Pass, Kern County; Chileo, San Gabriel Mountains, Los Angeles County; Cactus Flat, San Bernardino Mountains; northeast slope of Santa Rosa Mountains, Riverside County; Campo, San Diego County. No known occurrence on any island. Life-zone, characteristically Upper Sonoran. Extremes of altitudinal range, near sea level, as at Santa Barbara, Santa Barbara County, and 7500 feet, on south side of Sugarloaf, San Bernardino Mountains; late summer vagrants occur up to 8800 feet. Some important references additional to above: Dawson, Birds Calif., 2, 1924:823ff.; Stoner, Condor, 34, 1932:257); Willett, Pac. Coast Avif. No. 21, 1933: 123; Mailliard, Condor, 8, 1906:46; Pierce, Condor, 9, 1907:151; Bowles, Condor, 13, 1911:30; L. Miller, Condor, 23, 1921:97.

Habitat—Brushland, with various constituent plant species, whether broken, or continuous and forming a dense chaparral. Some commonly associated plants are chamise, poison oak, scrub oak, black sage, buck-brush, sumac.

Chamaea fasciata rufula Ridgway
Ruddy Wren-tit

Synonyms—Chamaea fasciata, part; *Chamaea fasciata phaea*, part; *Chamaea fasciata intermedia*, part; Wren-tit, part; Northern Wren-tit; Coast Wren-tit; Intermediate Wren-tit; part; Dusky Wren-tit.

Status—Resident. Abundant at south; less common, and of interrupted occurrence, at north.

Geographic range—Narrow northwest humid coast belt, from Oregon line south to northern shore of San Francisco Bay. Northernmost station represented by specimen examined, 7 miles east of Smith River, Del Norte County; southernmost, Sausalito,

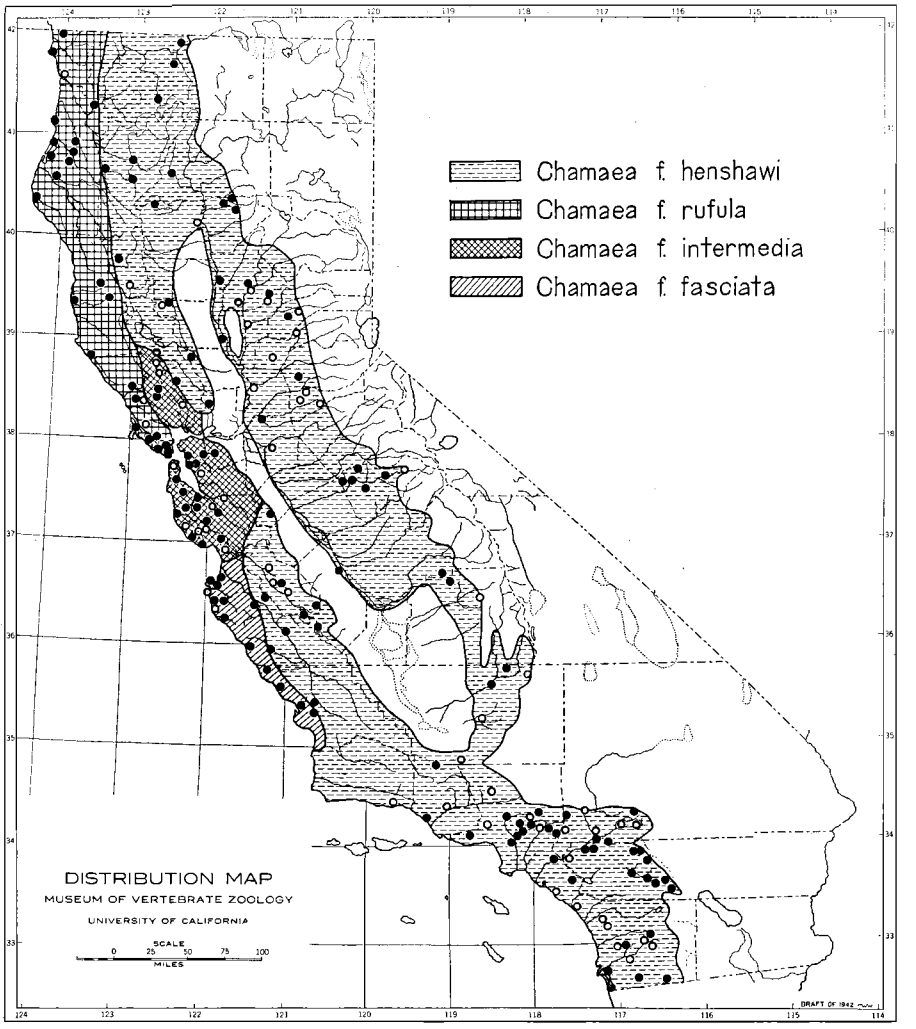

Fig. 31. Distribution of the subspecies of Wren-tit, *Chamaea fasciata*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Marin County (Mus. Vert. Zool.). Seems to be limited interiorward by inner limits of heavy summer fogs. Some interior localities of verified occurrence: Bluff Creek, Humboldt County (Calif. Acad. Sci.); Redwood Creek at 800 feet, Maple Creek, and Carlotta, Humboldt County; Bald Hill, near Sherwood, Mendocino County; Willits, Mendocino County, intergrade (Calif. Acad. Sci.); Guerneville, Sonoma County (Mus. Vert. Zool.). Life-zone, Transition. Altitudes of known occurrence from sea level, as near Mendocino City, up to 2700 feet, near Sherwood. Chief reference: Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:145.

Habitat—Brushland, often of continuous chaparral type, but also riparian and as margining forests.

Chamaea fasciata intermedia Grinnell
Intermediate Wren-tit

Synonyms—Chamaea fasciata, part; *Chamaea fasciata fasciata*, part; *Chamaea fasciata rufula*, part; Ground Wren, part; Wren-tit, part; Gambel Wren-tit, part; Ruddy Wren-tit, part.

Status—Resident. Common; locally abundant.

Geographic range—San Francisco Bay region, except coastal strip from Golden Gate northward. Occupies territory from vicinity of Santa Rosa and Mount Saint Helena, in Sonoma and southwestern Lake counties, south through western Napa, Contra Costa, Alameda, Santa Clara, San Francisco, San Mateo, and Santa Cruz counties, as far as Watsonville, in extreme southeastern Santa Cruz County. Life-zones, Transition and Upper Sonoran. Altitudes of occurrence, from sea level, as at mouth of San Francisquito Creek, near Palo Alto, Santa Clara County, up to 3800 feet on Mount Diablo, Contra Costa County. Some references: M. M. Erickson, Univ. Calif. Publ. Zool., 42, 1938:247ff.; Grinnell, Condor, 15, 1913:179; Newberry, Condor, 18, 1916:65; E. L. Sumner, Sr., Condor, 36, 1934:171; Eakin, Condor, 44, 1942:281.

Habitat—Brushland, of varying type: coyote brush, chamise, poison oak, deer brush, coffee berry, small live oaks, etc., on hill and mountain side; tangles of willow, blackberry, etc., along stream courses and up ravines; and, suburbanly, informally kept parks and gardens.

Note—Thorough overhauling (in 1937 and 1940) of the 600-odd specimens of Wren-tits in the Museum of Vertebrate Zoology has led us to recede somewhat from the conclusions reached by Grinnell and Swarth in 1926 (Univ. Calif. Publ. Zool., 30:170ff.). We now think a San Francisco Bay region race needs to be recognized, for which the name *intermedia*, as above, must be used. Recently acquired material from the Santa Cruz area and from San Mateo County shows close resemblance to birds from the interior San Francisco Bay region. Ruddy-breasted individuals essentially like those of the northern coastal strip do occur in San Mateo County, but as variants in the prevailingly paler population. North of the Golden Gate ruddy birds predominate. Thus it seems that the boundary most naturally falls at the Gate, even though we grant that there is a fairly even gradient in coloration southward as indeed also interiorward.

Chamaea fasciata fasciata (Gambel)
Monterey Wren-tit

Synonyms—Parus fasciatus; *Chamaea fasciata*, part; *Chamaea fasciata intermedia*, part; Ground Tit, part; Ground Wren, part; Wren-tit, part; Gambel Wren-tit, part; Intermediate Wren-tit, part.

Status—Resident. Common.

Geographic range—Coastal strip of Monterey and San Luis Obispo counties; that is, about from mouth of Salinas River to mouth of Santa Maria River, but interiorward excluding drainage toward Salinas River. Northernmost station attested to by study skins (Mus. Vert. Zool.): Seaside, Monterey County; southernmost, San Luis Obispo. Life-zones, Transition and Upper Sonoran. Altitudes of occurrence, close to sea level, as on Point Lobos, up at least to 4000 feet, as at Big Pines, Monterey County. Principal references: Gambel, Jour. Acad. Nat. Sci. Phila., ser. 2, 1, 1847:34; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:98.

Habitat—Tracts of low-growing, stiff-branched brush-plants, often as forming dense and continuous, typical chaparral. Some associated plants: ceanothus of several kinds, chamise, poison oak, small-sized live oaks, coffee berry, certain manzanitas.

Cinclus mexicanus unicolor Bonaparte
Northern American Dipper

Synonyms—Cinclus americanus; *Hydrobata mexicana*; *Cinclus mexicanus*; American Dipper; Water Ouzel; American Water Ouzel; Dipper; Ouzel.

Status—Resident. There is a little "pioneering" outside the limits of the regular range. Numbers are such as to warrant term "common" in regions where swift, cold, permanent streams abound. Along an especially favorable stream, there have been found to be four breeding pairs in one mile (see McGregor, Pac. Coast Avif. No. 2, 1901:19).

Geographic range—In general, northern half of State, both coastwise and all along Sierra Nevada on both slopes; also, more scatteringly, southeast in southern coast district as far as middle San Diego County. At north, occurs in Warner Mountains, Modoc County, and westward, beyond an unfavorable interval, through Shasta, Siskiyou and Trinity regions to streams immediately entering ocean. Occurs on White Mountains of Inyo County. Life-zones, Transition up through Canadian and into Hudsonian. Altitudes of regular occurrence, within 300 feet of sea level, as (formerly) near Santa Cruz, up to 11,600 feet in Mount Whitney region. Literature extensive (110 published accounts for California in 1944); some references selected for special distributional and ecologic bearing: Hoopa Valley, Humboldt County (W. K. Fisher, Condor, 6, 1904:51; San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:138); Santa Cruz Mountains, Santa Cruz and San Mateo counties (McGregor, *loc. cit.*; Willard, Bull. Cooper Ornith. Club, 1, 1899:23; Ray, Condor, 9, 1907:173, 175); Big Creek, San Antonio Creek, etc., Monterey County (Pemberton and Carriger, Condor, 17, 1915:196); Fort Bidwell, Modoc County (Whittle, Auk, 38, 1921:118); Lassen Peak vicinity (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:329); Quincy, Plumas County (Ray, Osprey, 5, 1901:117); Grass Valley, Nevada County (Richards, Condor, 26, 1924:103); Cisco, Placer County (Bryant and Bryant, Condor, 17, 1915:98); vicinity of Lake Tahoe (Ray, Auk, 20, 1903:192; Ray, Condor, 20, 1918:70, 78); Yosemite region (Muir, Mountains Calif., 1894:276; C. W. Michael, Condor, 24, 1922:98, and Condor, 40, 1938:185; E. Michael, Condor, 28, 1926:45; Grinnell and Storer, Animal Life Yosemite, 1924:543; many articles and notes by the Michaels and other authors, in Yosemite Nature Notes from 1930 to 1941, inclusive); South Fork of Kings River, Fresno County (Dawson, Birds Calif., 2, 1924:731ff.); Kern River, Kern County (Badè, Sierra Club Bull., 5, 1904:102); streams on east side of southern Sierra Nevada to head of Owens River (A. K. Fisher, N. Amer. Fauna No. 7, 1893:125); near Santa Barbara (Dawson, Condor, 18, 1916:29); near Carpinteria, Ventura County (Hoffmann, Condor, 23, 1921:137); Sespe Canyon, Ventura County (Peyton, Oologist, 49, 1932:23); San Gabriel Mountains, Los Angeles County (Torrey, Field-Days Calif., 1913:100ff.; Willett, Pac. Coast Avif. No. 21, 1933:123); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:117; Willett, *loc. cit.*; Shepardson, Condor, 19, 1917:169); San Jacinto Mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:302); San Luis Rey River, etc., 2600 feet and 3500 feet altitude, in San Diego County (Abbott, Condor, 29, 1927:117; Willett, *loc. cit.*).

Habitat—Along and in cold, swift-flowing, permanent streams, usually as descending steep mountain canyons, where the rock walls afford at their bases or behind falls the preferred type of nest site. Interestingly, streams that originally harbored the native rainbow and cutthroat trouts are the ones that the dippers most characteristically

affect; factors of coolness, shade, clear water, and plenty of aquatic insect life are needs of the fish and the bird in common. Sometimes the margins of alpine lakes are resorted to for foraging. In lieu of properly recessed rock faces, human-built bridges of wood, stone or cement provide locations that are adopted for nest sites.

Troglodytes aëdon parkmanii Audubon
Western House Wren

Synonyms—Troglodytes sylvestris; *Troglodytes americanus*; *Troglodytes aëdon*; *Troglodytes parkmanni*; *Troglodytes domesticus parkmani*; *Troglodytes aëdon aztecus*; Audubon Wood Wren; Wood Wren; House Wren; Parkman Wren; Parkman House Wren.

Status—In general, summer resident; arrives in early March, departs in September and October. But also, in southern third of State, remains in varying though relatively small numbers through winter; and now and then individuals remain through winter as far north as San Francisco Bay region. The numbers of this wren in summer in most parts of its main range are such that it is termed "common."

Geographic range—Major portion of State, from Oregon line to Mexican boundary; but rare or wanting in most parts of northwest coast belt, on the islands, and on Mohave and Colorado deserts save at migration times and in winter locally. Breeding life-zones, Upper Sonoran and Transition; exceptionally (then east of Sierran axis), Canadian. Altitudes of nesting extend from close to sea level, as at Point Lobos, Monterey County, to over 7000 feet, as in Warner Mountains, Modoc County, and White Mountains, Mono County; even to 9000 feet, near Mammoth, in southern Mono County (Dawson, Birds Calif., 2, 1924:678). A regular post-breeding, up-mountain movement in late summer carries many of the birds nearly or quite to timber line; for example, to 9200 feet, in Yosemite region. From the extensive literature, we cite the following references as being most informative for manner of occurrence and locality representation: Requa, Del Norte County, one specimen, May 18, 1921 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:25); Cahto and Ukiah, Mendocino County (McGregor, Nidologist, 4, 1896:8); vicinity of Mount Shasta west to Salmon Mountains, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:94); Warner Mountains, Modoc County (Dawson, Condor, 18, 1916:29); Lassen Peak section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:329); Lake Tahoe region (Price, Condor, 3, 1901: 182; Ray, Condor, 14, 1912:144, and Condor, 20, 1918:75); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:556; C. W. Michael, Condor, 27, 1925: 113); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927: 140); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:98); Santa Cruz Island, one specimen, September 3, 1903 [only island record] (Howell, Pac. Coast Avif. No. 12, 1917:99; Mus. Vert. Zool.); in region southeast of Sierra Nevada in Inyo County, but only, apparently as migrant (A. K. Fisher, N. Amer. Fauna No. 7, 1893:135); Death Valley, Inyo County, April (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:104); Colorado River valley, January to April (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:210); Mecca, Riverside County, January (van Rossem, Condor, 13, 1911:134); Los Angeles region (Willett, Pac. Coast Avif. No. 21, 1933:124; Law, Condor, 28, 1926:178); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:120); San Jacinto Mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:307); Twin Oaks, etc., in San Diego County (F. A. Merriam, Auk, 13, 1896:122; *et al.*).

Habitat—For foraging, thickets, low trees, tracts of chaparral; most of food-seeking is done within four feet of ground. But for successful nesting, there must be within short cruising distance of such thickets, trunks of trees in which cavities are available. These may be woodpecker-excavated or the results of decay; as a rule, those cavities chosen are in fairly open deciduous trees—oak of one kind or another, sycamore, alder, willow, aspen, cottonwood. Use of conifers, for either foraging or nesting, seems exceptional. Recourse to "artificial" housing is not yet frequent. Cavity size with the House Wren is somewhat adjustable through its own constructive ability to fill up a large space with coarse materials until the finished nest is of properly snug interior dimensions and small diameter of entrance. Thus a greater range of sizes and shapes of cavities is available to this bird than to certain other hole-nesting species, which fact perhaps in part accounts for the wide distribution of this species, zonally and associationally.

Troglodytes troglodytes pacificus Baird
Western Winter Wren

Synonyms—Troglodytes hiemalis [or *hyemalis*]; *Troglodytes hiemalis pacificus*; *Troglodytes parvulus* var. *pacificus*; *Troglodytes parvulus* var. *hyemalis*; *Anorthura troglodytes hyemalis*; *Anorthura pacifica*; *Anorthura troglodytes pacifica*; *Anorthura hiemalis pacifica*; *Olbiorchilus hiemalis pacificus*; *Nannus hiemalis pacificus*; *Nannus troglodytes pacificus*; *Nannus hiemalis*; Winter Wren.

Status—Resident, apparently, throughout breeding range; but emigrants, perhaps from north of California, filter southward in winter (October to March) irregularly, to reach localities interiorwards as well as far southerly. As to numbers, under favorable conditions common.

Geographic range—As resident and breeding, northwest humid coast belt, continuously from Oregon line to Sonoma County; thence interruptedly farther south to Pacific-emptying canyons of central Monterey County. Also a sparse population exists on west slope of Sierra Nevada, from northern Butte County (Sterling City; nest, Mus. Vert. Zool.) to Tulare County. In winter, individuals appear interiorly to Modoc and Kern counties, and southeastward as far as Los Angeles County. Southernmost breeding stations in coast belt, Sur River and Big Creek, Monterey County (Jenkins, Condor, 8, 1906:129); in Sierra Nevada, Doyle's Camp, 5000 feet, Tulare County (Rowley, Condor, 30, 1928:160). Life-zones, Transition and Canadian. Altitudes of summer occurrences, close to sea level, in coast belt, up to 5500 feet in Yosemite section. Following are some accounts of the species for localities within the breeding range: Eureka, Humboldt County (J. M. Davis, Condor, 20, 1918:190); places in Marin County (Sheldon, Condor, 10, 1908:121); Santa Cruz Mountains, in San Mateo and Santa Cruz counties (McGregor, Pac. Coast Avif. No. 2, 1901:19; Ray, Condor, 10, 1908: 219, 221, and Condor, 11, 1909:20, 21; Dawson, Birds Calif., 2, 1924:681, 682; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:141); Little Sur River, Monterey County (Grinnell, Condor, 4, 1902:126); Weber Canyon, near Fyffe, Eldorado County (Barlow, Condor, 3, 1901:182); vicinity of Big Trees, Calaveras County (Belding, Land Birds Pac. Dist., 1890:234); Yosemite Valley, Mariposa County (Torrey, Condor, 12, 1910:79; Grinnell, Sierra Club Bull., 8, 1911:122; Grinnell and Storer, Animal Life Yosemite, 1924:558). The southernmost recorded station for wintering is San Dimas Canyon, near Pomona, Los Angeles County, January 20 and 21, 1901 and 1915 (Willett, Pac. Coast Avif. No. 21, 1933:124; Pierce, Condor, 17, 1915:167). Other marginal wintering records are: near Eagleville, Modoc County, September 30, 1926 (Mailliard,

Proc. Calif. Acad. Sci., ser. 4, 16, 1927:333); Ward Creek, Lake Tahoe, December 3, 1926 (Calif. Acad. Sci.); Greenhorn Mountains at 7000 feet, Tulare County (Grinnell, Condor, 37, 1935:44); Fort Tejon, Kern County (Xantus, Proc. Acad. Nat. Sci. Phila., 11, 1859:191); several localities on Pacific slopes of Santa Barbara, Ventura and Los Angeles counties (records summarized by Willett, *loc. cit.*); Santa Cruz Island, specimen, October 23, 1908 [only island record] (Willett, Pac. Coast Avif. No. 7, 1912:103).

Habitat—Tangles of matted vegetation close to ground; moss-covered and fern-girt logs on floor of dense forest; deep canyon bottoms, where undercut banks are festooned with root tangles and piles of drift and log-jams are frequent. Shade, general moistness of substratum, and terrestrial tangles through the interstices of which foraging can be carried on in this wren's own mouse-like way, are evident requisites. For nesting, natural spaces or cavities in or under logs, or in root-tangles, are used; since these niches would seem to be plentiful, nesting-requirement seems not to be an important factor for presence or absence of the birds in the breeding season.

Thryomanes bewickii atrestus Oberholser
Warner Bewick Wren

Synonyms—Thryomanes bewickii drymoecus, part; San Joaquin Wren, part; Sacramento Bewick Wren, part.

Status—Resident in part; also migratory in part, at least altitudinally. Common in a few localities, but generally scarce.

Geographic range—Great Basin plateau region, east of Cascade-Sierran axis, from Oregon line south at least to Honey Lake Valley, Lassen County, and probably irregularly much farther (breeds along Walker River in Nevada not far from northern Mono County, California). Life-zones, Upper Sonoran and Transition. Altitudes of breeding, from 4700 feet up to at least 5600 feet, possibly higher. Stations of record are as follows: Sugar Hill and Cedarville, Modoc County (Grinnell, Pac. Coast Avif. No. 11, 1915:159); Surprise Valley (common), Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:333); 4 miles northwest of Red Rock P. O. and 8 miles southwest of Ravendale, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:331; A. H. Miller, Condor, 43, 1941:250, 263, 264); Secret Valley and Litchfield, Lassen County, winter (Mus. Vert. Zool.).

Habitat—In breeding season, willow thickets and growths of juniper together with shrubby vegetation.

Thryomanes bewickii eremophilus Oberholser
Desert Bewick Wren

Synonyms—Thriothorus leucogaster; *Thryothorus bewickii bairdi*, part; *Thryomanes bewicki leucogaster*; *Thryomanes bewicki bairdi*; White-bellied Wren; Baird Wren, part; Desert Wren.

Status—Resident in part, migratory in part; that is to say, part of population apparently remains through winter on breeding grounds, but part of population moves down-hill and southward. Numbers in favorable places such as to justify term "common."

Geographic range—As breeding, mountains southeast of Sierra Nevadan axis, in Mono, Inyo, and eastern San Bernardino counties. In winter, lower levels adjacent, as also over full breadth of Mohave and Colorado deserts south nearly if not quite to Mexican boundary. Life-zone of known or probable nesting, essentially Upper Sonoran. Altitudes of summer-time presence, 3800 feet (near Lone Pine) up to 9500 feet (in White Mountains). Locality ascriptions for breeding season: east base southern Sierra Nevada north from Walker Creek, in Inyo County (Swarth, Proc. Calif. Acad. Sci., ser. 4, 6, 1916:80; A. P. Smith, Condor, 21, 1919:214; Dawson, Birds Calif., 2, 1924: 667; Mus. Vert. Zool.); White Mountains, Mono County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:134); Inyo Mountains, Inyo County (Swarth, *loc. cit.*); Grapevine Mountains, Inyo County (Mus. Vert. Zool.); Panamint Mountains, Inyo County (Fisher, *loc. cit.*); Argus Mountains, Inyo County (Fisher, *loc. cit.*); Grapevine Mountains, Inyo County (A. H. Miller MS); Kingston Range, Clark Mountain, and Providence Mountains, San Bernardino County (Mus. Vert. Zool.). Fall and winter records are numerous, from Owens Valley, Inyo County, south to Imperial County, and west from valley of Colorado River, to east base of San Jacinto Mountains; some selections: Death Valley, Inyo County (Fisher, *loc. cit.*; Grinnell, Condor, 36, 1934:69); Needles to Riverside Mountain, in valley of Colorado River (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:209); Brawley and Alamoria, Imperial County (van Rossem, Condor, 13, 1911:133); Palm Springs, Riverside County (Grinnell, Condor, 6, 1904:44; Swarth, *loc. cit.*); Piute Mountains, Kern County (Swarth, *loc. cit.*).

Habitat—In breeding season, growths of piñon, juniper, mountain mahogany and Joshua tree, together with admixed shrubby vegetation. In winter, all sorts of thickets, such as tracts of mesquite, screwbean, catclaw, quail-brush, and willow.

Thryomanes bewickii calophonus Oberholser
Seattle Bewick Wren

Status—Winter visitant to northwest coast district. Possibly of regular occurrence, but known only from two specimens obtained 3 miles north of Trinidad, Humboldt County, December 28, 29, 1941 (nos. 84518, 84519 Mus. Vert. Zool.). The birds were taken in brushland in broken timber. The area is one in which the resident *T. b. marinensis* occurs sparsely (Mus. Vert. Zool.).

Thryomanes bewickii marinensis Grinnell
Nicasio Bewick Wren

Synonyms—Thriothorus bewickii, part; *Thryothorus bewickii spilurus*, part; *Thryomanes bewickii spilurus*, part; Bewick Wren, part; Vigors Wren, part; Nicasio Wren.

Status—Resident. Fairly common.

Geographic range—Northwest humid coast belt, from Del Norte County south through Marin County. Life-zone, chiefly Transition; locally, at south, Upper Sonoran. Altitudes of occurrence, close to sea level up at least to 2500 feet, as on slopes of Mount Tamalpais, Marin County. Northernmost station of record: 7 miles east of Crescent City, Del Norte County (Kimball, Condor, 24, 1922:97). Most eastward marginal stations: 4 miles northeast of Bridgeville, Humboldt County (Calif. Acad. Sci.);

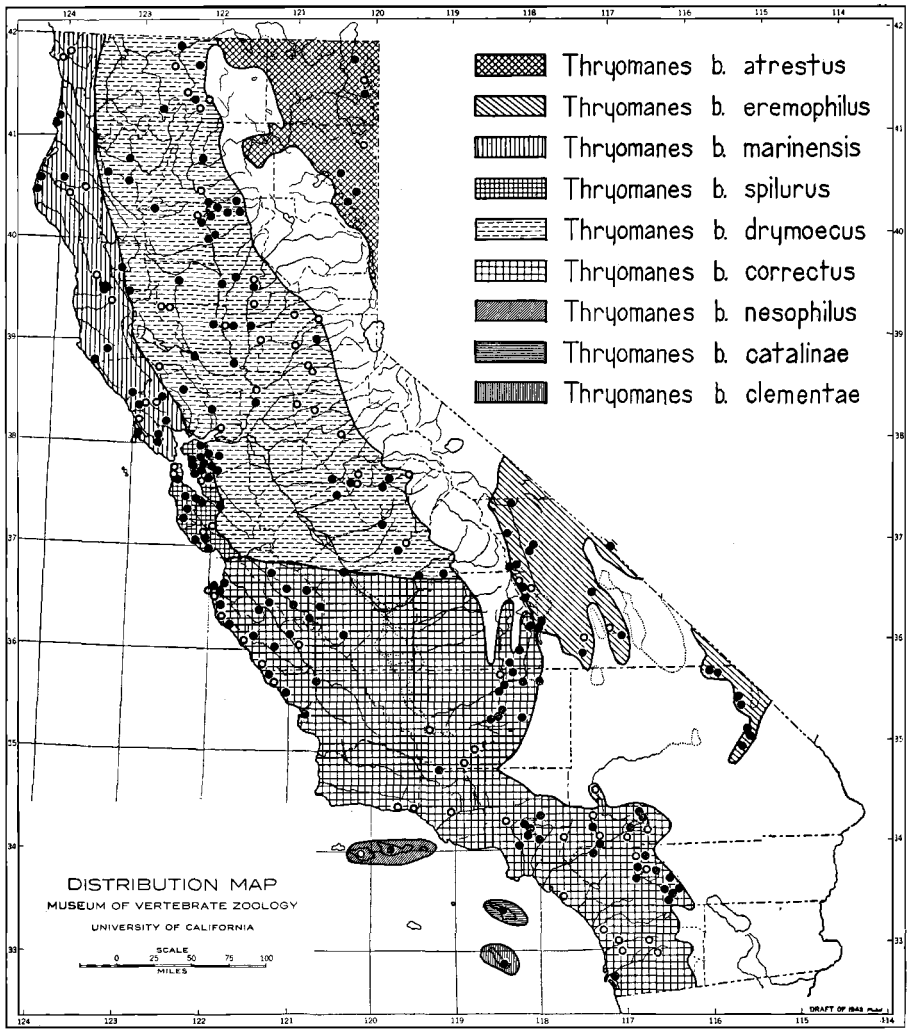

Fig. 32. Distribution of the subspecies of Bewick Wren, *Thryomanes bewickii*, in California. Dots indicate localities from which breeding or resident birds have been examined; circles, localities reported in the literature.

Covelo, Mendocino County (Swarth, Proc. Calif. Acad. Sci., ser. 4, 6, 1916:64), and vicinity of Santa Rosa, Sonoma County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:140).

Habitat—Hillside brushland; dense, tangled vegetation at margins of forest. The dryest and most open or sun-exposed locations in the fog belt are sought by this wren, whose general range *is* the fog belt. In other words, the habitat here is the one available that is most like that of the more southern related races.

Thryomanes bewickii spilurus (Vigors)
Vigors Bewick Wren

Synonyms—Troglodytes spilurus; *Troglodytes bewickii*, part; *Thryothorus bewickii*, part; *Thryothorus spilurus*, part; *Thryothorus bewickii spilurus*, part; *Thryomanes bewickii drymoecus*, part; *Thryomanes bewicki*, part; Bewick Wren, part; Western Mocking Wren, part; Vigors Wren, part.

Status—Resident. Common. Has found its needs met, and its range locally thereby extended, through the establishment of city parks and gardens.

Geographic range—Central coast belt south from Golden Gate and San Francisco Bay through Santa Cruz County. Life-zone, chiefly Upper Sonoran, but also Transition locally. Altitudes of occurrence, close to sea level up to at least 3500 feet (in Santa Cruz Mountains). Easternmost stations lie along hills immediately east of San Francisco Bay from Martinez (Swarth, Proc. Calif. Acad. Sci., ser. 4, 6, 1916:167) southward; even at these localities intergradation toward *drymoecus* is seen. South of the Bay occurs only to west of Santa Clara Valley. Some accounts bearing especially on conditions for nesting: Golden Gate Park, San Francisco (Ray, Condor, 18, 1916:226; *et al.*); Berkeley (A. S. Allen, Condor, 45, 1943:154; E. V. Miller, Condor, 43, 1941: 81ff., and Gull, 23, 1941:31); Hayward, Alameda County (Emerson, Ornith. and Ool., 9, 1884:87); Pescadero Creek, San Mateo County (Orr, Amer. Midl. Nat., 27, 1942: 325); Santa Cruz (Skirm, Ornith. and Ool., 9, 1884:149).

Habitat—Typically, hillside chaparral of "hard" type; but also, tangled growths inclusive of blackberry and willow along streams and ravine bottoms; brush-piles; shrubbery of suburban gardens.

Thryomanes bewickii drymoecus Oberholser
San Joaquin Bewick Wren

Synonyms—Troglodytes bewickii, part; *Thryothorus bewickii*, part; *Thryomanes bewickii spilurus*, part; *Thryothorus bewickii spilurus*, part; *Thryomanes spilurus*, part; *Thryothorus spilurus*, part; *Thryomanes bewicki charienturus*, part; Bewick Wren, part; Californian Bewick Wren; Vigors Wren, part; San Joaquin Wren, part; San Diego Wren, part; Sacramento Bewick Wren.

Status—Resident. Common throughout most of general range; least common at northern end of geographic area occupied. There is some wandering of individuals in fall and winter to localities beyond limits of breeding range.

Geographic range—Broadly, the interior central and northern part of the State west of the Cascade-Sierran axis. Another phrasing, the lower, brushy mountain slopes around the entire Sacramento Valley and on both sides of northern half of San Joaquin Valley. Life-zone, essentially Upper Sonoran; local invasions of Lower Sonoran and Transition occur. Altitudes of known or probable breeding, from within a few feet of sea level, as on Grand Island, Yolo County, up to 4500 feet, as on Mount Sanhedrin, Mendocino County. Some marginal stations of record are as follows: Toward north: Hornbrook and Yreka, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:94; Calif. Acad. Sci.). Toward west: Scott River valley, Siskiyou County, and Helena and Hyampom, Trinity County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916: 387; Mus. Vert. Zool.); Adams, Del Norte County, November 1 [undoubtedly a vagrant; identification not checked by us] (Kimball, Condor, 24, 1922:97); Mount San-

hedrin, Mendocino County (Swarth, Proc. Calif. Acad. Sci., ser. 4, 6, 1916:68); Harbin Springs, Lake County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919:280); Mount Saint Helena and Howell Mountain, Napa County (W. K. Fisher, Condor, 2, 1900: 138; Hemphill MS); Vacaville, Solano County (Swarth, *loc. cit.*); Walnut Creek and Mount Diablo, Contra Costa County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:140). Toward south: Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:104). Toward east, from north to south: Lassen section, Red Bluff east to Manton, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:331); Blue Canyon, Placer County (Swarth, *loc. cit.*); El Portal and even to Yosemite Valley, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:555; E. Michael, Yosemite Nature Notes, 21, 1942:78). Verified examples of fall or winter vagrancy outside of breeding range: Palo Alto, Santa Clara County, September 27, 1902 (Swarth, *loc. cit.*); Big Sur River, Monterey County, December 29, 1903 (Mus. Vert. Zool.); Pasadena, Los Angeles County, December 23, 1896, January 23, 1900 (Mus. Vert. Zool.).

Habitat—Typically "blue" chaparral, that is, within the general range of the race, the lower brush-belt of the mountain slopes. Broken or discontinuous brushland seems most frequented, especially where interspersed with oak of one species or another, and digger pine. But also the birds extend down out of the mountains along stream courses where there are dense thickets of willow, grapevine, rose and other woody plants of the riparian association.

Thryomanes bewickii correctus Grinnell
San Diego Bewick Wren

Synonyms—Troglodytes bewickii, part; *Thryothorus bewickii*, part; *Thryothorus bewickii spilurus*, part; *Thryothorus spilurus*, part; *Troglodytes bewickii* var. *spilurus*, part; *Thryothorus bewickii bairdi*, part; *Thryomanes bewickii drymoecus*, part; *Thryomanes bewickii charienturus*, part; *Thryomanes bewickii spilurus*, part; *Thryomanes spilurus*, part; Vigors Wren, part; Western Mocking Wren; Western Mocking-bird, part; Baird Wren, part; Southwest Bewick Wren; San Diego Wren, part; San Joaquin Wren, part.

Status—Resident. Common. There is a temporary up-mountain movement of birds in late summer, even to 10,700 feet altitude, and some wander out onto the lowlands and deserts in fall and winter.

Geographic range—Southern coastal region, chiefly in hills and mountains, from Mexican boundary in San Diego County northwest through Monterey and San Benito counties; also east and north from Ventura County through Tehachapi region into western slopes of southern Sierra Nevada to about latitude 36° 30′. Life-zone, characteristically Upper Sonoran. Altitudes of nesting extend from near sea level, as at Seaside, Monterey County, up to at least 6000 feet, as in San Jacinto Mountains, Riverside County. Some northern, marginal record stations are: Seaside, Monterey County (Mus. Vert. Zool.); Paicines, San Benito County (Mailliard and Mailliard, Condor, 3, 1901:126; Swarth, Proc. Calif. Acad. Sci., ser. 4, 6, 1916:74ff.); Panoche, San Benito County (Mus. Vert. Zool.); Coalinga, Fresno County (J. R. Arnold, Condor, 39, 1937:33); Trout Creek, valley of South Fork of Kern River, Tulare County (Swarth, *loc. cit.*). On the main mountain ranges of southern California this wren occurs as a resident well down the eastern slopes; exceptionally beyond, as at Oro Grande, San Bernardino County (Mus. Vert. Zool.). In winter some birds range well out onto the

Mohave and Colorado deserts, especially along water-courses, for example, to Barstow along Mohave River, San Bernardino County, and to Palm Springs and Mecca, Riverside County (Swarth, *op. cit.*:76; van Rossem, Condor, 13, 1911:137). Some further references: in general (Dawson, Birds Calif., 2, 1924:671; Willett, Pac. Coast Avif. No. 21, 1933:125); Carmel, Monterey County (Williams, Condor, 43, 1941:274, and Wilson Bull., 54, 1942:238); Buena Vista Lake, Kern County (Linton, Condor, 10, 1908:198); San Jacinto Mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:307); Twin Oaks and Escondido, San Diego County (F. A. Merriam, Auk, 13, 1896:121; Sharp, Condor, 9, 1907:90); San Diego and Cuyamaca Mountains (Cooper, *in* Baird, Brewer and Ridgway, Hist. N. Amer. Birds, 1, 1874: 147, part).

Habitat—Essentially, Upper Sonoran chaparral, especially as clothing hillsides and canyon walls and admixed with live oaks. Also includes brushy tangles of willow, vines, etc., along stream courses, even where these lead down onto the lowlands. Chosen forage level is low, mostly below that of four feet above the ground; but there must be heavy cover overhead.

Note—Four specimens (Mus. Vert. Zool.) taken September 11, 1911, near Carroll Creek, at 7000 to 7500 feet, Inyo County, on the east side of the Sierra Nevada were described by Swarth (*op. cit.*:72) as extremely gray, aberrant *drymoecus*. One of these is still in juvenal plumage, the others partly or entirely in fresh first-year plumage. In view of the date and the state of molt in some of the specimens, we think it unlikely that the birds had migrated or wandered far from the breeding grounds. They show some resemblance to *atrestus* of Modoc County yet probably in origin are intergrades between *correctus* of the Kern River drainage and *eremophilus* of the Owens Valley area. These latter are themselves somewhat intergradient in that they are slightly darker colored dorsally than *eremophilus* from farther east.

Thryomanes bewickii nesophilus Oberholser

Santa Cruz Island Bewick Wren

Synonyms—Thryothorus bewickii, part; *Thryothorus bewickii spilurus*, part; *Thryothorus bewickii bairdi*, part; *Thryomanes bewickii spilurus*, part; *Thryomanes nesophilus*; *Thryomanes bewickii charienturus*, part; Bewick Wren, part; Vigors Wren, part; Santa Cruz Island Wren; San Diego Wren, part.

Status—Resident. Locally common, at least on Santa Cruz Island.

Geographic range—Santa Rosa, Santa Cruz and Anacapa islands; also (but not provenly of this race) Santa Barbara and San Nicolas islands. Literature and status to 1917 summarized by Howell, Pac. Coast Avif. No. 12, 1917:97. Chief non-systematic references, to present time (1944), assorted by islands: Santa Rosa Island (Howell, *loc. cit.*; Willett, Pac. Coast Avif. No. 21, 1933:125); Santa Cruz Island (Mailliard, Bull. Cooper Ornith. Club. 1, 1899:42; Howell and van Rossem, Condor, 13, 1911:210; Wright and Snyder, Condor, 15, 1913:92; Howell, *loc. cit.*; Dawson, Jour. Mus. Comp. Ool., 2, 1922:45, and Birds Calif., 2, 1924:669, 673); Anacapa Island (Willett, *loc. cit.*; L. Miller, Condor, 30, 1928:325); Santa Barbara Island (Cooper, Proc. Calif. Acad. Sci., 4, 1870:78; Pemberton, Condor, 30, 1928:145); San Nicolas Island (Cooper, *loc. cit.*). It is possible that the last two ascriptions were based on vagrants from the southern California mainland if not from some other island; as far as we know, no specimen is extant from either of the last two named islands. The evolutionary history of this and other island races is commented upon in papers by Murphy (Science, n.s., 38, 1938: 538) and Cockerell (Univ. Colo. Studies, 26, 1938:12).

Habitat—On Santa Cruz Island, tracts of dense brush, or mixed brush and trees as where lining ravine bottoms.

Thyromanes bewickii catalinae Grinnell
Catalina Bewick Wren

Synonyms—Thryothorus bewickii, part; *Thryothorus bewickii spilurus*, part; *Thryomanes bewickii charienturus*, part; Bewick Wren, part; Vigors Wren, part; Catalina Island Wren; San Diego Wren, part; Catalina Wren.

Status—Resident. Common.

Geographic range—Santa Catalina Island. All literature concerning this race to 1917 is cited by Howell, Pac. Coast Avif. No. 12, 1917:97. There is apparently no addition to our knowledge of this race since that time.

Habitat—Dry hillside chaparral, brushy ravines, and wooded canyon bottoms.

Thyromanes bewickii leucophrys (Anthony)
San Clemente Bewick Wren

Synonyms—Thryothorus bewickii, part; *Thryothorus bewickii bairdi*, part; *Thryothorus leucophrys*; *Thryomanes leucophrys*; Bewick Wren, part; Baird Wren, part; San Clemente Wren.

Status—Resident. Common, even "abundant."

Geographic range—San Clemente Island. Quite evenly distributed over almost entire area of this island. For all references to 1917, see Howell, Pac. Coast Avif. No. 12, 1917:98. Additional accounts: nesting (Abbott, Condor, 29, 1927:160); evolution (Murphy, Science, n.s., 88, 1938:538).

Habitat—Dense thickets of thorny shrubs and patches of cactus. All the conditions for subsistence and breeding are met by these.

Heleodytes brunneicapillus couesi (Sharpe)
Northern Cactus Wren

Synonyms—Campylorhynchus brunneicapillus; *Campylorhynchus couesi*; *Heleodytes brunneicapillus*; *Heleodytes brunneicapillus bryanti*; *Heleodytes brunneicapillus anthonyi*; *Heleodytes brunneicapillus brunneicapillus*; *Heleodytes affinis*; Brown-headed Wren; California Cactus Wren; Brown-capped Cactus Wren; Bryant Cactus Wren.

Status—Completely resident; population as nearly fixed, seasonally, as in any California bird. Numbers sufficient only very locally such as to merit term "common" or "abundant." Range on coastal slope of southern California now much restricted as compared with condition in 1880's and 1890's, owing to great reduction of requisite habitat, as also, perhaps, in part, to the attentions of egg collectors.

Geographic range—Southeastern desert area, that is to say, the Colorado and Mohave deserts, north from Mexican boundary to Inyo and Kern counties; and also most arid parts of westward drainage slope from San Diego County northwest to Ventura

County. Life-zone, Lower Sonoran. Altitudes of occurrence, from 180 feet below sea level, as around Salton Sea, Riverside and Imperial counties, up to 5800 feet, in Argus Mountains, Inyo County. Northernmost recorded stations of occurrence: near Little "Owens" Lake, Coso, and Mountain Springs Canyon in Argus Mountains, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:131; Mus. Vert. Zool.); Kingston Range, San Bernardino County (A. H. Miller MS). Westernmost stations in Kern County: Kernville, Weldon, Walker Basin at 4500 feet, etc., on western side of Sierran divide where Mohave Desert conditions extend through Walker Pass (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:231; Mus. Vert. Zool.). Westernmost stations in Los Angeles County: extreme western end of Antelope Valley and "wash leading south from Gorman ranch" toward Piru Creek (A. K. Fisher, *loc. cit.*). Northwesternmost stations on immediate coastal slope: Santa Paula, Sespe and Simi Valley, Ventura County (Evermann, Auk, 3, 1886:87, 185; Willett, Pac. Coast Avif. No. 21, 1933:126). A report of "several" seen on one of the islands, San Clemente, on March 24 and 25, 1918 (Mailliard, Condor, 20, 1918:189), remains unsupported and is dubious. Some selections from the literature further to exemplify range, but also as bearing on natural history: Mohave, Kern County (Storer, Condor, 22, 1920:159); Azusa, Los Angeles County (Woods, Condor, 23, 1921:47); Claremont, Los Angeles County (Pierce, Condor, 16, 1914:146; Gardner, Condor, 16, 1914:182); Colton, San Bernardino County (Hanna, Condor, 4, 1902:94); both bases of San Jacinto Mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:305); near San Diego, etc. (Dawson, Birds Calif., 2, 1924:662ff.); Colorado River valley, The Needles to Potholes (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:208); coastal southern California, food habits (Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 30, 1907:64).

Habitat—Sharply defined as arid terrain grown to thickets, patches or tracts of cactus of the larger, branching types, or of stiff-twigged, thorny brush or small trees. Such thorny thickets provide safe refuge in quick need, sites for nests that are inaccessible to terrestrial marauders, and, in part, the required food, insects, spiders and, in season, fruits. Foraging, chiefly on the ground, extends but a few rods radially from such havens. Beside cholla and tuna cactuses, plants that are used as headquarters are yuccas of the arborescent kinds, catclaw, mesquite, screw-bean, ironwood and palo verde.

Telmatodytes palustris plesius (Oberholser)
Western Long-billed Marsh Wren

Synonyms—Troglodytes palustris, part; *Cistothorus palustris*, part; *Cistothorus palustris paludicola*, part; *Cistothorus palustris plesius*; *Telmatodytes palustris paludicola*, part; *Telmatodytes palustris*, part; Marsh Wren, part; Long-billed Marsh Wren, part; Tule Wren, part; Western Marsh Wren.

Status—Present in three seasonal rôles; summer resident in elevated northeastern corner of State; winter visitant (September to March) in southern half, chiefly; transient there and elsewhere. Common to even abundant where conditions of habitat are most favorable.

Geographic range—As breeding, northeastern plateau region, in Modoc, eastern Siskiyou and Lassen counties, and Tahoe area. In winter, suitable spots on Mohave and Colorado deserts, more continuously on southern coastal drainage northwest from San Diego, and north less frequently through west-central portion of State. Breeding

life-zones, Upper Sonoran and Transition; altitudes 4000 to 6200 feet. Definite breeding stations: Tule Lake in Siskiyou County, Pit River near Alturas, etc., in Modoc County, and Eagle Lake, etc., in Lassen County (Swarth, Auk, 34, 1917:314; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:332; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:333); Rowland's Marsh, Lake Tahoe, Eldorado County (Calif. Acad. Sci.). There are records of marsh wrens from Shasta Valley, Siskiyou County, September 17 to 20, 1898 (Merriam, N. Amer. Fauna No. 16, 1899:131), but their significance as regards breeding populations is not known to us. Northwesternmost stations of winter occurrence: Point Reyes and Tomales Point, Marin County (Swarth, *loc. cit.*); Petaluma, Sonoma County (Mus. Vert. Zool.). Northernmost winter station interiorly: Litchfield, Lassen County (A. H. Miller MS). There are two January records for the islands: Santa Cruz Island (Hoffmann, Condor, 22, 1920:187) and San Nicolas Island [subspecies not certain] (Howell, Pac. Coast Avif. No. 12, 1917:99). From among locality ascriptions of winter or transient occurrence, the following are selections: Long Beach and Alamitos Bay, Los Angeles County, and Sunset Beach, Orange County (Willett, Pac. Coast Avif. No. 21, 1933:126); many other coastal points from San Benito County south to Tia Juana River, San Diego County (Swarth, *loc. cit.*); Berkeley, Alameda County, and Palo Alto, Santa Clara County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:141); Big Lagoon, Humboldt County, September 21 (A. H. Miller MS); Maxwell, Colusa County (Grinnell, Condor, 25, 1923: 176); Yosemite section, to as high as 9000 feet, at Gem Lake, Mono County, September 13 (Grinnell and Storer, Animal Life Yosemite, 1924:560); points in Owens Valley and Death Valley, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:136; A. P. Smith, Condor, 21, 1919:214); Colorado River valley south to Fort Yuma, Imperial County (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:211; Swarth, *loc. cit.*); Mecca and Palm Springs, on Colorado Desert, Riverside County, etc. (Swarth, *loc. cit.*).

Habitat—Typically, especially in nesting season, thick tracts of tall, straight-stemmed marshland vegetation as comprised of cattail, tule, and bulrush. In this sort of vegetation sites for nests seem preferred where above water, a greater measure of security against terrestrial marauders being thus probably secured. All the other requirements of the bird are afforded within this plant association plus the tangles of other aquatic or semi-aquatic plant growths in the vicinity. In the migrations and in winter any sort of low vegetation growing in water or on damp ground suffices for foraging and concealment of these wrens. An interesting seasonal circumstance is that in its winter range, when its elevated and interior summer grounds are largely uninhabitable, this wren finds in southern California the wet season on, with, then, as a rule, plenteous fresh water and the lush plant growths that are to its liking. Another, resident race of marsh wren occupies the few marshes in southern California which outlast the long dry summer season.

Telmatodytes palustris paludicola (Baird)
Tule Long-billed Marsh Wren

Synonyms—Troglodytes palustris, part; *Cistothorus palustris*, part; *Cistothorus paludicola*; *Cistothorus palustris paludicola*, part; *Telmatodytes palustris*, part; Marsh Wren, part; Long-billed Marsh Wren, part; California Marsh Wren; Tule Wren, part; Tule Marsh Wren.

Status—Essentially resident; an autumnal exodus of individuals is more or less in

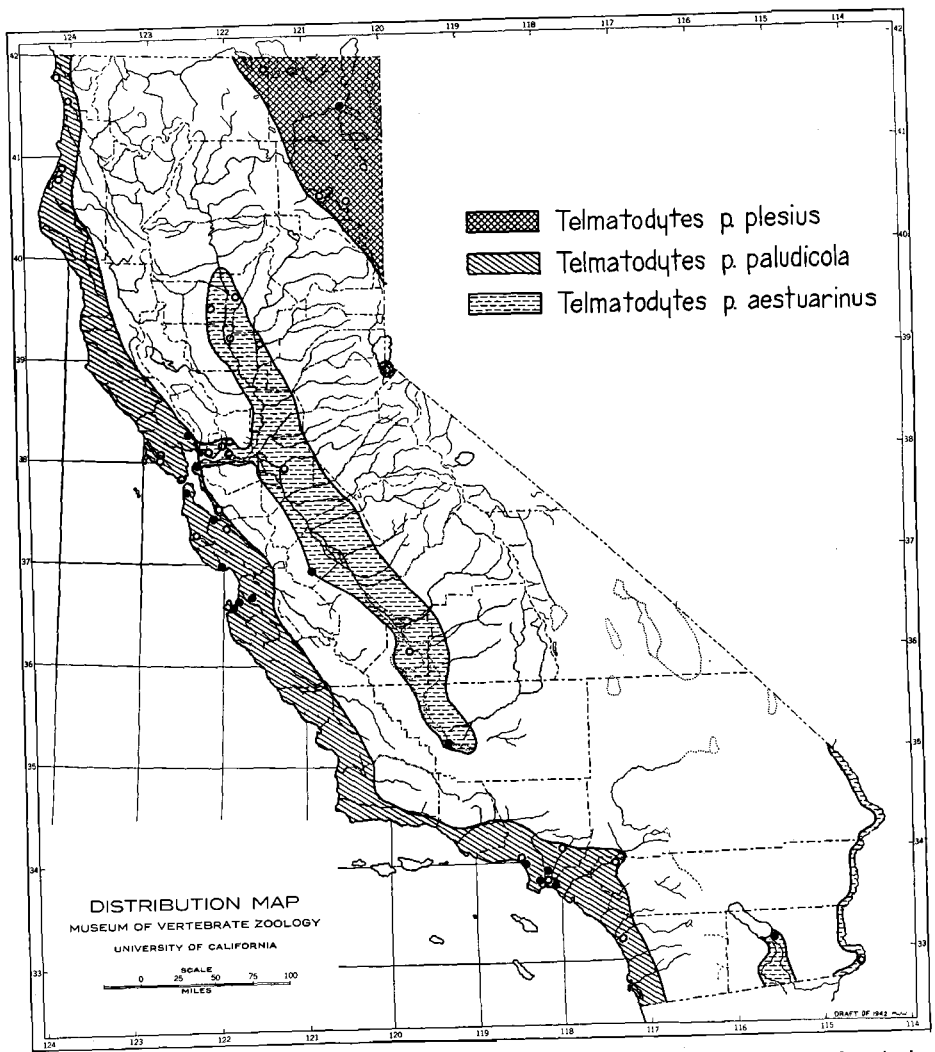

Fig. 33. Distribution of the subspecies of Long-billed Marsh Wren, *Telmatodytes palustris*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

evidence. As to numbers, common under suitable conditions, but these are localized and general range is thus of decidedly interrupted character.

Geographic range—Full length of coast belt, entirely within 50 miles of sea, from Del Norte County to San Diego County. Life-zones, Transition and Upper Sonoran. Altitudes of nesting all, so far as known to us, below 1400 feet. Recorded localities of known or probable breeding, more important for indicating range, are as follows: Crescent City and Requa, Del Norte County (W. K. Fisher, Condor, 4, 1902:135; Swarth, Auk, 34, 1917:313; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:25); Arcata and Eureka, Humboldt County (Swarth, *loc. cit.*); Point Reyes, Olema, Point Bonita, etc., Marin County (Swarth, *loc. cit.*; Stephens and Pringle, Birds Marin Co.,

1933:6); Merced Lake, San Francisco (Ray, Condor, 18, 1916:226; *et al.*); Alvarado, etc., Alameda County (Keeler, Bird Notes Afield, 1907:57; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:141; *et al.*); San Jose, Santa Clara County (Van Denburgh, Proc. Amer. Philos. Soc., 38, 1899:178); Pescadero Creek, San Mateo County (Orr, Amer. Midl. Nat., 27, 1942:326); Santa Cruz, Santa Cruz County (McGregor, Pac. Coast Avif. No. 2, 1901:20); Santa Monica, Nigger Slough, Bixby, El Monte, etc., Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:49; Willett, Pac. Coast Avif. No. 7, 1912:103; *et al.*); Riverside, Riverside County (Willett, *loc. cit.*); San Luis Rey, San Diego County (Sharp, Condor, 9, 1907:91). Some instances of verified wandering east of breeding range: Butte Creek, near Colusa, Colusa County, March 2 (Grinnell, Condor, 25, 1923:176); places near Suisun, Solano County, in winter (Swarth, *loc. cit.*); Modesto, Stanislaus County, October 26, December 14 (Calif. Acad. Sci.).

Habitat—Marshland, at nesting time as grown to cattail, tule, and bulrush. Predilections about as in the Western Long-billed Marsh Wren, which see.

Telmatodytes palustris aestuarinus Swarth
Suisun Long-billed Marsh Wren

Synonyms—Cistothorus palustris, part; *Telmatodytes palustris paludicola*, part; *Cistothorus palustris paludicola*, part; *Cistothorus palustris aestuarinus*; Marsh Wren, part; Western Long-billed Marsh Wren, part; Tule Wren, part; Suisun Marsh Wren.

Status—Resident, but subject to fall and winter wandering of some individuals considerably out of breeding range. Common where proper conditions occur.

Geographic range—As breeding, Sacramento and San Joaquin valleys from at least Glenn and Butte counties south to Kern County, and Imperial Valley and valley of lower Colorado River, in Imperial County. Life-zone, mainly Lower Sonoran; Upper Sonoran only marginally. Altitudes of known nesting stations, all below 500 feet. Localities of known or probable breeding: vicinity of Willows, Glenn County, and near Chico, Butte County (A. H. Miller MS); Butte Creek, Colusa and Sutter counties (Grinnell, Condor, 25, 1923:176); Marysville, Yuba County, and Stockton, San Joaquin County (Belding, Proc. U. S. Nat. Mus., 1, 1879:403); vicinity of Suisun, Solano County, and north side of San Pablo Bay, in Napa County (Swarth, Auk, 34, 1917:310; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:141); Los Baños, Merced County, and "Fresno County" (Dawson, Birds Calif., 2, 1924:659, 661); Tulare Lake, Kings County (Goldman, Condor, 10, 1908:205); Buena Vista Lake, Kern County (Dickey and van Rossem, Condor, 24, 1922:67); Alamo Duck Preserve, near Calipatria, Imperial County (Linsdale MS; Mus. Vert. Zool.); California Swamp [near Potholes], Colorado River, Imperial County (Monson, Condor, 46, 1944:21). Some stations of fall and winter occurrence (October to February) outside above-indicated general breeding area: Palo Alto, Santa Clara County (Swarth, *loc. cit.*); Santa Cruz, Santa Cruz County (Mus. Vert. Zool.); San Luis Obispo, San Luis Obispo County (Swarth, *loc. cit.*); Los Angeles, Bixby and El Monte, Los Angeles County (Swarth, *loc. cit.*); Sunset Beach, Orange County, October 10 to February 7 (Willett, Pac. Coast Avif. No. 21, 1933: 127); Corona, Riverside County (Swarth, *loc. cit.*).

Habitat—Fresh-water or brackish marshland, typically as grown to beds of cattail, tule, or bulrush; see account of *Telmatodytes p. plesius*.

Catherpes mexicanus conspersus Ridgway
Dotted Canyon Wren

Synonyms—Troglodytes mexicanus; *Catherpes mexicanus*; *Catherpes mexicanus punctulatus*; *Catherpes mexicanus polioptilus*; White-throated Wren; Mexican Wren; Canyon Wren; White-throated Rock Wren; Auburn Canyon Wren; Ridgway Canyon Wren; Dotted Wren; Nevada Canyon Wren; Intermediate Canyon Wren.

Status—Resident; only occasional individuals wander far away from localities of nesting. Population never dense; usually so scattered, even where conditions are favorable, as to justify merely the term "fairly common."

Geographic range—Chiefly interior, mountainous parts of State; in other words, mainly Sierra Nevada and southern inner Coast Ranges. Does not reach into northern humid coast belt, but scattering occurrences interiorly, extend north nearly to Oregon line and in southern coast belt north to vicinity of San Francisco Bay. Also there is a sparse population on the mountains of the southeastern deserts, and a few dwell on Santa Cruz Island. Life-zone of predominant occupancy, Upper Sonoran; Transition and Lower Sonoran entered to lesser extent. Altitudes of known or probable nesting, near sea level, as on coast of Monterey County, up to 7500 feet, in mountains of Mohave and Inyo regions; late-summer wanderings carry individuals up to at least 9000 feet. Northwesternmost recorded stations: Santa Cruz Mountains, Santa Cruz County, nesting (McGregor, Pac. Coast Avif. No. 2, 1901:19); foothills east of Berryessa, Santa Clara County, nesting (Barlow, Condor, 2, 1900:133); near Tesla, Alameda County, nesting (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:139); Berkeley, Alameda County, November, 1903, specimens (L. Miller MS); Mount Saint Helena, Napa County, late summer (W. K. Fisher, Condor, 2, 1900:138). Some extreme northward stations: Baird, Shasta County, nesting, and Mount Shasta, Siskiyou County, "timberline" and at northeast base (Townsend, Proc. U. S. Nat. Mus., 10, 1887:226); near Weed, Siskiyou County, January 3, 1936 (Mus. Vert. Zool.); Dry Creek, Warner Mountains, and Steele Meadow, Modoc County, July 20, 1910, and September 30, 1922 (Mus. Vert. Zool.). Has been recorded from but one of the islands: Santa Cruz Island, December 19, 1907, and April 20, 1915 (Linton, Condor, 10, 1908:128; Dawson, Condor, 18, 1916:29). Further references, especially selected as giving clues to distribution and habitat relations: Lassen Peak "section," Antelope Creek, at 600 feet, Tehama County, east to Secret Valley, 4500 feet, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:334); near Oroville, Butte County, etc. (Belding, Land Birds Pac. Dist., 1890:230); Summit, Placer County, and Glen Alpine, Eldorado County (Price, Condor, 6, 1904:73); Yosemite section, Lagrange, Stanislaus County, east to Merced Lake, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:552); Negit Island, Mono Lake, Mono County (Dawson, Birds Calif., 2, 1924:690); Big Creek, Fresno County (L. M. Lofberg, Condor, 33, 1931:245); Minkler, Fresno County (Swarth, Condor, 19, 1917:130); Mount Whitney region, Walker Basin, etc. (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:231); Great Basin ranges east of Sierra Nevada, Inyo, Panamint, Funeral, Argus, and Kingston mountains, etc. (A. K. Fisher, N. Amer. Fauna No. 7, 1893:133; Mus. Vert. Zool.); Providence Mountains and Clark Mountain, eastern San Bernardino County (Stephens, Condor, 5, 1903:105; Mus. Vert. Zool.); near Colorado River, The Needles to Riverside Mountain (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:209); Palm Springs, Riverside County (Grinnell, Condor, 6, 1904:44); Big Sur, Monterey County (Unglish, Condor, 39, 1937:40); vicinity of Santa Barbara, Santa Barbara County (Dawson,

op. cit.:692); Sespe, Ventura County, Colton, San Bernardino County, etc. (Willett, Pac. Coast Avif. No. 21, 1933:127); San Gabriel Mountains, Los Angeles County (Pierce, Condor, 9, 1907:17); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:119); San Jacinto and Santa Rosa mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:306); vicinity of Escondido, San Diego County (Sharp, Condor, 9, 1907:90; Carpenter, Condor, 21, 1919:28).

Habitat—Cleft faces of rock walls; interstices among boulders of rock slides or among fragments resulting from weather-shattering of rock outcrops. The appertaining surfaces and crevices furnish forage, safety and nest sites of requisite character. Preference seems shown for neighborhood of water, especially during the breeding period, though this factor is not absolutely necessary. Steep-walled, stream-carrying canyons are typical settings for the successful all-year activities of this wren. Vegetation does not figure at all in its economy, save secondarily as source of insect and arachnid food and for materials for nests. The bird is devoted to shade and adapted to life in the shadows. (See Grinnell, Condor, 26, 1924:32; Grinnell and Behle, Condor, 37, 1935:248.)

Salpinctes obsoletus obsoletus (Say)
Northern Rock Wren

Synonyms—Troglodytes obsoletus; *Salpinctes obsoletus*; *Salpinctes obsoletus pulverius*; *Salpinctes pulverius*; Rock Wren; San Nicolas Rock Wren.

Status—Resident within State, permanently so in lower and southern districts, emigrant southward from northern parts and down-hill from higher altitudes. Within characteristic habitat, common; especially so, even abundant, in winter locally in certain southern portions of general range.

Geographic range—Most of length and breadth of State, wherever suitable habitat exists, but not reported from northwest coast belt north of Marin County. Greatest numbers reached in more or less arid interior and on islands from the Farallones southward. Zonally, metropolis lies in Lower and Upper Sonoran, but not infrequent instances of breeding are known up to timber line (Hudsonian) on Sierra Nevada and other high mountain ranges. Altitudinally, nestings extend from 250 feet below sea level, in Death Valley, Inyo County (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:104), up to at least 12,500 feet, on Mount Langley, Tulare County (Dawson, Birds Calif., 2, 1924: 689); in late summer may be found up to 14,000 feet (Mount Langley, Grinnell MS). Thus the factor of special habitat requirement transcends that of climatic temperature (but see paragraph beyond). Northernmost stations of record in coast belt: nesting along ocean cliffs, and at Tiburon, etc., in Marin County (Mailliard, Condor, 2, 1900: 67; Stephens and Pringle, Birds Marin Co., 1933:6). Westernmost stations at north: Mount Shasta, to 10,000 feet, and "Sheep Rock Butte," Siskiyou County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:226; A. H. Miller, Condor, 41, 1939:219); Hayfork Baldy, Trinity County (A. H. Miller MS). The literature for the Rock Wren is extensive; the following are citations selected for special natural history or distributional significance: Clear Lake, Modoc County (Willett, Condor, 21, 1919:206); Warner Mountains, up to 9000 feet, Modoc County (Dawson, *op. cit.*:688; Mus. Vert. Zool.); Lassen Peak section, near Red Bluff, Tehama County, east to Secret Valley and Red Rock, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930: 334); vicinity of Summit, up to 8500 feet, Nevada and Placer counties, in summer

(Belding, Land Birds Pac. Dist., 1890:229); Yosemite section, up to 10,500 feet in Mono Pass, from Merced Falls, Merced County, east to near Mono Lake, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:550); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:103); hills of eastern Santa Clara County (Barlow, Condor, 2, 1900:133); Tesla, Alameda County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:139; Bond, Condor, 42, 1940:122); Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:49; Ray, Auk, 21, 1904:440; Dawson, Condor, 13, 1911: 183; *et al.*); all the Santa Barbara Islands, information to date summarized (Howell, Pac. Coast Avif. No. 12, 1917:96); southwestern California in general (Willett, Pac. Coast Avif. No. 21, 1933:127); Colton, San Bernardino County (Hanna, Condor, 11, 1909:80, and Condor, 20, 1918:126); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:118); many places in Mono and Inyo counties east to Nevada line, also along southern Sierra Nevada, on crest and both slopes (A. K. Fisher, N. Amer. Fauna No. 7, 1893:132); Colorado River valley, Needles to near Potholes (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:208).

Habitat—Rocky situations: typically, rock taluses, broken rock outcrops, fractured cliff faces, lava rim-rock; but also dry, storm-cut earth banks, especially where penetrated by rodent burrows (even, in winter, level ground where permeated at intervals by ground-squirrel burrows), stony road-side banks, human-built rock walls; sometimes deserted wooden buildings, and prone logs in forest-margins. Essential feature of all these places is presence of crevices of suitable size which serve the bird for foraging purposes (for insects, in its peculiar way), for shelter, for emergency refuge, and for nest site. The flattened body enables it to creep far into fissures and into narrow spaces between boulders in search of food or to obtain safety. On occasion a bird has been seen to go down a mammal burrow and reappear at another opening some yards off. The Rock Wren comes nearest being subterranean of any of our birds! Yet, a good deal of its foraging is done also on exposed rock surfaces; and, of course, the singing and look-out posts are usually situated on prominent rock "corners." The Canyon Wren rarely occurs in exactly the same places with the Rock Wren, being more tied down to shade and often to the neighborhood of water. The Rock Wren seemingly eschews water; at least, no extreme of aridity interferes with its thrifty existence, whatever the season. Extremes of climatic temperature may be met by the birds, which have recourse much of the time to sheltered or underground spaces where the temperature is more equable. (See Swarth, Condor, 16, 1914:211-212).

Mimus polyglottos leucopterus (Vigors)
Western Mockingbird

Synonyms—Orpheus leucopterus; *Mimus polyglottus*; *Mimus polyglottis*; *Mimus caudatus*; *Mimus polyglottus* var. *caudatus*; *Mimus polyglottos*; Common Mocking Bird; Long-tailed Mocking-bird; Mockingbird.

Status—Resident. However, individuals in fall and winter are prone to appear at points much outside areas of regular breeding. Has been spreading northward and westward in past 40 years. This spreading, and also the marked local increase in numbers, seems correlated with progressive human settlement and cultivation of valley lands; perhaps seeming onset of warmer and drier climatic conditions is to some degree accountable.

Geographic range—In greatest concentration of numbers, at lower levels west of Sierran axis and desert divides. In detail, San Diegan district, from Mexican line northwest to Santa Barbara; San Joaquin Valley (most abundant in Fresno district) and thence north, though not continuously, nearly to head of Sacramento Valley, in Tehama County; in valleys, scatteringly, toward seacoast north to San Francisco Bay district. Also includes, meagerly, Colorado and Mohave deserts north to Mono County. Northernmost breeding station, far isolated, near Red Rock, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:336); northwesternmost station of occurrence, probably vagrant, Ferndale, Humboldt County, "early winter" up to December 27, 1922 (Wilder, Condor, 25, 1923:70). Has bred on islands of the Santa Barbara group: Santa Rosa, Santa Cruz, Santa Catalina and San Clemente; and a probable stray has reached Anacapa Island (Howell, Pac. Coast Avif. No. 12, 1917:94; Pemberton, Condor, 30, 1928:148). Altitudes of nesting extend from 190 feet below sea level, at Mecca, Riverside County (van Rossem, Condor, 13, 1911:137), up to as high as 6100 feet east of Sierra Nevada, as in Argus and Panamint mountains, Inyo County (A. H. Miller MS; Mus. Vert. Zool.). A vagrant reached 7340 feet altitude, at Florence Lake, Fresno County (L. M. Lofberg, Condor, 30, 1928:314). Life-zones, characteristically the moderately arid phase of Lower Sonoran, but also Upper Sonoran. Invades areas of more humid conditions only locally and perhaps not in permanently reproducing populations; seemingly, this non-migratory species thrives best in areas of warm, dry summer climate, and of relatively warm winters as well. For detailed accounts of the natural history and progressive distribution of the Western Mockingbird in California, see: Grinnell, Auk, 28, 1911:293-300, map; Michener and Michener, Condor, 37, 1935:97-140; J. R. Arnold, Condor, 37, 1935:193-199; Ingles, Condor, 41, 1939:10-12. Much preceding literature is referred to in one or another of these papers and will not be re-cited here. Some additional references: Death Valley, Inyo County, May 4 (Gilman, Condor, 37, 1935:242); Davis, Yolo County, time of awakening (Emlen, Bird-Banding, 8, 1937:81); La Mesa, electrocution (Rand, Auk, 55, 1938:547); Los Angeles, singing analyzed (L. Miller, Condor, 40, 1938:216).

Habitat—As a rule, level terrain scatteringly grown to large bushes or small, stiff-twigged, dense-foliaged trees. This type of growth is required for nest sites and for roosting and refuge purposes, in part for foraging. Fruits and berries of wide variety, seasonally spaced so as to form a nearly constant, year-round food source, go far toward holding a resident population of mockingbirds. But also, the food requirement includes insects gleaned on the ground under or near trees or bushes as well as within their foliage. Human-provided citrus and olive orchards and shrubbery-planted grounds surrounding suburban homes thus have come to form "ideal" places for permanent mockingbird habitation.

Dumetella carolinensis (Linnaeus)

Catbird

Synonyms—Mimus carolinensis; *Galeoscoptes carolinensis.*

Status—Rare vagrant in the autumnal season of migration. But one record: Farallon Islands, bird taken September 4, 1884 (Townsend, Auk, 2, 1885:215); specimen now in United States National Museum (no. 100202). The bird was "among the rocks near the sea."

Oreoscoptes montanus (J. K. Townsend)
Sage Thrasher

Synonyms—Mimus montanus; *Oroscoptes montanus*; Mountain Mockingbird.

Status—Present in two seasonal rôles: summer resident in *Artemisia tridentata* belt of eastern California; winter visitant (late September through April) to deserts and coastal slopes of southern California and to San Joaquin Valley. Common, even abundant locally, on breeding grounds; common in eastern part of winter range.

Geographic range—As breeding, Great Basin plateau region, east of the Cascade-Sierran axis from the Oregon line south to northern end of Owens Valley and White Mountains, thence irregularly southward at higher levels in mountains around northern, western and southern margins of Mohave Desert; also upper Kern Basin and extreme southern end of San Joaquin Valley. In winter, Mohave and Colorado deserts, San Diegan district from Ventura County southward, and San Joaquin Valley. Life-zones, in summer, Upper Sonoran and Transition, but on White Mountains up through Hudsonian. Altitudes of known or probable breeding, 300 feet, as at Buena Vista Lake, Kern County, up to 10,500 feet on White Mountains (Mus. Vert. Zool.). Recorded localities indicative of breeding range: McDoel, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:11); Surprise Valley, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:332); Eagle Lake, Red Rock P. O., Ravendale, etc., eastern Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:339); Loyalton, Sierra County (Mailliard, Condor, 21, 1919:76); vicinity of Mono Lake (Grinnell and Storer, Animal Life Yosemite, 1924:546); Mammoth Creek, Mono County (Rowley, Condor, 41, 1939:250); head of Owens River, Round Valley, Benton, and White Mountains, Mono County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:126; Van Denburgh, Proc. Acad. Nat. Sci. Phila., 1898:217); Inyo and Panamint mountains, and probably Coso Valley, Inyo County (Fisher, *loc. cit.*); vicinity of Walker Pass, Kern County (Grinnell, Pac. Coast Avif. No. 11, 1915:153); 8 miles northeast of Bakersfield and vicinity of Buena Vista Lake, Kern County (Swarth, Condor, 13, 1911:161; Willett, Condor, 19, 1917:143); Lockwood Valley, Ventura County (Willett, Pac. Coast Avif. No. 7, 1912:99); vicinity of Victorville (Morcom, Ridgway Ornith. Club, Bull. No. 2, 1887:53; Rowley, Condor, 30, 1928:325; Hanna, Condor, 32, 1930:263). A breeding record from Fullerton, Orange County (Dunn, Oologist, 14, 1897:68) is questionable and requires confirmation. From among locality ascriptions of winter or transient occurrence, the following are selections: Nevada City, Nevada County, October (Nelson, Proc. Bost. Soc. Nat. Hist., 17, 1875:355); Yosemite Valley, April 29 (C. Michael, Yosemite Nature Notes, 12, 1933:66); Dudley, Mariposa County, April 10 (McLean, Condor, 38, 1936:17); LeGrand, Merced County (Beck, Condor, 38, 1936:177); Mendota, Panoche Valley, and Coalinga, western Fresno County (Tyler, Condor, 18, 1916:198; McLean, *loc. cit.*; J. R. Arnold, Condor, 39, 1937:34); San Lucas, Monterey County, November 18, 1918 (Mus. Vert. Zool.); Death Valley, Inyo County (Fisher, *loc. cit.*; Gilman, Condor, 37, 1935:242); Hesperia and Twentynine Palms, San Bernardino County (Fisher, *loc. cit.*; F. Carter, Condor, 39, 1937:215); records from Santa Paula to San Diego in coastal district summarized (Willett, Pac. Coast Avif. No. 21, 1933:129); San Gorgonio Pass and Palm Springs, Riverside County (Grinnell, Condor, 6, 1904:43; Gilman, Condor, 9, 1907:42); Mecca, Riverside County (van Rossem, Condor, 13, 1911:137); near Blythe, and opposite Cibola, and Potholes, Colorado River (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:206; Howell and van Rossem, Condor, 17, 1915:234).

Habitat—Mesas and slopes of moderate inclination, well covered with *Artemisia tridentata*. Much less frequently other shrubs of similar growth pattern, such as rabbitbrush, *Tetradymia* and *Sarcobatus*, provide the necessary cover for nesting and escape. The ground between and beneath bushes, and to some degree the bushes themselves, are searched over in foraging. In winter, brushland associations of much wider variety are frequented.

Toxostoma rufum (Linnaeus)
Brown Thrasher

Synonyms—Harporhynchus rufus; *Harporhynchus rufus* var. *longirostris*.

Status—Rare winter visitant. Four records: "Dr. Cooper states that in September, 1870, he found a straggler at Clear Lake, close to the lower town" [=Lower Lake, Lake County] (Baird, Brewer and Ridgway, Hist. N. Amer. Birds, 3, 1874:500; Cooper, Bull. Nutt. Ornith. Club, 2, 1877:90). One present in a suburban garden in Altadena, Los Angeles County, from about December 1, 1932, until late March, 1933; photographed on March 12, but not otherwise molested (van Rossem, Condor, 35, 1933:161, fig. 32). One present in the "Hollywood Hills," Hollywood, Los Angeles County, January 13 (banded) to April 17, 1939 (Duff, Condor, 41, 1939:121). One seen in March and April, 1940, at Pomona, Los Angeles County; last seen when banded April 17 (E. C. Ayer, Condor, 43, 1941:76). The species belongs to the eastern United States, ranging west to Montana, Wyoming and Colorado, casually to Arizona and, by present evidence, to California.

Note—In absence as yet of any preserved specimen from California, the subspecies represented is unknown. The species is included in this list for the exceptional reason that examples have been examined in hand even though not saved as skins.

Toxostoma bendirei (Coues)
Bendire Thrasher

Synonym—Harporhynchus bendirei.

Status—Summer resident; at least, our records to present time, are for spring and summer. Population far scattered and aggregate numbers small.

Geographic range—Colorado and Mohave deserts. Life-zone, Lower Sonoran. Stations of occurrence, all definitely known to date, are as follows: Palm Springs, Riverside County, specimen, April 8, 1885 (Stephens, Condor, 21, 1919:87); Whitewater, Riverside County, specimen, May 22, 1897 (Grinnell, Pac. Coast Avif. No. 11, 1915: 154); Warren's Wells, Morongo Pass, San Bernardino County, "fairly common in May, 1896" (Heller, Condor, 3, 1901:100); near Victorville, San Bernardino County, specimen, May 7, 1916, and two sets of eggs, one with specimen, April 11 and 26, 1920 (Pierce, Condor, 21, 1919:123, and Condor, 23, 1921:34); near Cima, at 4100 feet, eastern San Bernardino County, 5 specimens including young, May 13 to 16, 1938, and near Rock Spring, at 4700 feet, Lanfair Valley, same county, 2 specimens, adult and nestling, June 5, 1938 (Mus. Vert. Zool.). A vagrant, immature, was taken in a suburb of Los Angeles, September 10, 1912 (L. Miller, Condor, 15, 1913:41).

Habitat—Flat desert floor where scatteringly grown to clumps of cholla cactus, yucca of one species or another, and bushes of various kinds.

Toxostoma curvirostre palmeri (Coues)
Palmer Curve-billed Thrasher

Synonym—Palmer Thrasher.

Status—Vagrant at extreme southeastern corner of State. One record: adult female (no. 1020 L. M. Huey Coll.) taken three miles north of Bard, Imperial County, December 31, 1916 (Huey, Condor, 22, 1920:73). The bird was "on the shady side of a neighbor's wood pile," on bottomland of the Colorado River. This is a marginal occurrence only a relatively short distance west of the area of regular residence of the species in southern Arizona. [A record of "*Toxostoma curvirostre*" from "Altadena," Los Angeles County (Lincoln, U. S. Dept. Agr., Tech. Bull. No. 32, 1927:80) is a mistake (letter from Lincoln to Grinnell, February 15, 1928).]

Toxostoma lecontei lecontei Lawrence
Gila LeConte Thrasher

Synonyms—Toxostoma lecontei; *Harporhynchus lecontii*; *Harporhynchus lecontei*; *Harporhynchus redivivus* var. *lecontei*; *Harporhynchus redivivus lecontii*; Le Conte Mocking Bird; LeConte Thrasher; Leconte Mock-thrush; Leconte Mocking Thrush; LeConte Thrush; Yuma Thrasher.

Status—Permanently resident. Fairly common under suitable conditions, but these are localized and occur only scatteringly over general range.

Geographic range—West side and south end of San Joaquin Valley, in the Piedmont area, north to vicinity of Coalinga, Fresno County; Owens Valley and Mohave Desert from Benton, Mono County, and Panamint and Death valleys, Inyo County, southward, including upper arid Kern basin region; Colorado Desert from east base of coastal ranges to Colorado River and south to Mexican boundary. Life-zone, Lower Sonoran. Altitudes of occurrence from —250 feet in Death Valley up to 5000 feet in Walker Pass, Kern County. Citations referring to marginal stations and representative of different sections of the range: vicinity of Coalinga and Huron, western Fresno County (Goldman, Condor, 10, 1908:205; Grinnell, Condor, 15, 1933:107; J. R. Arnold, Condor, 39, 1937:34); vicinity of Buena Vista Lake, and Maricopa, Kern County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:128; Willett, Condor, 19, 1917:143); 8 miles northeast of Bakersfield, Kern County (Swarth, Condor, 13, 1911:161; Mus. Vert. Zool.); occurrence in San Joaquin Valley summarized, mapped (Grinnell, *loc. cit.*); Onyx, Isabella, and Kelso Valley, 11 miles south-southeast of Weldon, Kern County (Anthony, Zoe, 4, 1893:223; Grinnell, *loc. cit.*; Mus. Vert. Zool.); Owens Valley from Benton, Mono County, to Little Owens Lake [Little Lake], Inyo County (Fisher, *loc. cit.*); Merriam, Auk, 12, 1895:54); "western tongue" of Mohave Desert, Los Angeles County (Fisher, *loc. cit.*; Mus. Vert. Zool.); Death Valley, Inyo County (Fisher, *loc. cit.*; Merriam, *loc. cit.*; Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:103); Victorville and Yermo, along Mohave River, San Bernardino County (Grinnell and Mailliard, Condor, 7, 1905:101; Lamb, Condor, 14, 1912:40); Ivanpah Valley, San Bernardino County (Hollister, Auk, 15, 1908:461); Twentynine Palms, San Bernardino County (F. Carter, Condor, 39, 1937:215); Banning, Cabezon and Whitewater, Riverside County (Gilman, Condor, 6, 1904:95; Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:304; Pemberton, Condor, 18, 1916:219); Palm Springs, Riverside County (Stephens, Auk, 1, 1884:353; Parker, Ornith. and Ool., 11, 1886:185; *et al.*); Mecca,

etc., Coachella Valley (Morcom, Ridgway Ornith. Club, Bull. No. 2, 1887:53; Dawson, Birds Calif., 2, 1924:705; Hanna, Condor, 35, 1933:74); San Felipe Valley, 10 miles east of Julian, and "near" Julian, San Diego County (Stephens, Trans. San Diego Soc. Nat. Hist., 1919:30 [of separate]; Willett, Pac. Coast Avif. No. 21, 1933:129); Flowing Wells and Brawley, Imperial County (Holterhoff, Bull. Nutt. Ornith. Club, 8, 1883: 48; van Rossem, Condor, 13, 1911:133); Potholes, Colorado River, Imperial County (Howell and van Rossem, Condor, 17, 1915:234). Habits and adaptations in general: Engels, Univ. Calif. Publ. Zool., 42, 1940:349ff.

Habitat—Desert washes and flats with bushes far scattered and with large areas of open, usually sandy or alkaline terrain, prevailingly of light color. The creosote-bush association not infrequently presents conditions suitable for this thrasher. Protection, but not necessarily concealment, for the large bulky nests is provided by cholla cactus, as first choice, if available; other thorny plant types resorted to are mesquite, palo verde, and atriplex, the latter most notably in the San Joaquin Valley. In avoiding enemies, effective use is made of the sparse cover to conceal the direction of movement whether it be by running or by flight low to the ground. The scanty leaf litter in the lee of bushes as also comparatively barren sandy ground is whisked apart and dug into for plant and insect food.

Toxostoma redivivum sonomae Grinnell
Northern California Thrasher

Synonyms—Harporhynchus redivivus, part; *Toxostoma redivivum*, part; *Toxostoma redivivum redivivum*, part; Sickle-bill Thrush, part; California Mocking Thrush, part; California Thrasher, part; Sickle-bill Thrasher, part; Sonoma Thrasher; Sonoma California Thrasher.

Status—Permanently resident. Within characteristic habitat, fairly common.

Geographic range—Lower, brushy mountain slopes and parts of floor of Sacramento Valley south to Eldorado County; also coastal districts from extreme southern Humboldt County and central Trinity County south through Santa Cruz and Santa Clara counties, but only more arid parts of narrow coastal fog belt north of San Francisco Bay. Life-zone, Upper Sonoran; Lower Sonoran locally in interior. Altitudes of occurrence from near sea level, as at Santa Cruz, Santa Cruz County, up to at least 5500 feet on Mount Sanhedrin, Mendocino County (Oberholser, Auk, 35, 1918:57; Mus. Vert. Zool.). Northernmost recorded stations of occurrence: Thorn, Humboldt County (Mailliard, Condor, 24, 1922:62); 2 miles east of Hayfork, Trinity County (A. H. Miller MS); Baird, Shasta County (Townsend, Proc. U. S. Nat. Mus., 10, 1887: 225). Some easternmost stations: Manton, 2300 feet, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:337); Grass Valley district, Nevada County (Richards, Condor, 26, 1924:103); Placerville, Eldorado County (Oberholser, *op. cit.*:59). Distribution as known up to 1917 summarized by Grinnell (Auk, 34, 1917: 427) and Oberholser (*loc. cit.*). Other selected references by locality, as bearing on range or natural history: Mendocino, Lake, Colusa and Napa counties (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 10, 1919:295); Napa Range, Napa County (Clark, Condor, 32, 1930:50); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:139); Berkeley and Hayward, Alameda County (A. S. Allen, Condor, 17, 1915:83; Emerson, Ornith. and Ool., 9, 1884:133); San Jose, Santa Clara County (Denton, Ornith. and Ool., 9, 1884:122); in general, food (Beal, U. S. Dept. Agr.,

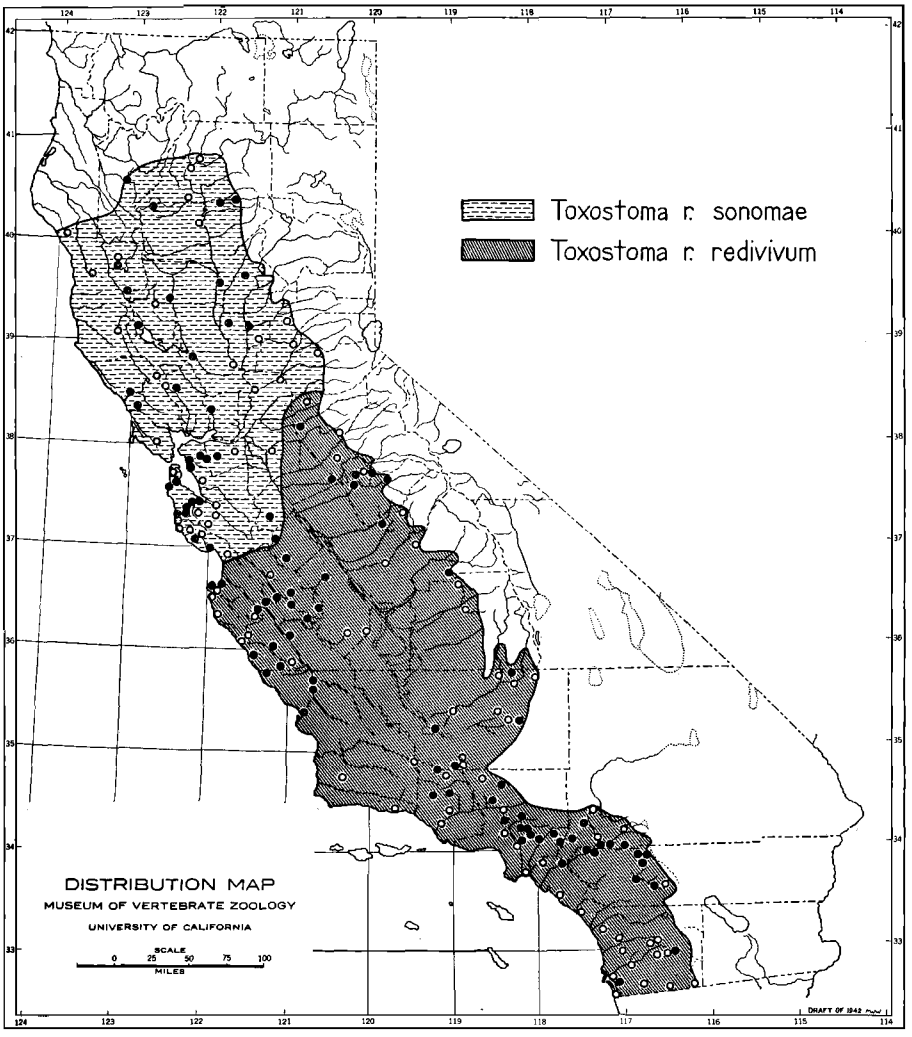

Fig. 34. Distribution of the California Thrasher, *Toxostoma redivivum*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Biol. Surv. Bull. No. 30, 1907:55); adaptations, habits, ecology (Engels, Univ. Calif. Publ. Zool., 42, 1940:341).

Habitat—Dense cover of chaparral type, less commonly river bottom thickets, open next to the ground with leafy canopy, usually evergreen, close above. Both hard and soft chaparral plant associations are involved, as also extensive growths of wild blackberry and wild grape, but not forest undergrowth. Such cover provides on the ground requisite plant litter and soft soil in which by means of the bill plant food and surface, or even subterranean, insects and spiders are uncovered or exposed by excavation. Also, within the upper story of plant growth, fruits and berries are available. But most importantly, the chaparral "forest" affords means of escape by rapid running beneath

cover and along partly open alley-ways, or skillfully through the branch-work. Seldom is foraging carried on more than a few yards from protecting bushes. (See Grinnell, *loc. cit.*; Engels, *loc. cit.*)

Toxostoma redivivum redivivum (Gambel)
Southern California Thrasher

Synonyms—Harpes rediviva; *Toxostoma rediviva*; *Toxostoma redivivum*, part; *Harporhynchus redivivus*, part; *Harporhynchus redivivus pasadenensis*; *Toxostoma redivivum pasadenense*; Curve-billed Thrush; California Mocking Bird; California Thrush; Sickle-bill Thrush, part; California Mocking Thrush, part; Bowbill Thrush; California Thrasher, part; California Sickle-bill Thrush; Sickle-bill Thrasher, part; Pasadena Thrasher.

Status—Permanently resident. Common under favorable conditions in many parts of range.

Geographic range—Coastal district from Monterey and San Benito counties south to Mexican boundary, including east slopes of mountains of southern California to limits of chaparral. Also lower slopes of Sierra Nevada north to Amador County, where intergradation with *T. r. sonomae* occurs; locally on floor of San Joaquin Valley. Life-zone, Upper Sonoran; Lower Sonoran on coastal drainage only. Altitudes of occurrence from near sea level, as at Morro, San Luis Obispo County, up to 5500 feet in the San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:117). Easternmost stations: El Portal, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:548); Tollhouse and 3 miles east of Dunlap, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:103; Mus. Vert. Zool.); west slope of Walker Pass, Kern County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:128); Elizabeth Lake, Los Angeles County (Ray, Auk, 23, 1906:417); near Hesperia, San Bernardino County (Hanna, Condor, 38, 1936:220); Cabezon, San Gorgonio Pass, and vicinity of Dos Palmos, Santa Rosa Mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913: 303); Vallecitos, San Diego County (Mus. Vert. Zool.). Distribution summarized to 1917 by Grinnell (Auk, 34, 1917:427) and Oberholser (Auk, 35, 1918:52). Additional locality ascriptions selected for distributional or natural history content: Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:101); Coalinga, Fresno County (J. R. Arnold, Condor, 39, 1937:34); Buena Vista Lake, Kern County (Linton, Condor, 10, 1908:198); Santa Barbara (Mailliard, Condor, 8, 1906: 48; Dawson, Birds Calif., 2, 1924:698); southern California in general (Willett, Pac. Coast Avif. No. 21, 1933:129); Pasadena and Azusa, Los Angeles County (G. T. Sargent, Condor, 42, 1940:49; Woods, Condor, 41, 1939:30); Twin Oaks, San Diego County (F. A. Merriam, Auk, 13, 1896:121); San Diego (Gander, Wilson Bull., 41, 1929:95, and Condor, 33, 1931:73); in general, food (Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 30, 1907:55); adaptations, habits, ecology of the species (Engels, Univ. Calif. Publ. Zool., 42, 1940:341).

Habitat—Chaparral of various types; chamise, ceanothus, baccharis and sages figure prominently in this throughout large parts of range. Type of cover required much as in Northern California Thrasher, which see. Utilization of informally kept gardens which offer cover equivalent in protective qualities to native brushland compensates in limited fashion for some of the reduction in natural habitat brought about by clearing of chaparral.

Toxostoma dorsale dorsale Henry
Arizona Crissal Thrasher

Synonyms—Harporhynchus crissalis; *Harporrhynchus crissales*; *Toxostoma crissalis*; *Toxostoma crissale*; *Toxostoma dorsale*; Mocking Thrush; Henry Thrush; Henry Mock-thrush; Red-vented Thrasher; Crissal Thrasher.

Status—Permanently resident. Numbers small at western periphery of range, but fairly common in mesquite association where this is well developed.

Geographic range—Colorado River valley from Fort Yuma north to Nevada boundary; west through Imperial and Coachella valleys to Palm Springs, Riverside County, and east slope of Providence Mountains, San Bernardino County. Life-zone, Lower Sonoran. Breeds chiefly below 500 feet; but nesting records extend from 190 feet below sea level up to 4500 feet, and probably as high as 5400 feet, in Providence Mountains. Specific locality ascriptions: Providence Mountains, San Bernardino County, as above (D. H. Johnson MS; Mus. Vert. Zool.); Colorado River, Needles to Pilot Knob (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:207); Fort Yuma, Imperial County (Baird, Pac. Railroad Rept., 9, 1858:923); Palm Springs, Riverside County (Gilman, Condor, 4, 1902:15; Grinnell, Condor, 6, 1904:44); Indio, Thermal, Mecca and near-by points in Coachella Valley, Riverside County (Stephens, Auk, 7, 1890:297; Gilman, *loc. cit.*; van Rossem, Condor, 13, 1911:133, 137; Hanna, Condor, 35, 1933:79); Alamoria, Imperial County (van Rossem, *loc. cit.*). General distribution, relationships and adaptations: Engels (Univ. Calif. Publ. Zool., 42, 1940:348ff.).

Habitat—Dense thickets of bushes or low trees which screen the ground where in loose sandy or alluvial soil and in the ground litter nearly all foraging is done. Cover is provided most frequently by mesquite and screw-bean and by thicker growths of ironwood and catclaw; also by arrowweed and, locally, dense willows. Considerably different is the situation in the Providence Mountains where dense tall artemisia brush and, in places, other dense bushes in the juniper belt afford the requisite protection (D. H. Johnson MS). Essential in the habitat, as with the California Thrasher, is a dense vegetational screen with runways beneath, where the bird may escape along the ground (see Engels, *op. cit.*:348, 392).

Turdus migratorius caurinus (Grinnell)
Northwestern Robin

Status—Rare winter visitant to northern coastal section of State. Few conclusive records: Big Lagoon and 3 miles north of Trinidad, Humboldt County, December 28, 1941, to January 5, 1942, 5 specimens (Mus. Vert. Zool.); near Point Reyes, Marin County, about January 15, 1932, recovery of bird banded as a nestling on Vancouver Island, British Columbia (Grinnell, Condor, 38, 1936:87); San Geronimo, Marin County, February 14, 1896, December 21, 1897 (Calif. Acad. Sci.). Previously published records of this race from California are based on specimens of *T. m. propinquus* (see Grinnell, Condor, 37, 1935:173).

Turdus migratorius propinquus (Ridgway)
Western Robin

Synonyms—Turdus migratorius; *Turdus migratorius migratorius*; *Merula migratoria propinqua*; *Merula confinis*; *Turdus propinquus*; *Planesticus migratorius propinquus*; *Planesticus confinis*; *Planesticus migratorius*; *Planesticus migratorius migratorius*; *Plantasticus migratorius propinquus*; *Turdus migratorius caurinus*, part; Red-breasted Thrush; American Robin; Robin; Robin Thrush; Cape Robin; San Lucas Robin; Northwestern Robin, part.

Status—Common summer resident over much of northern and middle section of State and in higher mountains of southern California; less common and of interrupted distribution in lowlands. Pioneering of nesting robins in regions of human settlement in the Sonoran zones came to notice first in 1915. Habitation by Robins of irrigated lands, orchards, and garden areas has progressed steadily since that time, resulting in pronounced extension of range and numerical increase. As a winter visitant, common to abundant in lower parts of breeding range and elsewhere in suitable places throughout the State.

Geographic range—As breeding, northwest coast district and coast ranges south through San Francisco Bay region and Santa Cruz Mountains; northern interior California, Sierra Nevada, and, locally, about human settlements in Sacramento-San Joaquin Valley south to Bakersfield, Kern County; Great Basin region and eastern border of State south to White Mountains and Owens Valley; Mount Pinos, and San Gabriel, San Bernardino, and Cuyamaca mountains of southern California and rarely in cities of central and southern coastal slope. In winter, throughout State, but absent or scarce at higher elevations where ground is snow covered. Breeding life-zones, Transition through Hudsonian; under modified conditions, in Upper Sonoran and rarely Lower Sonoran; altitudes range from near sea level to 10,000 feet. Localities of breeding, chiefly as indicating limits and recent extensions of range in southerly direction: Howell Mountain and Napa, Napa County (Clark, Condor, 32, 1930:51; Bickford, Condor, 29, 1927:163); Benicia, Solano County (Stoner, Condor, 36, 1934:38; "Treasure Island," San Francisco Bay (A. Rhinehart, Gull, 23, 1941:January [1]; vicinity of Walnut Creek, Contra Costa County (A. S. Allen MS); vicinity of San Jose, Santa Clara County (J. G. Peterson MS); Stanford University, Santa Clara County (Blake, Condor, 30, 1928:250); Santa Cruz and Santa Cruz Mountains (A. S. Allen MS; C. P. Streator MS); Pacific Grove, Monterey County (Williams, Condor, 43, 1941:249); Winters and Davis, Yolo County, and Marysville, Yuba County (Storer, Condor, 30, 1928: 328); summary of records in San Joaquin Valley south to Porterville, Tulare County (Storer, Condor, 28, 1926:264); vicinity of Taft, Kern County, 1932-1933 (J. G. Peterson MS); Lone Pine and George Creek, Inyo County (Dawson, Birds Calif., 2, 1924: 760); Mount Pinos, and San Gabriel and San Bernardino mountains (Willett, Pac. Coast Avif. No. 21, 1933:130; Grinnell, Univ. Calif. Publ. Zool., 5, 1908:132); Pasadena (van Rossem, Condor, 44, 1942:130) and Monrovia, Los Angeles County (Wilson and Campbell, Condor, 33, 1931:250); Los Angeles (Willett, *loc. cit.*); Redlands, San Bernardino County (Hill and Billings, Condor, 39, 1937:253); Cuyamaca Mountains, 5000 feet (J. G. Peterson MS; L. M. Huey MS). Selected references bearing on behavior and distribution in winter and during migrations: Eagleville, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:337); Bogard Ranger Station, Lassen County (Mailliard, Condor, 26, 1924:34); Yosemite Valley (Grinnell and Storer, Animal Life Yosemite, 1924:605; Harwell, Yosemite Nature Notes, 12, 1933:26 [10,800 feet]; Borell, *ibid.*, 13, 1934:72); Florence Lake, 7300 feet, Fresno County

(L. M. Lofberg, Gull, 9, Nov., 1927:3); Davis, Yolo County (Clabaugh, Condor, 30, 1928:126); Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888: 50); Marin County (Mailliard, Condor, 2, 1900:67); Howell Mountain, Napa County (Clark, Condor, 32, 1930:163); Oakland, Alameda County (L. P. Bolander, Condor, 34, 1932:142); Stanford University, Santa Clara County (Price, Condor, 35, 1933: 52); coastal southern California and Santa Cruz, San Nicolas, and San Clemente islands, occurrences summarized (Willett, Pac. Coast Avif. No. 21, 1933:130); Santa Rosa and Santa Barbara islands (Pemberton, Condor, 30, 1928:145, 148); Santa Catalina Island (Harris, Condor, 21, 1919:172); San Diego (Gander, Condor, 32, 1930: 64); Lancaster, Los Angeles County (L. G. Weld, Condor, 34, 1932:138); Death Valley, Inyo County (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:106); near Yermo, San Bernardino County (Lamb, Condor, 14, 1912:40); Twentynine Palms, same county (F. Carter, Condor, 39, 1937:215); Mecca, Riverside County, and Alamoria, Imperial County (van Rossem, Condor, 13, 1911:134, 137); Needles to opposite Cibola, Colorado River (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:216). Some additional references bearing on natural history: Lassen Peak region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:341); Yosemite Valley (Godfrey, Yosemite Nature Notes, 17, 1938:67; and many other items in the "Notes"); San Francisco (Mailliard, Condor, 32, 1930:77); in general, food (Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 30, 1907, 93, and Bull. U. S. Dept. Agr. No. 171, 1915:2); Dawson, Birds Calif., 2, 1924:759).

Habitat—In nesting season, meadows and moist stream-sides, or lawns, gardens and soft cultivated ground, with adjoining, open or scattered trees for nest sites. The prime requisites are (1) turf, soft and open for shallow probing and rich enough in organic matter to harbor a workable supply of earthworms and insects; and (2) mud for the nest cup. Most of the food is sought on and just within the ground, or in the deeper parts of the grassy tangle. Trees of almost any variety are utilized which are sufficient to support the bulky nests at least a few feet above the ground. In winter, ground softened by recent rain and sprouting with the annual green cover may be resorted to in addition to turf. However, berry supplies of a great variety, native and introduced, largely govern occurrence in this season; in desert areas mistletoe berries figure importantly.

Ixoreus naevius meruloides (Swainson)
Northern Varied Thrush

Synonyms—Turdus naevius, part; *Hesperocichla naevia*, part; *Hyperocichla naevius meruloides*; *Ixoreus naevius*, part; *Turdus naevius meruloides*; Varied Thrush, part; Oregon Robin, part; Varied Robin; Pale Varied Thrush.

Status—Fairly common winter visitant, chiefly to interior and southern sections of State, the numbers fluctuating greatly from year to year. Present from late October to early April.

Geographic range—Sacramento and San Joaquin valleys, and surrounding foothills and lower mountains south to coastal slopes and mountains of southern California, rarely to Mohave Desert. Occurs on larger Channel Islands; also, much less commonly than *I. n. naevius*, in San Francisco Bay region. Some localities of record based on recently determined specimens (Mus. Vert. Zool.): South Fork Mountain, Trinity Coun-

ty; Paine's Creek, Tehama County; 8 miles northeast of Susanville, Lassen County; Fyffe, Eldorado County; Yosemite Valley; Berkeley, Oakland, and Piedmont, Alameda County; Palo Alto, Santa Clara County; Santa Cruz, Santa Cruz County; Piute Mountains, Kern County; Los Angeles; Riverside, Riverside County. Additional localities and citations, selected in part for natural history content, which probably apply largely or exclusively to this race: Lassen region (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:344); Clipper Gap and Applegate, Placer County (Adams, Condor, 11, 1909:102; Williams, Condor, 3, 1901:69); Davis, Yolo County (Storer, Condor, 35, 1933:34); Yosemite region, Snelling to 7300 feet (Grinnell and Storer, Animal Life Yosemite, 1924:615); Minkler and Fresno, Fresno County (Swarth, Condor, 19, 1917:128; Tyler, Pac. Coast Avif. No. 9, 1913:108); Mount Pinos, 7000 feet, Ventura County (Willett, Condor, 36, 1934:178); Death Valley, Inyo County (Gilman, Condor, 38, 1936:41); near Yermo, San Bernardino County (Lamb, Condor, 14, 1912: 40); occurrence in southern California reviewed, south to Witch Creek, San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:130); Santa Cruz, Santa Catalina and San Clemente islands (Dawson, Birds Calif., 2, 1924:769; Meadows, Condor, 36, 1934: 40; Linton, Condor, 10, 1908:86).

Habitat—Dense oak woodlands and timber in ravines and canyons; also associated tall growths of chaparral. Toyon and manzanita berries are favored foods in addition to acorns and invertebrate animals sought on the ground (see also account of *I. n. naevius*).

Note—The two races of the Varied Thrush are readily separable on the basis of color of the back of females. The slight average difference revealed in the males, would in itself not warrant recognition of the races. Statements about ranges in winter in California have been based on a recent critical study of skins of females. It is obviously impossible to allocate as to race many of the records in the literature.

Ixoreus naevius naevius (Gmelin)

Coast Varied Thrush

Synonyms—*Turdus naevius*, part; *Hesperocichla naevia*, part; *Geocichla naevia*; *Ixoreus naevius*, part; *Turdus naevius naevius*; Varied Thrush, part; Oregon Robin, part; Pacific Varied Thrush.

Status—Sparse resident of extreme northern humid coast belt. Common winter visitant (October to early April) along coast south to Monterey County; rare in interior, and in southern California.

Geographic range—As breeding, Del Norte, Humboldt and western Trinity counties, and probably western Siskiyou County. In winter, coastal district and coast ranges from Oregon line to Monterey County and scatteringly along Sierra Nevada and in coastal southern California. Life-zones in summer, Transition and Canadian; in winter, also Upper Sonoran. Altitudes of breeding, from near sea level up to about 2500 feet, possibly higher. Localities of known summer residence: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:26); Redwood and Lindsay creeks, Humboldt County (W. K. Fisher, Condor, 3, 1901:91); Big Lagoon, Eureka, Maple Creek, Fair Oaks, and Cuddeback, Humboldt County (Mus. Vert. Zool.); 10 miles west of Peanut, Trinity County (Dawson, Birds Calif., 2, 1924:769). Selected localities of winter occurrence, chiefly peripheral, based on recently determined specimens (Mus. Vert. Zool.; females): Helena, Trinity County; Butte Creek, Colusa County; Pacific Grove, Monterey County; Pasadena and Los Angeles, Los Angeles County; Riverside,

Riverside County. Additional ascriptions: Eagle Lake, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:343); Montalvo, Ventura County, San Diego, San Diego County, and occurrence generally in southern California critically reviewed (Willett, Pac. Coast Avif. No. 21, 1933:130); Santa Cruz Island (Hoffmann, Condor, 34, 1932:190). Other reports of this form outside of the northern and central coastal districts are based on sight records or on skins which either are racially indeterminable or appear to us to require critical re-examination. The following records, on geographical grounds, may pertain to this race: Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:50); Coalinga, Fresno County (J. R. Arnold, Condor, 39, 1937:34).

Habitat—In summer, heavy mature stands of conifers, principally redwood, but with associated tideland spruce and lowland fir. A dark forest, with wet, mossy, almost completely shaded floor is requisite. Here in the protected, somewhat open understory of ferns, vine maple and alder scrub, foraging close to or on the ground is carried on, the tall trees serving as singing posts. Winter habitats involve similar features in less extreme degree: shaded ground and dense trees, especially along ravines in the warmer and more arid areas. Dense stands of live, black, tan and golden oak, madrone, and laurel figure prominently, in addition to conifers, in providing shade, acorns and berries for food, and retreats upward in the foliage.

Hylocichla guttata guttata (Pallas)
Alaska Hermit Thrush

Synonyms—Turdus nanus, part; *Turdus minor*; *Turdus pallasi* var. *nanus*; *Turdus guttatus*; *Turdus aonalaschkae*, part; *Turdus aonalaschkae auduboni*, part; *Hylocichla aonalaschkae*, part; *Hylocichla aonalaschkae aonalaschkae*; *Hylocichla guttata*, part; Dwarf Hermit Thrush, part; Hermit Thrush, part; Audubon Hermit Thrush, part.

Status—Common winter visitant from mid-October through early April; in migration, late September to early May. Greatest numbers occur in interior valleys and in San Diegan district.

Geographic range—Entire length and breadth of State below level of heavy snows, but only locally and in small numbers on southeastern deserts. Locality ascriptions exemplifying widespread distribution, which probably apply chiefly to this race (as against *H. g. nanus*): Crescent City, Del Norte County, October 13 (Ferry, Condor, 10, 1908:44); near Laytonville, Mendocino County, October 9 (Mus. Vert. Zool.); Eagleville, Modoc County, September 16, October 4 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:337); Red Bluff to Manton, 2300 feet, Tehama County, and Fredonyer Peak, 5700 feet, and Termo, 5300 feet, Lassen County, October 5 to 11 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:344); Big Trees, Calaveras County, and distribution in general, in part applicable to *H. g. nanus* (Belding, Proc. Calif. Acad. Sci., ser. 2, 2, 1889:63); Yosemite region, from Lagrange to Yosemite Creek, 7500 feet, October 6 (Grinnell and Storer, Animal Life Yosemite, 1924:602); Panamint and Argus mountains, Inyo County, in migration, March 28, May 8 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:85); Providence Mountains, San Bernardino County, December 25 (Mus. Vert. Zool.); Berkeley and Oakland, Alameda County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:147); Seaside and San Lucas, Monterey County (Mus. Vert. Zool.); occurrence in coastal southern California summarized

(Willett, Pac. Coast Avif. No. 21, 1933:131); San Diego (Weaver, Bird-Lore, 31, 1929:405); Santa Cruz, Santa Catalina, and San Clemente islands (Howell, Pac. Coast Avif. No. 12, 1917:101; Harris, Condor, 21, 1919:172); Santa Rosa and Santa Barbara islands (Pemberton, Condor, 30, 1928:148, and Condor, 33, 1931:219); Colorado River valley, Chemehuevis Valley to 20 miles north of Picacho (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:215).

Habitat—Chaparral, willow thickets, and forests which are open near the ground, lacking tall grass, and thus permitting freedom of movement and unrestricted view of immediate surroundings at a low level. A thick chaparral canopy overhead is tolerated and the shade it provides is at times even sought. Scattered bushes and forest-edge situations are favorable, both as involving native plants and artificial plantings in gardens. Beside foraging in the leaf litter provided in these habitats, Hermit Thrushes frequently remain for long periods in and about favored berry-producing shrubs, feeding up in the tangle of branches and on the exposed tops. Toyon, manzanita, pepper, pyracantha, and cotoneaster are among berries regularly sought.

Note—Identification of wintering Hermit Thrushes of the races *H. g. guttata* and *H. g. nanus* is rendered uncertain by the similarity both as to size and color demonstrable in the breeding populations of these forms in interior and coastal Alaska (see McCabe and McCabe, Condor, 34, 1932:26ff.). A greater number of dark, reddish-backed birds occurs in *nanus*. Naming of individual specimens in California has little meaning, but working with series, approximate racial allocation of the wintering populations can be made.

Hylocichla guttata nanus (Audubon)
Dwarf Hermit Thrush

Synonyms—Turdus nanus, part; *Turdus pallasi*; *Hylocichla unalascae*; *Turdus aonalaschkae*, part; *Hylocichla aonalaschkae*, part; *Hylocichla aonalaschkae verecunda*; *Hylocichla guttata*, part; Dwarf Thrush, part; Coast Hermit Thrush; Hermit Thrush, part.

Status—Common winter visitant from mid-October to early April; in migration, late September to the end of April. Abundant locally in humid coast region.

Geographic range—Entire length of State west of the Cascade-Sierran axis; rarely on the deserts of southern California. Some selections from among records applicable chiefly to this race (see note under *H. g. guttata*): Seiad Valley, Siskiyou County (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:14); Helena, Trinity County, and Tower House, Shasta County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:388); Humboldt Bay, Humboldt County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:231); Grass Valley, Nevada County (Richards, Condor, 26, 1924:104); San Geronimo, Marin County, September 26 (Mailliard, Condor, 2, 1900:67); Farallon Islands, but race uncertain (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:50); Berkeley, Alameda County (A. S. Allen, Condor, 17, 1915:80, 84; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:147; Rodgers and Sibley, Condor, 42, 1940:204); Santa Clara, Santa Clara County (Atkinson, Condor, 3, 1901:17); San Francisco Bay region, food habits (Beal, U. S. Biol. Surv., Bull. No. 30, 1907:92); Santa Cruz, Santa Cruz County (Skirm, Ornith. and Ool., 9, 1884:149); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:102); El Portal, Sweetwater Creek, Glen Aulin, 7700 feet, Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:602); Piute Mountains, 6700 feet, and Buena Vista Lake, Kern County (Mus. Vert. Zool.); Santa Barbara (Dawson, Birds Calif., 2, 1924:740-746); Pasa-

dena, Santa Cruz and Santa Catalina islands, and coastal southern California in general (Willett, Pac. Coast Avif. No. 21, 1933:131); San Clemente Island (Mus. Vert. Zool.); San Nicolas Island, but race uncertain (Willett, Pac. Coast Avif. No. 7, 1912:108); near Yermo, San Bernardino County (Lamb, Condor, 14, 1912:40); Palm Springs, Riverside County (Grinnell, Condor, 6, 1904:45; Mus. Vert. Zool.).

Habitat—As in *H. g. guttata*, which see.

Hylocichla guttata slevini Grinnell
Monterey Hermit Thrush

Synonyms—Turdus nanus, part; *Turdus aonalaschkae*, part; *Turdus aonalaschkae sequoiensis*, part; *Turdus sequoiensis*, part; *Hylocichla aonalaschkae auduboni*, part; *Hylocichla aonalaschkae sequoiensis*, part; *Hylocichla aonalaschkae*, part; *Hylocichla aonalaschkae slevini*; *Hylocichla guttata nana*, part; *Hylocichla guttata sleveni*, part; *Hylocichla guttata sequoiensis*, part; *Hylocichla guttata guttata*, part; *Hylocichla guttata oromela*; Dwarf Thrush, part; Dwarf Hermit Thrush, part; Big Tree Thrush, part; Sierra Thrush, part; Hermit Thrush, part; Sierra Hermit Thrush, part; Cascade Hermit Thrush.

Status—Fairly common summer resident, May through August. Detected in small numbers in migration in April, and from the end of August to mid-October.

Geographic range—As breeding, coastal district from Oregon line south, interruptedly, to southern Monterey County, and east to Mount Shasta, Trinity Mountains, and inner coast ranges south to San Francisco Bay. In migration, scatteringly along Sierra Nevada and in southern California, the fall movement as far as known confined to higher elevations in the Sierra. In summer, Transition and Canadian life-zones, from near sea level, as at Pacific Grove, Monterey County, up to 7000 feet on Mount Shasta. Northernmost breeding stations: 7 miles east of Smith River and east fork of Illinois River, Del Norte County (Mus. Vert. Zool.); Little Grayback Mountain and head of Doggett Creek, Siskiyou Mountains (Gabrielson, Murrelet, 15, 1934:53; Mus. Vert. Zool.). Populations in the Warner Mountains and on Mount Lassen are intermediate toward *H. g. sequoiensis*. Some eastern record stations south of the vicinity of Mount Shasta are: 12 miles north of North Yolla Bolly Mountain, Trinity County (Mus. Vert. Zool.); South Yolla Bolly Mountain, Tehama County (Ferry, Condor, 10, 1908:134); northeast slope of Mount St. Helena, Lake County (Mus. Vert. Zool.); Howell Mountain, Napa County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:147); head of Redwood Creek, Contra Costa County (Seibert, Condor, 44, 1942:68). Other selected references bearing on natural history and distribution: near Carlotta and 8 miles east of Bridgeport, Humboldt County (Grinnell, Condor, 26, 1924:73; reported partly as *H. g. guttata*, but now considered to be all of race *slevini*); south fork of Gualala River and Bohemian Grove, Russian River, Sonoma County (Sheldon, Condor, 10, 1908:121; Mailliard, *ibid.*:134; Mailliard, Condor, 20, 1918:192); Butano Creek, San Mateo County (Jenkins, Condor, 6, 1904:25); Big Creek, Monterey County (Pemberton and Carriger, Condor, 17, 1915:196); distribution in general (Grinnell, Auk, 18, 1901:258; McCabe and McCabe, Condor, 34, 1932:32ff., and *ibid.*, 35, 1933:122). Migrants of certain identity (the slightly larger birds originating in the Cascade Mountains of Oregon are included under *slevini*): Blue Canyon and Cisco, Placer County, August 28, September 27; Raymond, Madera County, April 16; Horse Corral Meadow, 8000 feet, and Hume, Fresno County, September 21, 25; Greenhorn Mountains, Kern County, October 14; Pasadena, Los Angeles County, March 4 (migrant?), April 24, 25; Vic-

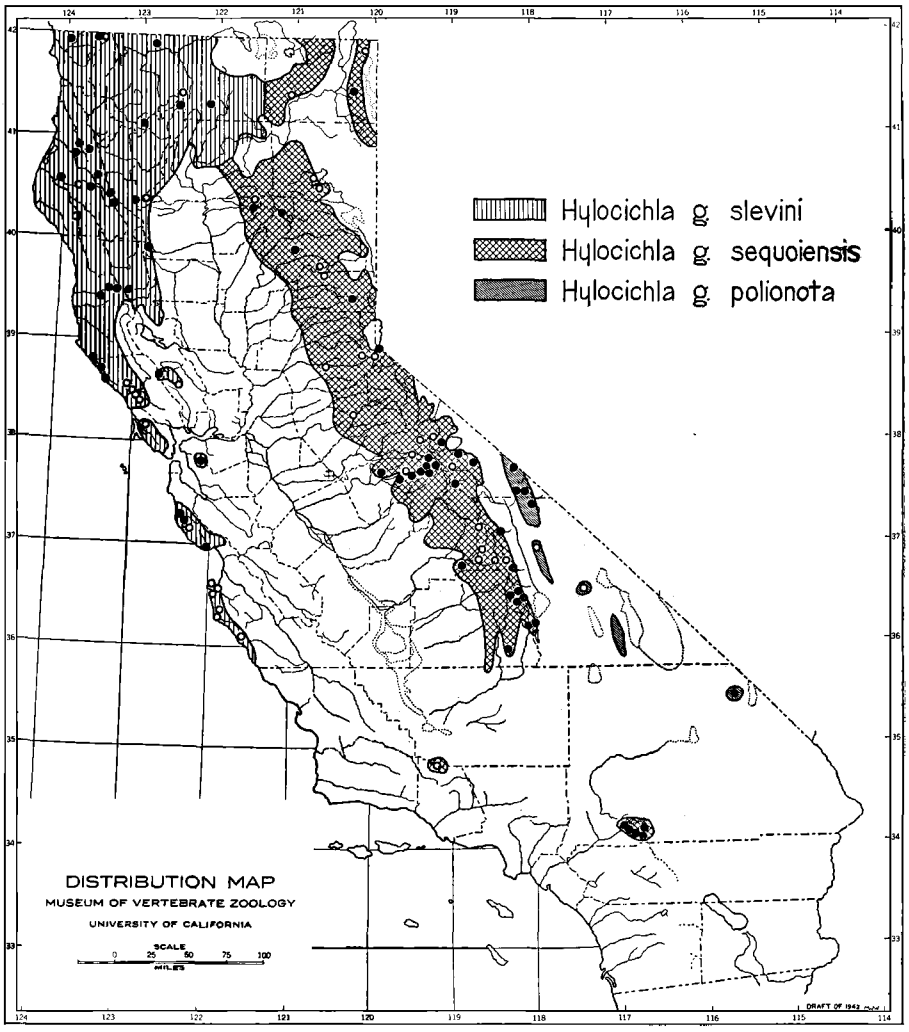

Fig. 35. Distribution of the subspecies of Hermit Thrush, *Hylocichla guttata*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

torville, San Bernardino County, March 28; Mecca, Riverside County, April 10, 17 (all in Mus. Vert. Zool.). Some additional records: near Drytown, Amador County, May 8, and Panoche Pass, San Benito County, April 20 (Calif. Acad. Sci.); Pasadena and Mount Wilson, April 8 to 30 (Daggett, Condor, 3, 1901:131; Willett, Pac. Coast Avif. No. 21, 1933:131); Campo, San Diego County, April 4 (Huey, Condor, 27, 1925: 72); Potholes, Colorado River valley, Imperial County, April 7, 11 (Calif. Acad. Sci.).

Habitat—Dense or well shaded coniferous forests; along the coast these are principally of redwood and Douglas fir, less often of mature Bishop and Monterey pines. Typical is an understory of vaccinium, rhododendron, and ceanothus, the first especially providing favored nest sites. In the interior and at higher elevations firs (*Abies*)

of various species provide forest cover. The ground where the birds forage normally is leaf-littered and shaded, often only dimly lighted. Such requisite conditions in much of the range are found chiefly in ravines, on north-facing slopes and in protected pockets in the hills.

Hylocichla guttata sequoiensis (Belding)
Sierra Hermit Thrush

Synonyms—Turdus pallasi auduboni; *Turdus auduboni*; *Turdus aonalaschkae*, part; *Turdus aonalaschkae auduboni*, part; *Turdus sequoiensis*; *Turdus aonalaschkae sequoiensis*, part; *Hylocichla aonalaschkae auduboni*, part; *Hylocichla aonalaschkae sequoiensis*; *Hylocichla guttata auduboni*, part; *Hylocichla sequoiensis*; *Hylocichla guttata nana*, part; Dwarf Hermit Thrush, part; Audubon Hermit Thrush, part; Big Tree Thrush; Sierra Thrush, part.

Status—Summer resident, from mid-May through August. Fairly common to common. Rarely detected as a migrant.

Geographic range—Warner Mountains of Modoc County and Lassen Peak region, where intergradation with *slevini* occurs, thence south along Sierra Nevada through Tulare County, and, in southern California, on Mount Pinos and in San Bernardino Mountains. Life-zone chiefly Canadian, but also Transition and Hudsonian. Altitudes of nesting range from 3700 feet near Fyffe, Eldorado County, to at least 10,000 feet, probably 11,000 feet, in Mount Whitney region, Tulare County. Selected citations of special significance for distribution and natural history content: Lassen section, Battle Creek Meadows east to Eagle Lake (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:345); Gold Lake region, Plumas County (M. W. Wythe, Condor, 29, 1927:64); Fyffe, Echo, and Lake Tahoe, Eldorado County (Ray, Condor, 16, 1914: 60, 64; Barlow and Price, Condor, 3, 1901:184; Barlow, Condor, 4, 1902:81; Ray, Auk, 20, 1903:192); Big Trees, Calaveras County (Belding, Proc. Calif. Acad. Sci., ser. 2, 2, 1889:18, and Bull. Cooper Ornith. Club, 1, 1899:21); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:602; H. C. Bryant, Yosemite Nature Notes, 5, 1926:26; Sharsmith, *ibid.*, 12, 1933:98); June and Virginia lakes, Mono County (J. B. Dixon, Condor, 36, 1934:36; Rowley, Condor, 41, 1939:250); Mount Pinos, Kern County (Miller and Benson, Condor, 32, 1930:101, 103; Willett, Pac. Coast Avif. No. 21, 1933:132); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908: 130); in general (McCabe and McCabe, Condor, 34, 1932:32ff.). Migrants taken May 9, at Independence, 3900 feet, Inyo County (Mus. Vert. Zool.); reported from Pasadena, April 16 (Willett, *loc. cit.*); other reports of migrants are doubtfully of this race. Late fall record: Ten Lakes, 9200 feet, Yosemite Park, October 8 (Mus. Vert. Zool.). Winter record: California Lakes, near Bard, Imperial County, January 2 (Mus. Vert. Zool.).

Habitat—Aspens, lodgepole pine and red fir, in dense or moderately open stands, are most favored. At lower elevations dense growths of young yellow pines, Douglas fir and white fir may by reason of their shade provide requisite retreat from maximum daytime temperature prevailing at these levels. Toward timber line exposed singing posts and little-protected nest sites in short, well-spaced trees are increasingly in evidence. Dry slopes as well as meadow regions are frequented, ground foraging being carried on in short grass in the openings as well as on the needle-covered forest floor.

Hylocichla guttata polionota Grinnell
Great Basin Hermit Thrush

Synonyms—Turdus aonalaschkae auduboni, part; *Hylocichla guttata sequoiensis*, part; Audubon Hermit Thrush, part; Sierra Hermit Thrush, part; White Mountain Hermit Thrush; Mono Hermit Thrush.

Status—Summer resident, locally common.

Geographic range—White Mountains of Mono and Inyo counties, 8000 to 10,000 feet (Grinnell, Condor, 20, 1918:89), Inyo and Panamint mountains, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:146) and Clark Mountain, 7100 to 7300 feet, eastern San Bernardino County (A. H. Miller, Condor, 42, 1940:162). A migrant has been taken at Cedar Canyon, 5800 feet, Providence Mountains, San Bernardino County, May 25 (Mus. Vert. Zool.).

Habitat—Limber pine, aspen, and mountain mahogany associations; on Clark Mountain white firs with currant bushes beneath. The plant cover, for this species of thrush, is exceptionally arid, open and strongly insolated. Singing posts are often on hot exposed bush- or pine-tops. Nonetheless these types of plant provide the best shady retreats within the general range of the race and produce an adequate leaf litter on the ground.

Hylocichla ustulata almae Oberholser
Rocky Mountain Swainson Thrush

Synonyms—Turdus swainsoni, part; *Turdus ustulatus swainsoni*, part; *Hylocichla ustulata swainsoni*, part; Olive Thrush, part; Olive-backed Thrush, part.

Status—Fairly common summer resident; rare migrant.

Geographic range—Warner Mountains of Modoc County and locally along east slope of Sierra Nevada south through Mono County. Life-zones, Transition and Canadian. Localities of known summer residence: Sugar Hill, Parker and Dry creeks, Goose Lake, and Jess Valley, all in Warner Mountain region, 4800 to 7500 feet, Modoc County (Grinnell, Pac. Coast Avif. No. 11, 1915:170; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:336); Tahoe Basin, Placer and Eldorado counties (Calif. Acad. Sci.); Mono Lake and Mammoth, 8000 feet, Mono County (Dawson, Birds Calif., 2, 1924:757; van Rossem, Condor, 27, 1925:37). Recorded also in summer on west slope of Sierra Nevada: Haskin's Valley, 5150 feet, Plumas County (Mus. Vert. Zool.); Sierra City, 4500 feet, Sierra County (van Rossem, *loc. cit.*); these records, based on single birds, do not necessarily indicate breeding populations of this race, but possibly extreme variants of an intergradational complex, since intergradation is indicated to the north in the Lassen section (see under *H. u. ustulata*). Stray (or unusual variant of *H. u. ustulata*) taken July 22, at head of Grizzly Creek, 6000 feet, Trinity County (Mus. Vert. Zool.). Migrants: Weed, Siskiyou County, May 14 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:75, 94); Panamint Mountains, Inyo County, May 18 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:145). Two migrants, essentially like *H. u. swainsoni*, but probably in origin intergrades between *H. u. almae* and *H. u. ustulata*: Las Trampas Creek, Contra Costa County, September 18, and Altadena, Los Angeles County, May 10 (Mus. Vert. Zool.).

Habitat—Willow thickets along streams and in meadows; also aspens and small firs in similar situations.

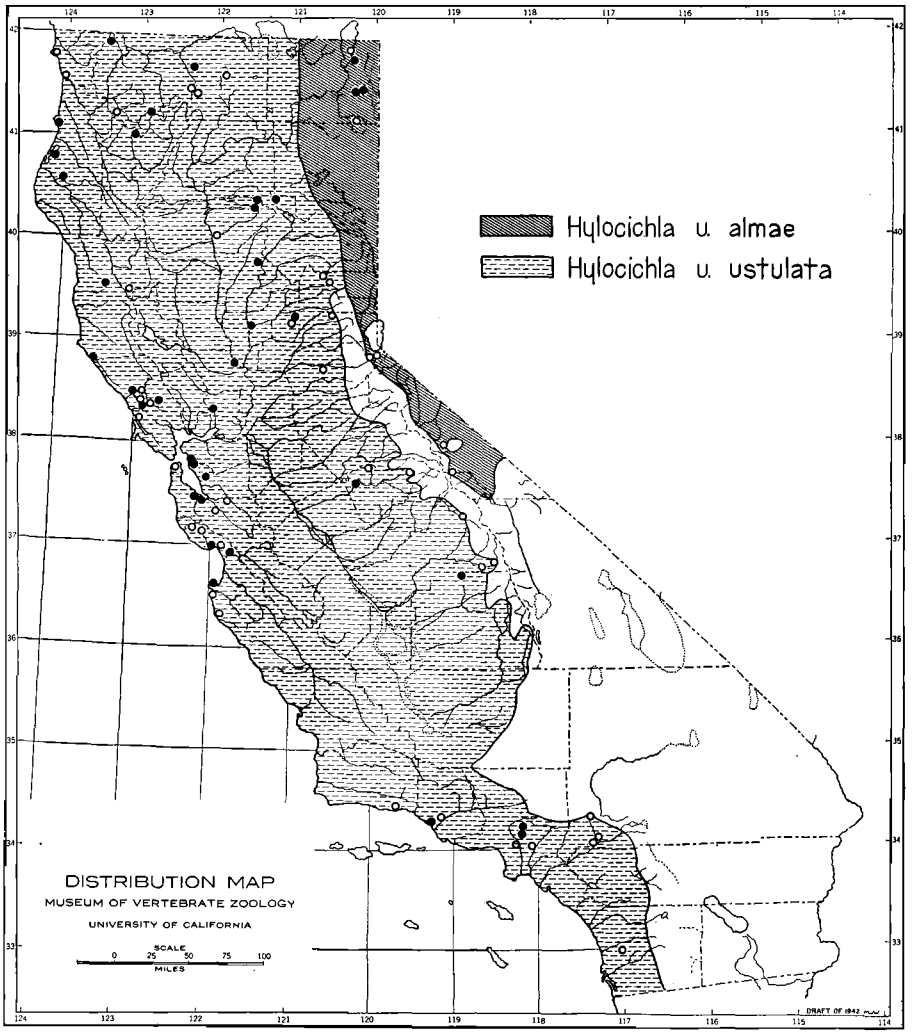

Fig. 36. Distribution of the subspecies of Swainson Thrush, *Hylocichla ustulata*, in California in the breeding season. Dots indicate localities whence summer resident birds have been examined; circles, localities reported in the literature. Large unoccupied areas impossible of exact definition are included in the ranges of both races .

Hylocichla ustulata ustulata (Nuttall)
Russet-backed Swainson Thrush

Synonyms—Turdus solitarius; *Turdus nanus*, part; *Turdus swainsoni*, part; *Turdus ustulatus*; *Turdus swainsoni ustulatus*; *Hylocichla ustulata*; *Turdus ustulatus swainsoni*, part; *Hylocichla ustulata oedica*; *Hylocichla swainsoni*; *Hylocichla ustulata swainsoni*, part; Dwarf Thrush, part; Olive Thrush, part; Oregon Thrush; Russet-backed Thrush; Tuneful Olive-back; Olive-backed Thrush, part.

Status—Common to abundant summer resident from late April through August. Common migrant in late April and early May, and in late August and September, but

noticed also particularly in desert regions in late May and early June, where summer resident populations are lacking.

Geographic range—As breeding, length of State west of Cascade-Sierran axis and desert divides in the south, exclusive of the islands. Life-zones chiefly Upper Sonoran and Transition, from near sea level up to 7300 feet, but in southern California not above 4000 feet. In migration, entire length and breadth of State and on the coastal islands. Representative localities of known breeding, from north to south: Salmon Mountains, Edgewood, Weed, and Bray, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:94); Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:26); Lassen section, 260 feet to 6800 feet and east to Kelly's, specimens of east slope showing intergradation toward *H. u. almae* (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:348); Cisco, Placer County (Ingersoll, Condor, 15, 1913: 85); Marysville, Yuba County (Belding, Proc. U. S. Nat. Mus., 1, 1879:396); Echo, 5700 feet, Eldorado County (Barlow, Condor, 4, 1902:81); Monte Rio, Sonoma County (Mailliard, Condor, 22, 1920:38); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:147); Yosemite Valley (Grinnell and Storer, Animal Life Yosemite, 1924:600); Boulder Creek, Santa Cruz County (Ray, Condor, 2, 1900: 126); northern San Benito County (Mus. Vert. Zool.); Florence Lake, 7340 feet, Fresno County (L. M. Lofberg, Condor, 30, 1928:313); Santa Barbara (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:227); Pasadena, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:51); 3250 feet in San Gabriel Mountains, Los Angeles County, Colton, San Bernardino County, etc. (Willett, Pac. Coast Avif. No. 21, 1933:132); Poway, San Diego County (Belding, Proc. Calif. Acad. Sci., ser. 2, 2, 1889:59). Selected records of migrants: Farallon Islands, May 29 (Dawson, Condor, 13, 1911:183); near Santa Cruz, Santa Cruz County, November 4, 1940 (C. P. Streator MS); Florence Lake, Fresno County, October 30 (L. M. Lofberg, *loc. cit.*); Coalinga, Fresno County, April 28, May 16, 18 (Arnold, Condor, 39, 1937:34); Argus Mountains, Inyo County, May 15 (A. K. Fisher, N. Amer. Fauna No. 7, 1893: 145); Clark Mountain and Providence Mountains, San Bernardino County, May 22, June 9 (Mus. Vert. Zool.); Twentynine Palms, same county, May 7 to 30 (F. Carter, Condor, 39, 1937:215); Colorado River, May 4 to 15 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:215); Santa Cruz, Santa Barbara, and San Clemente islands (Howell, Pac. Coast Avif. No. 12, 1917:101); Santa Rosa Island, April 3 (Pemberton, Condor, 30, 1928:148).

Habitat—In summer, riparian thickets of willows and alders and dense forest understory on moist slopes near streams or meadows. Tangles of blackberry, dogwood, and dense bracken form excellent cover. In such places sources of mud for nests are present, and forage beats in the low humid green foliage are provided.

Sialia mexicana occidentalis J. K. Townsend
Western Mexican Bluebird

Synonyms—Sialia occidentalis; *Sylvia occidentalis*; *Sialia caeruleocollis*; *Sialia mexicana*, part; *Sialia mexicana anabelae*; *Sialia mexicana bairdi*, part; Western Bluebird, part; Mexican Bluebird, part; California Bluebird; Anabel Bluebird; Chestnut-backed Bluebird; San Pedro Bluebird.

Status—Common summer resident over most of northern and western sections of State. In winter, widespread in lowlands and at times abundant. Migratory movements

are irregular as to date and apparently often are local or altitudinal. In many sections these bluebirds are permanently resident.

Geographic range—As breeding, entire length of State west of eastern margins of Sierran forests, but including Great Basin plateau region south to vicinity of Lake Tahoe. Intermediates, best assigned to this race, breed in Panamint Mountains, Inyo County (Mus. Vert. Zool.). In winter, throughout State below levels where there is heavy snow. Life-zones in breeding season Upper Sonoran and Transition, also locally Canadian and Lower Sonoran. Altitudes of summer residence range from near sea level, as at Carpinteria (Hoffmann, Condor, 23, 1921:138), up to 10,600 feet in San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:132). Additional localities of known breeding selected to represent limits of range: Fair Oaks, Humboldt County (Mus. Vert. Zool.); 8 miles west of Yreka, Edgewood, Weed, and Bray, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:94); Warner Mountains, Modoc County (Mus. Vert. Zool.); Lassen section east to Eagle Lake and vicinity of Ravendale (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930: 349); Lake Tahoe, Eldorado County (Ray, Auk, 22, 1905:368); San Francisco (Ray, Condor, 8, 1906:44); Walker Pass, Kern County (Mus. Vert. Zool.); Buena Vista Lake, Kern County (Linton, Condor, 10, 1908:198); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:316); Twin Oaks, San Diego County (F. A. Merriam, Auk, 13, 1896:124). Some winter record stations, peripheral, or outside of breeding range: Seiad Valley, Siskiyou Mountains, February 9 (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:14); Farallon Islands, probably in winter (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:50); Santa Catalina and San Clemente islands (Harris, Condor, 21, 1919:173; Linton, Condor, 11, 1909:194); Death Valley, Inyo County (Gilman, Condor, 37, 1935:242); Twentynine Palms, San Bernardino County (F. Carter, Condor, 39, 1937:215); Colorado River valley, Needles to Potholes (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:216; Howell and van Rossem, Condor, 17, 1915:234; the winter population in this region now appears to us to be composed chiefly of *bairdi*; occasional individuals apparently represent *occidentalis*.)

Habitat—In breeding season, the prime requisite is well spaced, broken timber, providing nest sites and an abundance of exposed lookout posts, low down or at middle height, from which search of open patches of grassy, meadowy, or even rocky ground can be made. Larger openings are searched by the hovering method or from scattered bush tops or weed stalks. Tree growths providing these conditions are: mature, scattered groups of willows and cottonwoods along stream courses; typically open stands of wild walnut and sycamore, and of blue, valley and black oaks; yellow and Monterey pine forests, and even conifers of higher zonal type when displaying the requisite spacing. In breeding territories dead trees or limbs are usually abundant. Although most of the food in summer is taken from the ground or the grass tops, some flycatching of insects is indulged in. In winter, mistletoe berries commonly are taken and the presence of this plant may govern local occurrence.

Sialia mexicana bairdi Ridgway
Chestnut-backed Mexican Bluebird

Synonyms—Sialia mexicana, part; *Sialia mexicana occidentalis*, part; Western Bluebird, part; Mexican Bluebird, part.

Status—Summer resident; rare by reason of greatly restricted breeding habitat along southeastern border of State. Common winter visitant in this region.

Geographic range—In summer known only from Clark Mountain, 7300 feet, northeastern San Bernardino County (A. H. Miller, Condor, 42, 1940:162). In winter, Providence Mountains, 4000 to 5400 feet (Mus. Vert. Zool.); Colorado River, Needles to Potholes (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:216; Howell and van Rossem, Condor, 17, 1915:234; see comment under *S. m. occidentalis*). Single birds from Little Lake, Inyo County, and Victorville and Oro Grande, San Bernardino County (Mus. Vert. Zool.) are indistinguishable from *bairdi*, but may represent variants of *occidentalis* since there is appreciable overlap in characters of these races.

Habitat—In summer, open patches of white fir, interspersed with piñon, on mountain slopes. In winter, yucca, sagebrush and creosote bush associations; at lower elevations, mesquite clumps, where especially attracted by mistletoe.

Sialia currucoides (Bechstein)
Mountain Bluebird

Synonyms—Sialia arctica; Arctic Bluebird; Rocky Mountain Bluebird.

Status—Common summer resident in the mountains; but rated as "very common" or "abundant" in northeastern section. Winter occurrence in lowlands irregular as to date and variable from year to year; noted chiefly from November through March; at times common locally, but otherwise sparse over much of winter range, especially toward the north and west.

Geographic range—Breeds along Cascade-Sierra Nevada mountain system and on high plateaus and mountains to eastward from Warner Mountains south to Panamint Mountains, Inyo County; also in inner northern coast ranges from Siskiyou County south to Mount Sanhedrin, Mendocino County, and in San Bernardino Mountains of southern California. In winter, throughout State at lower levels, except in humid coast belt from Mendocino County northward. Life-zones in summer, chiefly Hudsonian, but also Canadian and high arid Transition; altitudes of known nesting range from 4000 feet, as in Yosemite Valley up to 12,000 feet as near Virginia Lakes, Mono County. Some accounts of special distributional or natural history bearing as related to the breeding season: Bray, McDoel, and Mount Shasta, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:82, 94, and *ibid.*, 13:11, 27; Townsend, Proc. U. S. Nat. Mus., 10, 1887:233; Merriam, N. Amer. Fauna No. 16, 1899:133); Wildcat Peak, Siskiyou County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:389); South Yolla Bolly Mountain, western Tehama County (Ferry, Condor, 10, 1908:45); Mount Sanhedrin, eastern Mendocino County (Stone, Proc. Acad. Nat. Sci. Phila., 1904:585); Warner Mountains, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927: 337); Lassen Peak region, from near Mineral east to Box Springs (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:351); Blairsden, Plumas County, and Gold Lake, Sierra County (M. W. Wythe, Condor, 29, 1927:64); Pyramid Peak, Echo, and near Fyffe, Eldorado County, where birds may have bred at elevations as low as 3000 feet (Barlow and Price, Condor, 3, 1901:151; also, specimen, June 1, 1925, "Placerville," in Ellis Coll.); vicinity of Lake Tahoe (Ray, Auk, 20, 1903:193, and *ibid.*, 22, 1905:368); Yosemite section, Yosemite Valley east to Mono Lake (C. W. Michael,

Condor, 38, 1936:85; Grinnell and Storer, Animal Life Yosemite, 1924:622); vicinity of Virginia Lakes, Mono County, above timber line (Rowley, Condor, 41, 1939:250); Cottonwood Lakes, Inyo County (Dawson, Birds Calif., 2, 1924:781); White, Inyo, Panamint and Grapevine mountains, Mono and Inyo counties (A. K. Fisher, N. Amer. Fauna No. 7, 1893:149); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:133). Additional ascriptions indicative of winter dispersal: Murphy, Calaveras County, and near Stockton, San Joaquin County (Belding, Proc. U. S. Nat. Mus., 1, 1879:398); San Francisco Bay region, Sonoma, Palo Alto, Livermore, etc. (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:149; Stoner, Condor, 41, 1939: 172); Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:50); Camp Ord, near Salinas, Monterey County (Silliman and von Bloeker, Condor, 39, 1937:129); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:109); Death Valley, Inyo County, January to mid-April (Gilman, Condor, 37, 1935:242); Twentynine Palms, San Bernardino County (F. Carter, Condor, 39, 1937:215); Needles, same county (Calif. Acad. Sci.); Brawley, Imperial County (van Rossem, 13, 1911:134); San Diego (Belding, Land Birds Pac. Dist., 1890:263); Santa Cruz Island (Hoffmann, Condor, 22, 1920:187).

Habitat—Widely open terrain, the ground covered with short grass, alpine turf, stunted or widespread bushes, or even rock shingle. Perches may be provided by rocks, bush tops, or scattered trees of small or moderate stature. The insects for which these bluebirds forage may be taken either on the ground or in the air. For nest sites dead trees usually are present, but rock crevices and man-made structures may be used. Open tracts of ground and snow banks are searched over from the wing by cruising out from distant resting places. High tolerance of wind and light exposure is shown.

Myadestes townsendi townsendi (Audubon)
Northern Townsend Solitaire

Synonyms—Ptilogonys townsendi; *Myiadestes townsendii*; *Myadestes townsendi*; Townsend Ptilogonys; Townsend Flycatcher; Townsend Solitaire.

Status—Fairly common summer resident in the mountains. Descends to some extent in winter, and small numbers appear in foothills and lowlands; lowland occurrences scattered, and rare, chiefly from December through February, occasionally late October, November, and March, but occurrence varies from year to year.

Geographic range—In summer, Cascade-Sierra Nevadan mountain system, Warner Mountains of Modoc County, and inner northern coast ranges, from Siskiyou Mountains to South Yolla Bolly Mountain, Tehama County; also Panamint Mountains, and Mount Pinos, San Bernardino and San Jacinto mountains in southern California. In winter, chiefly along same mountain systems, but also spreads onto adjacent deserts and west to the coast from Sonoma County southward, even to the northern channel islands. Life-zones in breeding season, high Transition, Canadian and Hudsonian; altitudes of nesting range from 3700 feet, as at Fyffe, Eldorado County (Hanford, Condor, 19, 1917:14) up to at least 9000 feet, possibly to 9500 feet, in San Bernardino Mountains. Selected references to localities representative of different sections and limits of breeding range: 15 miles northwest of Happy Camp, Siskiyou Mountains (Calif. Acad. Sci.); Horse Mountain and South Fork Mountain, Humboldt County (Mus. Vert. Zool.); South Yolla Bolly Mountain, Tehama County (Grinnell, Pac. Coast Avif. No.

11, 1915:169); Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:132; Dawson, Condor, 21, 1919:12); Warner Mountains, Modoc County (Grinnell, *loc. cit.*); Lassen section, 4800 to 8200 feet (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:353; Halloran, Condor, 36, 1934:244); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:595; E. Smith, Gull, 13, 1931: December [p. 1]); Sirretta Meadows, Tulare County (Grinnell, 1915, *loc. cit.*); Death Valley Canyon, Panamint Mountains, family noted, June 22 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:144); Mount Pinos, Kern County (Miller and Benson, Condor, 32, 1930:102); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908: 128); San Jacinto Mountains (Swarth, Condor, 18, 1916:32). Additional references indicative of altitudinal migration and winter dispersal: Lava Beds National Monument, Siskiyou County, November 2 (Bond, Wilson Bull., 50, 1938:145); near Cedarville, Modoc County, up to about 6000 feet, October 14 (Mailliard, Condor, 28, 1926:127); Willow Creek, eastern Humboldt County, January (Mus. Vert. Zool.); Grass Valley, Nevada County, midwinter and early spring (Richards, Condor, 26, 1924:104); Davis, Yolo County, January 31 to March 7 (Storer, Condor, 35, 1933:44); San Francisco Bay region, Sonoma County to Santa Clara County, November 11 to April (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:146; Moffitt, Condor, 34, 1932:191; Stoner, Condor, 42, 1940:125; A. S. Allen, Condor, 45, 1943:152); Florence Lake, Fresno County, 7300 feet, throughout winter (L. M. Lofberg, Gull, 9, 1927:November [p. 2]); Santa Cruz Island, March 5 (Hoffmann, Condor, 34, 1932:190); Santa Rosa Island, April 3 (Pemberton, Condor, 30, 1928:148); records for coastal southern California south to San Diego County reviewed in detail (Willett, Pac. Coast Avif. No. 21, 1933: 133); near Yermo, January 3, and Victorville, San Bernardino County (Lamb, Condor, 14, 1912:40; Mailliard and Grinnell, Condor, 7, 1905:102); Palm Springs and Indio, January 10, Riverside County (Grinnell, Condor, 14, 1912:154; Stephens, Auk, 7, 1890:297). Food (Beal, U. S. Dept. Agr., Bull. No. 280, 1915:3).

Habitat—In breeding season, mountain slopes and canyons, at least partly forested, with provision for nest sites on or near the ground, which are well drained, free of snow early in the season, and often protected above from rain. Such sites are found on cliffs, in cut banks, at bases of trees, bent over or burned out on the downhill side, and in stumps and masses of upturned roots. Most typically frequented are forests of fir of several species, Jeffrey pine, sugar pine, and mountain hemlock, all of which provide in mature stands considerable shade, high song and fly-catching posts, and openings between or under the leafy crowns. The trees may at times be wide spaced, and chaparral, with its berry-producing species, frequently is present. In winter the search for wild fruit largely governs the habitat, and individuals stay constantly in the vicinity of workable berry supplies. Some plants that are important in this regard are junipers, manzanitas, service berry, madrone, toyon, mistletoe, and among non-natives, pepper trees, cotoneaster and pyracantha.

Polioptila caerulea amoenissima Grinnell
Western Blue-gray Gnatcatcher

Synonyms—Culicivora caerulea; *Polioptila caerulea*; *Polioptila melanura*, part; *Polioptila caerulea obscura*; *Polioptila plumbea*, part; Blue-gray Flycatcher; Black-tailed Gnatcatcher, part; Blue-gray Gnatcatcher; Plumbeous Gnatcatcher, part; Western Gnatcatcher.

Status—Common summer resident, April to July; permanently resident in coastal southern California, but even there local movements away from many nesting areas take place. Sparse winter visitant in the north at low levels and in coastal regions outside breeding range; common in winter on southeastern deserts and in lowlands of southern coastal district. Departure from breeding grounds in late summer results in a period of vagrancy, often up-slope, and at times leading birds to points outside normal summer and winter ranges.

Geographic range—As breeding, foothills and low mountains surrounding Sacramento and San Joaquin valleys, and locally in river bottoms of the valleys; interior coast ranges, and mountains and coastal plain of southern California south to Mexican boundary; desert mountain ranges from Providence Mountains north to White Mountains. In winter, lowlands north as far as Marin County, and from coast east to floor of San Joaquin Valley; also on inner channel islands, and on southeastern deserts north to Death Valley, Inyo County. Life-zones, Upper and Lower Sonoran; breeds from within a few hundred feet of sea level up to 7500 feet, as on Clark Mountain, San Bernardino County (A. H. Miller, Condor, 42, 1940:163). Northern and western records of occurrence in breeding season: Hornbrook and Yreka, Siskiyou County, May 26 (Calif. Acad. Sci.; Cooper, Ornith. Calif., 1, 1870:36); Baird, Shasta County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:230); Hyampom, Trinity County (A. H. Miller MS); Covelo and Mount Sanhedrin, Mendocino County (Grinnell, Pac. Coast Avif. No. 11, 1915:168); 4 miles east of Napa, Napa County (Bickford, Condor, 31, 1929: 36). Other ascriptions selected for distributional and natural history content relating to the breeding season: Lassen region, Red Bluff to Lyman's (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:355); Marysville and Oroville, Butte County (L. P. Bolander, Condor, 9, 1907:23; W. B. Davis, Auk, 55, 1938:546); Fyffe, Eldorado County (Pemberton, Condor, 10, 1908:239); Murphy, Calaveras County (Belding, Proc. U. S. Nat. Mus., 1, 1879:399); Cordelia, Solano County (Stoner, Condor, 41, 1939:255); Yosemite region, La Grange to El Portal (Grinnell and Storer, Animal Life Yosemite, 1924:593); 6 miles west and 3 miles north of Benton, Mono County (Mus. Vert. Zool.); Clovis, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:107); Jolon, Monterey County (Pemberton and Carriger, Condor, 17, 1915: 196); Buena Vista Lake, Kern County (Mailliard, Condor, 16, 1914:261); Little Santa Anita Canyon, Los Angeles County (H. W. Myers, Condor, 9, 1907:48); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:314); Twin Oaks, Poway, Julian, and Campo, San Diego County (F. A. Merriam, Auk, 13, 1896: 129; Belding, Land Birds Pac. Dist., 1890:248); White, Inyo, Panamint, Argus and Grapevine mountains, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:143). Some localities of late summer or fall vagrancy: Mount Tallac, 9000 feet, Eldorado County (L. Miller, Condor, 22, 1920:79); near Glacier Point, 6300 feet, August 17, and Fletcher Creek, 10,300 feet, both in Yosemite Park, and Williams Butte, Mono County, September 15 (Grinnell and Storer, *loc. cit.*). Marginal localities of winter occurrence: Muir Beach, Marin County (A. H. Miller MS); Death Valley, Inyo County (Fisher, *loc. cit.*); Santa Cruz and Santa Catalina islands (Howell, Pac. Coast Avif. No. 12, 1917:100); Colorado River, Needles to opposite Cibola (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:214).

Habitat—In nesting season, arid, well insolated park-like tree growths, of low or moderate stature, and broken chaparral. In these are provided open branchwork in which to forage and limited intervals that must be traversed in flight. Most favorable

are blue-oak-covered hill slopes and chaparral edges where mingled with oaks of several species or with diversified arroyo-edge cover. Less commonly occurs in willow thickets, sycamores, and cottonwoods, and then usually where there is adjacent chaparral. In desert mountains, piñon, juniper, and shrubs such as *Purshia* provide comparable conditions.

Polioptila melanura lucida van Rossem
Sonora Black-tailed Gnatcatcher

Synonyms—Polioptila melanura, part; *Polioptila plumbea*; *Polioptila plumbea plumbea*; *Polioptila melanura melanura*; Black-headed Gnatcatcher, part; Plumbeous Gnatcatcher, part; Lead-colored Flycatcher; Black-capped Gnatcatcher, part.

Status—Resident. Common.

Geographic range—Colorado Desert west to eastern San Diego County and northwest to Palm Springs, Riverside County; along valley of Colorado River from Mexican boundary to Nevada line; occurs locally on the Mohave Desert. Life-zone, Lower Sonoran, from —240 up to 3000 feet, as on northeast side of Santa Rosa Mountains, but breeds chiefly below 1000 feet. Principal localities of record: Mesquite Springs, Death Valley, April, nesting (Willett, *fide* Michener MS); Resting Springs, Amargosa River, Inyo County, February (A. K. Fisher, N. Amer. Fauna No. 7, 1893:144); near Yermo, San Bernardino County, October (Lamb, Condor, 14, 1912:40); Goffs and Needles, San Bernardino County (Hollister, Auk, 25, 1908:462); Colorado River, south to Mexican boundary (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:214); Cottonwood Springs, Palm Springs, Dos Palmos, east base of Santa Rosa Mountains, Mecca, etc., in and about Coachella Valley, Riverside County (Mus. Vert. Zool.; Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:315; Grinnell, Condor, 6, 1904:45; Hanna, Condor, 30, 1928:161); Boregas Springs [Borego], San Felipe Canyon, and Vallecito, San Diego County (Stephens, Auk, 7, 1890:296; Grinnell, Pac. Coast Avif. No. 11, 1915:168; Mus. Vert. Zool.); Imperial Valley, south to Calexico (van Rossem, Condor, 13, 1911:134; Friedmann, Wilson Bull., 46, 1934:33).

Habitat—Taller desert shrubs and trees along washes and surrounding desert sinks. Prominent plants in these places which are utilized extensively are catclaw, palo verde, smoke tree, ironwood, mesquite, and screw-bean. In the scanty cover provided by these plants foraging and nesting is carried on under heavy exposure to the sun.

Polioptila melanura californica Brewster
California Black-tailed Gnatcatcher

Synonyms—Culicivora atricapilla; *Culcivora mexicana*; *Polioptila melanura*, part; *Polioptila californica*; Black-headed Gnatcatcher, part; Black-tailed Gnatcatcher; Black-tailed Flycatcher; Black-capped Gnatcatcher, part; California Black-capped Gnatcatcher.

Status—Resident. Common locally; areas of suitable habitat somewhat reduced within last twenty years.

Geographic range—Coastal southern California from Mexican line northwest to lower Santa Clara Valley, Ventura County, and eastward to San Gorgonio Pass. Life-zone, typically Lower Sonoran; Upper Sonoran in immediate vicinity of coast. Breeds

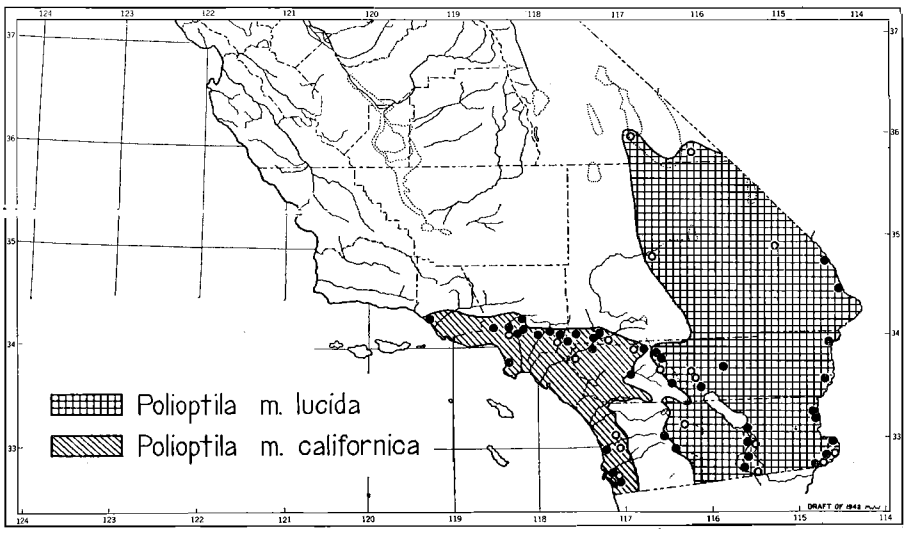

Fig. 37. Distribution of the subspecies of Black-tailed Gnatcatcher, *Polioptila melanura*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

from near sea level, as at Laguna Beach, Orange County, up to 2500 feet, in the vicinity of Banning, Riverside County. Representative localities: Ventura and Santa Clara Valley (Grinnell, Pac. Coast Avif. No. 11, 1915:169; Evermann, Auk, 3, 1886:186); Redondo, Los Angeles County, December 17 (Calif. Acad. Sci.); San Fernando Valley and Pasadena, same county (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:50); Azusa, same county (Woods, Condor, 23, 1921:173; *ibid.*, 30, 1928:139; *ibid.*, 32, 1930:126); Claremont and Pomona, same county (Grinnell, 1898, *loc. cit.*); San Bernardino, near Redlands, and Colton, San Bernardino County (Bendire, Proc. U. S. Nat. Mus., 10, 1887:549; Ingles, Jour. Ent. Zool., Pomona, 21, 1929:85; Hanna, Condor, 11, 1909: 81); Riverside and Corona, Riverside County (Brewster, Bull. Nutt. Ornith. Club, 6, 1881:103; Hanna, Condor, 36, 1934:89; Hellmayr, Field Mus. Nat. Hist., Zool. Ser., 13, 1934:508); Banning, Cabezon, and Vallevista, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:315); vicinity of Escondido and Poway, San Diego County (Sharp, Condor, 9, 1907:91; Belding, Land Birds Pac. Dist., 1890:249); San Diego and National City, San Diego County (Dawson, Birds Calif., 2, 1924:819; Friedmann, Wilson Bull., 46, 1934:33). One record of vagrant outside of normal range to eastward: Palm Springs, Riverside County, January 1 (Grinnell, Condor, 6, 1904:45).

Habitat—Low, fairly dense tracts of xerophilous brush on mesas and bajadas, or in dry washes. Nest emplacements are normally within three feet of the ground and concealed beneath the crowns of the bushes. Compared with other California gnatcatchers, the sphere of activity of this race is in lower, more compact foliage. A typical plant association occupied is that dominated by California sagebrush (*Artemisia californica*) and sages (*Salvia*). In washes, cacti, red-berry (*Rhamnus crocea*) and sumac (*Rhus laurina*), among the considerable variety of shrubs in such places, are known to be utilized (Woods, 1921 and 1928, *op. cit.*).

Regulus satrapa olivaceus Baird
Western Golden-crowned Kinglet

Synonyms—Regulus satrapa; *Regulus regulus olivaceus*; Golden-crowned Wren; Golden-crested Wren; Golden-crowned Kinglet; American Golden-crested Kinglet.

Status—Present in two seasonal rôles: summer resident in higher mountains and along northern coast; winter visitant west of Sierran crests in lowlands from October to mid-March. Fairly common on breeding grounds, although sparse toward southern and western limits of range. Common in winter in humid coast belt; elsewhere usually sparse, although flocking habit may give impression of local abundance.

Geographic range—As breeding, coast district from Oregon line south interruptedly to Santa Cruz County; interior coast ranges south to Mount Sanhedrin, Mendocino County; east in the north to Warner Mountains, Modoc County; south throughout southern Cascade Mountains and Sierra Nevada, thence, discontinuously, on Mount Breckenridge and Mount Pinos, Kern County, and in San Bernardino and San Jacinto mountains. In winter, in Transition Zone within breeding range, but also in favorable situations in foothills and lowlands throughout State west of Sierran-Cascade divide from Siskiyou Mountains south at least to Los Angeles County, and on Santa Cruz Island. Life-zones in summer, Canadian and Transition. Breeds from 200 feet, as in Muir Woods, Marin County (A. H. Miller MS) up to 9000 feet in Mammoth Pass, Madera County (A. H. Miller MS). Selected references pertaining to distribution in summer season and to natural history: Trinity Mountains, Siskiyou and Trinity counties (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:388); Mount Sanhedrin, Mendocino County (Stone, Proc. Acad. Nat. Sci. Phila., 1904:585); South Fork Gualala River, Sonoma County (Sheldon, Condor, 10, 1908:123); 3 miles northwest of La Honda, Santa Cruz Mountains, San Mateo County (McLean, Condor, 38, 1936:17); Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:132); Eagle Peak, Warner Mountains (Dawson, Condor, 18, 1916:30); Lassen Peak section, 4800 to 8200 feet (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:357); Gold Lake, Sierra County (A. S. Allen, Condor, 30, 1928:362); Cisco, Placer County (Ingersoll, Condor, 15, 1913:85); Fyffe, Eldorado County (Barlow and Price, Condor, 3, 1901:183); Big Trees, Calaveras County (Belding, Proc. U. S. Nat. Mus., 1, 1879: 399); Yosemite region, from Yosemite Valley up to 8700 feet (Grinnell and Storer, Animal Life Yosemite, 1924:586); Mount Breckenridge and Mount Pinos, Kern County (Grinnell, Pac. Coast Avif. No. 11, 1915:167; Miller and Benson, Condor, 32, 1930: 102); Big Bear Lake, San Bernardino Mountains (Pierce and Sumner, Condor, 29, 1927:82); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:313). References exemplifying or summarizing winter occurrence: Horse Creek, near Seiad Valley P. O., Siskiyou Mountains, November-December (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:14); Lassen section, Dale's up to near Susanville, 5000 feet, January (Grinnell, Dixon and Linsdale, *loc. cit.*; A. H. Miller MS); Stockton, San Joaquin County, October 28, November 15 (Belding, *loc. cit.*); Yosemite region, 1700 feet to 6800 feet, December (Mus. Vert. Zool.); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:145); coastal southern California, Santa Barbara County to Los Angeles County, and Santa Cruz Island (Willett, Pac. Coast Avif. No. 21, 1933:135).

Habitat—In summer limited to conifers which provide densely needled boughs, usually, but not always, high above the ground. The forage beats in this foliage are

nearly continuous, consist of small twigs and needle tufts and are in large measure shaded. Nest sites at middle heights are afforded in the concealing terminal tips of branches or in clusters of live hanging twigs. On the coast, Douglas fir and redwood are the important conifers that provide these requisites. In the interior, red, white, and Shasta firs, and again Douglas fir, are utilized, the Canadian-Zone, red-fir belt being particularly favorable. Less commonly pines of several species are frequented and the birds may for short periods resort to broad-leaved trees, such as willows. In winter diverse types of plant cover are utilized, but they normally are dense and well shaded.

Regulus calendula grinnelli Palmer
Sitka Ruby-crowned Kinglet

Synonyms—Corthylio calendula grinnelli; Sitka Kinglet.

Status—Winter visitant, mid-October to mid-March. Numbers small; rare in southern part of range.

Geographic range—Humid coast belt south to Santa Barbara County. Record stations, from north to south: Del Norte and Mendocino counties, in general (Bishop, Condor, 28, 1926:183); Big Lagoon, September 22 and January, 3 miles north of Trinidad, and mouth of Eel River, Humboldt County (Mus. Vert. Zool.; Ellis Coll.); Camp Meeker, and near Cazadero, October 13, Sonoma County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:146; Mus. Vert. Zool.); San Geronimo, Marin County (Grinnell, Pac. Coast Avif. No. 11, 1915:168); Berkeley, March 11, and Oakland and Hayward, Alameda County (Grinnell and Wythe, *loc. cit.*; Mus. Vert. Zool.); La Honda and Pescadero Creek, San Mateo County (Anderson and Jenkins, Condor, 5, 1903:155; Grinnell, Condor, 3, 1901:48); Palo Alto and vicinity, Santa Clara County (Grinnell and Wythe, *loc. cit.*); Monterey and Pacific Grove, Monterey County (Grinnell, Pac. Coast Avif. No. 3, 1902:72; Mus. Vert. Zool.); 7 miles north of Piedras Blancas, October 11, 14, and Morro, San Luis Obispo County (Mus. Vert. Zool.); Santa Barbara (Dawson, Birds Calif., 2, 1924:802; Bishop, *loc. cit.*; Calif. Acad. Sci.). Also recorded by Bishop from Redlands, but the specimen is reported as not typical and Willett (Pac. Coast Avif. No. 21, 1933:190) suggests that it and Bishop's bird from Santa Barbara may be variants of *R. c. cineraceus*; this seems likely at least as regards the specimen from Redlands.

Habitat—So far as known, like that of *R. c. cineraceus* in winter.

Regulus calendula cineraceus Grinnell
Western Ruby-crowned Kinglet

Synonyms—Regulus calendula; *Regulus calendula calendula*; *Corthylio calendula cineraceus*; *Corthylio calendula calendula*; *Corthylio calendula*; Ruby-crowned Wren; Ruby-crowned Kinglet; Ashy Kinglet; Eastern Ruby-crowned Kinglet.

Status—Summer resident in higher mountains of interior; winter visitant in western lowlands and on southeastern deserts from late September to mid-April; transients east of Sierra Nevada detected as late as May 21. Common on breeding grounds, except in mountains of southern California. In winter, abundant.

Geographic range—As breeding, Siskiyou, Trinity and Warner mountains in north, thence south in Cascade Mountains and Sierra Nevada from Mount Shasta to southern Tulare County; in southern California, on Mount Pinos, San Gabriel, San Bernardino and San Jacinto mountains. Occurs widely in winter in foothills and lowlands west of the Sierra from Humboldt County southward; also on channel islands and on Mohave and Colorado deserts east to Colorado River and from Death Valley south to Mexican line; some remain north interiorly as far as Honey Lake valley, Lassen County. Life-zone, in summer, chiefly Canadian, extending sparingly into Transition and Hudsonian. Extreme altitudes of nesting range from 1500 feet, at Redlands, San Bernardino County, up to at least 10,000 feet in Tulare County; breeding usually does not occur below 4000 feet. Selected references pertaining to summer range: head of Doggett Creek, Siskiyou Mountains (Grinnell MS); 8 miles west Yreka, Bray, and Stewart's Spring, near Edgewood, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921: 94); south fork Salmon River and Bear Creek, Trinity Mountains (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:388); Mount Shasta (Dawson, Birds Calif., 2, 1924:806); Warner Mountains, Modoc County (Grinnell, Pac. Coast Avif. No. 11, 1915:167); Lassen region above 4800 feet (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:358); Lake Tahoe (A. Head, Bird-Lore, 5, 1903:52; Ray, Condor, 12, 1910: 130); Yosemite region, from Yosemite Valley up to 9000 feet (Widmann, Auk, 21, 1904:67; Grinnell and Storer, Animal Life Yosemite, 1924:589); Virginia Lakes, Mono County (Rowley, Condor, 41, 1939:250); Long Meadow, Tulare County (Grinnell, *loc. cit.*); Mount Pinos, Kern County (Miller and Benson, Condor, 32, 1930:102); Mount Waterman, San Gabriel Mountains (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:50); Bear Valley, San Bernardino Mountains, and Redlands, San Bernardino County (Willett, Pac. Coast Avif. No. 21, 1933:135; Moore and Moore, Condor, 42, 1940:263); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:314); reported from mountains of San Diego County (Belding, Land Birds Pac. Dist., 1890:246; Stephens, Trans. San Diego Soc. Nat. Hist., 1919:22 [of separate]), but not known actually to nest there. Marginal records from among the large number of reports of winter occurrence: 3 miles north of Trinidad and Willow Creek, December, January (Mus. Vert. Zool.); 8 miles northeast of Susanville, Lassen County, January 2 (Mus. Vert. Zool.); Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:50); Santa Cruz and Santa Catalina islands (Howell, Pac. Coast Avif. No. 12, 1917:100); Death Valley, Inyo County, February (A. K. Fisher, N. Amer. Fauna No. 7, 1893:142); Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:212).

Habitat—In breeding season, coniferous forests either of moderately dense type or where trees are open and broken. More tolerance of exposure to light is shown than in the Golden-crowned Kinglet and forest-edge situations may even be favored. The forage beat is in the terminal foliage and nest sites are in concealing needle tufts at middle heights. Lodgepole pines, mountain hemlock, and firs of several species are the trees most frequented. In winter wide tolerance of conditions is shown, the birds foraging in almost any kind of foliage and twigs, from the ground upward, and even in much exposed situations.

Note—Regulus calendula calendula has been reported from the State several times on the basis of bright green-backed, winter-taken specimens. Re-examination of a number of these birds has led us to doubt that they originated from within the breeding range of *R. c. calendula*. They fail to match the extreme coloration of eastern birds; perhaps they are intermediates between *cineraceus* and *R. c. calendula* or between *cineraceus* and *grinnelli*. Pending a thorough revision of this species based on fresh-plumaged material from nesting areas, it seems best to view the present evidence for the occur-

rence of *R. c. calendula* in California as inadequate, probable as its occurrence may be on geographic grounds.

Anthus spinoletta alticola Todd
Rocky Mountain Water Pipit

Status—Rare winter visitant. Four specimens taken in San Francisco Bay region: Oakland, Alameda County, April 10, 1901; Palo Alto, Santa Clara County, April 12, 1908, and April 18, 1901 (Mus. Vert. Zool.); Albany, Alameda County, March 4, 1922 (Ellis Coll.). Two specimens from Los Angeles, April 9, 17, 1900 (Calif. Acad. Sci.).

Anthus spinoletta pacificus Todd
Western Water Pipit

Synonyms—Anthus ludovicianus; *Anthus pensilvanicus*; *Anthus rubescens*; *Anthus spinoletta rubescens*; *Anthus spinoletta*; American Titlark; Titlark; Pipit; American Pipit; Western Pipit.

Status—Winter visitant from late September to late April. Abundant. Extreme dates for transients and vagrants fall as early as July 1 and as late as May 16.

Geographic range—Lowlands throughout length and breadth of State, although rare in midwinter on northeastern plateaus. As a transient in late summer and fall may occur in open situations in mountains. Some marginal and representative record stations, with dates where significant: Orick and Trinidad, Humboldt County (Ferry, Condor, 10, 1908:43); Mount Shasta, Siskiyou County, July 17, but not breeding (Merriam, N. Amer. Fauna No. 16, 1899:130; A. H. Miller, Condor, 41, 1939:218); Lava Beds National Monument, Modoc County, November 10 (Bond, Condor, 41, 1939:60; Mus. Vert. Zool.); Surprise Valley, September 26, and Eagleville, October 11, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:331); Lassen Peak, 9000 feet, July 1 (Vogt, Condor, 43, 1941:162); near Litchfield, Lassen County, December 31 (A. H. Miller MS); Summit, Nevada County, September 10, and Stockton, San Joaquin County, September 18 to April 27 (Belding, Land Birds Pac. Dist., 1890:222); Mono Lake, Mono County (W. K. Fisher, Condor, 4, 1902:11); Mount Lyell, 12,000 feet, October 6 (Harwell, Yosemite Nature Notes, 12, 1933:25); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:138); Santa Cruz Mountains, May 16 (McGregor, Pac. Coast Avif. No. 2, 1901:19); Coalinga, Fresno County (J. R. Arnold, Condor, 39, 1937:34); Kernville, Kern County (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ., 1876:232); Pasadena, August 29, and Los Angeles, May 1 (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:47; Swarth, Condor, 2, 1900:40); Santa Rosa Island (Pemberton, Condor, 30, 1928:148); Santa Cruz and San Clemente islands (Howell, Pac. Coast Avif. No. 12, 1917:94); Lone Pine, Owens Lake (December), Panamint Valley (January), and Death Valley (January), all in Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:125); near Yermo, San Bernardino County, November 3 to April 15 (Lamb, Condor, 14, 1912:39); Cabezon, Riverside County, May 4 (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:302); Salton Sea, Imperial County (van Rossem, Condor, 13, 1911:133); Colorado River valley, from Needles to opposite Cibola, and Fort Yuma (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:206; Baird, Rept. Colo. River . . . Ives, part 5, 1861:5).

Habitat—Open terrain, covered with turf, sparse grass or stubble, or consisting of

bare ground, preferably moist. Shore lines, stream edges, flooded fields, and river flats are particularly favored. Slope is unimportant, but ground cover must be sufficiently open to permit rapid walking and to allow for visibility at a low angle.

Note—For nomenclature of western races of pipits, see Todd, Proc. Biol. Soc. Wash., 48, 1935:63; also A.O.U. Check-list Committee, Auk, 61, 1944:457. No records of the species in California are now known to apply certainly to *A. s. rubescens* of eastern North America.

Bombycilla garrula pallidiceps Reichenow
American Bohemian Waxwing

Synonyms—Ampelis garrulus; *Bombycilla garrulus garrulus*; *Bombycilla garrula*; Northern Waxwing; Bohemian Waxwing.

Status—Irregular winter visitant, usually rare; in some years occurs in numbers, notably 1892, 1910-1911, and 1919-1920.

Geographic range—Chiefly interior of northern half of State, especially the lower levels of the Sierra Nevada; but also southern California south to San Diego County, including the Mohave Desert and adjoining Colorado River valley. Authenticated occurrences, by years: 1890, Quincy, Plumas County, January 25 (H. C. Bryant, Condor, 22, 1920:33); 1892, Susanville, Lassen County, February 2, 17, and Quincy, February 15 (W. E. Bryant, Zoe, 4, 1893:226; McGregor, Condor, 2, 1900:34); 1904, Victorville, San Bernardino County, December 31 (Mailliard and Grinnell, Condor, 7, 1905:77); winter season of 1910-1911, Eureka, Humboldt County, February 9, 20, (Mus. Vert. Zool.), Helena, Trinity County, February 17, vicinity of Tower House, February 9, March 1 (L. Kellogg, Condor, 13, 1911:120), Grass Valley, Nevada County, February to April (Richards, Condor, 26, 1924:102), Dutch Flat, Placer County, February 26 (Gifford, *ibid.*:109), Galt, Sacramento County, March 14 (Grinnell, *ibid.*: 111), Yermo, San Bernardino County, December 13 (Lamb, *ibid.*:34); 1917, 6 miles east of Coulterville, Mariposa County, January 31 (Storer, Condor, 19, 1917:103); winter season of 1919-1920, Yosemite Valley, September 28 (Michael and Michael, Condor, 23, 1921:35), Ballarat, Inyo County, March 31 (Mus. Vert. Zool.), Danby, eastern San Bernardino County, December 21 (Swarth, Condor, 22, 1920:72), Claremont, Los Angeles County, February 15 to 25 (Pierce, *ibid.*:110; Dawson, Birds Calif., 2, 1924:548; Mus. Vert. Zool.), Vallecito, eastern San Diego County, March 29 (Stephens, *ibid.*:159); winter season of 1926-1927, Dudley, Mariposa County, December 16 to March 18 (McLean, Yosemite Nature Notes, 6, 1927:33), 29 miles south of Needles, San Bernardino County, December 27 (Ellis Coll.); 1932, Davis, Yolo County, January 17 (Storer, Condor, 35, 1933:33), Modesto, Stanislaus County, spring (Feltes, Condor, 38, 1936:18), Pasadena, Los Angeles County, January 22 (Willett, Pac. Coast Avif. No. 21, 1933:136); 1933, Los Angeles, April 13 (Willett, *loc. cit.*); 1938, Yosemite Valley, December 23 (Cole, Yosemite Nature Notes, 18, 1939:83).

Habitat—Local occurrence apparently governed entirely by food supply in the form of native or introduced berry-producing plants or spoiled fruit in orchards. Old apples, pepper berries, coffee berries, mistletoe, and privet have figured as food sources in reports from the State.

Bombycilla cedrorum Vieillot
Cedar Waxwing

Synonyms—Ampelis cedrorum; Cedar-bird; Southern Waxwing.

Status—Summer resident of limited area in northwest; breeding population sparse. Widespread winter visitant, but irregular in local occurrence and numbers from year to year, and within any one season. Although there is a north-south direction to the annual movements of the species as a whole, individuals and flocks may be essentially nomadic. On the basis of aggregate numbers in the State, common, or in some years even abundant. Occasional stragglers may be found on wintering grounds between early June and late September when species normally absent, although none reported in July.

Geographic range—As breeding, humid coast belt south to vicinity of Eureka, Humboldt County. Life-zone of nesting grounds, Transition. In winter, entire length and breadth of State, exclusive of the high mountains; however, there are few reports from east of the Sierra and none from Imperial Valley and extreme lower Colorado River valley. Sole locality of nesting records: Eureka (J. M. Davis, Condor, 16, 1914:182; Fraser, Condor, 28, 1926:173); some birds apparently migrate in juvenal plumage. Selected references pertaining to distribution, with dates when these are significant or unusual: Crescent City, Del Norte County, June 9 (W. K. Fisher, Condor, 4, 1902:134); Beswick, Siskiyou County (Ferry, Condor, 10, 1908:43); Clear Lake and Eagleville, Modoc County, April, September 20, and "in winter" (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:328); Grass Valley, Nevada County, September 25 to June 3 (Richards, Condor, 26, 1924:103); Placer County, June 19 (Adams, Placer County Inst. Research, 1909:41); San Francisco Bay region and Farallon Islands (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:129); Yosemite Valley, June 5, August 29 (Grinnell and Storer, Animal Life Yosemite, 1924:504; H. C. Bryant, Condor, 30, 1928:250; E. Michael, Yosemite Nature Notes, 18, 1939:27; Adams, *ibid.*, 19, 1940: 6); Mono Lake, May 24 (Grinnell and Storer, *loc. cit.*); Fresno and Clovis, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:93; Shaw and Culbertson, Condor, 46, 1944:205); occurrence in coastal southern California reviewed, with records for June 16 and August 9, and Santa Cruz, Santa Catalina and San Clemente islands (Willett, Pac. Coast Avif. No. 21, 1933:67); San Diego, San Diego County (Gander, Condor, 32, 1930:64); Lone Pine, June 14, and Death Valley, December 15, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:113; Gilman, Condor, 37, 1935:242); Clark Mountain and Providence Mountains, eastern San Bernardino County, May 26, 31 (Mus. Vert. Zool.); Victorville and Twentynine Palms, San Bernardino County (Mailliard and Grinnell, Condor, 7, 1905:77; F. Carter, Condor, 39, 1937:215); 29 miles south of Needles, same county (Ellis Coll.); Indio, Riverside County (Stephens, Auk, 7, 1890:297). For banding records of birds trapped at Modesto, Stanislaus County, with recoveries at Olympia, Washington, and in Alabama, see Feltes (Condor, 38, 1936:18) and Cooke (Bird-Banding, 9, 1938:188).

Habitat—In breeding season, vicinity of growths of willows, alders and myrtles along water courses or on cut-over forest land, but only in cool humid coast belt. In winter, areas of diversified or open tree and shrub growth are most favored; but at times these waxwings appear in heavy forests and in flight out over open deserts. Occurrence actually governed by food supply of fruits, berries, flower parts, or buds; occasionally insects are taken on the wing. Non-native plant species account for many conspicuous winter concentrations. Thus, eucalyptus flowers, pepper, camphor, cotone-

aster, and pyracantha berries, and fruits such as cherries, apples, dates, and grapes (usually in the form of raisins) are eaten. Some natural food sources are toyon berries, mistletoe berries, and cottonwood buds.

Phainopepla nitens lepida Van Tyne
Northern Phainopepla

Synonyms—Ptilogonys nitens; *Cichlopsis nitens*; *Phainopepla nitens*; Black Flycatcher; Black-crested Flycatcher; Shining Flycatcher; Shining-crested Flycatcher; Crested Shining-black White-winged Flysnapper; Black Ptilogonys; Phainopepla; Silky Flycatcher.

Status—Resident within State, southerly. Locally common to abundant. In winter, population concentrates chiefly in portions of Colorado and Mohave deserts; for summer season, spreads thence westward to coast of San Diegan district, and northwestward, less commonly, to San Francisco Bay region and head of Sacramento Valley. However, seasonal and yearly occurrence anywhere is irregular, unpredictable; there are winter records for occurrences nearly as far to northward as northernmost summer ones.

Geographic range—North from Mexican boundary over Colorado and Mohave deserts east of Sierra Nevada as far as "Morans" [= Benton Station], Mono County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:113); west, at least in summer, to include coastal slope of southern California, and northwest along inner coast ranges as far as Alameda, Contra Costa and Solano counties (but no good record known to us for coast belt north of San Francisco Bay); north, sparingly, through Great Valley to its head, in Tehama and Shasta counties. Breeding life-zone east of desert divides, Lower Sonoran; west of desert and Sierran divides, both Lower and Upper Sonoran, but chiefly the latter. Altitudinal records in summer range from —200 feet as near Salton Sea up to 6600 feet west of Lone Pine, Inyo County (Mus. Vert. Zool.). Northernmost recorded station of occurrence, Fort Crook [near present-day Cayton], Shasta County, April, 1860, specimen in U. S. Nat. Mus. taken by John Feilner (Baird, Review Amer. Birds, 1866:417). One or more individuals have reached one of the islands, Santa Catalina, May 14 and June 12, 1918 (H. C. Bryant, Condor, 20, 1918:193; Wyman, Condor, 21, 1919:172). Some northward occurrences in winter are: Marysville, Yuba County, February 12 (Muller, Condor, 17, 1915:129); Newcastle, Placer County, February 7 (Calif. Acad. Sci.); Davis, Yolo County, January 21 (Linsdale, Audubon Mag., 43, 1941:235); Calaveras-San Joaquin county line, February 16 (Linsdale, *ibid.*:320); near Walnut Creek, Contra Costa County, January 1 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:130); Paicines, San Benito County, "common winter resident" (Mailliard and Mailliard, Condor, 3, 1901:125). A high winter record (5500 feet) is for December 30 (snow on ground), on Barley Flats, San Gabriel Mountains, Los Angeles County (L. E. Hoffman, Condor, 35, 1933:166). The literature is extensive; some references of special bearing on distributional matters are: Belding, Land Birds Pac. Dist., 1890:196; Gilman, Condor, 5, 1903:42; Keyes, Condor, 7, 1905:42; Grinnell, Univ. Calif. Publ. Zool., 12, 1914:187; Dawson, Birds Calif., 2, 1924:554ff.; Grinnell and Storer, Animal Life Yosemite, 1924:505; Follett, Condor, 35, 1933:243; Willett, Pac. Coast Avif. No. 21, 1933:137; A. H. Miller, Univ. Calif. Publ. Zool., 38, 1933: 432; Cowles, Madroño, 3, 1936:352; Crouch, Auk, 60, 1943:319ff.

Habitat—In general, though most especially in winter, areas which provide scattered stands of usually smallish trees, quite essentially such trees as bear growths of

mistletoe. Kinds of trees included here are: mesquite, screw-bean, desert ironwood, cottonwood, blue oak and live oak. Other sorts of berries than those of mistletoe are also at times attractive and may hold birds locally; for example, those of elder, nightshade, and the non-native pepper-tree. Nesting environs chosen are of the same, open-woodland type, but need not include trees bearing mistletoe. During the breeding period, a need for insect food seems to dim the berry requirement.

Lanius excubitor invictus Grinnell
Western Boreal Shrike

Synonyms—Lanius septentrionalis; *Collyrio borealis*; *Collurio borealis*; *Lanius borealis*; *Lanius borealis invictus*; Northern Shrike; Great Shrike; Great Northern Shrike; Northwestern Shrike; Northwestern Boreal Shrike.

Status—Winter visitant in small numbers to northeastern plateau region and rarely to Sacramento Valley. Doubtless occurs in State each year, but more numerous and widespread in some years than in others.

Geographic range—Great Basin plateau south to Plumas County; sporadically in Sacramento Valley to Davis, Yolo County. Reported from Shasta Valley, Siskiyou County, on May 16, 1860 (Feilner, Ann. Rept. Smithsonian Inst., 1865:422, 425), but late date and apparent lack of specimens may mean confusion with *Lanius ludovicianus*. Stations and dates of records based on specimens: Fort Crook, Shasta County (Feilner, *loc. cit.*); Eagle Lake, Lassen County, November 26, 1899 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:360); near Ravendale, same county, December 16, 1936, 2 specimens (Calif. Acad. Sci.); Termo, near Susanville, vicinity of Litchfield, Buntingville and Milford, same county, 16 specimens, November 8, 1933, October 8, 1934, to February 26, 1935, and December 28, 1942, to January 2, 1943 (McLean, Condor, 38, 1936:17; Mus. Vert. Zool.); Tule Section, Lassen County, January 22, 1938 (Calif. Acad. Sci.); Quincy, Plumas County, February 17, 1892 (Grinnell, Pac. Coast Avif. No. 1, 1900:54); Rowland's Marsh, Lake Tahoe, Eldorado County, October 24, 1925 (Calif. Acad. Sci.); Marysville, Yuba County, January 2 to February 5, 1878 (Belding, Proc. U. S. Nat. Mus., 1, 1879:411); Davis, Yolo County, January 19, 1923 (Mus. Vert. Zool.).

Habitat—Open terrain provided with lookout posts; noted about farm yards in Lassen County in pursuit of flocks of sparrows.

Lanius ludovicianus gambeli Ridgway
California Loggerhead Shrike

Synonyms—Lanius elegans; *Lanius ludovicianus*, part; *Lanius excubitoroides*, part; *Lanius excubitorides*, part; *Collyrio excubitoroides*, part; *Collurio excubitoroides*, part; *Collurio ludovicianus*, part; *Collurio ludovicianus excubitoroides*, part; *Collurio ludovicianus excubitorides*; *Lanius ludovicianus excubitoroides*; *Lanius ludovicianus robustus*; *Lanius ludovicianus excubitorides*, part; White-winged Shrike; American Grey Shrike, part; White-rumped Shrike, part; Western Loggerhead, part; Loggerhead Shrike, part; California Shrike, part; Long-billed Shrike; Gambel Shrike; Butcher-bird.

Status—Entirely resident south of latitude 39°; summer resident populations to northeastward considerably depleted by fall migrations. Winter visitants augment

numbers in areas of permanent residence, invade unoccupied areas locally, and appear on southeastern deserts. Common to abundant, the largest populations occurring in the San Joaquin Valley and in coastal southern California.

Geographic range—As breeding, Great Basin plateau, east of timbered areas of Cascade-Sierran system, south to Sierra County and west to Shasta Valley, Siskiyou County; Sacramento and San Joaquin valleys south through Fresno County; coastal districts from Sonoma County south to Mexican boundary. Additional areas occupied in winter: southern end of San Joaquin Valley, and Mohave and Colorado deserts east to Colorado River. Intergradation with *L. l. nevadensis* occurs along California-Nevada line in northeast, in a broad zone in Tulare, Kings, southeastern Monterey and interior San Luis Obispo counties, and in desert passes in northern Los Angeles County. Similarly intergradation with *L. l. sonoriensis* occurs in desert passes and along eastern edge of mountains in Riverside and San Diego counties. Life-zones, chiefly Upper and Lower Sonoran. Altitudes of known nesting range from near sea level as at Richmond, Contra Costa County, up to 5600 feet, as near Ravendale, Lassen County. Northern and western record stations: Humboldt Bay, Humboldt County, December [somewhat doubtful because of lack of a specimen] (Townsend, Proc. U. S. Nat. Mus., 10, 1887: 222); mouth of Gualala River, Sonoma County, August 26 (A. H. Miller, Condor, 35, 1933:37); Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888: 48). Southern record of breeding east of Sierra Nevada: Sierra Valley, Sierra County (Belding, Land Birds Pac. Dist., 1890:198). Some representative records of vagrants and winter visitants outside of breeding range: Summit Meadows, Nevada County, September 16 (Belding, Proc. U. S. Nat. Mus., 1, 1879:411); Kelso and Walker valleys, Kern County, November; Olancha, December 28, and Ballarat, March 31, Inyo County; Providence Mountains, San Bernardino County, December, January; 5 miles south of Needles, February 22, and Potholes, December 30, Colorado River valley (all in Mus. Vert. Zool.). For general account of natural history and distribution, see A. H. Miller, Univ. Calif. Publ. Zool., 38, 1931:75, 77-82, 147ff.

Habitat—Chief requisites are open terrain with well spaced lookout posts, at least two feet high, from which moving animals—insects or small vertebrates—may be seen below on the bare ground or in short or sparse grass. Densely timbered areas and chaparral are avoided. Suitable conditions are found in the sagebrush and juniper associations where either thickly foliaged trees or tall bushes provide nest sites and where open patches of ground between bushes serve as forage areas. West of the Sierra Nevada, farm lands in the valleys and on rolling hills offer the requirements for existence in especially favorable combination. Well spaced oaks, scattered trees in arroyos and the margins of river-bottom timber also are occupied. Regions of heavy rainfall and steep mountain slopes usually are not frequented, even when open ground is available, perhaps because of interference with visibility and difficulty in approach and pursuit of prey by the instinctive gliding flight.

Lanius ludovicianus nevadensis A. H. Miller
Nevada Loggerhead Shrike

Synonyms—Lanius ludovicianus, part; *Lanius excubitorides*, part; *Collyrio excubitoroides*, part; *Lanius excubitoroides*, part; *Collurio excubitoroides*, part; *Collurio ludovicianus excubitoroides*, part; *Lanius ludovicianus gambeli*, part; *Lanius ludovicianus excubitorides*, part; Loggerhead Shrike, part; American Grey Shrike, part; White-rumped Shrike, part; Western Loggerhead, part; California Shrike, part.

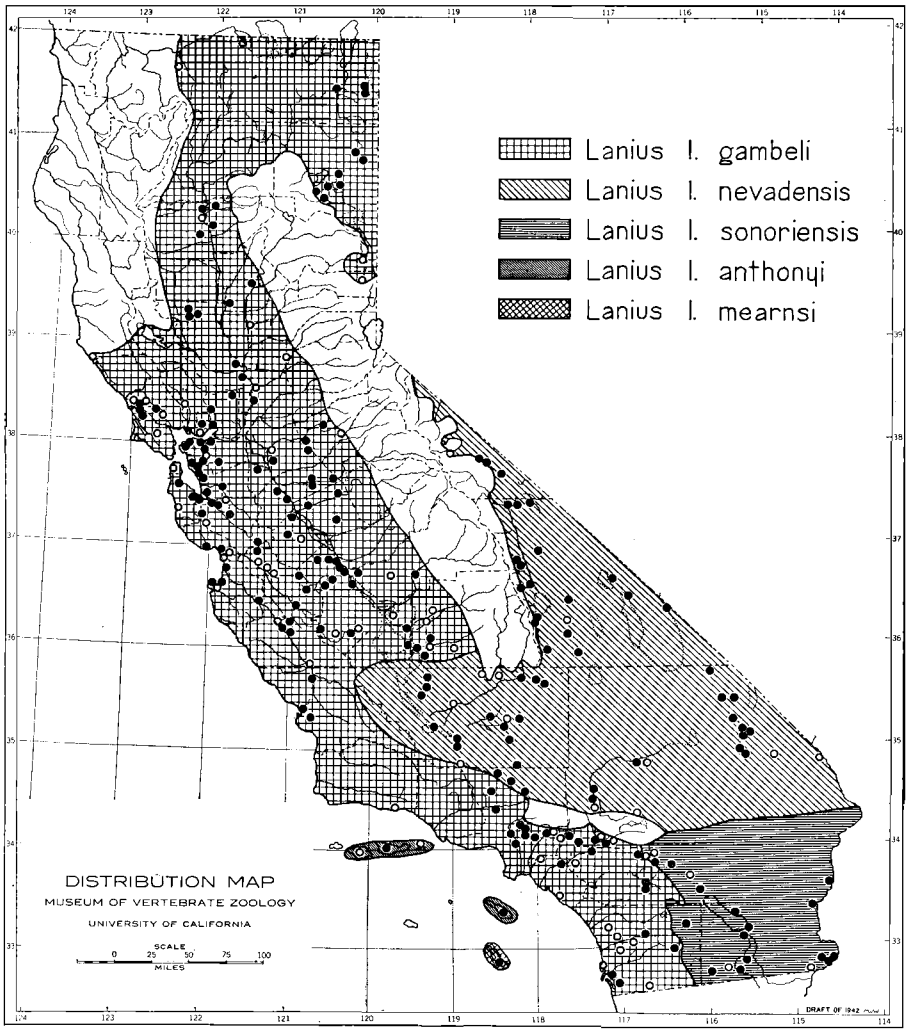

Fig. 38. Distribution of the subspecies of Loggerhead Shrike, *Lanius ludovicianus*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Status—Resident, except in northern part of range, in Mono and Inyo counties, where part of breeding population probably is migratory. Common. Winter visitants augment numbers in areas of permanent residence and appear within ranges of other races.

Geographic range—In breeding season, Mono and Inyo counties south over Mohave Desert to latitude of Providence Mountains and Barstow, San Bernardino County; west into southern end of San Joaquin Valley in Kern County. Additional areas occupied in winter: eastern Riverside County and Imperial County east to Colorado River and south to Mexican boundary; coastal areas, from Los Angeles County to San Diego County. Intergradation with *L. l. sonoriensis* takes place over a broad belt in the south-

ern Mohave Desert in southern San Bernardino County. Life-zones, Upper and Lower Sonoran. Altitudes of nesting range from —250 feet as in Death Valley up to 7500 feet, as at Waucoba Pass, Inyo County (Grinnell MS). Some record stations for vagrants and winter visitants: Lava Beds National Monument, Modoc County, November 10 (Mus. Vert. Zool.); 6 miles east of Coulterville, Mariposa County, January 20 (Mus. Vert. Zool.); Whitney Meadow, 9800 feet, Tulare County, August 8 (Mus. Vert. Zool.); Palms, September 12, and Pasadena, November-February, Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:137; Mus. Vert. Zool.); Witch Creek, San Diego County, November 26 (Bishop, Condor, 29, 1927:78); Mecca, Riverside County, March 18, April 8 (Mus. Vert. Zool.); Calipatria, Westmoreland, etc., Imperial County (A. H. Miller MS). For general account of natural history and distribution, see A. H. Miller, Univ. Calif. Publ. Zool., 38, 1931:74-76, 81, 92-93, 147ff.

Habitat—Same in requisite features for existence as in the race *gambeli*. Situations frequented are open desert flats or moderate slopes, covered with well spaced shrubs such as *Artemisia tridentata, Purshia, Atriplex*, and creosote bush. Mesquites, Joshua trees, junipers and occasionally broad-leafed trees about ranches or springs provide higher lookouts. On the average foraging posts are farther apart and the ground surveyed more sparsely covered with low annuals and grass than in the habitat of *gambeli*.

Lanius ludovicianus sonoriensis A. H. Miller
Sonora Loggerhead Shrike

Synonyms—Lanius excubitorides, part; *Collyrio excubitoroides*, part; *Lanius excubitoroides*, part; *Collurio excubitoroides*, part; *Collurio ludovicianus excubitoroides*, part; *Lanius ludovicianus excubitorides*, part; *Lanius ludovicianus*, part; American Grey Shrike, part; Western Loggerhead, part; White-rumped Shrike, part; Sonora Shrike.

Status—Resident. Common.

Geographic range—Colorado Desert in eastern Riverside, Imperial, and eastern San Diego counties, from east base of mountains as in San Gorgonio Pass, east to Colorado River valley; extends from zone of intergradation with *L. l. nevadensis* in southern San Bernardino County south to Mexican boundary. Life-zone, Lower Sonoran. Breeds chiefly below 1000 feet, only in the desert mountains of Riverside County extending up to about 4000 feet. For distributional summation, see A. H. Miller, Univ. Calif. Publ. Zool., 38, 1931:67-69, 75, 90, 163.

Habitat—Extremely arid desert flats, mesas, and washes wherever there are at least a few scattered shrubs or small trees. Mesquite clumps, desert ironwood, smoke tree, palo verde, catclaw, ocotillo and desert willow provide favored perches of moderate height. Nest emplacements are found in some of these same plants if the growth habit is such as to form thorny tangles and to give firm support. Frequently mistletoe clumps are used for nest concealment. This shrike has successfully adjusted itself to cultivated lands in the Imperial Valley and probably has increased in numbers there in the last twenty years.

Lanius ludovicianus anthonyi Mearns
Island Loggerhead Shrike

Synonyms—Collyrio excubitoroides, part; *Collurio ludovicianus*, part; *Lanius ludovicianus excubitorides*, part; *Lanius ludovicianus gambeli*, part; *Lanius anthonyi*, part; *Lanius ludovicianus*, part; Western Shrike, part; White-rumped Shrike, part; California Shrike, part; Island Shrike, part.

Status—Resident. Fairly common on Santa Cruz Island; less numerous on other islands. Total population of race small by reason of limited range and normal spacing of individuals.

Geographic range—Santa Rosa, Santa Cruz, Anacapa, and Santa Catalina islands. Reported by Cooper (Proc. Calif. Acad. Sci., 4, 1870:78) from Santa Barbara Island, but probably this observation relates to Santa Cruz Island. Some birds from Santa Catalina Island show structural intergradation with *L. l. mearnsi*. Principal references to distribution and natural history: Santa Rosa Island (Willett, Pac. Coast Avif. No. 7, 1912:92); Santa Cruz Island (Mearns, Auk, 15, 1898:261; Dawson, Birds Calif., 2, 1924:598); Anacapa Island, June 4, 1899 (Willett, *loc. cit.*); Santa Catalina Island (Grinnell, Auk, 15, 1898:235; Meadows, Condor, 30, 1928:251); in general (Howell, Pac. Coast Avif. No. 12, 1917:18; A. H. Miller, Univ. Calif. Publ. Zool., 38, 1931: 82-84, 94, 164; Willett, Pac. Coast Avif. No. 21, 1933:138).

Habitat—Grasslands and brush-covered canyon slopes. Steep hillsides are not avoided as seems to be true in mainland races, and tolerance is shown for dense low tangles of bushes and cactuses which are hunted from above. Scattered oaks, Monterey pines and non-native trees such as acacias and eucalyptuses about ranches are extensively used.

Lanius ludovicianus mearnsi Ridgway
San Clemente Loggerhead Shrike

Synonyms—Lanius ludovicianus gambeli, part; *Lanius ludovicianus anthonyi*, part; *Lanius anthonyi*, part; *Lanius mearnsi*; California Shrike, part; Island Shrike, part; San Clemente Shrike; Mearns Shrike.

Status—Resident. Rated by some authors as "fairly common," but total population small.

Geographic range—San Clemente Island. Occurs on all sections of island. Principal references to occurrence and natural history: Grinnell, Pasadena Acad. Sci., publ. 1, 1897:7; Mearns, Auk, 15, 1898:261; Linton, Condor, 10, 1908:85; Howell, Pac. Coast Avif. No. 12, 1917:88; Dawson, Birds Calif., 2, 1924:598; A. H. Miller, Univ. Calif. Publ. Zool., 38, 1931:84-85, 94, 164; Willett, Pac. Coast Avif. No. 21, 1933:138.

Habitat—Washes, ravines and mesas, either where there are scattered tall bushes, such as toyon and wild cherry, or low thorny scrub and cactus patches.

Vireo huttoni huttoni Cassin
California Hutton Vireo

Synonyms—Vireo solitarius; *Vireo huttoni obscurus*; *Vireo mailliardorum*; *Vireo huttoni mailliardorum*; *Vireo huttoni oberholseri*; Hutton Greenlet; Hutton Vireo; Dusky Vireo; Santa Cruz Island Vireo; Oberholser Vireo.

Status—Resident. Fairly common to common. In fall and winter detected locally where absent in spring, in a manner suggestive of migration. This may represent definite movement southward or down slope, or merely local dispersal. Nevertheless individuals may be found throughout year in all sections of breeding range.

Geographic range—Entire length of State west of Sierran divide, including Santa Rosa, Santa Cruz, and Santa Catalina islands. There are but two authentic records of vagrants east of Pacific water-shed: Victorville, San Bernardino County, December 28 (Mailliard and Grinnell, Condor, 7, 1905:101); Palm Springs, Riverside County, January 25 (Dawson, Condor, 18, 1916:29). Life-zones, Upper Sonoran and, in northern part of State, Transition. Altitudes of breeding range from near sea level, as at Point Lobos, Monterey County, up to 6000 feet in Santa Rosa Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:290). Some additional eastward record stations indicative of margins of normal range: Baird, Shasta County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:223); Payne Creek P.O., Tehama County, February 15 (Compton, Condor, 34, 1932:45); Grass Valley, Nevada County (Richards, Condor, 26, 1924:103); Big Trees, Calaveras County (Belding, Proc. U. S. Nat. Mus., 1, 1879: 410); Yosemite region, up to 5800 feet, October 21 (Grinnell and Storer, Animal Life Yosemite, 1924:513); Kern River, near Greenhorn Mountains, Kern County (Linton, Condor, 10, 1908:181); Witch Creek, San Diego County (Bishop, Condor, 7, 1905: 142). Northernmost record: Seiad Valley P.O., Siskiyou Mountains, December-February (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:12). Additional references bearing on distribution and natural history: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:25); Sonoma County (Van Fleet, Condor, 21, 1919:162); Berkeley, Alameda County, nest construction (A. S. Allen, Condor, 32, 1930:240); San Jose, Santa Clara County, feeding of young (Wheelock, Auk, 22, 1905:65); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Washington, publ. 481, 1936:109); Santa Barbara, nesting, habits (Dawson, Birds Calif., 2, 1924:576ff.); Santa Rosa Island (Pemberton, Condor, 30, 1928:148); Santa Cruz and Santa Catalina islands (Howell, Pac. Coast Avif. No. 12, 1917:90); nesting in February (Hanna, Condor, 40, 1938:124; Hall, *ibid.*:186); parasitism by cowbird (Friedmann, Auk, 48, 1931:64); food (Chapin, U. S. Dept. Agr., Dept. Bull. No. 1355, 1925:23).

Habitat—Most importantly, live oaks, and in particular the foliage and smaller twigs of these trees. In and beneath the protecting crowns of evergreen oaks the full cycle of activities of this species may take place. Other plant associations frequented by smaller numbers of individuals are blue and golden oak woodlands, willow thickets, and Monterey pine, tan oak and Douglas fir forests. Large ceanothus bushes mixed with forest trees may be used for nesting. Few species of birds are as conspicuously partial to non-deciduous oaks as is this vireo.

Vireo bellii pusillus Coues
Least Bell Vireo

Synonyms—Vireo belli; *Vireo pusillus*, part; *Vireo pusillus albatus*; *Vireo bellii albatus*; Bell Vireo; Little Vireo; Little Greenlet; Least Vireo; California Least Vireo.

Status—Summer resident, from latter part of March to end of August in southern California. Farther north arrives in early April. Common, even abundant locally under

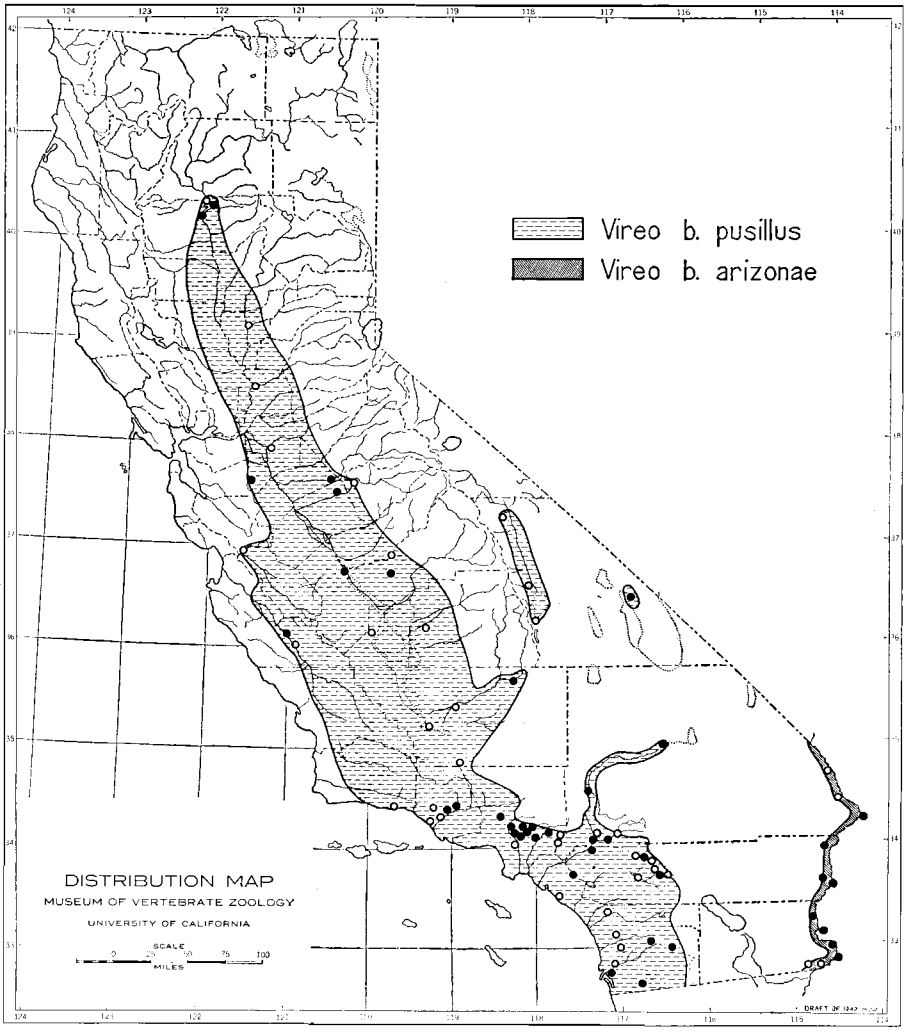

Fig. 39. Distribution of the subspecies of Bell Vireo, *Vireo bellii*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

favorable conditions of habitat. In last fifteen years a noticeable decline in numbers has occurred in parts of southern California and in the Sacramento-San Joaquin Valley, apparently coincident with increase of cowbirds which heavily parasitize this vireo.

Geographic range—Coastal southern California, and on east slope in stream courses at the bases of the southern mountains; north in warmer coastal valleys to extreme southern Santa Clara County; north through San Joaquin and Sacramento valleys to Tehama County; in the Inyo district occurs in Owens and Death valleys. Life-zone, Lower Sonoran; follows water courses into Upper Sonoran locally. Altitudinal range, from —175 feet, as in Death Valley, up to 4100 feet at Bishop, Inyo County. Northern records: Bloody Island, Sacramento River, near Red Bluff, Tehama County (Grinnell,

Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:363); in coastal valleys, Sargent, Santa Clara County (Unglish, Condor, 39, 1937:40), Redwood City, San Mateo County, April 5, apparently a stray migrant (Littlejohn, Condor, 14, 1912:41); in Owens Valley, Bishop Creek, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:116). Extreme seasonal dates: March 11, and newly-hatched young April 1, Los Angeles; October 3, near Azusa, Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:139). Additional references selected for distributional and natural history content: Marysville, Yuba County, and Stockton, San Joaquin County (Belding, Proc. U. S. Nat. Mus., 1, 1879:410); Corral Hollow, eastern Alameda County (G. Bolander, Gull, 14, 1932: August [p. 2]); La Grange, Stanislaus County, Snelling, Merced County, and Pleasant Valley, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1923:514); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:98); San Ardo, Monterey County (Dawson, Birds Calif., 2, 1924:586ff.); Fort Tejon, Kern County, and Santa Barbara, Santa Barbara County (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:236); Camp Cady [near Manix], Mohave River, San Bernardino County, June 4 (Cooper, Proc. Calif. Acad. Sci., 2, 1861:122; Mus. Vert. Zool.); Palm Canyon, etc., Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:290); Escondido, San Diego County (Carpenter, Condor, 21, 1919:29); Death Valley, Inyo County (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:98); parasitized by cowbirds (Hanna, Condor, 20, 1918:211; Rowley, Condor, 32, 1930:131; Friedmann, Wilson Bull., 46, 1934:34); food (Chapin, U. S. Dept. Agr., Dept. Bull. No. 1355, 1925:25).

Habitat—Low riparian growth either in the vicinity of water or in dry parts of river bottoms. The center of activity is within a few feet of the ground, in the fairly open twigs canopied above by the foliage of willows and cottonwoods. Foraging cruises may take the birds higher into the trees but territorial interest, with song perches and nest sites, is in the lowest stratum of vegetation. Nests frequently are placed along the margins of bushes or on twigs projecting into pathways. Most typical plants frequented are willow, guatemote (*Baccharis glutinosa*), and wild blackberry. Less commonly live and valley oaks, wild grape, poison oak and sumac in the margins of water courses are visited and may be nested in. On the desert slopes mesquite and arrowweed in canyon locations may be occupied.

Vireo bellii arizonae Ridgway
Arizona Bell Vireo

Synonyms—*Vireo pusillus*, part; Arizona Least Vireo.

Status—Summer resident, arriving in early March. Common.

Geographic range—Colorado River valley from Nevada line south to Mexican boundary. Life-zone, Lower Sonoran. For account of distribution and habitat, see Grinnell, Univ. Calif. Publ. Zool., 12, 1914:189.

Habitat—Chiefly willow association with undergrowth of guatemote (*Baccharis glutinosa*). The sphere of activity is within about eight feet of the ground and includes open and sparsely foliaged branch-work beneath or between the taller and denser trees and bushes.

Vireo vicinior Coues
Gray Vireo

Synonyms—Vireo vicinior californicus; California Gray Vireo.

Status—Summer resident, from late March through August. Common locally, and sharply restricted to arid chaparral habitats; in many parts of range to be rated as no more than fairly common.

Geographic range—Mountains and foothills of southern California from Mexican boundary north to upper Kern River Basin, and on Mohave Desert from Providence Mountains north to Grapevine Mountains, Inyo County. Life-zone, Upper Sonoran. Altitudes of nesting localities range from 2000 feet, as in Mint Canyon, Los Angeles County (L. Miller, Condor, 23, 1921:194) up to 6500 feet. Other stations of known record: Bodfish and Walker Pass, Kern County (Grinnell, Condor, 24, 1922:211); near Liebre Mountain, northeastern Los Angeles County (A. H. Miller MS); San Gabriel Mountains, 6000 feet (Willett, Pac. Coast Avif. No. 21, 1933:140); Cajon Pass, and Cactus Flat on north side of San Bernardino Mountains, San Bernardino County (Morcom, Ridgway Ornith. Club, Bull. No. 2, 1887:51; Hanna, Condor, 46, 1944:244; H. L. Cogswell MS); about 10 miles east of Riverside [probably Box Springs Mountains], Riverside County (Stephens, Auk, 7, 1890:159); San Jacinto Mountains, many localities, 3000 to 6500 feet, general account of natural history (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:291); Julian and Campo, San Diego County (Belding, Land Birds Pac. Dist., 1890:204; Stephens, Bull. Nutt. Ornith. Club, 3, 1878:42); Grapevine Mountains, in Nevada, but near State line (A. H. Miller MS); Horse Spring in Kingston Range, Clark Mountain, and Providence Mountains, San Bernardino County (Mus. Vert. Zool.). Seasonal extremes are March 24 at Campo, and August 27 in San Jacinto Mountains. Sole record of migrant outside of areas of breeding: Mecca, March 26 (van Rossem, Condor, 13, 1911:137).

Habitat—Dry chaparral, which forms a continuous zone of twig growth from one to five feet above the ground in which the birds forage, sing, and nest. Most typical plant association west of the deserts is that dominated by chamise (*Adenostoma sparsifolium* and *A. fasciculatum*). Other associations of more varied composition (*Garrya, Purshia, Artemisia tridentata, Cercocarpus*; and scrub oak, manzanita, and ceanothus) may be occupied. In the mountains of the Mohave Desert, the juniper-artemisia association is the normal habitat, with mixture of other shrubs and trees such as *Ephedra, Lycium, Purshia*, and piñon pine. These plants provide a less dense brush cover than the chaparral of the coastal mountains.

Vireo solitarius cassinii Xantus
Cassin Solitary Vireo

Synonyms—Vireo solitarius; *Vireo cassinii*; *Vireosylvia solitaria*; *Lanivireo solitarius*; *Lanivireo solitarius cassini*; *Lanivireo cassini*; Cassin Vireo; Blue-headed Flycatcher; Solitary Vireo; Blue-headed Vireo; Blue-headed Greenlet; Cassin Greenlet.

Status—Present in two seasonal rôles: summer resident, on nesting grounds, from mid-April through August; migrant, for protracted periods, most conspicuously in spring, from the first of April through May, and from late August through the first half of October, rarely later. Common.

Geographic range—As breeding, mountains and foothills of northern California, exclusive of narrow humid coastal strip north of Sonoma County; coast ranges and Sierra Nevada south to Tehachapi Mountain system, and in mountains and foothills of southern California south to Mexican boundary. In migrations widely distributed over State, including southeastern deserts but not on the islands. In late summer there is movement up slope to mountain areas above the breeding range. Life-zone in nesting season chiefly Transition, but also Canadian and rarely high Upper Sonoran. Altitudes of known or probable nesting stations range from 300 feet, as on San Pablo Creek, Contra Costa County, up to at least 7500 feet in Sierra Nevada of Tulare County. Representative records of occurrence in summer and accounts of nesting: Coyote Peak, Humboldt County (Mus. Vert. Zool.); Yreka, Weed, Edgewood, Bray, etc., Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:93); Warner Mountains (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:329); Lassen section, Red Bluff to Eagle Lake (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:364); Cahto and Lierley's [near Mount Sanhedrin], Mendocino County (McGregor, Nidologist, 4, 1896:8; A. Head, Condor, 8, 1906:150); Fyffe and near Fallen Leaf Lake, Eldorado County (Barlow, Condor, 2, 1900:103; Barlow and Price, Condor, 3, 1901: 175); San Francisco Bay region, from Cazadero and Guerneville, Sonoma County, south to Almaden, Santa Clara County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:131); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:511; E. Michael, Yosemite Nature Notes, 9, 1930:48); central coast ranges from San Benito County to Ventura County (Pemberton, Condor, 12, 1910:18); Arroyo Seco Canyon, near Pasadena, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:43); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:109); Campo, San Diego County (Mus. Vert. Zool.). Extreme dates for migrants: March 24, Twenty-nine Palms, San Bernardino County (F. Carter, Condor, 39, 1937:216); November 28, Wildcat Canyon, Contra Costa County (Marshall, Condor, 40, 1938:127). One observation in winter: Pasadena, Los Angeles County, January 15, 1944 (E. Michael, *fide* H. L. Cogswell MS). Additional records of migrants: Carlotta, Humboldt County, September 18, 1942 (Mus. Vert. Zool.); Horse Creek, September 12, Siskiyou Mountains (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:11); Dale's [near Red Bluff], Tehama County, April 1 (DuMont and Stevenson, Condor, 34, 1932:192); Coalinga, Fresno County, November 2 (J. R. Arnold, Condor, 39, 1937:34); Death Valley, Inyo County, April 23 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:98); Clark Mountain, San Bernardino County, May 18 to 26 (Mus. Vert. Zool.); Colorado River valley, April 7 to May 14 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:189). Parasitism by cowbird (Friedmann, Wilson Bull., 46, 1934:35; C. W. Michael, Condor, 37, 1935:178).

Habitat—Oak and conifer forests that offer open branch-work at low and middle levels. The sphere of activity ranges from a few feet above the ground up through the spacious, partly shaded vaults beneath the crowns of the trees. Comparatively dry, warm forests are favored, although growth in canyons and near streams is also sought, especially in the south. Principal trees frequented in summer are yellow pine, Jeffrey pine, incense cedar, black oak, and golden oak; mature willows, cottonwoods and alders also may be occupied. Nest emplacements usually are in the lower branches of these trees, not uncommonly in exposed, though shaded, situations.

Vireo flavoviridis flavoviridis (Cassin)
Northern Yellow-green Vireo

Synonyms—Vireosylva flavoviridis; *Vireo virescens flavoviridis*; Yellow-green Vireo.

Status—Rare vagrant from the southeast. One record: a single specimen taken in the Santa Ana River bottom near Riverside, Riverside County, October 1, 1887 (Price, Auk, 5, 1888:210); verified by Ridgway who states (Birds N. M. Amer., 3, 1904:146) that the label gives the date as September 29, instead of October 1. Bird found flitting about in top of cottonwood tree.

Vireo olivaceus (Linnaeus)
Red-eyed Vireo

Synonym—Vireosylva olivacea.

Status—Rare fall transient. Two records: male taken at San Diego, October 6, 1914 (Huey, Condor, 17, 1915:58); male found dead in Los Angeles, October 10, 1931 (G. Widmann, Condor, 34, 1932:47).

Vireo gilvus leucopolius (Oberholser)
Great Basin Warbling Vireo

Synonyms—Vireo gilvus swainsoni, part; *Vireosylva gilva swainsonii*, part; *Vireosylva gilva leucopolia*; Western Warbling Vireo, part; Oregon Warbling Vireo.

Status—Summer resident and migrant, the spring migratory movement lasting until the first week in June. Common.

Geographic range—As breeding, western margin of Great Basin; more specifically, suitable areas in Modoc County and in Mono and Inyo counties east of the forests of the Sierra Nevada. In migration, Colorado River valley and Colorado and Mohave deserts. Life-zones in summer, Upper Sonoran, Transition and Canadian; altitudinal range from about 4700 feet up to 9200 feet, in White Mountains. Record stations based on recently determined breeding specimens (Mus. Vert. Zool.): Sugar Hill, Cedarville, Parker Creek, Pine Creek, and Warren Peak, all in or about Warner Mountains, Modoc County; Mono Lake P. O., Mono County [population probably intergradient toward *swainsonii*]; 9 miles west of Benton, Mono County (Mus. Vert. Zool.); Cottonwood Creek and Wyman Creek, White Mountains, Mono and Inyo counties. Other references pertaining at least in part to this form: Mailliard (Proc. Calif. Acad. Sci., ser. 4, 16, 1927:329); Dawson (Birds Calif., 2, 1924:569); Grinnell and Storer (Animal Life Yosemite, 1924:508). Distribution in general: Oberholser (Sci. Publ. Cleveland Mus. Nat. Hist., 4, 1932:9); Sibley (Condor, 42, 1940:255ff.). Some migration records based on specimens (Mus. Vert. Zool.): Mountain Springs Canyon, Argus Mountains, Inyo County, May 27; Horse Spring, Kingston Range, San Bernardino County, June 7; Clark Mountain and Providence Mountains, San Bernardino County, May 18-June 2; Vandeventer Flat, San Jacinto Mountains, Riverside County, June 2; near Pilot Knob, Colorado River, Imperial County, May 12-14.

Habitat—In general features, similar to that of *Vireo gilvus swainsonii*. Consists chiefly of groves of aspens and cottonwoods.

Vireo gilvus swainsonii Baird
Western Warbling Vireo

Synonyms—Vireo gilvus; *Vireo swainsonii*; *Vireosylvia swainsoni*; *Vireosylvia gilva swainsoni*; *Vireosylvia gilva*; *Vireosylva gilva swainsonii*, part; Warbling Flycatcher; Warbling Vireo; Swainson Warbling Greenlet; Western Warbling Greenlet; Swainson Greenlet.

Status—Summer resident and migrant. Common; in some areas even abundant; the most numerous vireo in California. Present on breeding grounds from late March through August; spring arrival in mountains may be several weeks later. Detected as migrant in spring as late as mid-May on southeastern deserts. Fall migration from August to early October.

Geographic range—Breeds in suitable habitat throughout entire length of State west of southeastern deserts and exclusive of Great Basin region in Mono, Inyo, and Modoc counties. In migration appears additionally on deserts east to Colorado River valley and, rarely, on inner Santa Barbara Islands. Zonal range in summer wide: from Upper Sonoran (occasionally Lower Sonoran) through Transition to Canadian. Stations of summer residence extend up to 8500 feet, as in San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:108), the upper extreme sharply marked by the limits of aspens and tall deciduous trees along streams. Extreme dates for migrants: March 12, San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927: 131); October 27, Santa Barbara (Willett, Pac. Coast Avif. No. 21, 1933:141). Representative references pertaining to breeding range and natural history: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:25); Hoopa Valley, Humboldt County (W. K. Fisher, Condor, 6, 1904:51); Lierley's [near Mount Sanhedrin], Mendocino County (A. Head, Condor, 8, 1906:149); Yreka, Weed, Edgewood, and Bray, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923: 25); Lassen section, from Red Bluff east to Eagle Lake [possibly not this race farther east] (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:366); Cisco, Placer County (Ingersoll, Condor, 15, 1913:84); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:508; E. Michael, Yosemite Nature Notes, 9, 1930:48); Kingsburg, Fresno County, and Visalia, Tulare County (Ray, Auk, 23, 1906:417); east flank of Sierra Nevada, near Olancha, Independence, etc., Inyo County [intergrades] (Mus. Vert. Zool.); Big Creek and San Antonio Creek, Monterey County (Pemberton and Carriger, Condor, 17, 1915:197); southern California, Santa Barbara to San Diego County (Willett, *loc. cit.*); San Bernardino Mountains (Grinnell, *loc. cit.*); victim of cowbird, Oakland, Alameda County, and in San Diego County (Friedmann, Wilson Bull., 44, 1934:35); food (Chapin, U. S. Dept. Agr., Dept. Bull. No. 1355, 1925:13-15); habits (Dawson, Birds Calif., 2, 1924:566ff.); systematics and distribution in general (Sibley, Condor, 42, 1940:255ff., map). Vagrants on islands: Farallon Islands, May 28, 1887 (Calif. Acad. Sci.); Santa Cruz Island, April 4 (Dawson, Condor, 17, 1915:204); Anacapa Island, May 19-20 (L. Miller, Condor, 30, 1928: 325). References to migrants on the deserts and along east slopes of mountains of southern California confuse the races *V. g. swainsonii* and *V. g. leucopolius*. Sample occurrences of *swainsonii* in these areas based on recently identified skins (Mus. Vert. Zool.) are: near Benton, Mono County, September 20; Palm Springs, Riverside County, April 27; Mecca, Riverside County, March 18-April 25; 8 miles northwest of Calipatria, Imperial County, May 13; Colorado River valley, Imperial County, from opposite Cibola to near Pilot Knob, April 1-May 12.

Habitat—Deciduous trees, especially those growing in moist places, such as alders, willows and cottonwoods. Nest sites and singing posts are at middle heights, yet are high compared with those of other vireos. In areas of coniferous timber this species will seek out clumps or even single trees of broad-leaf type as headquarters, although foraging and singing some of the time in the evergreens. Activity tends to center in yellow or light green foliage of fairly dense type, thus in the leafy crowns if the trees are open below. Presence in vicinity of water probably is only incidental, resulting from attraction to the trees found there rather than to the moisture. Orchard trees, aspens, and black oaks may in some places be occupied extensively.

Mniotilta varia (Linnaeus)
Black-and-white Warbler

Status—Rare migrant and winter visitant. Most of the records are for September and October in the fall, and for March and April in the spring. Reports recur through the years in a manner to suggest that occurrence in small numbers is "normal," not accidental.

Geographic range—In migration, chiefly coastal, in so far as known; two records for eastern part of State. Winter records are from southern California only. Principal reports, for the most part those supported by specimens: Kentfield, Marin County, September 6, 1935 (A. M. Smith, Condor, 38, 1936:44); Berkeley, Alameda County, March 18, 1915, March, 1919, October 3 to 20, 1924, and June 5, 1944 (Storer, Condor, 17, 1915;131; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:132; Fox, Condor, 46, 1944:243); Farallon Islands, May 28, 1887 (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:48); Watsonville, Santa Cruz County, September 24, 1903 (Hunter, Condor, 6, 1904:25); mouth of Carmel River, Monterey County, September 8, 1901 (Emerson, Condor, 3, 1901:145); San Carpojo Creek, near Piedras Blancas, San Luis Obispo County, October 11 (Grinnell, Condor, 24, 1922:185); Carpinteria, Santa Barbara County, January 9, 1920, and April 20, 1921 (Henderson, Condor, 22, 1920:76; Hoffmann, Condor, 23, 1921:163); Santa Barbara Island, March 27, 1927 (Pemberton, Condor, 30, 1928:145); Pasadena, Los Angeles County, October 8, 1895 [specimen now bears label, not the original, reading October 2], October 8, 1942 (Gaylord, Auk, 13, 1896:260; Pemberton, Condor, 45, 1943:37); Los Angeles, spring, 1922 (Wyman, Condor, 24, 1922:182), also vicinity of Los Angeles, in fall and spring of several years (Comby, Condor, 45, 1943:199; W. A. Kent MS); Dehesa, San Diego County, December 24, 1925 (Abbott, Condor, 29, 1927:128); near San Diego, September 1, 4, 1933 (Kenyon, Condor, 37, 1935:170); National City, San Diego County (Johnson, Condor, 24, 1922:100); McGee Creek, near Convict Lake, Mono County, June 9, 1921 (Dawson, Birds Calif., 1, 1924:438); Thermal, eastern Riverside County, April 6, 1922 (Wyman, *loc. cit.*).

Habitat—Trunks and larger limbs of trees, in California particularly those of live oaks. Also reported from sycamores, cottonwoods, willows, laurels, pepper trees, olive trees and mesquites. Forages over bark surface in creeping fashion suggestive of actions of nuthatches.

Vermivora peregrina (Wilson)
Tennessee Warbler

Synonym—Helminthophila peregrina.

Status—Rare migrant. Six records, all for the period of fall migration: Berkeley, Alameda County, October 14, 1925 (Ellis, Condor, 28, 1926:47); Arroyo Seco, near Pasadena, Los Angeles County, September 25 [not 27], 1897 (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:45); Pasadena, September 28, 1925, bird banded (Michener, Condor, 28, 1926:50); Altadena, same county, September 27 to 29, 1929 (Law, Condor, 32, 1930:119); Sierra Madre, same county, September 20, 1940 (H. L. Cogswell MS); Kagel Canyon, same county, September 19, 1942 (Willett, Condor, 45, 1943:74).

Vermivora celata celata (Say)
Eastern Orange-crowned Warbler

Synonyms—Helminthophila celata, part; *Helminthophila celata celata*; Orange-crowned Warbler, part.

Status—Migrant and winter visitant. Occurs regularly in small numbers in September and October, and in April and May; as a winter visitant, rare, except in Colorado River valley where more numerous.

Geographic range—In migration, throughout southern and central sections of State, from coast east to the Colorado River valley. Probably passes through northern California also, but thus far not detected there. In winter, coastal and interior southern California. Records based on specimens which represent dispersal in migration: Berkeley and Piedmont, Alameda County, October 25, October 4 (Ellis Coll.; Mus. Vert. Zool.); Minkler, Fresno County, October 12 (Swarth, Condor, 19, 1917:130); Big Meadow, 7600 feet, Tulare County, August 29 (Mus. Vert. Zool.); San Luis Obispo and Morro, San Luis Obispo County, September 19 to October 24 (Mailliard, Condor, 7, 1905:55; Mus. Vert. Zool.); Pasadena, Los Angeles and vicinity, occurrences reviewed, September 17 [not September 3; =30] to October 30, April 15 to May 4 (Willett, Pac. Coast Avif. No. 21, 1933:142); near Corona, Riverside County, August 27, 1908 (L. Miller Coll.); Witch Creek, San Diego County, April 24 (Willett, *loc. cit.*); Panamint Mountains, September 30, and 4 miles southwest of Olancha, May 16, Inyo County (Mus. Vert. Zool.); Mecca, Riverside County, April 23 (Mus. Vert. Zool.); 8 miles northwest of Calipatria, Imperial County, May 18 (Mus. Vert. Zool.); Colorado River valley, from near Needles to near Pilot Knob, February 20 [wintering] to May 14 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:194). Known winter stations based on specimens: Santa Cruz Island, November 29 (Howell, Pac. Coast Avif. No. 12, 1917:90); Riverside, Riverside County, December 25 (Swarth, Condor, 12, 1910: 108); Victorville, San Bernardino County, December 22, 29 (Mailliard and Grinnell, Condor, 7, 1905:101); Colorado River valley (Grinnell, *loc. cit.*). Sight records of occurrence in winter in central coastal California, although probably correct in indicating presence of this race, should be substantiated by collection of specimens.

Habitat—Often seen in cover afforded by live oaks, chaparral, and tangles of riparian underbrush, at low to middle heights. No particular plant association is favored conspicuously.

Vermivora celata orestera Oberholser
Rocky Mountain Orange-crowned Warbler

Synonyms—Helminthophaga celata, part; *Helminthophaga celata celata*, part; *Helminthophila celata lutescens*, part; *Helminthophila celata orestera*; *Vermivora celata lutescens*, part; Lutescent Warbler, part; Luteoline Warbler.

Status—Summer resident, migrant, and winter visitant, in eastern sections of State. Present on breeding grounds from May to August. Migrations chiefly in April and the first half of May, and in late August, September, and early October. Common in summer and in migration. Fairly common through the winter in Colorado River valley.

Geographic range—In breeding season, Great Basin region from Warner Mountains, Modoc County, south to White and Panamint mountains, Inyo County. Occurs locally on east flank of Sierra Nevada. In migration, throughout area east of Cascade-Sierran axis and on the Mohave and Colorado deserts; occasional on west slope of mountains. In winter, entire extent of Colorado River valley within the State. Life-zones in summer, Transition and Canadian; altitudinal range, from 4800 to 8500 feet in Warner Mountains. References to summer range: Warner Mountains (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:329; Mus. Vert. Zool.); Mono Lake P.O., Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:519); White Mountains, Mono County (Dawson, Birds Calif., 1, 1924:443); Panamint Mountains, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:118 [reports from Argus Mountains probably relate to migrants]). Some representative records of migrants based on recently determined specimens (Mus. Vert. Zool.): 5 miles north of Benton, Mono County, September 18 to 21; Lone Pine Creek, April 11, Independence, May 11, Inyo County; Jackass Spring, Panamint Mountains, October 1; Clark Mountain, eastern San Bernardino County, May 21; Palm Springs and Mecca, eastern Riverside County, March 29 to April 28; Colorado River near Pilot Knob, Imperial County, May 7. Records from Pacific drainage (Mus. Vert. Zool.): Pasadena, Los Angeles County, April 1, 30; Cajon Wash, San Bernardino County, October 3; Cuyamaca Mountains, San Diego County, August 21; also, Tejon Pass, Los Angeles County, April 27 (Calif. Acad. Sci.). Migrants [of this race] reported as late as September 27 in Warner Mountains (Mailliard, *loc. cit.*). Winter dates for Colorado River valley: February 23, 28 [Mellon, Arizona] (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:195); December 29, February 1, 2, 8 [Nevada, near State line] and December 29, near Potholes, Imperial County (Mus. Vert. Zool.). Winter record for Pacific slope: February 22, 1938, 10 miles north of Merced, Merced County (Mus. Vert. Zool.).

Habitat—In summer, streamside thickets and groves of aspens affording moderately dense foliage at middle heights and partly shaded, but not densely covered, ground. In winter, underbrush of river bottoms.

Vermivora celata lutescens (Ridgway)
Lutescent Orange-crowned Warbler

Synonyms—Vermivora celata, part; *Helinaia celata*; *Helminthophaga celata*, part; *Helminthophaga celata celata*, part; *Helminthophaga celata* var. *lutescens*; *Helminthophila celata lutescens*, part; *Helminthophila celata*, part; Orange-crowned Warbler, part; Californian Orange-crowned Warbler; Western Orange-crowned Warbler; Lutescent Warbler, part.

Status—Summer resident, from early March to early September. Migrant in

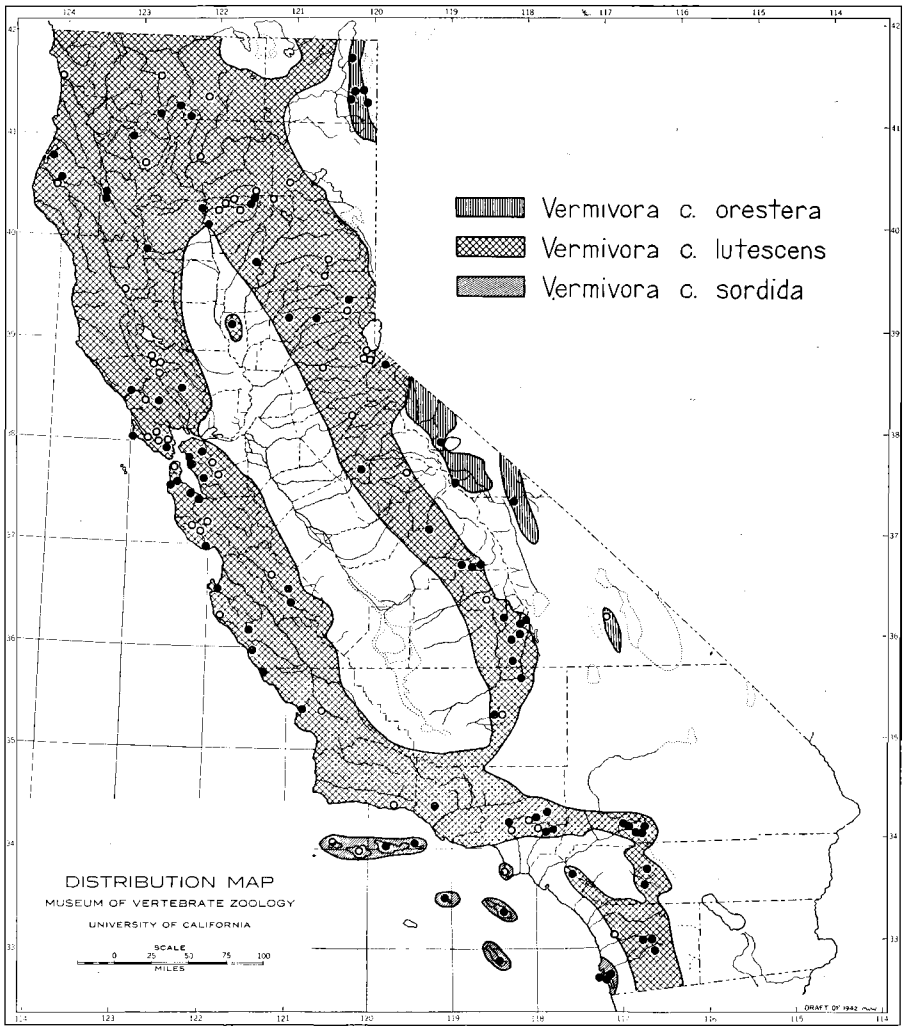

Fig. 40. Distribution of the subspecies of Orange-crowned Warbler, *Vermivora celata*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

March and April and from late August through October. Beginning of period of summer residence essentially coincident with first migratory movements into State in spring. As with many migrant species, departure from breeding grounds in fall not clearly defined; territorial ties apparently are broken early in some instances and a period of late summer vagrancy, with appearance at high altitudes, merges imperceptibly into fall migration. As a summer resident and migrant, common, especially toward the coast. Small numbers remain through the winter.

Geographic range—As breeding, entire Pacific watershed west of Cascade-Sierran crests, but exclusive of larger valleys and of a narrow coastal strip south of Santa Monica Mountains. In migration, widespread, ranging eastward to Colorado River valley.

In winter, coastal southern California and central section of State north to Marysville, Yuba County. Life-zones in breeding season, Upper Sonoran and Transition. Altitudes of known or probable nesting range from near sea level up to 7600 feet, as at Echo Lake, Eldorado County (Mrs. H. J. Taylor, Wilson Bull., 38, 1926:202). Record stations serving to outline breeding range: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:25); Fort Jones, Siskiyou County (Oberholser, Auk, 22, 1905:246); Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:128); Lassen Peak region [doubtfully east as far as Eagle Lake] (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:369); San Francisco (Ray, Condor, 18, 1916:225); Mineral King, 7400 feet, July 7, Tulare County (Van Denburgh, Proc. Acad. Nat. Sci. Phila., 1898:216); Santa Barbara, Santa Barbara County (Dawson, Birds Calif., 1, 1924:446; Bowles, Auk, 28, 1911:177); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:11); Escondido, San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:142). Records of up-mountain movement in late summer: Yosemite region, up to 10,500 feet, August 22 (Grinnell and Storer, Animal Life Yosemite, 1924:520); Cottonwood Lakes, Inyo County, 11,000 feet, August 27 (Mus. Vert. Zool.); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:297). Waves of spring migrants occasionally appear as early as February 15, in San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:132). Late fall and winter records fairly certainly pertaining to this race rather than to *orestera*: Marysville, Yuba County, January, February (Belding, Proc. U. S. Nat. Mus., 1, 1879:404); Los Angeles, November 20 (Willett, *loc. cit.*); El Monte, December 16, Del Rey, January 8, Toluca, February 12, all in Los Angeles County (Willett, Condor, 36, 1934:114). Some stations of occurrence in migration outside of breeding range: San Miguel Island, April 4 (Willett, Pac. Coast Avif. No. 21, 1933: 142); 5 miles north of Benton, Mono County, September 18 (Mus. Vert. Zool.); Olancha, April 12, and Keeler, September 25, Inyo County (Mus. Vert. Zool.); Mecca, Riverside County, March, April, and Colorado River, 20 miles north of Picacho, Imperial County, April 14 (Mus. Vert. Zool.).

Habitat—Moderately compact foliage as provided by chaparral, streamside thickets, and undergrowth of open forests or woodlands; associated trees or bushes of greater height serve for singing perches and partly for the forage beat which is chiefly between 5 and 30 feet above the ground. Hill slopes, indeed often steep banks, are sought for nesting; the nest sites on the ground thus are well drained and may be sheltered from above by hanging vegetation. A mixture of oak woodland and chaparral constitutes particularly favorable environment.

Vermivora celata sordida (C. H. Townsend)
Dusky Orange-crowned Warbler

Synonyms—Vermivora celata, part; *Helminthophaga celata*, part; *Helminthophila celata lutescens*, part; *Helminthophila celata sordida*; *Helminthophila sordida*; Orange-crowned Warbler, part; Lutescent Warbler, part; Dusky Warbler.

Status—Resident of southern coastal islands and locally on adjacent mainland. Island population migrates in large part to mainland and disperses thence far to northward along coast. As a summer resident common, even rated as abundant on some of the larger islands. In winter, common on southern mainland where it appears as early

as mid-July and remains through March; smaller numbers are found in winter in central California and on the islands.

Geographic range—In breeding season, islands of San Miguel, Santa Rosa, Santa Cruz, Anacapa, Santa Barbara, Santa Catalina and San Clemente; on mainland, on seacoast, between Redondo and San Pedro, Los Angeles County, and in vicinity of San Diego. In winter, these same islands and coastal region north to Humboldt County; occasional in San Joaquin Valley. Life-zone, Upper Sonoran. References bearing on natural history and distribution in spring: general account, reviewing reports of island occurrences up to 1917, and report from San Miguel Island (Howell, Pac. Coast Avif. No. 12, 1917:91-92); Santa Rosa Island (Townsend, Proc. U. S. Nat. Mus., 13, 1890: 139); Santa Cruz Island (Dawson, Birds Calif., 1, 1924:447ff.); Anacapa Island (Willett, Pac. Coast Avif. No. 21, 1933:143; Mus. Vert. Zool.); Santa Barbara Island (Mailliard, Condor, 20, 1918:189; Mus. Vert. Zool.); Santa Catalina Island (Richardson, Condor, 10, 1908:68; [Snyder], Oologist, 26, 1909:188); San Clemente Island (Grinnell, Pasadena Acad. Sci., publ. 1, 1897:20; Howard, Warbler, 2, 1906:8); Point Loma and Coronado Beach, and San Diego, San Diego County (Willett, *loc. cit.*; Abbott, Condor, 28, 1926:57); Point Vicente and Point Firmin, Los Angeles County (Willett, *loc. cit.*). Representative winter record stations based on specimens: Eureka, Humboldt County, January 1 (J. M. Davis, Condor, 42, 1940:222); San Francisco Bay region, Berkeley, Hayward, Palo Alto, etc. (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:132); Irwin, Merced County, January 11 (Tyler, Condor, 22, 1920:190); Seaside, Monterey County, December 30, February 5 (Mus. Vert. Zool.); Morro, San Luis Obispo County, September 26, October 16 (Mus. Vert. Zool.); Santa Barbara, April (Mailliard, Condor, 6, 1904:16); Pasadena, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:44); Colton, San Bernardino County, August 27 (Mus. Vert. Zool.); San Marcos, San Diego County, January 29 (Ellis Coll.); Julian, August 5, and Cuyamaca Mountains, September 1, San Diego County (Mus. Vert. Zool.); winter occurrences on Santa Cruz, Santa Catalina and San Clemente islands (Willett, *loc. cit.*; Linton, Condor, 10, 1908:86).

Habitat—In breeding range, low bushes, tangled vines and taller chaparral affording dense cover on hill slopes, canyon walls and sea cliffs. Trees of moderate height, such as oaks, are frequented when present, but their absence is not a limiting factor. Nest sites are off the ground, even up near the tops of bushes and small trees in many instances. Comparatively humid and shaded situations seem to be favored.

Vermivora ruficapilla ridgwayi van Rossem
Calaveras Nashville Warbler

Synonyms—Helminthophaga ruficapilla; *Helminthophaga ruficapilla gutturalis*; *Helminthophila ruficapilla*; *Helminthophila ruficapilla gutturalis*; *Helminthophila rubricapilla gutturalis*; *Vermivora rubricapilla gutturalis*; *Vermivora ruficapilla gutturalis*; *Vermivora ruficapilla*; Nashville Warbler; Calaveras Warbler.

Status—Summer resident from mid-April through August. Migrant from early April to early May and from late August to early October. Common in both rôles.

Geographic range—In summer, west slope of Sierra Nevada and northward into Cascade Mountains; also inner coast ranges from Mount Sanhedrin, Mendocino County, north through Trinity and Siskiyou counties; extends east to Warner Mountains, Modoc

County. Migrants move through all sections of State except humid coast belt north of San Francisco Bay; most in evidence in the interior and in southern California. Life-zones in breeding season, Transition and lower Canadian. Altitudinal range of probable nesting, 2000 feet as on south fork of Trinity River (Mus. Vert. Zool.) up to 8000 feet on Mount Tallac, Eldorado County (Barlow and Price, Condor, 3, 1901:177); late summer (late July and August) movement up-slope may carry birds as high as 11,000 feet. Westernmost breeding stations: near Happy Camp, Siskiyou County (Calif. Acad. Sci.); South Fork Mountain, Trinity County (Mus. Vert. Zool.); Mount Sanhedrin (Stone, Proc. Acad. Nat. Sci. Phila., 1904:584). Northern records: 8 miles west of Yreka, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:93); Buck Creek Ranger Station, near Goose Lake, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:329). Southernmost breeding station: Greenhorn Mountains, Kern County (Grinnell, Pac. Coast Avif. No. 11, 1915:145). Selected accounts relating to summer residence: Mount Lassen section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:367); Fyffe, Eldorado County (Osgood, Nidologist, 3, 1896:140; Barlow, Condor, 2, 1900:105; Ray, Condor, 16, 1914:70); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:516); in general (Chapman, Warblers N. Amer., 1907:98; Dawson, Birds Calif., 1924:451ff.). Significant accounts of migrants based on specimens: Murphy, Calaveras County (Belding, Land Birds Pac. Dist., 1890: 205); near Pinnacles, San Benito County, April 17 (Mailliard, Condor, 22, 1920:155); Poso Range, Kern County, September (Sheldon, Condor, 11, 1909:172); occurrence in coastal southern California reviewed, dates from April 4 to May 12, September 13 to October 8, record from San Nicolas Island, May 1 (Willett, Pac. Coast Avif. No. 21, 1933:142); Argus Mountains, Inyo County, April 29 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:117); Cabezon, Riverside County, May 7 (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:297); Colorado River valley, April 7 to May 15 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:193).

Habitat—Black oaks and maples, above a forest floor covered with scattered bushes or chaparral such as formed by ceanothus. Yellow pines may take the place of broad-leafed trees. Thus the habitat is of dual nature, consisting of a foraging and singing sphere primarily 25 to 40 feet above the ground, in fairly open foliage, and a nesting sphere near the ground where bushes and fallen leaves conceal and shade the nest which is sunk in the ground. The combination is essential and as a consequence this warbler is usually found only in moderately open forests which permit suitable bush growth.

Note—Reports of winter occurrence which have been published should be substantiated by specimens before they are accepted. There is fair chance of confusion of this species with the gray-cheeked race (*V. c. celata*) of Orange-crowned Warbler which is known to spend the winter in the State.

Vermivora virginiae (Baird)
Virginia Warbler

Synonym—Dendroica virginiae.

Status—Rare summer resident in mountains of southeastern border of State. One record of a migrant. Known stations: McCloud Camp, 9200 feet, Mono County, August 1, 1917, immature bird, probably fledged locally (Grinnell, Condor, 20, 1918: 193); Clark Mountain, 7000 feet, Transition Zone, eastern San Bernardino County, three or four breeding males, May 20, 24, 1939 (A. H. Miller, Condor, 42, 1940:161);

near Lemon Grove, San Diego County, September 3, 1931, an immature female migrant (Huey, Auk, 49, 1932:107).

Habitat—On Clark Mountain, open growth of piñons and white firs, with tracts of shrubs between the trees. Service berry, snow berry and currant bushes provide necessary plant cover near the ground. Singing and foraging of the males takes place at middle heights in tops of larger bushes or in the trees.

Vermivora luciae (J. G. Cooper)
Lucy Warbler

Synonyms—Helminthophaga luciae; *Helminthophila luciae.*

Status—Common summer resident in suitable habitat in extreme southeastern California, from mid-March on through summer. Restriction in range and reduction in numbers with destruction of mesquite thickets is noticeable in some sections.

Geographic range—Entire extent of Colorado River valley within State. Occurs at least occasionally in Imperial and Coachella valleys, where it may have bred formerly if not now. Life-zone, Lower Sonoran. Stations of record all below 600 feet elevation. Specific reports: Colorado River valley, to latitude 35° [Nevada boundary] (Cooper, Ornith. Calif., 1870:84); Chemehuevis Valley, San Bernardino County, to near Picacho, Imperial County, on Colorado River (Grinnell, Univ. Calif. Publ. Zool., 12, 1914: 191); Silsbee, Imperial Valley, April 8, 1909, bird singing and gonads enlarged (Grinnell, Pac. Coast Avif. No. 11, 1915:145; F. Stephens MS); Mecca, Riverside County, March 29, 1911 (van Rossem, Condor, 13, 1911:137). General account (Dawson, Birds Calif., 1, 1924:455ff.).

Habitat—Mesquite thickets almost exclusively; these warblers range only locally and temporarily into riparian growth and into palo verdes and ironwood. The mesquite clumps afford natural cavities and bark shelters essential for nest sites. Abundant forage surface is provided by twigs and foliage of these trees.

Dendroica aestiva rubiginosa (Pallas)
Alaska Yellow Warbler

Status—Spring and fall migrant; occurs in May, and in September and October. Fairly common.

Geographic range—Apparently passes through all sections of State. In central and southern sections recorded from coast to eastern boundary. Localities and dates of record based on specimens: Moraga Valley, Oakland, Piedmont, Hayward, Palo Alto, Redwood City, San Francisco, all in San Francisco Bay region, September 3 to October 14 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:133; Mus. Vert Zool.); Dunlap, Fresno County, September 28 (Mus. Vert. Zool.); Morro, San Luis Obispo County, September 19, 29 (Mus. Vert. Zool.); Placerita Canyon, May 15, 17, Greening, October 7, near Los Angeles, September 3, Pasadena, September 10, all in Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:144); Dos Palmos Spring, Santa Rosa Mountains, Riverside County, May 26 to June 2 (Grinnell and Swarth, Univ. Calif.

Publ. Zool., 10, 1913:298); Witch Creek, May 3, 6, 11, October 12, and Vallecito, May 29, San Diego County (Bishop, Condor, 7, 1905:143; Mus. Vert. Zool.); near Benton, Mono County, September 1, 3, 5, 21 (Mus. Vert. Zool.); Argus Mountains, Inyo County, May 29 (Mus. Vert. Zool.); 8 miles north of Calipatria, Imperial County, May 17, 20 (Mus. Vert. Zool.); Colorado River, near Pilot Knob, Imperial County, May 14 (Univ. Calif. Publ. Zool., 12, 1914:200).

Habitat—Favors riparian plant growth and broad-leafed trees generally, but as a migrant not sharply limited in habitat.

Note—Considerable doubt attaches to the identification of some specimens of migrant Yellow Warblers with the breeding populations of *rubiginosa* of Alaska (see Swarth, Condor, 37, 1935:204). The foregoing citations have been restricted in the main to reports based on unequivocal specimens restudied recently by Willett or ourselves.

We do not follow Aldrich (Auk, 59, 1942:447ff.) in merging the Yellow and Golden warblers in one species (*Dendroica petechia*). One can find in one place or another within these two groups of warblers breakdown of the distinguishing characteristics. But this breakdown or "structural intergradation" does not take place in all characters concerned at any one point and there seems to be no assurance that the two arrays would interbreed if they adjoined geographically.

Dendroica aestiva brewsteri Grinnell
California Yellow Warbler

Synonyms—Sylvicola aestiva; *Dendroica aestiva*; *Dendroica aestiva morcomi*, part; *Dendroica aestiva sonorana*, part; *Dendroica aestiva aestiva*; Yellow Warbler, part; Yellow-poll Wood Warbler; Summer Yellow-bird; Western Yellow Warbler, part; Sonora Yellow Warbler, part; Summer Warbler.

Status—Summer resident, from mid-April until mid-August, in lower sections of western part of State. Arrival in mountains delayed until late April or even mid-May. Occurs as a migrant in some years as early as the first of April, and in fall from latter half of August through first half of September; occasionally later. Common; even abundant locally in especially favorable breeding habitat and during fall migration.

Geographic range—In breeding season, all sections west of Sierran divides, including lower mountains and coastal slopes of southern California, and, as intergrades, Modoc region and east flank of Sierra Nevada south to Mono Lake. In migration, throughout State, occurring on Colorado and Mohave deserts in addition to areas included in breeding range; no records have appeared for any of the islands of southern California. Life-zones, Lower Sonoran, Upper Sonoran and Transition; zonal restrictions appear unimportant compared to that of habitat, although there is some limitation of zonal character in an upward direction. Altitudinal range of known nesting extends from near sea level, as at Palo Alto, Santa Clara County, up to 7000 feet at Independence Lake, Nevada County (Mus. Vert. Zool.). Northwestern and northeastern record stations for breeding: Crescent City, Del Norte County (W. K. Fisher, Condor, 4, 1902:134); Twelve-mile Creek, near Cowhead Lake, Modoc County (Grinnell MS). Extreme eastern records: Jones', Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:369); Lake Valley, Lake Tahoe, Eldorado County (Ray, Auk, 20, 1903:191); Mono Lake, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:521); Onyx, Kern County (Mus. Vert. Zool.); Oro Grande, San Bernardino County (Mus. Vert. Zool.); Cabezon, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:298); Vallecito, San Diego County (Mus. Vert. Zool.). References pertaining especially to migrants: Farallon

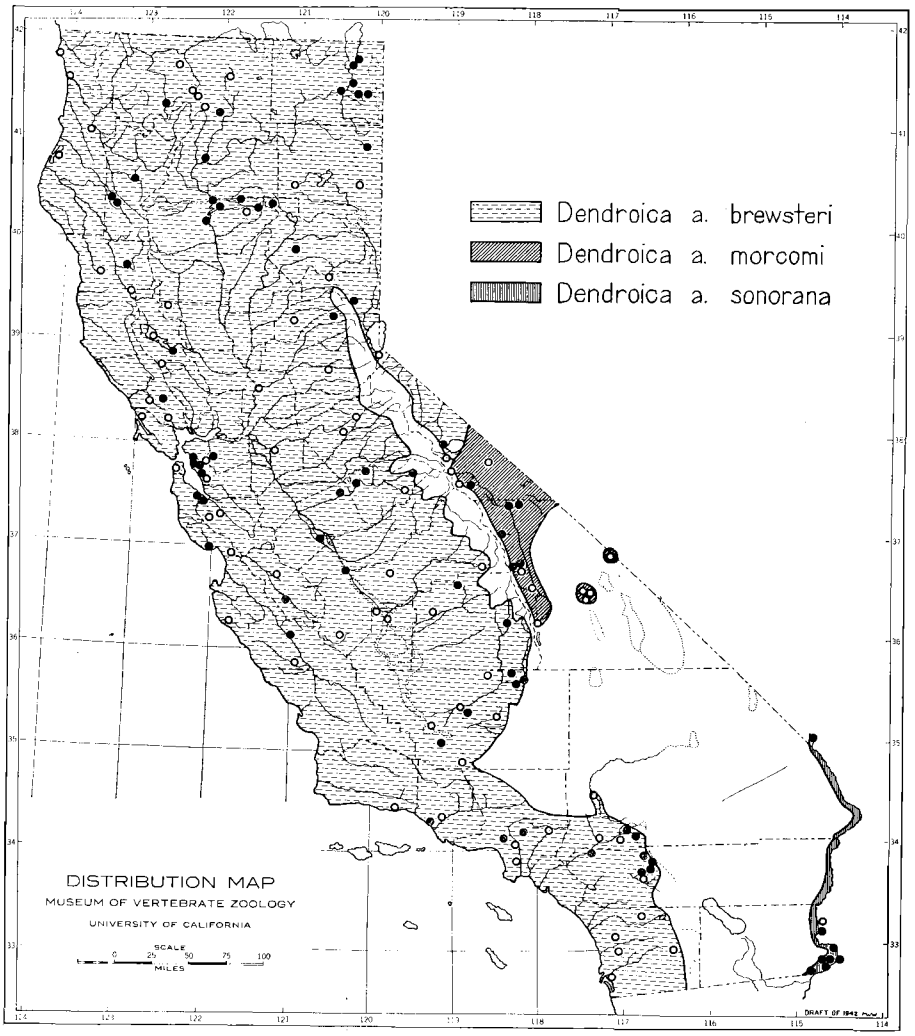

Fig. 41. Distribution of the subspecies of Yellow Warbler, *Dendroica aestiva*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Islands, May 22, 1887 [race doubtful] (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:48); survey of dates of arrival, many localities in central and southern California (Belding, Land Birds Pac. Dist., 1890:208); coastal southern California, extremes April 1, October 14 [presumably this race] (Willett, Pac. Coast Avif. No. 21, 1933: 144); off San Diego, May 30 [race not determined] (von Bloeker, Condor, 38, 1936: 38); Lavic, San Bernardino County, May 1 (Mus. Vert. Zool.); Colorado River valley, Imperial County, April 12 to May 9 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914: 200). Additional references selected for natural history content: Barlow (Nidiologist, 1, 1893:44); Beal (U. S. Dept. Agr., Biol. Surv. Bull. No. 30, 1907:47); Chapman (Warblers N. Amer., 1907:117); Dawson (Birds Calif., 1, 1924:461ff.). One winter

record, possibly of this race: Davis, Yolo County, December 23, 1941, male seen (Emlen and Storer, Aud. Mag., 44, suppl., February, 1942:72).

Habitat—In summer, riparian plant associations composed of willows, cottonwoods, aspens, sycamores, and alders which provide forage beats that may range up to 40 feet above the ground. Nests are placed in these same trees at middle heights, or in bushes growing in the vicinity, sometimes as low as three feet from the ground. Orchard and shade trees in cities are occupied frequently, as are oaks, particularly of deciduous species, in the vicinity of stream courses. Conifers bordering riparian associations may be used for singing posts and even for nesting, but are not favored for foraging. In migration wide tolerance of plant types is displayed, but preference for broad-leafed trees is still manifest.

Note—The populations of Yellow Warblers breeding east of the Cascade-Sierran axis north of Mono Lake are intermediate in character between *morcomi* and *brewsteri* in that they show a mixture of color types. In them the percentage of individuals resembling typical *brewsteri* is greater than that matching *morcomi* of central Nevada. South of Mono Lake the proportion of *morcomi*-like birds increases so that the more southern populations occurring east of the Sierras are best assigned to *morcomi*.

Dendroica aestiva morcomi Coale
Rocky Mountain Yellow Warbler

Synonyms—Dendroica aestiva, part; *Dendroica aestiva rubiginosa*, part; *Dendroica aestiva brewsteri*, part; Western Yellow Warbler, part; Yellow Warbler, part; Alaska Yellow Warbler, part; California Yellow Warbler, part.

Status—Summer resident from May to August; common. A few migrants have been detected.

Geographic range—As breeding, east slope of Sierra Nevada, from headwaters of Owens River south through Owens Valley; also in White, Panamint and Grapevine mountains. In migration, Mohave and Colorado deserts. Life-zones in summer, Lower Sonoran, Upper Sonoran and Transition. Altitudinal range, from 3600 feet, as at Olancha, Inyo County, up to 8500 feet at head of Owens River, Mono County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:118). Other breeding stations of record: Mammoth, Mono County (Dickey and van Rossem, Field Mus. Nat. Hist., Zool. Ser., 23, 1938:488; Rowley, Condor, 41, 1939:251); Convict Creek in Long Valley, same county (Mus. Vert. Zool.); Benton, same county (Fisher, *loc. cit.*); Laws, and Silver Canyon in White Mountains, Inyo County (Mus. Vert. Zool.); near Big Pine and near Independence, same county (Mus. Vert. Zool.); Panamint and Grapevine mountains, and Lone Pine, same county (Fisher, *loc. cit.*). For discussion of relation to *D. a. brewsteri*, see note under that race; also, van Rossem (Trans. San Diego Soc. Nat. Hist., 6, 1931:283). Among migrants on southeastern deserts are numerous birds of doubtful racial affinity because of the overlapping of the races in all characters. Some records of well-marked *morcomi* are as follows: Furnace Creek Ranch, Death Valley, May 4 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:99 [under *rubiginosa*]); Cedar Canyon, Providence Mountains, May 22 (Mus. Vert. Zool.); Mecca, Riverside County, April 22 (Mus. Vert. Zool.); near Pilot Knob, Imperial County, May 9 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:200 [*rubiginosa*, part]).

Habitat—In breeding season, willows, cottonwoods and aspens bordering streams.

Dendroica aestiva sonorana Brewster
Sonora Yellow Warbler

Status—Summer resident, arriving about the middle of April. Abundant.

Geographic range—Colorado River valley, from Nevada line south to Mexican boundary. Probably breeds in Imperial Valley, but not thus far definitely reported from there. Life-zone, Lower Sonoran. All occurrences are below 600 feet elevation. For general account of distribution, habitat, and variation, see Grinnell, Univ. Calif. Publ. Zool., 12, 1914:195ff. Two reports from coastal California [Riverside, Brewster (Bull. Mus. Comp. Zool., 41, 1902:180; Grinnell, Pac. Coast Avif. No. 11, 1915: 146); Nicasio, Hellmayr (Field Mus. Nat. Hist., Zool Ser., 13, pt. 8, 1935:367)] would seem to be erroneous in that they apparently relate to *D. a. brewsteri.*

Habitat—Willow and cottonwood association, particularly the crown foliage of these trees.

Dendroica magnolia (Wilson)
Magnolia Warbler

Synonym—Dendroica maculosa.

Status—Rare migrant. Eight records in late spring and late fall: southeast Farallon Island, May 29, several males seen (specimen, Calif. Acad. Sci.) and June 2, 1911, female (Dawson, Condor, 13, 1911:182; Birds Calif., 1, 1924:466-468); "about 10 miles west of Halfmoon Bay," San Mateo County, June 8, 1943, male (R. G. Miller, Condor, 45, 1943:232); Yosemite Valley, October 6, 1919, male (Calif. Acad. Sci.); Santa Cruz Island, May 23, 1908 (Willett, Pac. Coast Avif. No. 21, 1933:144); Santa Barbara Island, May 15, 1897, male (Grinnell, Pasadena Acad. Sci., publ. 1, 1897:7); Los Angeles, October 21, 1897, immature female (Swarth, Condor, 2, 1900:40); Los Angeles, October 5, 1901, female (Swarth, Condor, 3, 1901:145).

Dendroica tigrina (Gmelin)
Cape May Warbler

Status—Rare vagrant from far eastward. One record: immature male, taken September 23, 1924, at Laguna Dam [Potholes], Colorado River, Imperial County (Huey, Condor, 28, 1926:44). The bird was feeding on dates in a palm growing near the edge of the river.

Dendroica caerulescens caerulescens (Gmelin)
Canadian Black-throated Blue Warbler

Synonyms—Dendroica caerulescens; Black-throated Blue Warbler.

Status—Rare vagrant from far eastward. One record: Farallon Islands, November, 1886 (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:48). The bird, a female, was observed for three weeks; it died on November 17. Specimen (no. 54107) now in collection of California Academy of Sciences.

Dendroica coronata hooveri McGregor
Alaska Myrtle Warbler

Synonyms—Dendroica coronata; Yellow-rumped Warbler; Yellow-crowned Warbler; Myrtle Warbler; Hoover Warbler.

Status—Fairly common winter visitant, from late October to mid-April, the greatest numbers occurring in northwestern and west-central California. Migratory movements may be noted in April and early May.

Geographic range—Occurs in winter in lowlands and lower mountains of all parts of State exclusive of Great Basin region in northeastern section. Selected records significant as indicating range and season of occurrence: Adams, Del Norte County, November (Kimball, Condor, 24, 1922:97); Big Lagoon, Humboldt County, January 4 (Mus. Vert. Zool.); Battle Creek, October 8, and vicinity of Red Bluff, April 1, May 3, Tehama County (McGregor, Bull. Cooper Ornith. Club. 1, 1899:33; DuMont and Stevenson, Condor, 34, 1932:192; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:371); Grass Valley, April migrants, and Summit, October 1, Nevada County (Richards, Condor, 26, 1924:103; Belding, Land Birds Pac. Dist., 1890:210); Marysville, Yuba County, February, and Stockton, San Joaquin County, March 20 (Belding, *loc. cit.*); San Francisco Bay region, October 17 to April 19, exceptionally May 6 and October 5 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:134; Calif. Acad. Sci.); Paicines, San Benito County (Mailliard and Mailliard, Condor, 3, 1901: 126); Dudley, Mariposa County, midwinter (Grinnell and Storer, Animal Life Yosemite, 1924:523); Walker Basin, Kern County, November 4 (Mus. Vert. Zool.); Los Angeles, November 13 to March 1 (Willett, Pac. Coast Avif. No. 7, 1912:96); Santa Barbara Island, May 15 (Grinnell, Pasadena Acad. Sci., publ. 1, 1897:7); San Clemente Island (Linton, Condor, 11, 1909:194); Jackass Spring, Panamint Mountains, October 1, and Death Valley, April 10, Inyo County (Mus. Vert. Zool.; Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:99); Borego Valley, northeastern San Diego County, March 10 (Willett, Pac. Coast Avif. No. 21, 1933:145); Potholes, Colorado River, Imperial County, February 11 (Dawson, Birds Calif., 1, 1924:471).

Habitat—Distinctly varied. Perhaps most often, open branchwork and tops of trees and bushes, either of deciduous or evergreen types. Frequently seen in gardens and orchards. May occur out over open ground, either in flycatching activity or in search for food on ground surface and grass tops.

Dendroica auduboni auduboni (J. K. Townsend)
Pacific Audubon Warbler

Synonyms—Sylvicola auduboni; *Dendroica auduboni*; *Dendroica auduboni nigrifrons*; *Dendroica auduboni memorabilis*; Audubon Warbler; Black-fronted Warbler; Rocky Mountain Audubon Warbler.

Status—Summer resident, principally in the mountains, and widespread winter visitant from September through April. Migratory movements are at times quite evident, but often are complicated by mixture with populations either in summer or winter residence. Apparently the time of movement to and from the breeding grounds differs materially in correspondence with the latitude and altitude of different sections of the breeding range, both within the State and northward on the Pacific Coast. Common as a summer resident. In winter, abundant.

Geographic range—In breeding season, Cascade Mountains, Sierra Nevada, and mountains of southern California south to Santa Rosa Range, Riverside County; also on White and Inyo mountains and across northern part of State from forests of Warner Mountains to the coast; south in coast ranges to Sonoma and Napa counties and sporadically farther, as in Marin, Solano and Alameda counties, to mountains of Monterey County. In winter, throughout lowlands and lower mountains, but rarely in northeastern section; occurs widely on coastal islands. Life-zones in summer, Transition, Canadian and Hudsonian. Altitudes of known or probable breeding range from 500 feet as at 2 miles north of Cordelia, Solano County (Stoner, Condor, 40, 1938:259), up to 11,000 feet as at Cottonwood Lakes, Inyo County (Dawson, Birds Calif., 1924:474). Coastward record stations for the summer period: Horse Mountain, June 7, and Fair Oaks [= Kneeland], August 18 (Mus. Vert. Zool.); near Ornbaun Spring, Mendocino County (Mus. Vert. Zool.); near Fort Ross, Sonoma County, May (Mailliard, Condor, 10, 1908:133); Mount Tamalpais, Marin County (Orr, Condor, 39, 1937:38); Oakland Hills, Alameda County, young out of nest (Seibert, Condor, 44, 1942:69); near Mount Hermon, Santa Cruz County (C. P. Streator MS); mountains of Monterey County, yellow pine belt at summit of coastal slopes (Pemberton and Carriger, Condor, 17, 1915:199). Some marginal eastern stations: Warner Mountains (Mus. Vert. Zool.); Eagle Lake, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:372); Bijou, Lake Tahoe, Eldorado County (Ray, Auk, 20, 1903:191); White and Inyo mountains (A. K. Fisher, N. Amer. Fauna No. 7, 1893:119); Clark Mountain, eastern San Bernardino County, May 20, possibly summer resident (A. H. Miller, Condor, 42, 1940:163). Records of summer residence in southern California: headwaters of Santa Ynez River, 2500 feet, July 3 [Santa Barbara County] (Pemberton, Condor, 12, 1910:18); Mount Pinos, Ventura County (Grinnell, Auk, 22, 1905:390); Piute Mountains, Kern County (Richardson, Condor, 6, 1904:136); Mount Wilson, San Gabriel Mountains (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:45); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:112); San Jacinto and Santa Rosa mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:299). Winter and migrant occurrences on islands: Santa Cruz, Santa Catalina and San Clemente islands (Howell, Pac. Coast Avif. No. 12, 1917:93); Santa Rosa Island (Pemberton, Condor, 30, 1928:148); Santa Barbara Island (Mailliard, Condor, 20, 1918: 189). Additional references selected for their bearing on natural history, as reported from observations in California: F. M. Bailey, Handbook Birds Western U. S., 1902: 414; Tyler, Pac. Coast Avif. No. 9, 1913:99; Chapman, Warblers N. Amer., 1907:147; Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 30, 1907:43; Sharp, Condor, 5, 1903:79; Emerson, Condor, 6, 1904:78; Grinnell and Storer, Animal Life Yosemite, 1924:524ff.; Grinnell, Proc. Calif. Acad. Sci., ser. 4, 3, 1923:99 (Death Valley); Grinnell, Univ. Calif. Publ. Zool., 12, 1914:200 (Colorado River, February 15 to May 15); E. Michael, Yosemite Nature Notes, 7, 1928:95; Gander, Condor, 31, 1929:251; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:110.

Habitat—In summer, coniferous forests of wide variety, occurring in all types of pines, firs, and hemlocks found above the Upper Sonoran Life-zone. The needle tufts of the trees are searched in foraging partly from the outer surface by flying out beyond the edge of the cover and returning to it. Part of the insect food is caught on the wing. Rarely nesting occurs in broad-leafed trees in meadows or in orchards. The coniferous forests occupied vary in type from dense shaded tracts of Douglas fir to open yellow pine and stunted, well-spaced, timber-line pines of several species. Cruising range in foraging extends from the ground up to the tops of the tallest trees. The combined

singing and foraging of males is, however, chiefly at middle heights or in the tree tops. Nest emplacements range from 3 or 4 feet up to 100 feet above the ground. In winter, the habitat is highly varied. The birds turn to flycatching in the open, to ground foraging, to berry eating and to sipping nectar in addition to searching foliage surfaces. These varied activities lead them to all manner of plant cover, but especially to open foliage, tree and bush tops, to strand lines, faces of cliffs and walls, and to grassy patches of ground.

Note—A recent survey of size and color characters (Miller and Fisher MS) has shown the inadvisibility of recognizing a large race, *D. a. memorabilis*, from the Rocky Mountain region, even though there is a graded increase in size interiorward. Many individuals that breed in California, even on the coast, are equivalent in size to examples from the Rocky Mountains.

Dendroica nigrescens (J. K. Townsend)

Black-throated Gray Warbler

Synonyms—Sylvicola nigrescens; *Dendroica nigrescens halseii*; *Dendroica nigrescens nigrescens*; Arizona Black-throated Gray Warbler.

Status—Summer resident from late April until August. Migrates chiefly in April and September, but also in late March and early May, and in October. Common in summer in suitable habitat; fairly common as a migrant. A few individuals remain in the State through the winter.

Geographic range—In breeding season, all sections of State with the exception of the lower deserts of the southwest and the islands; however, occurrence limited in the main to mountains, foothills or plateaus and to particular plant associations. Sparse or absent in immediate vicinity of coast. In migration, widespread. Life-zones in summer, Upper Sonoran and Transition. Altitudinal range, from 300 feet, as near Red Bluff, Tehama County, up to 7500 feet on Santa Rosa Peak, Riverside County (Mus. Vert. Zool.); birds commonly range at least 2000 feet higher in late July and August after nesting. Representative stations of summer residence: Requa, Del Norte County, May 18 [probably summer resident] (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:25); Hoopa Valley, Humboldt County (W. K. Fisher, Condor, 6, 1904:51); Mad River, 2700 feet, Trinity County (Mus. Vert. Zool.); Glenbrook, near Cobb P. O., Lake County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919:287); near Fort Ross, Sonoma County, mid-May (Mailliard, Condor, 10, 1908:133); Mount Tamalpais, Marin County (Orr, Condor, 39, 1937:216); Edgewood and Bray, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:25); Warner Mountains, Modoc County (Mus. Vert. Zool.); Lassen section, Red Bluff, Ravendale, Box Springs [near Red Rock], etc. (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:373); Fyffe, Eldorado County (Barlow, Condor, 3, 1901:177); Yosemite Valley (Grinnell and Storer, Animal Life Yosemite, 1924:529); Brookdale, Santa Cruz County (Ray, Condor, 23, 1921:65); Santa Lucia Mountains, Monterey County (Pemberton and Carriger, Condor, 17, 1915:199); Santa Ynez Mountains, Ventura County (Pemberton, Condor, 12, 1910:18); mountains north of Pasadena, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:46); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:114); San Jacinto Mountains (Dawson, Birds Calif., 1, 1924:479ff.); Vallecito and Cuyamaca Mountains, San Diego County (Mus. Vert. Zool.); head of Owens River, and White Mountains, Mono County, and Inyo, Pana-

mint, Grapevine and Argus mountains, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:120); Providence Mountains, eastern San Bernardino County (Stephens, Condor, 5, 1903:105). Some extreme dates for migrants: Mecca, Riverside County, March 21 (van Rossem, Condor, 13, 1911:137); Pasadena, Los Angeles County, March 23 (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:46); Los Angeles, October 30 (Swarth, Condor, 2, 1900:91); Berkeley, Alameda County, November 1 (Johnson, Zoe, 3, 1892:117). Other accounts of migrants: in general (Belding, Land Birds Pac. Dist., 1890:212); Colorado River valley, April 2 to May 9 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:200); Santa Cruz Island, April 19 (Dawson, Condor, 17, 1915:204). Winter records of specific nature: Eureka, Humboldt County, January 1, specimen taken (J. M. Davis, Condor, 26, 1924:105); Oakland, Alameda County, December to April, 1929-1930, December, January, 1930-1931, one individual seen repeatedly by many persons (Gull, 13, 1931: February [p. 1]); Pasadena, November 7, December 5, 1942, January 2, 4, 1943, San Gabriel River, February 28, 1943, Los Angeles County (H. L. Cogswell MS); February 5 and 8, 1938, and December 24, 1940, Hastings Reservation, near Jamesburg, Monterey County (Linsdale MS); Potholes, Colorado River, Imperial County, December 30, 1925, specimen taken (L. Miller MS).

Habitat—In many sections west of desert slopes confined chiefly to golden oaks (*Quercus chrysolepis*), but may occur in other oaks (blue, live, Garry and black) and in conifers such as yellow pine and Douglas fir, the latter particularly in coastal regions. On desert mountains and interior plateaus occupies the open woodlands of junipers and piñons. In foraging, works rapidly through dense terminal foliage, keeping within the cover. The common requirement in the diverse areas where this warbler occurs seems to be fairly dense foliage, often stiff, harsh and semi-xerophytic, which either through local exposure or by reason of the prevailing summer climate in the region is warm and at least moderately dry. Nesting and foraging spheres may be characterized as of middle height, although frequently they extend to the tops of the trees of small stature which the species frequents. Situations of the kind described commonly include chaparral plants intermingled with the trees and thus the taller of these, such as ceanothus, manzanita and scrub oak, are frequented by the warblers and may be nested in.

Dendroica townsendi (J. K. Townsend)
Townsend Warbler

Synonyms—*Sylvia montana* and subsequent synonyms based on it are doubtfully identifiable with this species; a specimen of "*montana*" is supposed to have been taken in California.

Status—Winter visitant from October to mid-April; fairly common to sparse, depending on the region. As a migrant common; in spring occurs chiefly from late April to mid-May, but also as late as early June; in autumn, appears by mid-August and continues irregularly through September and October, the earlier waves probably passing through the State to more southern wintering grounds.

Geographic range—As wintering, central coastal district from Sonoma County southward and in smaller numbers on Pacific slope of southern California, inclusive of offshore islands, south to San Diego. In migration, recorded from all sections of State. Chief surveys of winter occurrence: San Francisco Bay region, north and east to vicinity of Mount Saint Helena, Sonoma County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:135); Santa Cruz and Monterey areas (Grinnell, Condor, 7, 1905:52;

Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 30, 1907:46 [food]); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:111); Santa Cruz and San Clemente islands (Howell, Pac. Coast Avif. No. 12, 1917:93); Mount Wilson, Pasadena, Riverside, and San Diego, in coastal southern California (Willett, Pac. Coast Avif. No. 21, 1933:146). Some significant data pertaining to migrants: Requa, Del Norte County, May 1 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:25); near Lassen Peak, Shasta County, August 17 (Stebbins, Condor, 45, 1943:200); Mount Shasta, 11,000 feet, Siskiyou County, mummy in snow (A. H. Miller, Condor, 41, 1939:219); Deep Creek, near Cedarville, Modoc County, May 13 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:330); Farallon Islands, June 1 (Dawson, Condor, 13, 1911:182); Mount Tallac, Eldorado County, "early in August" (Price, Condor, 3, 1901:179); Stockton, San Joaquin County, April 14 (Belding, Land Birds Pac. Dist., 1890:214); Yosemite Valley, August 23 (Adams, Yosemite Nature Notes, 17, 1938:41); Pleasant Valley, Mariposa County, May 24, and near Mendota, Fresno County, June 2 (Mus. Vert. Zool.); Horse Corral Meadow, 7600 feet, Fresno County, September 20 (Mus. Vert. Zool.); Paicines, San Benito County, May 14 (Mailliard and Mailliard, Condor, 3, 1901:126); Santa Barbara Island, May 16 (Grinnell, Pasadena Acad. Sci., publ. 1, 1897:7); Kenworthy, 4500 feet, San Jacinto Mountains, Riverside County, May 24 (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913: 300); Cuyamaca Mountains, San Diego County, August 21 (Mus. Vert. Zool.); Mono Lake, Mono County, May 24, 31 (Grinnell and Storer, Animal Life Yosemite, 1924: 531); White Mountains, 8300 feet, Inyo County, August 15 (Mus. Vert. Zool.); Twentynine Palms, San Bernardino County, April 30 to May 17 (F. Carter, Condor, 39, 1937:216); Colorado River valley, Imperial County, April 26 to May 14 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:201).

Habitat—In winter, prefers upper foliage of live oaks, laurels and conifers. Most often seen in shaded or dense trees, reflecting in some measure the adherence to dark cool forests shown on the breeding grounds to the northward.

Dendroica virens virens (Gmelin)
Northern Black-throated Green Warbler

Synonyms—Dendroica virens; Black-throated Green Warbler.

Status—Rare vagrant from eastward. Two records: female, taken May 29, 1911, on southeast Farallon Island, and another seen June 1 of the same year at the same place (Dawson, Condor, 13, 1911:168). The specimen is now in the collection of the California Academy of Sciences (no. 18080) and has been re-examined.

Dendroica occidentalis (J. K. Townsend)
Hermit Warbler

Synonyms—Western Warbler; Yellow-headed Gray Warbler.

Status—Summer resident, migrant, and rare winter visitant. In the first two rôles usually rated as "fairly common." Summer residence extends from the end of April through late July, when fall vagrancy and migration become evident. Spring migration

occurs chiefly in late April and early May, and fall migration in August and early September.

Geographic range—As breeding, Cascade Mountains and Sierra Nevada, from Mount Shasta south to Tulare County. Also in Trinity Mountains and inner coast ranges south at least to North Yolla Bolly Mountain, Trinity County, and west to interior Humboldt County. Has been taken in Santa Cruz Mountains and in San Bernardino Mountains in June suggesting that the species breeds at least sporadically in these areas. In migration, nearly all sections of State; occurs most numerously in southern California and along both sides of the Sierra Nevada, less regularly in west-central California; not reported thus far from Modoc Plateau region. The few winter records are from central coast district. Life-zones in summer, Transition and Canadian. Probable breeding stations range from 1000 feet, as on the Eel River, 10 miles north of Garberville, Humboldt County (A. H. Miller, Condor, 35, 1933:37), up to 7600 feet, as at Echo Lake, Eldorado County (Mrs. H. J. Taylor, Wilson Bull., 38, 1926:202); ranges up to 9000 feet or even higher in late summer, and fall migratory movements in contrast to those of the spring take place in large part at high elevations in the mountains. Additional references of importance pertaining to the breeding season: Stewart's Springs southwest of Weed, Salmon Mountains near Greenview, and 8 miles west of Yreka, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:93); near Ruth, Trinity County (Grinnell, Condor, 35, 1933:236); 12 miles north of North Yolla Bolly Mountain, Trinity County (Swarth MS; Mus. Vert. Zool.); summit of Santa Cruz Mountains, near La Honda, San Mateo County, June 10 (McLean, Condor, 38, 1936:17); Waddell Creek, Santa Cruz County, June 11 (Orr, Amer. Midl. Nat., 27, 1942:330); Lassen section east to Bogard Ranger Station (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:374); Buck Creek, Plumas County (Sheldon, Condor, 9, 1907:190); Gold Lake, Plumas County (M. W. Wythe, Condor, 29, 1927: 64); Blue Canyon, Placer County (Brewster, Auk, 4, 1887:166); Fyffe and vicinity, Eldorado County (Beck, Nidologist, 4, 1897:79; Barlow, Auk, 16, 1899:156, Bull. Cooper Ornith. Club, 1, 1899:60, and Condor, 2, 1900:45; Barlow and Price, Condor, 3, 1901:179; Ray, Condor, 16, 1914:61); Big Trees, Calaveras County (Belding, Proc. U. S. Nat. Mus., 1, 1879:405); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:532); Taylor Meadow, South Fork of Kern River, Tulare County (Grinnell MS); San Bernardino Mountains, two males in worn breeding plumage, June 13 (Grinnell, Pac. Coast Avif. No. 11, 1915:149; Mus. Vert. Zool.). Selected dates and localities for migrants: Dale's, near Red Bluff, Tehama County, May 19 (Grinnell, Dixon and Linsdale, *loc. cit.*); Grass Valley, Nevada County, September 8 (M. W. Wythe, Condor, 31, 1929:79); San Francisco Bay region from Petaluma, Sonoma County, to Berryessa, Santa Clara County, extreme dates April 24, May 12, August 27, October 30 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:135; A. S. Allen, Condor, 45, 1943:153; Mus. Vert. Zool.); Monterey, Monterey County, April 6 (Ellis Coll.); fall migration dates in central and southern Sierra Nevada, August 7, 9, 13 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:121); head of Tule River, Tulare County, October 9 (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:234); vicinity of Santa Barbara, April 27, May 10 (Dawson, Birds Calif., 1, 1924:492); Santa Barbara Island, May 14 (Grinnell, Pasadena Acad. Sci., publ. 1, 1897:7); coastal southern California, April 16 to May 20, and July 30 to September 10 (Willett, Pac. Coast Avif. No. 21, 1933:146); Clark Mountain, May 19, and Twenty-nine Palms, April 22 to May 3, San Bernardino County (Mus. Vert. Zool.; F. Carter, Condor, 39, 1937:216); Colorado River valley, Imperial County, April 20 to May 9

(Grinnell, Univ. Calif. Publ. Zool., 12, 1914:201). Winter records: San Geronimo, Marin County, January 30, and Hayward, Alameda County, March 4 (Grinnell and Wythe, *loc. cit.*); Point Reyes, Marin County, January 26 (Stephens and Pringle, Birds Marin County, 1933:10); Santa Cruz Mountains, March 26 [possibly a migrant] (Torrey, Field-Days Calif., 1913:152); Pacific Grove, January 22, and Point Lobos, Monterey County, November 27 (Grinnell, Pac. Coast Avif. No. 11, 1915:149; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:112).

Habitat—Moderately dense and shaded coniferous forests, composed either of large firs or pines in which forage beats 20 feet or more above the ground are afforded. Although foraging occasionally is noted down to the ground, the center of activity is at middle heights in the flat, spreading branches of the trees. Horizontal boughs seem to be required for nest emplacements. Species of trees most commonly constituting the habitat are white fir, red fir, Douglas fir, yellow pine and sugar pine.

Dendroica pensylvanica (Linnaeus)
Chestnut-sided Warbler

Status—But one record, a vagrant from the east: male taken at Sherwood, Mendocino County, September 21, 1908 (Marsden, Condor, 11, 1909:64). This specimen became no. 19539 in the L. B. Bishop Collection, and later no. 31345 in the Museum of Vertebrate Zoology.

Dendroica palmarum palmarum (Gmelin)
Western Palm Warbler

Synonyms—Dendroica palmarum; Palm Warbler.

Status—Rare vagrant, probably from northern interior of continent. Two records: immature male taken at Pacific Grove, Monterey County, October 9, 1896 (Emerson, Osprey, 2, 1898:92); the specimen (no. 54651) is now in the California Academy of Sciences; the bird was found in a fresh-water swamp where it was walking over water vegetation, later moving to a dead willow. One seen along shore of Ferguson Lake (near Imperial Dam), Colorado River valley, Imperial County, September 22, 1942 (Monson, Condor, 46, 1944:22).

Seiurus aurocapillus aurocapillus (Linnaeus)
Eastern Oven-bird

Synonyms—Siurus aurocapillus; *Seiurus aurocapillus*; Oven-bird.

Status—Rare migrant. Most of the records are for May; the lateness of dates, compared with those of migrants in eastern North America, suggests that the birds had become delayed by straying from normal migration routes. Specific records: southeastern Farallon Island, May 29, 1911, two observed and one, a male, taken (Dawson, Condor, 13, 1911:167), specimen now in California Academy of Sciences (no. 18078); Los Olivos, Santa Barbara County, May 13, 1928, bird watched, while walking on ground and singing (Hoffmann, Condor, 30, 1928:327); Glendale, Los Angeles County,

immature female taken October 25, 1922 (Willett, Pac. Coast Avif. No. 21, 1933:147); 5 miles south of Lavic, San Bernardino County, May 18, 1920, male in breeding condition, which sought refuge in desert in shade of truck (Hunt, Condor, 22, 1920:190; Mus. Vert. Zool.). The two males which have been taken belong to the eastern race rather than the form breeding along the east side of the Rocky Mountains (A. H. Miller, Condor, 44, 1942:186).

Seiurus noveboracensis limnaeus McCabe and Miller
British Columbian Northern Water-thrush

Synonyms—Seiurus noveboracensis notabilis; *Seiurus noveboracensis*; Grinnell Water-thrush; Alaska Water-Thrush; Water-thrush.

Status—Rare fall migrant from mid-August to mid-October; at least fifteen occurrencies, if sight records are included. There is a single record for the spring.

Geographic range—So far as known, chiefly central and southern coastal areas. Reports based on specimens: Santa Cruz, Santa Cruz County, September, 1885, two females, one taken September 25 [U. S. Nat. Mus. no. 106062] (Belding, Land Birds Pac. Dist., 1890:216); Cactus Flat, 6000 feet, San Bernardino Mountains, August 16, 1905, immature female [Mus. Vert. Zool. no. 37720] (Grinnell, Condor, 9, 1907:28); San Diego, September 11, 1887 (Keeler, Zoe, 1, 1891:371); National City, San Diego County, September 29, 1906, female taken [no. 16661 Thayer Collection], another seen (Linton, Condor, 9, 1907:60). Some sight records: Muir Woods, Marin County, August 13, 1916, two birds (Hansen, Condor, 18, 1916:231); Rodeo Lagoon, Marin County, October, 1928, and October 18, 1931, 3 birds in all (Stephens and Pringle, Birds Marin County, 1933:10); Golden Gate Park, San Francisco, September 14, 1929, one bird, October 8, 1932, one bird, and Merced Lake, San Francisco, October 17, 1933, one bird (L. A. Stephens, Gull, 15, 1933: November [p. 2]); Johnson's Lake, Pasadena, September 2, 1939, one bird (H. L. Cogswell MS). Spring record: Altadena, Los Angeles County, May 15, 1933, one bird observed (J. B. Abbott, Condor, 35, 1933:203).

Habitat—Moist ground, usually leaf covered, and shaded by trees or low plant growth, as in the vicinity of fresh-water swamps, streamsides and lake shores.

Note—Two of the California-taken specimens, one from Santa Cruz and one from the San Bernardino Mountains, have been identified as *S. n. limnaeus* (McCabe and Miller, Condor, 35, 1933: 196-197). The others may be presumed to belong to this form until contrary evidence is forthcoming. Restudy in 1941 of water-thrushes in the collection of the Museum of Vertebrate Zoology leads to reaffirmation of the distinctness of *limnaeus* from *S. n. notabilis* and of the previous determination of the bird from the San Bernardino Mountains.

Seiurus motacilla (Vieillot)
Louisiana Water-thrush

Status—Rare vagrant from the east. One record: male taken August 17, 1908, at Mecca, Riverside County (L. H. Miller, Condor, 10, 1908:236); the bird (no. 1105 Mus. Vert. Zool.) was in the vicinity of an artesian well in a railway yard.

Oporornis tolmiei (J. K. Townsend)
Tolmie Warbler

Synonyms—Trichas tolmiei; *Geothlypis macgillivrayi*; *Geothlypis philadelphia* var. *macgillivrayi*; *Geothlypis tolmiei*; Macgilllivray Warbler; Macgillivray Ground Warbler.

Status—Summer resident from early April to mid-August. Arrival at higher elevations is delayed until May. Spring migration therefore extends throughout April and May. Fall migration begins in the latter half of August and extends through September into early October. Common, at least locally, both as a migrant and summer resident. Rare winter visitant in southern California.

Geographic range—As breeding, coastal district and interior coast ranges south through San Francisco Bay region sporadically to San Benito and Monterey counties; mountains of northern California east through Modoc County; Sierra Nevada, south to Kern River canyon, Tulare County, and White Mountains, Inyo County. As a migrant, all regions of State, although more common in interior and southern sections; not reported from any of the islands. Life-zones in summer, Transition and lower part of Canadian. Altitudes of breeding range from near sea level, as at Inverness, Marin County, up to at least 8700 feet in Warner Mountains, Modoc County. Stations of summer residence representative of different sections and limits of range: Hoopa Valley, Humboldt County (W. K. Fisher, Condor, 6, 1904:5); South Fork Mountain, Trinity County (Mus. Vert. Zool.); Cahto and Mount Sanhedrin, Mendocino County (Nidologist, 4, 1896:8; Stone, Proc. Acad. Nat. Sci. Phila., 1904:584); San Geronimo, Marin County (Mailliard, Condor, 11, 1909:65); Redwood Canyon, Alameda County (Cohen, Bull. Cooper Ornith. Club, 1, 1899:82); Los Gatos, Santa Clara County (Van Denburgh, Proc. Amer. Philos. Soc., 38, 1899:176); Pajaro River, Santa Clara County (Carriger and Unglish, Condor, 33, 1931:222); Paicines, San Benito County (Mailliard and Mailliard, Condor, 3, 1901:126); San Antonio Creek, Monterey County (Pemberton and Carriger, Condor, 17, 1915:199); Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:129); Warner Mountains, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:330); Lassen section, Lyman's, 3300 feet, east to Eagle Lake (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:376); Fyffe and Mount Tallac, Eldorado County (Barlow and Price, Condor, 3, 1901:181); Yosemite Valley, Mariposa County (M. W. Wythe, Condor, 18, 1916:124; E. Michael, Yosemite Nature Notes, 9, 1930:53; Friedmann, Wilson Bull., 46, 1934:104, victim of cowbird); Mammoth Creek, Mono County (Rowley, Condor, 41, 1939:251); Wyman Creek, White Mountains, Inyo County (Mus. Vert. Zool.); Simpson Meadow, Middle Fork Kings River, Fresno County (Dawson, Birds Calif., 1, 1924:499); Little Lake, Kern River, Tulare County (Mus. Vert. Zool.). Reports of breeding farther south and east, as in Piute Mountains, Kern County, and Grapevine Mountains, Inyo County, are doubtful. Selected references and records pertaining to migrants: Chico, Butte County, April 27 (Belding, Land Birds Pac. Dist., 1890: 216-217); San Francisco Bay region, April 3 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:136); coastal southern California, March 28 [=29] to June 4, August 19 to October 24, chiefly in the mountains (Willett, Pac. Coast Avif. No. 21, 1933:147); Horse Spring, Kingston Range, June 5, and Clark Mountain and Providence Mountains, San Bernardino County, May 17-30 (D. H. Johnson MS; Mus. Vert. Zool.); Mecca, Riverside County, April 6-17 (Mus. Vert. Zool.); Colorado River valley, April 12-May 14, August 24 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:201; Mus. Vert. Zool.). Winter records: Los Angeles, December 17, 1914, specimen taken (Wyman,

Condor, 17, 1915:102), and December 15 and January 8, bird seen (H. P. Everhart, Condor, 27, 1925:77).

Habitat—In summer, dense plant growth close to the ground either in the vicinity of water or above ground that is shaded and damp. Humidity within the thickets appears to be relatively high. Situations that provide these conditions are dense, "soft" chaparral, often on north-facing slopes or in shaded canyons, streamside thickets, and forest understory where trees are widely enough spaced to permit growth of heavy continuous ground cover. The sphere of activity is within about four feet of the ground except for occasional song flights and for singing posts high above the bushes. The birds stay well concealed within the tangles of leaves and twigs. Even in migration in desert areas the preference for thick cover low to the ground is shown. Representative plants frequented in the breeding season are as follows: brakes, snow-berry, thimble-berry, black-berry, ceanothus, coffee-berry, choke-cherry, dogwood.

Geothlypis trichas occidentalis Brewster
Western Yellow-throat

Synonyms—Trichas marylandica, part; *Trichas delafieldi*; *Geothlypis trichas*, part; *Geothlypis trichas arizela*, part; *Geothlypis trichas scirpicola*, part; Maryland Yellow Throat, part; Delafield Yellow-throat; Pacific Yellow-throat, part; Tule Yellow-throat, part.

Status—Present in three seasonal rôles: summer resident from mid-April until September in northern and central parts of State, except San Francisco Bay region; winter visitant (or permanent resident) in central and southern California; transient throughout State, chiefly in April and September. Common as a summer resident in restricted areas of suitable habitat; as a migrant common, but in winter scarce.

Geographic range—In breeding season, valleys of northern California from the coast east to the Nevada line; in central California south to northern Sonoma County, thence east of San Francisco Bay through Solano and eastern Contra Costa counties to the Monterey Bay area and the Salinas Valley; extends south into central San Joaquin Valley where intergradation with *scirpicola* takes place; similarly east of the Sierra Nevada intergradation becomes apparent in Owens Valley, Inyo County (the latitudinally broad zone of intergradation is characterized by populations of heterogeneous appearance; south of the latitude of Bakersfield, Kern County, birds are predominantly of *scirpicola* type). In winter, Sacramento and San Joaquin valleys, from Tehama County southward, and southern California; also within the breeding range along the central coast. Migrants appear in all sections, even up to middle elevations in mountains. Life-zones in summer, Lower Sonoran and Upper Sonoran, and locally in Transition. Altitudes of nesting stations range from 260 feet below sea level as at Bennett's Well, Death Valley, Inyo County, up to 6500 as at Mono Lake, Mono County. Localities representing principal breeding areas: Scott River, six miles north of Callahan, and Mayten, Shasta Valley, Siskiyou County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:386); Rio Dell, Humboldt County (W. K. Fisher, Condor, 4, 1902:134); Cahto, Mendocino County (McGregor, Nidologist, 4, 1896:8); Clear Lake, Lake County (Johnson, Condor, 6, 1904:129); Santa Rosa, Sonoma County, and Suisun Marshes, Solano County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:136); Red Bluff, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930: 377); Marysville, Yuba County (L. Bolander, Condor, 9, 1902:23); Lagrange, Stanis-

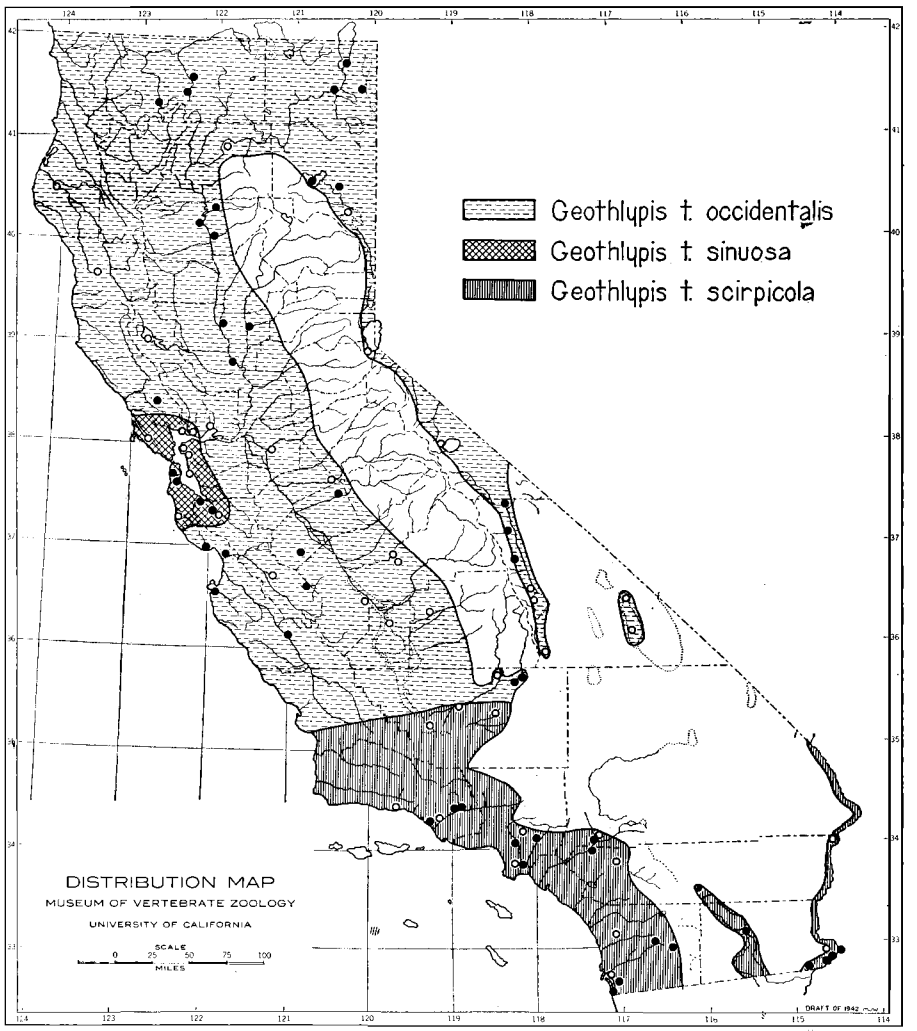

Fig. 42. Distribution of the subspecies of Yellow-throat, *Geothlypis trichas*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

laus County (Grinnell and Storer, Animal Life Yosemite, 1924:538); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:100); Tulare Lake, Kings County (Goldman, Condor, 10, 1908:205); Watsonville, Santa Cruz County, mouth of Carmel River and San Lucas, Monterey County, and Panoche, San Benito County (Mus. Vert. Zool.); Onyx and Weldon, Kern County (Mus. Vert. Zool.); Cedarville, Modoc County (Mus. Vert. Zool.); Eagle Lake, Petes Valley and Honey Lake, Lassen County (Grinnell, Dixon and Linsdale, *loc. cit.*; Mus. Vert. Zool.); Tallac, Eldorado County (Chapman, Warblers N. Amer., 1907:259); Little Lake, and Furnace Creek Canyon and Bennett's Well, Death Valley, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:123). Some accounts of migration: Beswick, Siskiyou County, September (Ferry, Condor,

10, 1908:43); Guerneville, Sonoma County, August 30, and Berkeley, Alameda County, May 21 (Grinnell and Wythe, *loc. cit.*); Yosemite Valley, May 29, September 29, and Mono Lake, September 20 (Grinnell and Storer, *loc. cit.*); Coalinga, Fresno County, September 10, October 22 (Arnold, Condor, 39, 1937:34); El Monte, October 18, and Pasadena, March 25-April 30, May 20, September 27, Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:148; Michener and Michener, Condor, 40, 1938: 38; Mus. Vert. Zool.); San Clemente Island, March 23, presumably this race (Howell, Pac. Coast Avif. No. 12, 1917:94); Cactus Flat, 6000 feet, San Bernardino Mountains, August 16 (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:116); San Jacinto Mountains, May (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:300); Colorado River valley, March 23, April 9, 11, 12 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:202). Winter records: Paine's Creek, 1000 feet, Tehama County, December 25 (Grinnell, Dixon and Linsdale, *loc. cit.*); Marysville, Yuba County, January 2 (Ridgway, Bull. Nutt. Ornith. Club, 3, 1878:65); near Maxwell, February 23, and Butte Creek, March 2, 4, Colusa County (Mus. Vert. Zool.); San Lucas, Monterey County, November 18 (Mus. Vert. Zool.); Snelling, Merced County, January 6 (Mus. Vert. Zool.); Pasadena, Los Angeles County, January 10 (Mus. Vert. Zool.); Bixby, Los Angeles County, December 28, and Santa Cruz Island, January 22 (Willett, *loc. cit.*); near Yermo, January 17, and Victorville, December 31, San Bernardino County (Lamb, Condor, 14, 1912:39; Mailliard and Grinnell, Condor, 7, 1905:101). Food: Beal (U. S. Dept. Agr., Biol. Surv. Bull. No. 30, 1907:49).

Habitat—For nesting, low thick tangles of plant growth in or about fresh- or brackish-water marshes and sloughs; extremely small areas of flooded ground in river bottoms or along lake shores may suffice. Important is continuous cover for concealment in foraging down to the mud or water surfaces. The sphere of activity is within six feet of the water and principally within three feet. Nests are placed low down, often over the water. (For an interesting adjustment to flood conditions, see Johnson's (*op. cit.*) account of nesting high above the ground at Clear Lake.) Plant associations most likely to meet these requirements: growths of cattails, tules and other sedges, especially where tangled and matted; thickets of young willows; blackberry vines, accompanied by nettles and dock. In winter and in migration less restricted, but always found in low, dense cover and most often in wet places.

Geothlypis trichas sinuosa Grinnell

San Francisco Yellow-throat

Synonyms—Geothlypis trichas occidentalis, part; Western Yellow-throat, part; Salt Marsh Yellow-throat.

Status—Resident; but to some degree scatters or migrates from breeding range in San Francisco Bay region to appear, fairly commonly, as a winter visitant in southern California from late September to mid-March. Common throughout year on breeding grounds.

Geographic range—In breeding season vicinity of San Francisco Bay, from Tomales Bay, Marin County, and Napa sloughs, southern Sonoma County, on the north, east to Carquinez Strait, and south to vicinity of San Jose, Santa Clara County. In winter, coastal marshes from San Francisco Bay region south to San Diego; also, twice recorded

north to Humboldt Bay. Life-zones, Upper Sonoran and Transition; localities of nesting all below 1000 feet elevation. Some specific breeding stations: Olema, Marin County; Second Napa Slough, Sonoma County; north Vallejo, Solano County; San Pablo, Contra Costa County; Cerrito Creek and Bay Farm Island, Alameda County; Lake Merced, San Francisco; Baden, San Mateo County; Palo Alto, Santa Clara, and San Jose, Santa Clara County (Grinnell, Condor, 3, 1901:65 and Pac. Coast Avif. No. 11, 1915:151; Ray, Condor, 18, 1916:225; Schussler, Condor, 20, 1918:62; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:136). Some records of occurrence outside of breeding range: Samoa, November 26, 1922, and Eureka, November 25, 1917, Humboldt County (J. M. Davis, Condor, 35, 1933:119, and *ibid.*, 42, 1940:222); Grizzly Island, Solano County, October 5 (Grinnell and Wythe, *loc. cit.*); San Carpojo Creek [7 miles north of Piedras Blancas], San Luis Obispo County, October 9, 11, and Morro, same county, September 19 to November 2, 18 specimens (Mus. Vert. Zool.); San Pedro, October 28, Nigger Slough, November 28, and Bixby, January 22, Los Angeles County (Mus. Vert. Zool.; Willett, Pac. Coast Avif. No. 21, 1933:149); Anaheim Landing, Orange County, September 23 to March 15, 16 specimens (van Rossem, Condor, 24, 1922:134; Willett, *loc. cit.*); San Diego, San Diego County, October 3 (Willett, *loc. cit.*).

Habitat—In summer, fresh and salt water marshes, but chiefly the former. More commonly found near salt and brackish water in fall and winter. Requires plant cover similar to that frequented by the race *G. t. occidentalis*, which see. Tall grasses, tule patches and willow thickets provide normal plant environment for nesting activity.

Geothlypis trichas scirpicola Grinnell
Tule Yellow-throat

Synonyms—Trichas marylandica, part; *Geothlypis trichas*, part; *Geothlypis trichas occidentalis*, part; *Geothlypis trichas arizela*, part; Maryland Yellow-throat, part; Western Yellowthroat, part; Pacific Yellowthroat, part.

Status—Resident; common in marshy places.

Geographic range—Pacific slope of southern California from southern end of San Joaquin Valley in Kern County south to Mexican boundary; Imperial Valley, and Colorado River valley from Nevada line southward. Life-zones, Lower Sonoran and Upper Sonoran. Altitudes of occurrence chiefly below 1500 feet, but birds may range up to 4200 feet, as at Julian, San Diego County. Northernmost record stations of populations predominantly of *scirpicola* character: Walker Basin and Buena Vista Lake, Kern County, and Santa Barbara (van Rossem, Condor, 32, 1930:297ff.). North of these points, supposedly on the coast as well as in the interior, a broad belt of intergradation with *occidentalis* exists. Representative localities of occurrence in southern California: Santa Clara River, Ventura County, and Nigger Slough, Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:148); Pasadena and El Monte, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:46, and Condor, 3, 1901:65); San Jacinto Lake, Riverside County (Hall, Nidiologist, 1, 1894:137); Escondido, Vallecito, and San Diego, San Diego County (Sharp, Condor, 9, 1907:90; Mus. Vert. Zool.); Mecca, Riverside County, and 8 miles northwest of Calipatria, Imperial County (Mus. Vert. Zool.); Colorado River valley, Riverside Mountain to Pilot Knob (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:202). Records that may indicate movement

away from breeding grounds: Santa Cruz Island, January, 1920, in cattails (Hoffmann, Condor, 22, 1920:187); Victorville, San Bernardino County, March 26, 1907 (Mus. Vert. Zool.). Evidence of occurrence in central California north of the normal breeding grounds (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:137; Hellmayr, Field Mus. Nat. Hist., Zool. Ser., 13, pt. 8, 1935:429) now seems to us to be uncertain; the specimens concerned, in some and perhaps all instances, are best considered variants of the more northern races.

Habitat—Marshy areas, in situations similar to those occupied by *G. t. occidentalis*, which see.

Icteria virens auricollis (Lichtenstein)
Long-tailed Chat

Synonyms—Icteria viridis; *Icteria valasquezii*; *Icteria longicauda*; *Icteria virens longicauda*; *Icteria viridis* var. *longicauda*; Yellow-breasted Chat; Western Chat; Western Yellow-breasted Chat; Long-tailed Yellow-breasted Chat.

Status—Summer resident from late April through August. Migrates chiefly in last half of April and first half of May, and in late August and September. Fairly common to common as a summer resident; sparse as a migrant, although often several individuals travel together.

Geographic range—In nesting season, entire length and breadth of State exclusive of higher mountains and coastal islands; more numerous toward the interior. In migration similarly widespread, with less restriction as to habitat. Life-zones in summer, Lower Sonoran, Upper Sonoran, and locally lower Transition. Altitudes of nesting range from 180 feet below sea level, at Mecca, Riverside County, up to 4700 feet, as at Cedarville, Modoc County; may range somewhat higher, to 5200 feet, at Eagle Lake, Lassen County (Sheldon, Condor, 9, 1907:190). References bearing on natural history and distribution in breeding season: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:25); Cahto and Ukiah, Mendocino County (McGregor, Nidologist, 4, 1896:8); Clear Lake, Lake County (Stone, Condor, 43, 1941:121); Olema, Marin County (L. A. Stephens, Gull, 18, 1936: June [p. 2]; San Jose, Santa Clara County (Chapman, N. Amer. Warblers, 1907:268); Edgewood and Yreka, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:94); vicinity of Red Bluff, Tehama County (Grinnell, Dixon and Linsdale, 35, 1930:378); Grass Valley, Nevada County (Richards, Condor, 26, 1924:103); Sacramento (Ridgway, U. S. Geol. Expl. Fortieth Parallel . . . Ornithology, 1877:436); Snelling, Merced County (Kinsey, Condor, 36, 1934:235); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:101); Fort Tejon, Kern County (Baird, Brewer and Ridgway, 1874, 1:310); San Antonio Creek, Monterey County (Pemberton and Carriger, Condor, 17, 1915:199); Los Angeles, and Colton, San Bernardino County (Willett, Pac. Coast Avif. No. 21, 1933: 149; Hanna, Condor, 30, 1928:161); San Pasqual, San Diego County (Sharp, Condor, 9, 1907:90); Eagleville, Cedarville, and Goose Lake, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:331); Owens and Death valleys, Inyo County, and Kernville, etc., Kern County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:125); near Yermo, San Bernardino County (Lamb, Condor, 14, 1912:39); Murray Canyon, near Palm Springs, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:301); Colorado River valley, Imperial County (Grinnell, Univ. Calif. Publ. Zool.,

12, 1914:204). Some accounts of migrants: Chico, Butte County, earliest date, April 21 (Belding, Land Birds Pac. Dist., 1890:219); Manor, Marin County, September 29 (Kinsey, Condor, 46, 1944:33); San Francisco Bay region, April 14, May 11 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:137); Yosemite Valley, September 22 (Beatty, Yosemite Nature Notes, 15, 1936:16); Los Angeles County, earliest date, April 1, latest, October 7 (Willett, *loc. cit.*); Twentynine Palms, San Bernardino County, May 1 to 17 (F. Carter, Condor, 39, 1937:216).

Habitat—For breeding activities, low dense riparian plant growth, consisting most commonly of willow thickets and tangles of tall weeds, blackberry vines and grapevines. The ground need not be damp or muddy but the plant cover must be dense to provide shade and concealment. Birds move deliberately and quietly within the cover, showing conspicuously only in flights between thickets or in song on the wing. Song perches not uncommonly are high in the concealing crowns of tall willows and cottonwoods, but foraging and nesting is chiefly within 10 feet of the ground. In the tangles of vegetation, spiders, insects and berries afford abundant food supplies in the summer season.

Wilsonia pusilla pileolata (Pallas)
Northern Pileolated Warbler

Synonyms—Myiodioctes pusillus, part; *Myiodioctes pusillus*, var. *pileolatus*, part; *Sylvania pusilla pileolata*, part; *Wilsonia pusilla*, part; Green Black-cap Warbler, part; Pileolated Warbler; Alaska Pileolated Warbler.

Status—Summer resident along eastern margin of State. Migrant, from late April through May, and in September; fairly common. Rare winter visitant.

Geographic range—As a summer resident, Warner Mountains of Modoc County, and, presumably, White Mountains of Mono County. Birds of the east side of the Sierra Nevada, although essentially *W. p. chryseola*, show some intermediacy between that race and *pileolata*; examples certainly representative of the breeding population on the White Mountains have not been examined. In migration likely to appear in all sections of State, but more often detected in southern and eastern California; in spring on the southeastern deserts this race outnumbers *chryseola*, especially late in the season. Life-zones in summer, Transition and Canadian. Specific reports of summer residence: Sugar Hill and canyons on east side of Warner Mountains, Modoc County (Grinnell, Pac. Coast Avif. No. 11, 1915:152; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927: 331); heads of streams in White Mountains, Mono County, July (A. K. Fisher, N. Amer. Fauna No. 7, 1893:124). Representative localities and dates pertaining to specimens of migrants: Mad River, 2700 feet, Trinity County, May 20, 22 (Mus. Vert. Zool.); vicinity of Red Bluff, May 3, 4, 21 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:280); Palo Alto, Santa Clara County, May 10 (Mus. Vert. Zool.); Lagrange, Stanislaus County, May 8, and vicinity of Mono Lake, Mono County, April 29 to May 31 (Grinnell and Storer, Animal Life Yosemite, 1924:540); Pasadena, Los Angeles County, April 29, May 1, September 22 (Grinnell, Condor, 5, 1903:80); Bassett, October 16, and Nigger Slough, May 22, Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:149); San Diego, May 6, Dulzura, April 25 [but not Julian, August 5] and Jacumba, April 4, San Diego County (Grinnell, Pac. Coast Avif. No. 11, 1915:152; Willett, *loc. cit.*); Santa Barbara Island, May 14 to 16 (Pasadena Acad. Sci., publ. 1, 1897:8); San Nicolas Island, May 1, 2 (Willett, *loc. cit.*); vicinity of

Benton, Mono County, August 30, September 21 (Mus. Vert. Zool.); Argus Mountains, Inyo County, May 28, 29 (Mus. Vert. Zool.); Providence Mountains area, San Bernardino County, May 17 to June 2 (D. H. Johnson MS); Colorado River valley, Imperial County, April 19 to May 12 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:205). Winter records: Eureka, Humboldt County, November 24 (J. M. Davis, Condor, 26, 1924:105); San Diego, December 21 (Abbott, Condor, 30, 1928:163); several sight records from southern California cannot be allocated as to race (see Willett, *loc. cit.*).

Habitat—In summer, tangles of stream-side vegetation over moist ground. In migration, as in summer, stays close to the ground, within the protecting plant cover.

Wilsonia pusilla chryseola Ridgway
Golden Pileolated Warbler

Synonyms—Sylvania pusilla; *Setophaga wilsonii*; *Myiodioctes pusillus*, part; *Myiodioctes pusillus pileolatus*, part; *Sylvania pusilla pileolata*, part; *Wilsonia pusilla pileolata*, part; *Wilsonia pusilla pusilla*; *Wilsonia pusilla*, part; *Wilsonia chryseola*; Green Black-capped Flycatcher; Green Black-capped Fly-catching Warbler; Black-capped Warbler; Green Black-cap Warbler, part; Western Blackcap; Wilson Black Cap; California Black-capped Green Warbler; Black-capped Yellow Warbler; Pileolated Warbler, part; Wilson Warbler; Golden Warbler.

Status—Summer resident and migrant, arriving by late March in the lowlands and leaving principally in September. Migratory movements proven to be of this race occur from mid-March through early May and from late August through mid-October. Common as a breeding species and often abundant in migration.

Geographic range—As breeding, in general entire State from eastern edge of Sierran forests westward. However, locally and irregularly distributed within this range; apparently absent from floor of Great Valley and sparse in arid lowlands elsewhere and in arid Transition zone of mountains. Most abundant in humid coastal belt and in high meadows and streamsides of interior mountains. Local approximation of the moderately cool climate and plant habitats of these optimal areas seem usually to account for the scattered occurrence elsewhere. In migration, occurs throughout the State, although critically determined specimens have not been reported from Modoc County. Life-zones in summer, Lower Sonoran (rarely) up through Canadian. Altitudes of nesting range from near sea level, as at Point Lobos, Monterey County, up to at least 9500 feet on east slope of Mount Whitney, Inyo County (Mus. Vert. Zool.); late summer occurrences range up to 11,000 feet. Sample localities of breeding serving to indicate range: Trinidad and Eureka, Humboldt County (Dawson, Birds Calif., 1, 1924:515); Jackson Lake, etc., in Scott Mountains, Siskiyou County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:386); Guerneville, Sonoma County (Mus. Vert. Zool.); Alameda, Alameda County, and San Jose and vicinity of Sargent, Santa Clara County (Barlow, Nidiologist, 1, 1893:44; Unglish, Condor, 33, 1931:214 [parasitized by cowbird]); Big Basin, Santa Cruz County (Orr, Amer. Midl. Nat., 27, 1942:331); Paicines, San Benito County (Mailliard and Mailliard, Condor, 3, 1901:126); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Washington, publ. 481, 1936:112; Chorro Creek, San Luis Obispo County (Mus. Vert. Zool.); Edgewood, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:25); Lassen section east to Eagle Lake (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:380); near Fallen Leaf Lake, Eldorado County (Barlow and Price, Condor, 3, 1901:182); Yosemite Valley, Chinquapin, and Merced Lake, in Yosemite region (Grinnell and Storer,

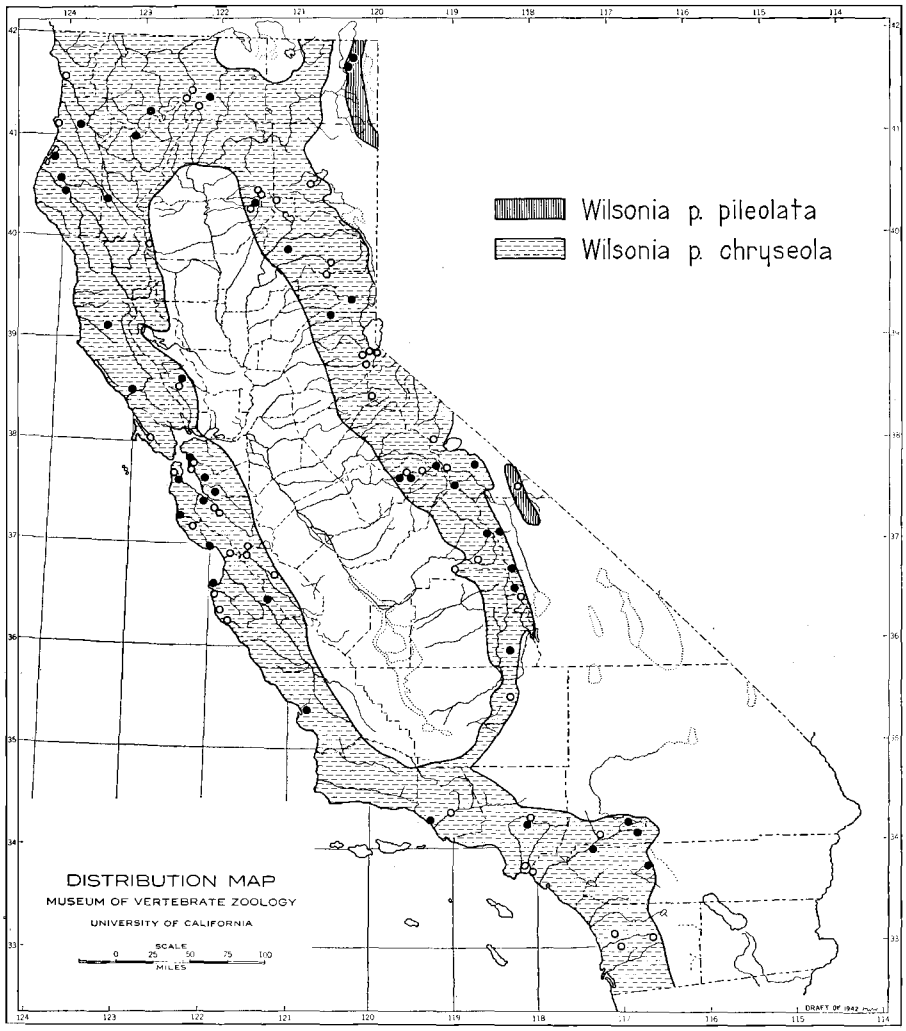

Fig. 43. Distribution of Pileolated Warblers, *Wilsonia pusilla*, in California in the breeding season. Dots indicate breeding stations from which specimens have been examined; circles, localities reported in the literature.

Animal Life Yosemite, 1924:540); Virginia Creek, Mono County (Rowley, Condor, 41, 1939:251, fig. 50); Santa Clara and Ventura rivers, Ventura County (Evermann, Auk, 3, 1886:185); near Anaheim, Orange County (Schneider, Condor, 2, 1900:33); near Los Angeles (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:47); Riverside, Riverside County (Barlow, *loc. cit.*); San Bernardino Mountains, 8500 feet (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:116); Tahquitz Valley, San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:302); Julian and Escondido, San Diego County (Sharp, Condor, 8, 1906:75; Mus. Vert. Zool.). Some significant dates and localities for migrants: Berkeley, Alameda County, earliest date March 15 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:137); Fresno district, in fall, September 17

to October 8 (Tyler, Pac. Coast Avif. No. 9, 1913:101); West Anacapa Island, April 16 (Mus. Vert. Zool.); Pasadena, Los Angeles County, February 16, 1895 [possibly wintering], October 2 (Mus. Vert. Zool.); near Benton, Mono County, September 1, 3 (Mus. Vert. Zool.); Mecca, Riverside County, March 25 to April 28 (Mus. Vert. Zool.); Colorado River valley, seen March 9, specimens March 20 to May 2 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:205). Other records of migrants, as from the Farallon Islands and Catalina Island, and also some late fall and winter occurrences possibly pertain to *chryseola*, but these ascriptions for various reasons cannot now be proven. One verifiable winter record: Santa Cruz, Santa Cruz County, February 4, 1939 (C. P. Streator MS; Mus. Vert. Zool.).

Habitat—Low, shaded, plant cover close to streams, meadows or seepage of water on hillsides; locally the temperature is moderately low and the humidity normally high. Willows, alders, dogwood, blackberries, poison oak and ferns form thickets favorable to this species. All activities take place within six feet of the ground, rarely higher even for singing. The birds utilize the close-set branchwork of the thickets as forage beats, gleaning surfaces but also engaging in considerable flycatching which occasionally leads them in pursuit outside of the concealing screen of foliage. Nest sites are found on the ground or up two or three feet in tangles of vegetation. In seasons of migration, low thick vegetation is preferred but not solely in the vicinity of water.

Setophaga ruticilla (Linnaeus)
American Redstart

Status—Rare visitant, chiefly in fall and late spring; probably to be considered as a regular though sparse migrant passing to and from breeding grounds to the northward. Specific records, either based on specimens or on decisive observation: Marysville Buttes, Butte County, [adult] male, June 6, 1884 (Belding, Land Birds Pac. Dist., 1890:222); Southeast Farallon Island, second-year male, June 1, 1911 (Dawson, Condor, 13, 1911:182); Manor, Marin County, female taken, September 30, 1942 (Kinsey, Condor, 45, 1943:119); Golden Gate Park, San Francisco, male taken May 30, 1944 (Calif. Acad. Sci.); Hayward, Alameda County, adult male taken, June 20, 1881 (Emerson, Zoe, 1, 1890:45); Pasadena, specimen, female, December 27, 1905 (Osburn, Condor, 11, 1909:102); immature male or female, banded, repeated, September 7, 9, 1936 (Michener and Michener, Condor, 40, 1938:38); Los Angeles, adult male, observed, September 13, 14, 1923 (E. H. Ellis, Condor, 26, 1924:30), female or young male observed by a number of persons, November 23, 1925 (M. M. Miller, Condor, 28, 1926:98) and males observed, October 18, 1936, and September 13, 14, 1941 (M. K. Yost MS); San Gabriel River Sanctuary, Los Angeles County, September 18, 1943 (Cogswell, Aud. Mag., 45, sect. 2, December, 1943:16); Artesia, Los Angeles County, female collected, September 20 (Robertson, Condor, 28, 1926:47); Redlands, San Bernardino County, adult male observed, September 11 to October 21, 1940 (Moore and Moore, Condor, 42, 1940:305); Twentynine Palms, San Bernardino County, May 28, 1935, female or young male observed (F. Carter, Condor, 39, 1937:216).

Habitat—The species has been reported most often from willow association, but also from oaks, cypresses and pecan trees.

Setophaga picta picta Swainson
Northern Painted Redstart

Synonyms—Setophaga picta; Painted Redstart.

Status—Rare winter visitant to southern California. Known only from the Los Angeles region: Elysian Park, Los Angeles, October 27 to November 1, 1927, one observed (L. Miller, Condor, 29, 1927:77; Hubricht, Bird-Lore, 29, 1927:121); Altadena, Los Angeles County, January 14, 1942, banded on January 19 (W. I. Allen, Condor, 44, 1942:76); apparently same bird at same place, October 12 to February, 1942-43 (Cogswell, Aud. Mag., 45, sect. 2, April, 1943:16), and September 26 (Cogswell, *ibid.*, December, 1943:16) to March 21, 1943-44 (H. Michener MS).

Note—This redstart is included in this list, even though no specimens have been preserved, for the exceptional reason that an example has been examined in hand.

Dolichonyx oryzivorus (Linnaeus)
Bobolink

Status—Summer resident in extreme northeastern part of State, where there is at least one colony. Rare straggler to other sections, chiefly in the autumn. Records of summer-resident colony near Eagleville, 4700 feet, Modoc County, follow: June 30, 1912, several singing males (Dawson, Condor, 18, 1916:28, and Birds Calif., 1, 1924: 138); May 27, 1924, about a dozen males, and reported by local residents for many years prior (Mailliard, Condor, 16, 1924:215, and Proc. Calif. Acad. Sci., ser. 4, 16, 1927:312). Other records: Redwood City, San Mateo County, September 17, 1897, female taken (Littlejohn, Bull. Cooper Ornith. Club, 1, 1899:73); near San Bruno Lake, same county, male taken (Mus. Vert. Zool.) between June 5 and 10, 1911 (Taylor, Condor, 13, 1911:211); near Monterey, Monterey County, October 14, 1896, female taken (Breninger, Bull. Cooper Ornith. Club, 1, 1899:93); Mono Lake, Mono County, September, 1901 (W. K. Fisher, Condor, 4, 1902:11).

Habitat—In summer, hay meadows in floors of valleys.

Sturnella neglecta Audubon
Western Meadowlark

Synonyms—Sturnella hippocrepus; *Sturnella magna neglecta*; *Sturnella magna*; *Sturnella neglecta neglecta*; Meadow Lark; Missouri Meadow Lark; Western Lark.

Status—Resident; only in higher localities subject to snowfall is there exodus of meadowlarks in winter; correspondingly some influx of birds is noticed in desert areas where breeding populations are sparse. Abundant in appropriate localities over most of range; on southeastern deserts numbers have increased with development of oases and irrigated lands.

Geographic range—Occurs throughout State, with exception of most arid and barren tracts of deserts, roughest mountains and densest forests. Included are all coastal islands, where at least stragglers have been reported, and many high points in the Sierra Nevada reached by late summer and fall vagrants. Life-zones occupied in breeding

season: Lower Sonoran, Upper Sonoran, and Transition. Localities of nesting range from —200 feet, at Fish Springs, near Salton Sea, Imperial County, up to 8000 feet on east side of Sierra Nevada; higher stations up to 11,000 feet, as at Cottonwood Lakes (Dawson, Birds Calif., 1, 1924:129), probably in no instance involve actual nesting. Some record stations in the less uniformly occupied sections of the range: northwest coast belt: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:23); Hoopa Valley and Eureka, Humboldt County (W. K. Fisher, Condor, 6, 1904:51; Mus. Vert. Zool.); Mad River, 3000 feet, Trinity County (Mus. Vert. Zool.); Cahto and Ukiah, Mendocino County (McGregor, Nidologist, 3, 1896:148). Northern border and Modoc Plateau: Yreka, Beswick, and Lava Beds National Monument, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:92; Ferry, Condor, 10, 1908:42; Bond, Condor, 41, 1939:54); Surprise Valley, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:314); east to Red Rock P.O., Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:380). Sierra Nevada and higher mountains of southern California: Summit, 7000 feet, Nevada County, May 15 (Belding, Condor, 3, 1901:31); Meyer's, Lake Valley, Eldorado County (Barlow and Price, Condor, 3, 1901:168; Ray, Auk, 20, 1903:186); Yosemite Valley, occasional in spring, and as vagrants to top of Half Dome, 9900 feet, June 27, and Parker Pass, 11,000 feet, October 12 (Grinnell and Storer, Animal Life Yosemite, 1924:409; Taber, Yosemite Nature Notes, 16, 1937:72; Harwell, *ibid.*, 12, 1933:26); Monache Meadow, 8000 feet, Tulare County (Mus. Vert. Zool.); Bear Valley, 6750 feet, San Bernardino Mountains, set of eggs (Willett, Pac. Coast Avif. No. 7, 1912:71); Tahquitz Valley, 8000 feet, and Round Valley, 9000 feet, San Jacinto Mountains, vagrants in July (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:264). Southeastern deserts: Owens Valley, Inyo Mountains, Saline, Panamint and Death valleys, etc., Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:75); Providence Mountains and Twentynine Palms, San Bernardino County (D. H. Johnson MS; F. Carter, Condor, 39, 1937:216); Mecca, Riverside County, and Brawley, Imperial County (van Rossem, Condor, 13, 1911:132, 136); Colorado River valley, Needles to vicinity of Yuma (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:163; van Rossem, Trans. San Diego Soc. Nat. Hist., 6, 1931:287). Coastal islands: Farallon Islands, winter stragglers (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:46); San Miguel, Santa Rosa, Santa Cruz, Anacapa, Santa Barbara, Santa Catalina and San Clemente, probably nesting on each (Howell, Pac. Coast Avif. No. 12, 1917:71); listed from San Nicolas Island by Cooper (Proc. Calif. Acad. Sci., 4, 1870:78). Of the large number of additional references pertaining to the heavily populated parts of the range, the following are selected for their bearing on natural history: song (Belding, Auk, 13, 1896: 29); food (H. C. Bryant, Univ. Calif. Publ. Zool., 11, 1914:377-510); nesting, etc. (Tyler, Pac. Coast Avif. No. 9, 1913:71); in general (Grinnell and Linsdale, Carnegie Inst. Washington, publ. 481, 1936:113); winter nesting (Abbott, Condor, 29, 1927: 160; Sechrist, Oologist, 45, 1928:12).

Habitat—Grassy plains, hill slopes and meadowlands in which grass is present in fairly large tracts and is thick enough or deep enough to permit concealment by crouching. The grass and low annual plants may be moderately intermixed with bushes or in pure growths. Scattered lookout and song posts are provided by trees, man-made structures, low bushes or even low mounds, stones or large grass tussocks. Foraging is carried on among matted grass tangles as also in the living vegetation, but much food is obtained from the ground itself by gleaning the surface, by turning over clods, and by

drilling when the soil is sandy or is softened by rains. Various cultivated crops, but particularly alfalfa, provide the requirements otherwise found in native grasslands.

Xanthocephalus xanthocephalus (Bonaparte)
Yellow-headed Blackbird

Synonyms—Agelaius xanthocephalus; *Agelaius xanthrocephalus*; *Xanthocephalus interocephalus*; *Xanthocephalus longipes*; Saffron-headed Blackbird.

Status—Common summer resident to eastward, from May through July; less common west of the Sierra Nevada and sparse along the coast. As a migrant, noted chiefly in April and early May, and in September, but migration and winter residence irregular, variable from year to year, the movements being essentially nomadic in regions of mild climate. In southern California especially, numbers have decreased in last twenty years because of drainage of marshes.

Geographic range—As breeding, northeastern plateau area from Oregon line south to Owens Valley; some of the large marshy lakes in high mountains; Sacramento and San Joaquin valleys; coastal district from Marin and southern Sonoma County south to Riverside County; also, at least recently, Colorado River valley. As a migrant and vagrant appears scatteringly in all sections of State except northwest coast region north of Sonoma County and west of west base of Mount Shasta. In winter, Sacramento Valley south through San Joaquin Valley, coastal regions to San Diego County, and suitable places on deserts from Owens Valley southeast to Imperial and Colorado River valleys. Life-zones in summer, Lower Sonoran, Upper Sonoran and Transition. Altitudes of known nesting range from near sea level, as near Newport, Orange County, up to 6600 feet at Baldwin Lake, San Bernardino Mountains. Some specific localities of breeding: Bray, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921: 92); Goose Lake and Surprise Valley, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:313); Pit River [near Cayton], Shasta County (Newberry, Pac. R. R. Rept., 6, 1857:86); Feather Lake, Eagle Lake, Petes Valley and Red Rock P. O., Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:381); Portola, Plumas County (Ewan, Condor, 38, 1936:84); marshes of Sacramento Valley, generally, and vicinity of city of Sacramento (Belding, Land Birds Pac. Dist., 1890: 119; Heermann, Jour. Acad. Nat. Sci. Phila., ser. 2, 2, 1853:268); Al Tahoe, Lake Tahoe, Eldorado County (Ray, Osprey, 5, 1901:116; Auk, 20, 1903:186); Lone Pine, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1890:73); Sebastopol, Sonoma County (Calif. Acad. Sci.); Pinole, Contra Costa County (Mus. Vert. Zool.); Irvington, Alameda County, and San Jose, Santa Clara County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:105); Los Baños, Merced County (Mus. Vert. Zool.); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:68); Tulare Lake, Kings County, and Buena Vista Lake, Kern County (Goldman, Condor, 10, 1908:204); Bakersfield, Kern County (A. K. Fisher, *loc. cit.*); Goleta, Santa Barbara County (Dawson, Birds Calif., 1, 1924:124); Nigger Slough, Los Angeles County, Bear Lake, San Bernardino County, and San Jacinto Lake, Riverside County [see also foregoing altitudinal records] (Willett, Pac. Coast Avif. No. 21, 1933:152); reported, without supporting details, as breeding in San Diego County (Stephens, Trans. San Diego Soc. Nat. Hist., 1919:22 [of separate]); California Swamp [=Lakes], near Potholes, Imperial County (Monson, Condor, 46, 1944:22). Representative data on migration: Siskiyou County, March 17

(Mus. Vert. Zool.); San Geronino, Marin County, October 17 (Mailliard, Condor, 10, 1908:94); Hayward, May 3, and Pleasanton, March 31, Alameda County (Grinnell and Wythe, *loc. cit.*; L. P. Bolander, Condor, 17, 1915:131); Yosemite Valley, May 8 to 11 (Presnall, Yosemite Nature Notes, 9, 1930:70); Coalinga, Fresno County, April 26 (Arnold, Condor, 39, 1937:34); Bennett Wells in Death Valley, April 1, and Darwin, May 5, Inyo County (A. K. Fisher, *loc. cit.*); near Yermo, San Bernardino County, August 6, April 12 (Lamb, Condor, 14, 1912:37); Twentynine Palms, May 2, 4 (F. Carter, Condor, 39, 1937:216); Cabezon, Riverside County, May 4, 12, 19 (Mus. Vert. Zool.); Santa Cruz Island, undated specimen examined (Dawson, Condor, 17, 1915:204). Some reports of winter residence: Sacramento Valley (C. A. Harwell MS); Rio Vista, Solano County (Grinnell and Wythe, *loc. cit.*); Stockton, San Joaquin County (Belding, *loc. cit.*); Paicines, San Benito County (Mailliard and Mailliard, Condor, 3, 1901:124); Yosemite Valley, January (Grinnell and Storer, Animal Life Yosemite, 1924:399); Fresno district (Tyler, *loc. cit.*); Victorville, San Bernardino County, lone bird (Mailliard and Grinnell, Condor, 7, 1905:76); coastal southern California in general, south to San Diego County (Willett, Pac. Coast Avif. No. 21, 1933: 152); Brawley, Imperial County (van Rossem, Condor, 13, 1911:132); Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:161).

Habitat—In the nesting season, fresh-water marshes with tules, cattails, or other plant growths that afford nesting sites over standing water of considerable depth. Thus, protection from ground-prowling predators is provided. Forage areas at this season and in winter consist of meadows, muddy ground, marsh edges grown with sedges, and open cultivated fields. Stragglers and migrants appear in a great variety of places, and frequently in association with flocks of other kinds of blackbirds, but preference for localities where there is water or moist ground is displayed whenever these are available.

Agelaius phoeniceus nevadensis Grinnell
Nevada Red-winged Blackbird

Synonyms—Agelaius gubernator, part; *Agelaius phoeniceus* var. *gubernator*, part; *Agelaius phoeniceus*, part; *Agelaius phoeniceus neutralis*, part; *Agelaius gubernator californicus*, part; *Agelaius phoeniceus aciculatus*, part; *Agelaius phoeniceus fortis*; *Agelaius phoeniceus mailliardorum*, part; Crimson-shouldered Blackbird, part; Red-winged Blackbird, part; Bicolored Blackbird, part; San Diego Redwing, part; California Bi-colored Blackbird, part; Bicolored Red-wing, part; Nevada Red-wing; Kern Red-winged Blackbird, part; Great Basin Red-winged Blackbird; Thick-billed Red-winged Blackbird.

Status—Summer resident, migrating completely or in part from higher and northern sections of breeding range to winter to the southward and westward. Presumed to be permanently resident in areas near southern limits of summer range, although locally nomadic. Common in summer in associationally suitable localities. Fairly common to common in winter west of the Sierra Nevada.

Geographic range—As breeding, Modoc Plateau, west to Shasta Valley and upper Klamath River drainage, and in western edge of Great Basin south through Mono and Inyo areas to Owens Valley; also disconnectedly on the Mohave Desert, to the Mohave River, San Bernardino County. Occurs along some of stream courses of Sierra Nevada and Cascade mountains; on the Pacific slopes of these mountains at middle levels, the scattered breeding population is generally intergradient toward *A. p. californicus*. In winter, lower parts of breeding range, and, in addition, Sacramento and San Joaquin

valleys, coast districts from San Francisco Bay region southward, and coastal southern California. Life-zones in summer, Lower Sonoran, Upper Sonoran and Transition. Altitudes of nesting range from —180 feet at Furnace Creek Ranch, Death Valley, Inyo County (Gilman, Condor, 39, 1937:90) up to 7900 feet at Walker Lake, Mono County. Localities of summer residence marking western limits of range: Seiad Valley, Siskiyou County (Mus. Vert. Zool.); 2 miles east of Hayfork, Trinity County (Mus. Vert. Zool.); Yreka, Mayten, etc., in Shasta Valley, and Sisson, Siskiyou County (van Rossem, Condor, 28, 1926:230; Grinnell, Proc. Biol. Soc. Wash., 27, 1914:107); Cassel, Shasta County (van Rossem, *loc. cit.*); Elliott's, 1000 feet, on Paine's Creek, and Manton, Tehama County [birds from these localities and those reported as *nevadensis* from Red Bluff, best viewed as intergrades] (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:383); Meadow Valley, Plumas County (Grinnell, *loc. cit.*); near Tallac, Lake Tahoe, Eldorado County (Ray, Auk, 20, 1903:186); Yosemite Valley, Mariposa County [reported as *A. p. aciculatus*, but this allocation now thought to be inadvisable] (Grinnell and Storer, Animal Life Yosemite, 1924:400); Little Lake, 6100 feet, upper Kern River Canyon, Tulare County (Mus. Vert. Zool.); Palmdale, Los Angeles County [probably breeding] and Victorville, San Bernardino County (van Rossem, *loc. cit.*). For further details, see van Rossem's revisionary study (*loc. cit.*). Significant records bearing on occurrence in winter: Surprise Valley, Modoc County, mid-October, but in "reduced" numbers (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:313); Honey Lake valley, Lassen County, winter, males only (A. H. Miller MS); Furnace Creek Ranch, Death Valley, January, and Lone Pine, December, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:74); specimen reported as *A. p. fortis* from Death Valley, October 23 (Grinnell, Condor, 36, 1934:70) now regarded as a variant of *nevadensis*; "west of Sierras, from San Francisco Bay south to the Lower California Boundary" (van Rossem, *op. cit.*:229); more specifically, the following record specimens are at hand (Mus. Vert. Zool.) from these regions: Lathrop, San Joaquin County, October 3; Cordelia, Solano County, December 1; Palo Alto, Santa Clara County, October 5; La Grange, Tuolumne County, December 11; Minkler, Fresno County, November 11, 12; San Lucas, Monterey County, November 20; Morro, San Luis Obispo County, October 13, 30; Walker Basin, Kern County, November; Oro Grande, San Bernardino County, February 25; San Timoteo Canyon, Riverside County, December 22.

Habitat—In summer, fresh-water marshes and margins of ponds, lakes and slow-moving streams grown or bordered with dense sedges, cattails and willows. The nests may be placed in dense cover, either over water or over ground near water; sites range in height from 6 inches to about 6 feet above the surface. The tules and cattails provide protective tangles used as roosting places and to some extent for foraging, but most of the foraging takes place on the ground either near the marsh or at considerable distances.

Agelaius phoeniceus caurinus Ridgway
Northwestern Red-winged Blackbird

Synonyms—Icterus phaeniceus, part; *Agelaius phoeniceus*, part; *Agelaius phoeniceus* var. *gubernator*, part; *Agelaius gubernator*, part; Red-winged Blackbird, part; Swamp Blackbird, part; Crimson-shouldered Blackbird, part; Bicolored Blackbird, part; Northwestern Red-wing.

Status—Summer resident of limited section of northwest coast; numbers small and nesting localities few and scattered. Appears fairly commonly as a winter visitant to the southward, probably moving in from areas north of the State.

Geographic range—In summer, narrow coastal strip from the vicinity of Humboldt Bay north to the Oregon line. In winter, San Francisco Bay region, Sacramento Valley and San Joaquin Valley south to Buena Vista Lake, Kern County. Life-zone, in breeding season, Transition. Specific localities of record in breeding range: Requa, Del Norte County [not necessarily nesting locally] (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:23); Trinidad, mouth of Mad River, and Eureka, Humboldt County (van Rossem, Condor, 28, 1926:230; Mailliard, Condor, 18, 1916:199); the Red-wings of Mendocino County reported as *caurinus* are now considered to be closer to *A. p. mailliardorum* (see van Rossem, *loc. cit.*). Some winter stations: Gray Lodge State Game Refuge, Butte County, February 2 (McLean, Condor, 38, 1936:17); Grizzly Island, Solano County, March 28 (Ellis Coll.); Palo Alto, Santa Clara County, March 29, April 27 (Mus. Vert. Zool.); Tracy, San Joaquin County, March 10 (Mus. Vert. Zool.); Modesto, Stanislaus County, October 15, March 19, and Buena Vista Lake, Kern County (van Rossem, *loc. cit.*).

Habitat—Similar to that of other races of *Agelaius phoeniceus*, which see.

Agelaius phoeniceus mailliardorum van Rossem
San Francisco Red-winged Blackbird

Synonyms—Oriolus phaniceus; *Agelaius phoeniceus*, part; *Agelaius gubernator*, part; *Icterus phaeniceus*, part; *Agelaius phoeniceus* var. *gubernator*, part; *Agelaius gubernator californicus*, part; *Agelaius californicus*; *Agelaius phoeniceus caurinus*, part; *Agelaius phoeniceus californicus*, part; *Agelaius phoeniceus neutralis*, part; Red-and-black-shouldered Marsh-Blackbird; Red-winged Blackbird, part; Two-colored Blackbird; Swamp Blackbird, part; Red-shouldered Blackbird, part; Crimson-shouldered Blackbird, part; Bicolored Blackbird, part; California Bicolored Blackbird, part; California Blackbird; Northwestern Red-wing, part; Northwestern Red-winged Blackbird, part; Bicolored Red-wing, part; Bi-colored Red-winged Blackbird, part; San Diego Red-winged Blackbird, part; San Francisco Red-wing. [In addition, several minor variations in spelling of scientific names have occurred.]

Status—Resident; remains within general limits of breeding range, but there is much local movement of seasonal and nomadic character. Common.

Geographic range—Central coastal district, west of eastern slopes of innermost coast ranges, from northern Mendocino County south to central Monterey County. Life-zones, Upper Sonoran and Transition. Altitudes of nesting localities range from sea level up to 2300 feet at Glenbrook [near Cobb P.O.], Lake County, but most of the population is to be found below 1000 feet. Northernmost station: Sherwood, Mendocino County (van Rossem, Condor, 28, 1926:223). Southernmost stations: Carmel River and Soledad, Monterey County, December 8 (van Rossem, *op. cit.*:225; Mus. Vert. Zool.); specimens taken in the fall at Morro, San Luis Obispo County (Mus. Vert. Zool.) are partly referable to *mailliardorum* and may represent variants of a local intergradient population between this race and *neutralis* or dispersal of *mailliardorum* southward from its normal range. Some nesting localities marking the eastern border of the range: Lower Lake, Lake County (Mus. Vert. Zool.); Grizzly Island, Solano County [intergrades] (van Rossem, *loc. cit.*); 1 mile west of Altamont, Alameda County (Mus. Vert. Zool.); Pacheco Pass, Santa Clara County, and Paicines, San Benito County (van Rossem, *loc. cit.*). Red-wings, of unknown race, have been reported from the Farallon Islands in autumn (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:46). Additional references bearing on natural history: Duprey, Condor,

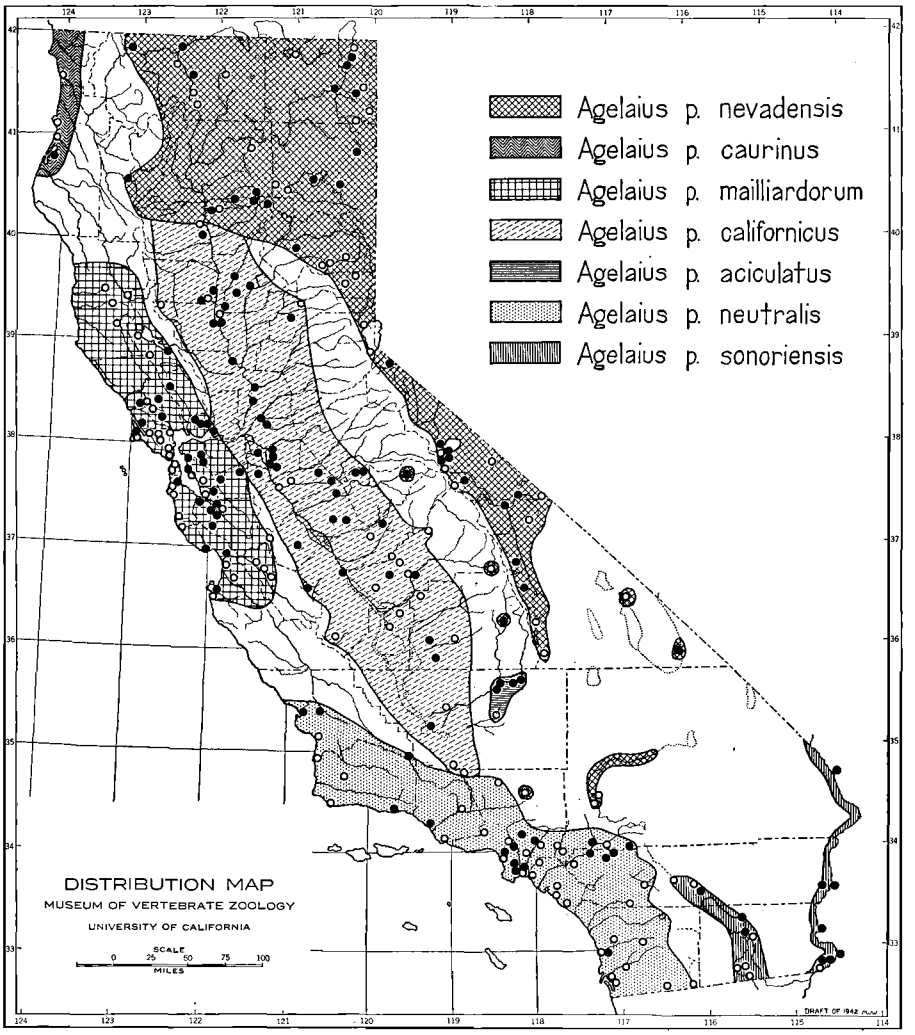

Fig. 44. Distribution of the subspecies of Red-winged Blackbird, *Agelaius phoeniceus*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

9, 1907:149; Mailliard, Condor, 11, 1909:127 and *ibid.*, 12, 1910:63; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:105; Grinnell and Linsdale, Carnegie Inst. Wash., publ. no. 481, 1936:114.

Habitat—In nesting season, fresh- and brackish-water marshes, lake margins, vicinities of lowland streams, wet pastures, and grain and mustard fields near or over moist ground or small seeps of water. In the fog belt restriction to the vicinity of water is not complete. Nesting cover most commonly is provided by tule patches, cattails, willow thickets, mustard, and heavy stands of grasses, and sites range normally from 5 inches to 6 feet above ground; occasionally nests are placed in the crowns of trees

such as oaks (see Duprey, *loc. cit.*). In late summer, autumn and winter flocks visit a wide range of grassland and marsh habitats, but even then show preference for moist ground. Foraging is carried on chiefly from the ground, but seed heads and insects commonly are taken while clinging to upright stems of plants.

Agelaius phoeniceus californicus Nelson
California Red-winged Blackbird

Synonyms—Agelaius gubernator, part; *Agelaius phoeniceus*, part; *Agelaius phoeniceus* var. *gubernator*, part; *Agelaius gubernator californicus*, part; *Agelaius phoeniceus neutralis*, part; *Agelaeus phoniceus*; Red and Black-winged Blackbird; Red-winged Blackbird, part; Red-shouldered Blackbird, part; Swamp Blackbird, part; Crimson-shouldered Blackbird, part; Red-and-black-shouldered Blackbird; Red-and-buff-shouldered Blackbird; Bi-colored Blackbird, part; California Bicolored Blackbird, part; San Diego Redwing, part; Bicolored Red-wing, part; Bi-colored Red-winged Blackbird, part.

Status—Resident; but local movements occur. Abundant.

Geographic range—Sacramento and San Joaquin valleys from Red Bluff, Tehama County, south to Buena Vista Lake, Kern County, and in Sierran foothills. Intergradation with *nevadensis* begins immediately north and east of Red Bluff, and there is a zone of intergradation southward into *neutralis* in southern Kern County and northern Los Angeles County. Life-zones, Lower Sonoran and Upper Sonoran. Altitudinal range, from near sea level in the delta of the San Joaquin and Sacramento rivers up to 5500 feet in Cuddy Valley [intergrades], near Mount Pinos, Kern County. Northernmost record of typical birds: vicinity of Red Bluff, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:384). Western record stations: Fouts Springs, Colusa County (van Rossem, Condor, 28, 1926:222); Tracy, San Joaquin County (Mus. Vert. Zool.); extreme eastern Solano and Contra Costa counties (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:105); 4 miles east of Panoche, San Benito County (Mus. Vert. Zool.); Coalinga, western Fresno County (J. R. Arnold, Condor, 39, 1937:34). Eastern stations: 4 miles north of Oroville, Butte County, and Columbia Hill, Nevada County (van Rossem, *loc. cit.*); 6 miles east of Coulterville, Mariposa County (Mus. Vert. Zool.); Shaver Lake, Fresno County, nesting colony [specimens not taken to prove racial status] (Tyler, Condor, 11, 1909:83). Southern limit arbitrarily set by van Rossem (*op. cit.*:220) in zone of intergradation: Gorman Station in Tejon Pass, extreme northwestern Los Angeles County. Vagrants reported outside of the breeding range of the race in nearly all instances are to be viewed as rare variants in the breeding populations of other races. Possible exceptions are single examples taken June 24, at mouth of Carmel River, Monterey County (*neutralis* or atypical *californicus*), where apparently breeding, and April 13, at Witch Creek, San Diego County (*californicus*). Additional references bearing on food, behavior and distribution: Mailliard, Condor, 12, 1910:63, *ibid.*, 15, 1913:228, and *ibid.*, 23, 1921:67; Beal, U. S. Biol. Surv. Bull. No. 34, 1910:56; H. C. Bryant, Univ. Calif. Publ. Zool., 11, 1912:5, and Auk, 31, 1914:169; Tyler, Pac. Coast Avif. No. 9, 1913:69; Grinnell, Condor, 25, 1923:174; Grinnell and Storer, Animal Life Yosemite, 1924:400ff., part; Soriano, Calif. Fish and Game, 17, 1931:362ff., part.

Habitat—Similar to that of other Red-wings; see account of *A. p. mailliardorum*.

Agelaius phoeniceus aciculatus Mailliard
Kern Red-winged Blackbird

Synonyms—Agelaius phoeniceus, part; Red-winged Blackbird, part; Kern Redwing.

Status—Resident within State, but moves away from nesting grounds in winter. Fairly common locally in summer.

Geographic range—In nesting season, restricted area in the mountain valleys of east-central Kern County. Life-zone, Upper Sonoran. Altitudinal range, 2500 to 3400 feet. Specific localities of record: 5 miles east of Isabella, Weldon and Onyx, on the south fork of the Kern River, Bodfish, and Walker Basin, Kern County (Mailliard, Condor, 17, 1915:13, 228; van Rossem, Condor, 28, 1926:225; Mus. Vert. Zool.). Winter records: Buena Vista Lake, Kern County, December 30, April 14 [not breeding]; a bird of doubtful identity taken at Corona, Riverside County, December 8 (van Rossem, *loc. cit.*; Willett, Pac. Coast Avif. No. 21, 1933:190).

Habitat—Marshy meadows and lagoons which support growths of cattails and sedges. Alfalfa fields developed through irrigation have increased available habitat, at least for foraging activity.

Agelaius phoeniceus neutralis Ridgway
San Diego Red-winged Blackbird

Synonyms—Icterus phaeniceus, part; *Agelaius phaniceus*; *Agelaius phoeniceus*, part; *Agelaius gubernator*, part; *Agelaius phoeniceus* var. *gubernator*, part; *Agelaius phoeniceus longirostris*, part; *Agelaius gubernator californicus*, part; *Agelaius phoeniceus sonoriensis*, part; *Agelaeus neutralis*; Red-winged Blackbird, part; Red-shouldered Blackbird, part; Swamp Blackbird, part; Bi-colored Blackbird, part; Sonoran Red-wing, part; Western Red-wing; San Diego Redwing.

Status—Resident within breeding range, but local seasonal movements occur. Formerly abundant; less plentiful now owing to drainage of marshes.

Geographic range—Pacific slope of southern California from west-central San Luis Obispo County south to Mexican boundary. In San Luis Obispo County and northern Los Angeles County, populations are distinctly intermediate toward *mailliardorum* and *californicus*, respectively. In the interior, limits of range conform closely to desert divides. Life-zones, Lower Sonoran and Upper Sonoran. Altitudes of nesting range from sea level up to 4000 feet, at Hemet Lake, San Jacinto Mountains, Riverside County. Northernmost stations based on specimens: Morro and Santa Margarita, San Luis Obispo County (van Rossem, Condor, 28, 1926:220-221). Stations along northeastern and interior limits of range: Cuyama Valley, Santa Barbara County; Elizabeth Lake, Los Angeles County; Redlands, San Bernardino County; Chino Canyon, Riverside County (possibly intergrades, no specimens taken); Hemet Lake, Riverside County; Witch Creek and Jacumba, San Diego County (van Rossem, *loc. cit.*; Grinnell and Swarth, Univ. Calif. Publ. Zool., 13, 1910:263). Vagrants outside the breeding range of the race: example of *neutralis* or atypical *californicus* taken June 24 at mouth of Carmel River, Monterey County, in range of *mailliardorum* (van Rossem, *loc. cit.*; Bishop, Trans. San Diego Soc. Nat. Hist., 9, 1938:2); typical *neutralis* taken six miles west of Imperial, Imperial County, May 6 (van Rossem, *loc. cit.*). Reports from Santa Catalina Island may relate to *neutralis* (Meadows, Condor, 36, 1934:40). Additional references selected for their bearing on natural history and local distribution: Dawson,

Birds Calif., 1, 1921:115ff., part; Calder, Condor, 28, 1926:240; Lincoln, U. S. Dept. Agr., Tech. Bull. No. 32, 1927:45; Willett, Pac. Coast Avif. No. 21, 1933:152.

Habitat—Tules and cattails, willow thickets, and grain and mustard fields near water. Situations chosen are much like those used by other races of Red-wings. Orchard trees have occasionally been adopted as nest sites in adjustment to changed conditions in agricultural areas.

Agelaius phoeniceus sonoriensis Ridgway
Sonora Red-winged Blackbird

Synonyms—Agelaius gubernator, part; *Agelaius phoeniceus*, part; *Agelaius phoeniceus longirostris*, part; *Agelaius phoeniceus neutralis*, part; *Agelaius phoeniceus thermophilus*; Red-shouldered Blackbird, part; Red-winged Blackbird, part; Sonoran Redwing; San Diego Redwing, part.

Status—Resident; but there is much local shifting of populations with the season; some wandering to points outside the breeding range takes place. Common; numbers and areas occupied have greatly increased with extensive development of irrigation within the range of the race.

Geographic range—Colorado River valley from Nevada line to Mexican boundary and irrigated parts of Imperial and Coachella valleys north and west to vicinity of Indio, Riverside County. Life-zone, Lower Sonoran. Nesting localities all below 600 feet. Northwestern record station: 7 miles west of Indio, Riverside County (van Rossem, Condor, 28, 1926:226-228). Records of stragglers outside of the breeding range: female, taken May 12, near Cima, San Bernardino County (Mus. Vert. Zool.); female, January 10, Redlands, San Bernardino County, and two females, October 15, Jamacha, San Diego County (van Rossem, *loc. cit.*); Willett (Pac. Coast Avif. No. 21, 1933:191) doubts that the last three records indicate actual movement of *sonoriensis* to coastal areas. General references: Colorado River valley, habitat restriction, nesting (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:161); Calexico and Imperial Valley generally, food habits, numbers, concentration points, nesting (Howell, Condor, 24, 1922:60); list of localities (van Rossem, *op. cit.*:219, 228).

Habitat—For nesting, willow thickets, patches of tules and cattails, crowns of tall cottonwoods and the non-native tamarisk trees in the vicinity of water. For foraging, alluvial land, river and ditch banks, marshy ground and cultivated fields, especially grain fields.

Note—If the Red-wings of south-central Arizona prove to be consistently enough different from those of the lower Colorado River valley to merit nomenclatural separation, the name *thermophilus* van Rossem (Trans. San Diego Soc. Nat. Hist., 9, 1942:383) must be used in place of *sonoriensis* for California birds.

Agelaius tricolor (Audubon)
Tricolored Blackbird

Synonyms—Icterus tricolor; *Agelaius phoeniceus* var. *tricolor*; Nuttall Starling; Three Colored Troopial; Three Colored Blackbird; Red and White-winged Blackbird; Red and white-shouldered Blackbird; Tricolor Redwing; Tricolored Red-winged Blackbird.

Status—Resident within State, but partly migratory within Sacramento-San Joaquin drainage system; all populations are in some degree nomadic and in fall and winter

normally leave the immediate vicinity of the nesting colonies. Common to abundant locally by reason of instinctive gregariousness, but not as uniformly present in suitable marsh habitats as Red-winged Blackbirds. Numbers have in general decreased in southern California and increased in the Sacramento Valley as a result of human management of water supplies.

Geographic range—In breeding season, Sacramento and San Joaquin valleys and low foothills of Sierra Nevada from Shasta County south to Kern County, and coast district from Sonoma County south to Mexican boundary; sporadically east of Sierra Nevada-Cascade axis on Modoc Plateau. Winter range same in general outline, but many individuals move northwestward in San Joaquin Valley and south in Sacramento Valley to form concentrations in the delta regions and in vicinities of Suisun, San Pablo and San Francisco bays. Life-zones, Lower Sonoran and Upper Sonoran, rarely Transition. Altitudes of nesting colonies range from near sea level, as near Newark, Alameda County, up to at least 3400 feet, as in Walker Basin, Kern County (Dickey and van Rossem, Condor, 24, 1922:31); probably higher on Modoc Plateau. Northeastern record stations: South Fork of Pit River, 4400 feet, Modoc County, June 5 [probably breeding] (Dawson, Condor, 18, 1916:28); McArthur and Glenburn, Shasta County (Neff, Condor, 36, 1934:42). Northwestern stations: Lakeport, Lake County, and Bodega Head, Sonoma County (Neff, Condor, 39, 1937:61ff.). Reports from Lake Tahoe (Barlow, Condor, 3, 1901:168) and from the Colorado River (Baird, Pac. R. R. Rept., 9, 1858:530) are still thought by us to be doubtful with respect to identity. The Tricolored Blackbird has been a subject of special study in recent years with the result that most aspects of its distribution and behavior are well summarized in a few papers: details of nesting distribution, censuses, review of literature, habitat, economic status (Neff, 1937, *op. cit.*); migration and banding (Neff, Condor, 44, 1942:45); breeding behavior (Lack and Emlen, Condor, 41, 1939:225; Emlen, Condor, 43, 1941: 209). Other references: Mailliard (Condor, 3, 1901:168; Condor, 16, 1914:204); Tyler (Condor, 9, 1907:177; Pac. Coast Avif. No. 9, 1912:70); Beal (U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:59); Dawson (Birds Calif., 1, 1921:104); Willett (Pac. Coast Avif. No. 21, 1933:153).

Habitat—In nesting season, vicinity of fresh water, especially marshy areas. The most favored sites for colonies are heavy growths of cattails and tules, but even when these are available, other vegetation may be resorted to for nesting: sedges, nettles, willows, thistles, mustard, blackberry, wild rose, foxtail grass, barley, etc. (see Neff, 1937, *op. cit.*). Nests have even been found on the ground. One essential would seem to be provision at the site of the colony for a large number of individuals. Nests apparently must be close together and pairs usually in excess of 50 in order to meet the instinctive requirements of the species. Foraging grounds about the colony may be utilized even if several miles distant. Flooded lands, margins of ponds, and grassy fields, in summer and winter, constitute typical foraging terrain.

Icterus spurius (Linnaeus)
Orchard Oriole

Status—Rare vagrant from eastward. Known only from female found dead under wires, after a thunder-storm, in Eureka, Humboldt County, October 6, 1932 (J. M. Davis, Condor, 35, 1933:119).

Icterus cucullatus californicus (Lesson)
California Hooded Oriole

Synonyms—Pendulinus californicus; *Pendulinus californianus*; *Icterus cucullatus*; *Icterus californicus*; *Icterus cucullatus nelsoni*; *Icterus nelsoni*; Hooded Oriole; Arizona Hooded Oriole.

Status—Summer resident from late March through early September; arrives in middle or late March in Los Angeles area, but apparently later in northern part of range. Rare winter resident in coastal southern California. Common locally in summer, southerly; sparse to rare in central sector of State. Range has been extended northward in recent years, most notably to include Santa Cruz and the San Francisco Bay region since 1930.

Geographic range—Coast district from south arm of San Francisco Bay south to Mexican boundary, including Santa Catalina Island, but only sporadically north of Santa Barbara County; San Joaquin Valley north to vicinity of Modesto; Colorado desert and eastern Mohave Desert north to Providence Mountains and Clark Mountain, eastern San Bernardino County, where probably breeding; occasional in Death Valley, Inyo County. Life-zones, Lower and Upper Sonoran, but less commonly the latter. Probable breeding stations range in altitude from —189 feet at Mecca, Riverside County, up to 5000 feet at Mescal Spring, Clark Mountain, San Bernardino County (Mus. Vert. Zool.). Record stations in central California: Auburn, Placer County, undocumented and somewhat doubtful report (Bendire, Life Hist. N. Amer. Birds, 2, 1895:476); Wildcat Creek, Contra Costa County, August 1, 8, 1937, Oakland, Alameda County, nesting, June 22, 1941, and San Leandro, Alameda County (L. A. Stephens, Gull, 21, 1939:September [p. 1]; Seibert, Condor, 44, 1942:70, 71); San Jose, Santa Clara County, July 21, 1930 (Pickwell, Condor, 34, 1932:48); Santa Cruz, nesting in 1932 (Mus. Vert. Zool.); Modesto, Stanislaus County, May 1, 1937 (L. Miller MS); Fresno, Fresno County (Wear, Condor, 17, 1915:234); Lindsay, Tulare County (M. I. Compton, Gull, 14, 1932:June [p. 2]; Paso Robles, San Luis Obispo County, April 22, 1912 (Dawson, Birds Calif., 2, 1921:89); Death Valley, Inyo County, April 8, 1920, May 5, 1934, July 5, 1936 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923: 80; Gilman, Condor, 37, 1935:242, and *ibid.*, 39, 1937:90). Selected references on natural history and distribution in southern California: Santa Barbara, Santa Barbara County (Mailliard, Condor, 5, 1903:99); Mint Canyon, northern Los Angeles County (A. H. Miller MS; Mus. Vert. Zool.); Los Angeles area, March 6, September 20, and San Nicolas Island, April 28 (Willett, Pac. Coast Avif. No. 21, 1933:153); Azusa, Los Angeles County, habits (Woods, Condor, 34, 1932:238, *ibid.*, 36, 1934, 32, and *ibid.*, 38, 1936:221); lower levels of San Jacinto Mountain area (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1933:265); nesting habits in Riverside and San Diego counties (F. M. Bailey, Auk, 27, 1910:33); Avalon, Santa Catalina Island, nesting (Howell, Pac. Coast Avif. No. 12, 1917:72); Twentynine Palms, San Bernardino County (F. Carter, Condor, 39, 1937:216); near Pilot Knob, Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:163). Parasitism by cowbird (Rowley, Condor, 32, 1930:130); competition from House Finches (Illingworth, Condor, 3, 1901:98; Shepardson, Condor, 17, 1915:101); nesting habits generally (Bendire, *loc. cit.*); feeding habits (Ross, Condor, 26, 1924:226; Gander, Condor, 30, 1928:362, and *ibid.*, 31, 1929:250). Winter records at Pasadena (Michener and Michener, Condor, 34, 1932: 208); also, east Pasadena, February 19, 1943, Los Angeles, February 5, 1941, and Nigger Slough, January 13, 1940, all in Los Angeles County (H. L. Cogswell MS).

Habitat—Originally, broad-leafed woodland along water courses, including canyons and dry arroyos; native fan palms, willows, cottonwoods and especially sycamores provided much of the essential plant habitat in the breeding season. With widespread planting of palms and of other large trees about cities and ranches, these orioles have invaded many new localities and in such artificial woodlands have found a satisfactory substitute for natural conditions. Fan palms are most favored, especially if tall, but other trees such as eucalyptus, pepper, walnut, live oak and even cypress may be used for nesting. Native and many introduced flowers provide sources of nectar; this and fruit supplement the insect diet in the summer. Fan palms seem to be favored because of opportunity for secure nest attachment well above ground, in shaded places, and because of the supply of palm fibers for the nests.

Icterus pustulatus microstictus Griscom
Western Scarlet-headed Oriole

Synonyms—Icterus pustulatus; Scarlet-headed Oriole.

Status—Rare vagrant from southeastward. Known only from a male in first-year plumage taken at Murray Dam, near La Mesa, San Diego County, on May 1, 1931, by Frank F. Gander (Huey, Auk, 48, 1931:606). The bird was in a sycamore tree.

Icterus parisorum Bonaparte
Scott Oriole

Status—Summer resident, arriving in late March and April; common. Migrants and stragglers detected occasionally west of normal breeding range, especially in April and early May; occurs rarely in winter.

Geographic range—As breeding, Inyo region and Mohave Desert, in suitable plant associations, and along eastern slopes of mountains of southern California bordering Colorado Desert; on Pacific slope locally in Walker Pass, Kern County, and in San Diego County rarely to the vicinity of San Diego. Stray migrants detected in coastal southern California north to Santa Barbara. Life-zones, Lower and Upper Sonoran. Known breeding localities range from 500 feet, near San Diego, up to about 8000 feet, as in Coso Mountains, Inyo County. Northern record stations: Inyo, Panamint (Cottonwood Canyon) and Grapevine mountains, Inyo County, but north also to White Mountains (record in Nevada at north end of range), Mono County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:76). Western breeding stations: west slope of Walker Pass (Fisher, *loc. cit.*; Mus. Vert. Zool.); Fairmont, northern Los Angeles County (Grinnell, Condor, 12, 1910:46); Telegraph Canyon, near San Diego (Browne, Auk, 8, 1891: 238). Other localities representative of different segments of range in summer: Kingston Range, Clark Mountain, and Providence Mountains, eastern San Bernardino County (Mus. Vert. Zool.; A. H. Miller, Condor, 42, 1940:163; Stephens, Condor, 5, 1903:102); Victorville, San Bernardino County (Willett, Pac. Coast Avif. No. 21, 1933:153); Twentynine Palms, San Bernardino County (F. Carter, Condor, 39, 1937: 217); Palm Canyon, Dos Palmos and Piñon Flat, all in San Jacinto Mountain area, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:264); San Felipe Valley, La Puerta, and Campo, eastern San Diego County (Mus. Vert. Zool.;

Belding, Land Birds Pac. Dist., 1890:125). Migrants and vagrants in coastal California: Santa Barbara, Santa Barbara County, May 7, 1913 (Dawson, Condor, 15, 1913:158); Los Angeles, April 19, 1895 (Grinnell, Pasadena Acad. Sci., publ. 2, 1898: 33); Glendora, Los Angeles County, May 6, 1904 (Grinnell, Condor, 12, 1910:46); Reche Canyon, near San Bernardino, April 1, 1895 (Thurber, Auk, 13, 1896:265); Riverside, Riverside County, May 8, 1896 (Willett, Pac. Coast Avif. No. 7, 1912:71); San Diego, San Diego County, September 2, 1914 (F. Stephens, Condor, 17, 1915:96) and late April (K. Stephens, Condor, 8, 1906:130). Winter records: Garnsey, San Fernando Valley, Los Angeles County, November 2, 1903, possibly a late migrant (Daggett, Condor, 6, 1904:22); San Diego, January 8, 1936 (Huey, Condor, 38, 1936:121) and February 26, 1916 (Stephens, Condor, 18, 1916:129).

Habitat—Arid woodlands of desert slopes and plateaus, thus principally in California the tree yucca "forests" and the piñon-juniper association. Palms, agaves and smaller species of yuccas also prove attractive to this oriole. Live oaks and other broadleafed trees occasionally serve for nesting, but yuccas and piñons normally are resorted to. Cactus, agave, and yucca fruits form an important food supply and flowers of these and other plants are probed for nectar. Additionally the birds forage widely out through low desert scrub in search of insects near or on the ground. Nest sites and singing posts may be as high as the plant growth permits, but often the nests are no more than six feet from the ground. A rigid suspension, particularly as afforded by yuccas, seems important for nesting, probably as a safeguard against tipping of the relatively shallow-cupped nests by desert winds.

Icterus bullockii (Swainson)
Bullock Oriole

Synonyms—Hyphantes bullocki; *Xanthornis bullockii*; *Yphantes bullockii*; *Icterus bullocki bullocki*; Western Oriole.

Status—Summer visitant and migrant. Common in both rôles; abundant in some sections of interior as in Great Valley. Arrives in last half of March and in early April; some migrants move through eastern California as late as mid-May. Fall migration occurs chiefly in August, but extends into first half of September. Adult males precede females in both migrations. In midsummer, the birds break territorial bonds and wander from breeding areas well in advance of fall departure. Rarely winters in State.

Geographic range—As breeding, all sections of State except the islands, in coastal fog belt north of Sonoma County and areas of continuous montane forest. In migration occurs also on Santa Barbara Islands, in arid portions of southwestern deserts and even in high mountains. Life-zones, Lower Sonoran, Upper Sonoran, and lower Transition. Altitudinal range of nesting stations, —180 feet, as at Furnace Creek Ranch, Death Valley, Inyo County, up to 6500 feet as at Mono Lake, Mono County. Western records of occurrence in summer in northern California: Scott Valley and Mayten, Siskiyou County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:383); South Fork Mountain, Trinity County (Mus. Vert. Zool.); Nash, Cahto and Willits, Mendocino County (Mus. Vert. Zool.; McGregor, Nidologist, 3, 1896:148); Bodega Bay, Sonoma County (Linsdale, Bird-Lore, 42, 1940:391). Selected references representative of distribution in breeding season, particularly as bearing on natural history: Sisson [=Mt. Shasta City], Siskiyou County (H. C. Bryant, Condor, 13, 1911:205); Surprise Valley, Modoc

County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:314); Eagle Lake to Box Springs, Lassen County, and Red Bluff to Manton, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:385); McCloud River, Shasta County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:214); Clear Lake, Lake County (N. Stone, Condor, 43, 1941:121); Yuba County (L. Bolander, Condor, 9, 1907:25); near Pinole, Contra Costa County, territory (A. H. Miller, Wilson Bull., 43, 1931:102); San Francisco Bay region, from Santa Rosa, Sonoma County, to Los Gatos, Santa Clara County, chiefly in drier, interior portions (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927: 106); Hayward, Alameda County, honey eating (Emerson, Condor, 6, 1904:78); 5 miles west of Watsonville, Santa Cruz County (Hawbecker, Calif. Fish and Game, 26, 1940:276); Los Baños, Merced County (H. C. Bryant, Univ. Calif. Publ. Zool., 11, 1912:5); Yosemite region (Grinnell and Storer, Animal Life Yosemite, 1924:411); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:72); Poso Range, Kern County (Sheldon, Condor, 11, 1909:171); Santa Ana Canyon, San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:87); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:266); Escondido and San Diego, San Diego County (Sharp, Condor, 5, 1903:38; Gander, Condor, 30, 1928:362); Death Valley, Inyo County (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:80); near Yermo, San Bernardino County (Lamb, Condor, 14, 1912:37); Colorado River valley, Needles to Pilot Knob, San Bernardino County (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:164); near Coachella, Riverside County (M. D. Clary, Bird-Banding, 2, 1931:188). General references: food (Beal, U. S. Biol. Surv., Bull. 34, 1910:68); nesting habits (Illingworth, Condor, 3, 1901:98); postbreeding dispersal (Tyler, *loc. cit.*; Robertson, Condor, 35, 1933:134). Unusual localities and extreme dates for migrants and vagrants: March 1, San Diego (Cooper, Proc. U. S. Nat. Mus., 2, 1880:249); September 21, Buena Park, Orange County (Willett, Pac. Coast Avif. No. 21, 1933:154); September 8, Yosemite Valley (C. W. Michael, Condor, 27, 1925:112); April 21-25, Florence Lake, 7300 feet, Fresno County (L. M. Lofberg, Condor, 30, 1928:314); Hayward, Alameda County, November 16, 1881 (Calif. Acad. Sci.); Santa Cruz Island, San Nicolas, Santa Catalina and San Clemente islands, spring migrants (Howell, Pac. Coast Avif. No. 12, 1917:72; Meadows, Condor, 32, 1930:212); at sea southwest of San Clemente Island, August 30 (L. Miller, Condor, 38, 1936:16). Winter records: Durham, Butte County, January 29, 1939, December 24-29, 1940, specimen taken (England, Condor, 43, 1941:116); Drytown, Amador County, January 26, 1896 (Calif. Acad. Sci.); Los Angeles, January 27, 30, 1911 (Jay, Condor, 13, 1911:75).

Habitat—Riparian and oak woodland, especially where trees are large and well spaced or in isolated clumps. Sycamores, cottonwoods, willows, and deciduous oaks seem to be especially favored for nesting, but live oaks, orchard trees, and occasionally conifers are used. Adjacent open fields, grass or bush covered, serve for foraging in addition to the leafy crowns of the trees. Nests are placed in the foliage six feet or more above the ground and often at middle or upper levels in the tree. Water usually is available near the nest site, but its presence does not in itself seem to be a limiting factor in distribution.

Euphagus carolinus (P. L. S. Müller)
Rusty Blackbird

Synonym—Scolecophagus carolinus.

Status—Rare winter visitant. Five specimens have been taken in November and December as follows: Amador County, December 15, 1895 (Mailliard, Condor, 6, 1904:16); south fork of Kern River, Kern County, December 16, 1937 (Stager, Condor, 40, 1938:127); Santa Rosa Island, November 6, 1927 (Dickey, Condor, 30, 1928: 162); San Clemente Island, November 20, 1908 (Linton, Condor, 11, 1909:194; Grinnell, Pac. Coast Avif. No. 11, 1915:105); Jamacha, San Diego County, November 14, 1925 (Sefton, Condor, 28, 1926:99).

Euphagus cyanocephalus (Wagler)
Brewer Blackbird

Synonyms—Scolecophagus ferrugineus; Quiscalus mexicanus; Quiscalus purpureus; Scolecophagus mexicanus; Scolecophagus cyanocephalus; Euphagus cyanocephalus minusculus; Euphagus cyanocephalus cyanocephalus; Euphagus cyanocephalus aliastus; Common Blackbird; Rusty Blackbird, part; Rusty Maggot-eater; Purple Coat-tail Gracle; Mexican Grackle; Western Blackbird; Western Grackle; Blue-headed Grackle; California Brewer Blackbird; Western Brewer Blackbird.

Status—In general, resident, although locally nomadic; partial southward migration occurs east of the Sierra Nevada and all birds leave the higher mountain meadows in winter. On southeastern deserts, winter visitant only. Abundant; in some areas apparently has increased as a result of human occupancy of the land.

Geographic range—In summer, entire length of State, and from coast to eastern border except in desert areas from eastern San Bernardino County southward; not reported nesting on any of the islands. Life-zones, Lower Sonoran to Canadian. Nesting stations range from near sea level, as at Lake Merced, San Francisco, up to 7300 feet, at Florence Lake, Fresno County; in summer young and adults move up slope to higher altitudes. References selected for bearing on natural history and distribution in summer: Hoopa Valley, Humboldt County (W. K. Fisher, Condor, 6, 1904:51); Carlotta, Humboldt County (Wilder, Condor, 18, 1916:128); Sisson [Mt. Shasta City], Siskiyou County (H. C. Bryant, Condor, 13, 1911:201); Modoc County in general (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:314); Lassen section, from Red Bluff, Tehama County, to Box Springs, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:386); Lake Tahoe, Eldorado County (Ray, Condor, 11, 1909: 194; Condor, 20, 1918:72); Carmel, Monterey County (Williams, Gull, 25, 1943:43); Snelling, Merced County, up to Yosemite Valley in nesting season (Grinnell and Storer, Animal Life Yosemite, 1924:413); Florence Lake, Fresno County (L. M. Lofberg, Condor, 30, 1928:312); Coalinga, Fresno County (J. R. Arnold, Condor, 39, 1937: 34); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:116); June and Mono lakes, Mono County (Rowley, Condor, 22, 1920:153); Olancha, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:78); southern California in general, up to 7000 feet (Willett, Pac. Coast Avif. No. 21, 1933: 155); Twin Oaks, San Diego County (F. A. Merriam, Auk, 13, 1896:120); food in general (Soriano, Calif. Fish and Game, 17, 1931:362ff.). Significant references concerning migration and localities of occurrence other than in breeding season: Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:47); altitudinal migra-

tion from Florence Lake, Fresno County, to San Joaquin Valley (L. M. Lofberg, *loc. cit.*; Condor, 35, 1933:243); partial southward and westward migration (Grinnell, Auk, 48, 1931:30); San Miguel, Santa Catalina, and San Nicolas islands (Howell, Pac. Coast Avif. No. 12, 1917:72; Meadows, Condor, 32, 1930:211); Death Valley, Inyo County, January 25, 27 (A. K. Fisher, *loc. cit.*); Yermo, San Bernardino County, October to April (Lamb, Condor, 14, 1912:37); Brawley, Imperial County, December, January (van Rossem, Condor, 13, 1911:132); Colorado River valley in winter (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:164).

Habitat—In the spring season, grassland, meadows, or moist lake and stream margins, with trees or tall bushes in the vicinity which may be used for lookouts, roosting and nesting. Foraging on the ground, especially in fall and winter, is not limited to moist situations, the tolerance of terrain with respect to dryness being greater than that of the Red-wing Blackbirds with which this species frequently is associated in feeding flocks. Nest emplacements vary greatly; occasionally the ground is used and numerous instances of nesting in crevices in stumps have been reported. Most favored nest sites are in dense masses of foliage, especially of conifers.

Note—Gradients in wing length, stoutness of bill, and tone of coloration exist in this species, with larger and greener birds occurring in the Rocky Mountain and Great Basin regions in contrast to coastal California. A recent survey of all material now available at the Museum of Vertebrate Zoology substantiates the main facts of this differentiation as earlier reported by one of us (Grinnell, Condor, 22, 1920:152). A question remains regarding the practicability of nomenclature in this case. Extreme populations in the gradient can be separated only to the extent of about 60 per cent because of high individual variation, and large areas are occupied by groups showing intermediate averages. If the terminal populations were more sharply set off, names for the extremes would be useful and would at the same time appropriately call attention to a differentiation that in any event is biologically significant. In view of the incipiency of differentiation in the species, we are not now using the names *Euphagus cyanocephalus minusculus* and *E. c. aliastus* (see also, Willett, *loc. cit.*).

Molothrus ater artemisiae Grinnell
Nevada Brown-headed Cowbird

Synonyms—Molothrus pecoris, part; *Molothrus ater*, part; *Molothrus ater ater*, part; Cow Blackbird, part; Cowbird, part; Nevada Cowbird, part; Sagebrush Cowbird, part.

Status—Summer resident, locally common, in Great Basin territory. Migrant, vagrant or winter visitant sparingly in western and southern portions of State. Numbers variable and seasonal movements irregular or obscure.

Geographic range—In summer (assumed to be breeding): east side of Sierra Nevada and Cascade Mountains from Oregon line south to central Inyo County where range of *M. a. obscurus* is met. In winter: Lower Sacramento Valley (Yuba, Sutter and Glenn counties (Neff, Condor, 33, 1931:250). Life-zones (breeding), chiefly Upper Sonoran; enters Transition, and even Canadian, locally, where adjacent to Upper Sonoran. Altitudes of known occurrence in summer, 3900 feet, at Independence, Inyo County, up to 11,600 feet, on McAfee Meadow, White Mountains, Mono County (Mus. Vert. Zool.); at other than supposed breeding places, down to —178 feet, in Death Valley. Principal summer record stations reported for east of the Sierra: Lava Beds National Monument, Siskiyou County (Bond, Condor, 41, 1939:58); Alturas and Surprise Valley, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:313); eggs found in vicinity of Mono Lake, Mono County (Grinnell and Storer, Animal Life Yosemite,

1924:399; J. B. Dixon, Condor, 36, 1934:36; Friedmann, Wilson Bull., 46, 1934:109; Rowley, Condor, 41, 1939:241, fig. 50); Laws, Inyo County (Dawson, Jour. Mus. Comp Ool., 2, 1922:50); Independence, Inyo County (Hoffman, Bull. U. S. Geol. Geog. Surv. Terr., 6, no. 2, 1881:229; Mus. Vert. Zool.). Some records of migrants or vagrants: Death Valley, Inyo County, April, and June 20 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:76); near Cima, San Bernardino County, May 12 (Mus. Vert. Zool.); Yermo, Mohave River, San Bernardino County, June 7 (Lamb, Condor, 14, 1912:37); Neighbors, Riverside County (Dickey and van Rossem, Condor, 24, 1922: 207); Borego Spring, eastern San Diego County, April 30 (Grinnell, Pac. Coast Avif. No. 11, 1915:101); Farallon Islands, June 2 (Dawson, Condor, 13, 1911:181).

Habitat—In summer range, pastures, meadowlands, and tall sagebrush and tracts of willows in near vicinity of water. Birds known to have been victimized in California, Pileolated Warbler and Green-tailed Towhee.

Molothrus ater obscurus (Gmelin)
Dwarf Brown-headed Cowbird

Synonyms—Icterus pecoris; *Molothrus pecoris*, part; *Molothrus ater*, part; *Molothrus ater ater*, part; *Molothrus ater artemisiae*, part; *Molothrus ater californicus*; Cow Troopial; Cow Blackbird, part; Common Cowbird; Cowbird, part; Dwarf Cowbird; Sagebrush Cowbird, part; California Cowbird; Nevada Cowbird, part.

Status—Permanently resident, though there is considerable shifting of populations locally, with dispersal to breeding stations in the spring. Now common or even abundant in places. Has increased phenomenally in southwestern California since about 1915, in the San Francisco Bay region since about 1922, and in the Sacramento Valley since 1927, if not earlier; however, old records indicate that some cowbirds have been present throughout historical times in each of the major areas now so well populated.

Geographic range—Imperial Valley and valley of the Colorado River from the Mexican line north, here and there at oases, over the deserts as far as central Inyo County; the Pacific slope of southern California northwest from San Diego through the coast counties to San Francisco Bay, but not in the northern humid coast belt north of Marin County; valleys of inner northern coast district; the San Joaquin and Sacramento valleys north to Shasta County. Life-zones, Lower Sonoran and Upper Sonoran; extends into Transition, as in Yosemite Valley; most numerous in Lower Sonoran. Altitudes of breeding occurrence extend from 200 feet below sea level, near Mecca, Riverside County, up to 5100 feet in Cedar Canyon, Providence Mountains, San Bernardino County (Mus. Vert. Zool.). Northernmost stations of occurrence: Beegum, Tehama County, and Hayfork and Hyampom, Trinity County, in 1943 (A. H. Miller MS); Inverness and Point Reyes Station, Marin County (G. Bolander, L. A. Stephens, Gull, 18, 1936: June [2]). Other citations representative of different segments of the range: vicinity of Marysville, Yuba County, abundance (Neff, Condor, 33, 1931:252); San Francisco Bay region, review of early records, increases (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:104; A. H. Miller, Condor, 37, 1935:217); Yosemite Valley, Mariposa County, increase (E. Michael, Yosemite Nature Notes, 18, 1939:96); Salinas, Monterey County (Sherwood, Oologist, 46, 1929:3); Clovis and Wheatville, Fresno County, scarce in 1913 (Tyler, Pac. Coast Avif. No. 9, 1913:67); Coalinga, western Fresno County (Arnold, Condor, 39, 1937:34); Death Valley, Inyo County (Gilman,

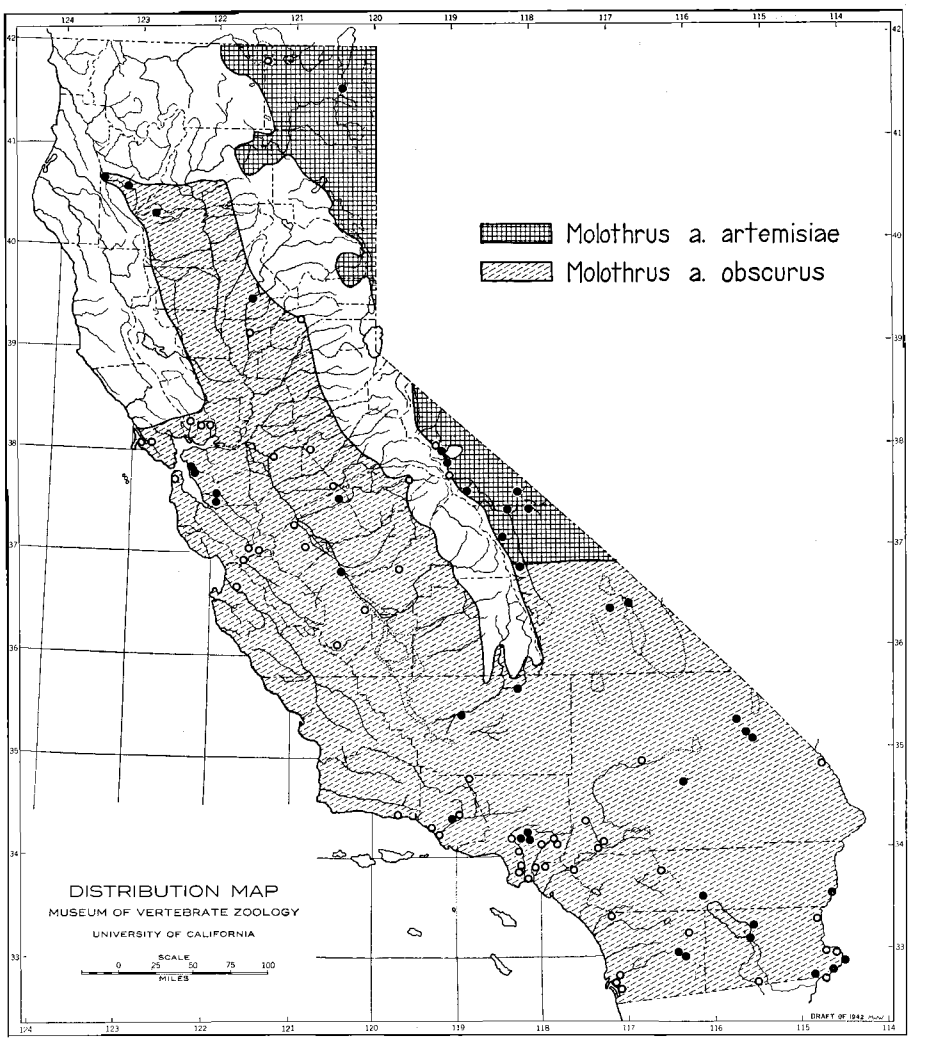

Fig. 45. Distribution of the subspecies of Brown-headed Cowbird, *Molothrus ater*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Condor, 39, 1937:90); Bakersfield, and Weldon on south fork of Kern River, Kern County (Swarth, Condor, 13, 1911:161; Grinnell, Pac. Coast Avif. No. 11, 1915:101); review of increase in numbers in coastal southern California (Willett, Pac. Coast Avif. No. 21, 1933:155); Mecca, Riverside County (van Rossem, Condor, 13, 1911:132, 135); Needles, San Bernardino County (Hollister, Auk, 25, 1908:460); Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:156). Vagrant on San Miguel Island, October 3, 1927 (Mus. Vert. Zool.).

Habitat—River bottomlands primarily, especially where pastures or meadowlands lie adjacent to tracts of willows and cottonwoods; also invades orchard and suburban areas even where closely built up, as in Los Angeles and Pasadena. Forages mostly on

open ground, often in vicinity of cattle, but roosts in trees. In breeding season seeks fosterers mostly among those passerine species which nest in riparian growths; but the total number of birds in the nests of which this cowbirds' eggs have been found in California is very large and inclusive of species of almost every ecologic niche anywhere in the general breeding area of the cowbirds (see Hanna, Condor, 30, 1928:161; Friedmann, The Cowbirds, 1929:205-260; Rowley, Condor, 32, 1930:130; Friedmann, Auk, 48, 1931:60-65, Wilson Bull., 46, 1934:25-36, 104-114, and Auk, 55, 1938:46ff.).

Note—Intergrades toward the race *artemisiae* occur in the San Joaquin and Owens valleys, and the name *californicus* has been proposed for an intergradient population inclusive of them (Dickey and van Rossem, Condor, 24, 1922:208; but see Willett, Pac. Coast Avif. No. 21, 1933:156, Grinnell, Condor, 36, 1934:218, A. H. Miller, *loc. cit.*, and Behle, Condor, 39, 1937:227). Birds characteristic of both *artemisiae* and *obscurus* occur in summer in the vicinity of Independence in Owens Valley.

Piranga ludoviciana (Wilson)
Western Tanager

Synonyms—Pyranga ludoviciana; Louisiana Tanager.

Status—Summer resident from May through August; common. Widespread migrant in passage to and from mountains and more northern regions, occasionally locally abundant; spring migration from late April to end of May; fall movements occur chiefly in last half of August and first half of September. Rare winter resident in southern California.

Geographic range—As breeding, in general, forested areas of mountains of entire State; less common toward coast. Specifically, the Cascade Mountains, Sierra Nevada and higher mountains of southern California southeast to San Diego County; mountain ranges east of Sierra Nevada, even in piñon association, from Modoc County south to central Inyo County; coast ranges, sparingly and usually exclusive of fog belt, from Siskiyou and Trinity mountains south to Santa Barbara County. Occasional strays appear through the summer outside of known breeding range. In migrations, entire breadth and length of State, including the coastal islands. Winter records known only from Santa Barbara and San Diego areas. Life-zones in summer, principally Transition and Canadian; Upper Sonoran of foothills and mountains is occupied sparsely and irregularly and some birds occur in Hudsonian Zone. Altitudes of nesting stations range from sea level, as at Napa, Napa County, up to at least 9000 feet, as at Mammoth Lakes, Mono County. Selected references to localities of summer residence: Hoopa Valley, Humboldt County (W. K. Fisher, Condor, 6, 1904:51); Trinity Mountain area (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:385); Cahto, Mendocino County (McGregor, Nidologist, 3, 1896:148); Seaview and Mark West Springs, Sonoma County (Mailliard, Condor, 13, 1911:50); Bray, Yreka, etc., Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:93); Modoc County generally (Mailliard, *ibid.*, 16, 1927:327); Lassen section from Payne Creek P. O., Tehama County, east to Eagle Lake, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930: 390); Fyffe, to Mount Tallac, Eldorado County (Barlow and Price, Condor, 3, 1901: 174); middle fork of Stanislaus River, Tuolumne County (Wiggins and Wiggins, Condor, 41, 1939:80); Yosemite National Park and Mono Lake (Grinnell and Storer, Animal Life Yosemite, 1924:493); Panamint Mountains, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:108); near Cordelia, Solano County (Stoner, Condor, 34, 1932:260); Napa, Napa County (Bickford, Condor, 31, 1929:35); Alum Rock Park,

San Jose, Santa Clara County, in live oaks (Peterson, Condor, 37, 1935:286); Alma, Santa Clara County, in mid-June (Storer, Condor, 22, 1920:161); Santa Lucia Peak, Monterey County (Pemberton and Carriger, Condor, 17, 1915:199); canyon near Santa Barbara, Santa Barbara County (Dawson, Birds Calif., 1, 1924:437); Santa Ynez Mountains, Ventura County (Pemberton, Condor, 12, 1910:18); San Gabriel, San Bernardino and Palomar mountains in southern California (Willett, Pac. Coast Avif. No. 21, 1933:156); San Jacinto Mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:285); Cuyamaca Mountains, San Diego County, in July (von Bloeker, Condor, 30, 1928:126). Significant data and reviews pertaining to migration: migratory wave beginning April 16 at Auburn, Placer County (Adams, Condor, 11, 1909:70); first arrivals in vicinity of Stockton, San Joaquin County, May 3-7 (Belding, Land Birds Pac. Dist., 1890:181); San Francisco Bay region, April 28, October 4, and on Farallon Islands, September 13 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:126); Oakland, Alameda County, November 2 (Seibert, Condor, 44, 1942:71); migratory wave at Hayward, Alameda County (Emerson, Condor, 5, 1903:64); extreme dates for the mainland of southern California, April 7, October 10 (Willett, *loc. cit.*); Santa Cruz Island, September 3, and San Clemente Island, March 23 (Howell, Pac. Coast Avif. No. 12, 1917:87); Anacapa Island, May 19-20 (L. Miller, Condor, 30, 1928:325); Santa Catalina Island (Meadows, Condor, 31, 1929:130); Twentynine Palms, San Bernardino County, from before April 13 to May 14 (F. Carter, Condor, 39, 1937:217); Colorado River valley, Imperial County, April 25 to May 15 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:182). Winter records: Santa Barbara, November to February 10, 1931, small flock (Spaulding, Condor, 33, 1931:129); National City, near San Diego, February 12 to April 10, 1922, February 1 to 3, 1927 (T. F. Johnson, Condor, 24, 1922:136, and *ibid.*, 30, 1928:326).

Habitat—Fairly open coniferous forests with their associated broad-leafed trees; less commonly dense live oak or piñon woodland. A similar spacing of trees is afforded in these two kinds of habitat. Dense, poorly lighted forests are avoided or sparsely occupied, and at the other extreme, woodlands are avoided in which the trees are so far apart as to necessitate prolonged exposure in flight and high insolation of ground cover and leafy canopy. Foraging in the nesting season is chiefly in the trees, where insects are sought among the larger twigs and branches by deliberate movements and in the air and foliage masses by fly-catching tactics. Song posts and nest sites normally range from middle heights up to the crowns of the trees. In the late summer and in the migrations, fruit-eating is common and then, as occasionally at other times, these tanagers may forage on or near the ground.

Piranga olivacea (Gmelin)
Scarlet Tanager

Synonym—Piranga erythromelas.

Status—Rare vagrant from eastward. Known only from a male in first fall plumage found dead on San Nicolas Island, October 30, 1929 (Miller and Miller, Condor, 32, 1930:217; now no. 54485 Mus. Vert. Zool.).

Piranga rubra rubra (Linnaeus)
Eastern Summer Tanager

Synonyms—Piranga rubra; Summer Tanager.

Status—Rare vagrant from the East in periods of spring and fall migration; recurrence of records indicates that at least some of these tanagers reach the State naturally and do not represent escaped cage birds. Five records: Arroyo Seco, Los Angeles, specimens taken March 2 and August 29, 1919 (L. Miller, Condor, 22, 1920:78); Westwood district, Los Angeles, a Summer Tanager, probably of this race, seen November 8, 1931 (L. Miller, Condor, 34, 1932:49); Point Loma, San Diego, specimen taken September 19, 1932 (Huey, Condor, 35, 1933:125); Wilmington, Los Angeles County, specimen preserved March 14, 1936 (Willett, Condor, 39, 1937:39).

Piranga rubra cooperi Ridgway
Cooper Summer Tanager

Synonyms—Pyranga aestiva cooperi; *Piranga rubra hueyi*; Cooper Tanager; Cooper Red-bird.

Status—Summer resident of southeastern border of State, arriving in late April; common within restricted range and habitat. Rare vagrant to coastal southern California.

Geographic range—As breeding, Colorado River valley from Nevada line south to Mexican boundary. Life-zone, Lower Sonoran; elevations of nesting areas all below 600 feet. Accounts of occurrence along the Colorado River: Needles north to Nevada line (Hollister, Auk, 25, 1908:461); 25 miles below Ehrenberg (Stephens, Condor, 5, 1903:104); 8 miles below Picacho to Pilot Knob (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:182). Records from the coastal district based on specimens or birds in hand: Santa Barbara, spring of 1885, specimen not known to have been critically determined (Streator, Ornith. and Ool., 11, 1886:52); Hueneme, Ventura County, February 23, 1918, specimen in Los Angeles Museum (Willett, Pac. Coast Avif. No. 21, 1933:158); Pasadena, Los Angeles County, February 7 to 22, 1935, birds banded and compared with skins (Michener and Michener, Condor, 40, 1938:39); San Clemente Island, October 11, 1907, specimen in Thayer Collection, examined by Grinnell (Linton, Condor, 10, 1908:85). Additionally there are at least five sight records of this species of tanager in southwestern California which can not properly be assigned as to race.

Habitat—In breeding range, willow-cottonwood association of river bottoms. The birds frequent the foliage of these trees, which afford them concealment and forage places.

Note—Specimens at hand do not support the view (see van Rossem, Trans. San Diego Soc. Nat. Hist., 9, 1938:13) that the Summer Tanagers of the Colorado River valley are racially separable from those of eastern Arizona.

Hedymeles ludovicianus (Linnaeus)
Rose-breasted Grosbeak

Synonym—Zamelodia ludoviciana.

Status—Rare, sporadic visitant. Specifically recorded on five different occasions: Myer's ranch, south fork of Eel River, Humboldt County, July 1, 1897, two specimens

saved (McLain, Auk, 15, 1898:190); Quincy, Plumas County, specimen taken August 5, 1891 (Grinnell, Condor, 33, 1931:254); near Glendale, Los Angeles County, adult male seen, April 23, 1939 (Webb, Condor, 41, 1939:216); Twentynine Palms, San Bernardino County, May 13, 1934, a sight record lacking desirable supporting details, reported to Frances Carter (Condor, 39, 1937:217); Palm Springs, Riverside County, specimen taken September 10, 1897, by M. French Gilman (Grinnell, Pac. Coast Avif. No. 3, 1902:59). At the locality on the Eel River, where there was a supply of fruit, summer residence of a flock of birds "lost" in migration was suggested (Gilbert, Condor, 18, 1916:61; Dawson, Birds Calif., 1, 1924:418).

Hedymeles melanocephalus melanocephalus (Swainson)
Rocky Mountain Black-headed Grosbeak

Synonyms—Habia melanocephala, part; *Zamelodia melanocephala*, part; *Zamelodia melanocephala melanocephala*; *Hedymeles melanocephalus*, part; Black-headed Grosbeak, part.

Status—Summer resident of restricted area in central eastern section of State; common. Also a common migrant on eastern deserts, appearing in spring in mid-April and continuing through May.

Geographic range—As breeding, mountains of Mono and Inyo counties east of Owens valley, extending south to eastern San Bernardino County. In migration, Colorado River valley, Colorado and Mohave deserts west to Twentynine Palms, and valleys of eastern Inyo County. Life-zones occupied for nesting, Upper Sonoran and Transition at elevations ranging from 5000 feet up to 8500 feet. Areas of known summer residence: White Mountains, Mono and Inyo counties, several localities (Mus. Vert. Zool.); Inyo, Panamint and Grapevine mountains (A. K. Fisher, N. Amer. Fauna No. 7, 1893:106); Kingston Range and Clark Mountain, San Bernardino County (Mus. Vert. Zool.). Probably breeds also in Providence Mountains, San Bernardino County (Mus. Vert. Zool.). Records of migrants: Death Valley, Inyo County, May 7, May 19, October 1, presumably members of this race (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:94; Gilman, Condor, 37, 1935:242, and *ibid.*, 39, 1937:91); Providence Mountains, San Bernardino County (Stephens, Condor, 5, 1903:103); Twentynine Palms, San Bernardino County, May 12, bird banded and recovered at Battle Mountain, Nevada, hence apparently of this race (F. Carter, Condor, 39, 1937:217); Colorado River valley, April 12 to May 13 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:179).

Habitat—Piñon woodland primarily, but also mountain mahogany and, where available, firs and rose and willow thickets, the latter apparently preferred.

Note—The Black-headed Grosbeaks of the Great Basin show intermediacy between *H. m. melanocephalus* and *H. m. maculatus*. Identification of individual migrants can not be made with a great degree of accuracy. The breeding populations here assigned to *H. m. melanocephalus* are closer to that form than are those of the east base of the Sierra Nevada, which are included with *maculatus*.

Hedymeles melanocephalus maculatus (Audubon)
Pacific Black-headed Grosbeak

Synonyms—Coccoborus melanocephalus; *Pitylus melanocephalus*; *Guiraca melanocephala*; *Hedymeles melanocephalus*, part; *Hedymeles melanocephalus* var. *capitalis*; *Goniaphea melanocephala*; *Zamelodia melanocephala*, part; *Habia melanocephala*, part; *Zamelodia melanocephala*

microrhyncha; *Zamelodia melanocephala capitalis*; *Hedymeles melanocephalus melanocephalus*, part; *Zamelodia melanocephala maculata*; Black-headed Grosbeak, part.

Status—Summer resident from early April to early September. Migrations occur normally in late March and April, and in late August and September; spring arrival in higher mountains and in northern California two to four weeks later than in other sections, and migration continues through May east of Sierran axis. Common generally, in some areas abundant.

Geographic range—Breeds throughout State west of southeastern deserts and Owens Valley, with exception, apparently, of coastal islands; in desert mountains of Mono and Inyo counties replaced by *H. m. melanocephalus*. In migration appears additionally on islands and in desert areas. Life-zones in summer, Lower Sonoran, Upper Sonoran, and Transition, with greatest numbers in last two. Nesting stations range from near sea level at least up to 7500 feet in Warner Mountains of Modoc County and in southern Sierra Nevada (Mus. Vert. Zool.). References to different sections of breeding range selected for distributional significance and natural history content: Crescent City, Del Norte County, and Humboldt Bay, Humboldt County (W. K. Fisher, Condor, 4, 1902:134); vicinity of Mount Sanhedrin, Mendocino County (A. Head, Condor, 4, 1902:119, and *ibid.*, 6, 1904:35); Weed, Edgewood and Yreka, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1921:93); Cedarville and Warner Mountains, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:327); Red Bluff, Tehama County, and Ravendale, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:391); Fyffe, Eldorado County (Barlow and Price, Condor, 3, 1901:173); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:125); Yosemite Valley and Mono Lake (Grinnell and Storer, Animal Life Yosemite, 1924:484; and many subsequent items by other authors in Yosemite Nature Notes); Fresno, Fresno County (Boyer, Condor, 43, 1941:249); Kaweah River, Tulare County, Independence Creek, Inyo County, Walker Basin, Kern County, etc. (A. K. Fisher, N. Amer. Fauna No. 7, 1893:106); Santa Lucia Peak and Big Creek, Monterey County (Pemberton and Carriger, Condor, 17, 1915:201); Ventura County (Dawson, Birds Calif., 1, 1924:420ff.); coastal southern California generally (Willett, Pac. Coast Avif. No. 21, 1933:159); Altadena, Los Angeles County (Allen, Condor, 32, 1930:262); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:104); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:284); Twin Oaks and San Diego, San Diego County (F. A. Merriam, Auk, 13, 1896:120; Gander, Condor, 31, 1929:251); food habits in general (McAtee, U. S. Dept. Agr., Bur. Biol. Surv., Bull. No. 32, 1908:60; Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:93). Some data pertaining to migration: earliest arrivals at Red Bluff, Tehama County, April 18, 25 (Grinnell, Dixon and Linsdale, *loc. cit.*); extreme dates in San Francisco Bay region up to 1933, April 4, October 7 (A. S. Allen, Condor, 35, 1933:226); early migration in 1942 in Bay region, February 16, 17, 19, and 24 (H. W. Grinnell, Condor, 44, 1942:80); Farallon Islands, May 28 (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1887:47); Coalinga, western Fresno County, March 14, April 23 (J. R. Arnold, Condor, 39, 1937:35); near Yermo, San Bernardino County, August, April 13—earliest spring date (Lamb, Condor, 14, 1912:39); Cedar Canyon, Providence Mountains, San Bernardino County, May 28, 30 (see note, p. 442; Mus. Vert. Zool.); Mecca, Riverside County, April 23, 28 (Mus. Vert. Zool.); near Nyland and Calipatria, Imperial County, May 22, April 30 (Mus. Vert. Zool.); exceptionally early dates at Los Angeles, February 15, February 20 (Myers, Condor, 15, 1913:94;

Wyman, Bird-Lore, 22, 1920:92); Riverside, Riverside County, November 23 (L. Miller, Condor, 15, 1913:92); Santa Cruz Island (Howell, Pac. Coast Avif. No. 12, 1917: 86); San Nicolas Island, April 26 (Willett, *loc. cit.*). There is a dubious winter record for Santa Barbara: bird seen December 25 (Dawson, *loc. cit.*).

Habitat—Riparian woodland, oak woodland with associated shrubs, and open coniferous forests of Transition and Upper Sonoran zones, especially where intermixed with deciduous oaks. The range in habitat is thus great and includes plant growths so diverse in type as willows, black oaks, fruit orchards, and juniper trees. Most favored is the willow-cottonwood association. Perhaps an important factor is local diversity of plant growth and extensive "edge" conditions. Food is varied and the species may require several kinds of supply in the nesting area. Insects and buds are sought in the foliage of broad-leafed trees especially, and berries and other fruits are taken in large quantity. Flycatching methods may also be employed.

Guiraca caerulea interfusa Dwight and Griscom
Arizona Blue Grosbeak

Synonyms—Guiraca caerulea eurhyncha, part; *Guiraca caerulea lazula*, part; Western Blue Grosbeak, part.

Status—Summer resident from May through August. Common in suitable habitat.

Geographic range—Valley of the Colorado River from Nevada line south to Mexican boundary, and Imperial Valley north to Salton Sea (Mus. Vert. Zool.) and Coachella Valley. Life-zone, Lower Sonoran. The entire range lies below 600 feet. Principal references: vicinity of Needles, San Bernardino County (Hollister, Auk, 25, 1908:461); in general, including vicinity of Ehrenberg (Stephens, Condor, 5, 1903:103); Potholes to Pilot Knob, Imperial County, first seen May 1 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:180); Coachella, Riverside County, nest (Mrs. B. L. Clary, *fide* H. Michener MS).

Habitat—Clumps of low willows, arrowweed and bushes in river bottoms or along ditch banks; the non-native tamarisk tree now also affords cover for this species.

Guiraca caerulea salicarius Grinnell
California Blue Grosbeak

Synonyms—Coccoborus coeruleus; *Guiraca caerulea*; *Goniaphea coerulea*; *Guiraca caerulea eurhyncha*, part; *Guiraca caerulea lazula*, part; *Guiraca lazula*; Blue Grosbeak; Western Blue Grosbeak, part.

Status—Summer resident; arrives in late April and early May and begins fall migration in August, continuing through September. Fairly common to common locally in interior and in southern California; rare in central coastal district.

Geographic range—Coastal southern California, Sacramento and San Joaquin valleys, and Owens Valley. Additionally, has occurred in scattered localities along coast north to San Francisco Bay and eastwardly in Inyo County to Death Valley, but actual nesting in these regions has not been reported. Life-zone, chiefly Lower Sonoran. Altitudes of stations of known or presumed breeding extend from —178 feet at Furnace

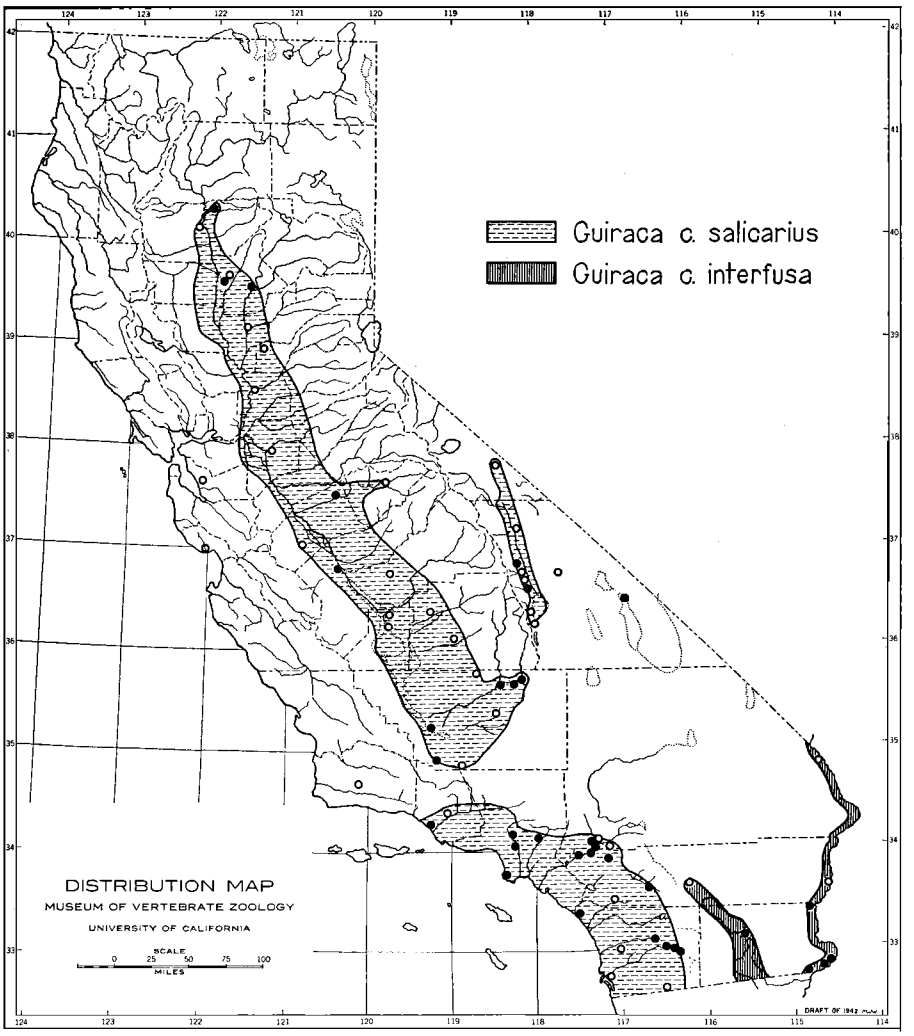

Fig. 46. Distribution of Blue Grosbeaks, *Guiraca caerulea*, in California in the summer season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature. Points outside of shaded areas are doubtful or sporadic breeding stations.

Creek Ranch, Death Valley, Inyo County, up to about 4000 feet as near Julian, San Diego County, and at Independence, Inyo County. Far northern localities: Pit River, Shasta County, apparently a casual occurrence (Newberry, Pac. R. R. Rept., 6, 1857: 88); vicinity of Red Bluff, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:392); Chico, Butte County (Belding, Land Birds Pac. Dist., 1890:177). Records for coast north of Santa Barbara: Hayward, Alameda County, May 1, 1876 (Cooper, Proc. U. S. Nat. Mus., 2, 1880:248); Santa Cruz, Santa Cruz County, April 12 (Cooper, *loc. cit.*); Los Olivos, Santa Barbara County, May 11, possibly transients (V. F. Fox, Condor, 15, 1913:129). Outposts along east side of Great Valley: Indian Flat, 1700 feet, Mariposa County, nesting (Webster, Yosemite

Nature Notes, 21, 1942:23); Onyx and Walker Basin, Kern County (Grinnell, Pac. Coast Avif. No. 11, 1915:136; A. K. Fisher, N. Amer. Fauna No .7, 1893:107). Principal references pertaining to breeding range: Sacramento (Ridgway, U. S. Geol. Expl. Fortieth Parallel, Ornithology, 1877:489); Stockton, San Joaquin County (Belding, Proc. U. S. Nat. Mus., 1, 1879:419); Snelling, Merced County (Grinnell and Storer, Animal Life Yosemite, 1924:490); vicinity of Fresno, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:88); George Creek (near Manzanar), Inyo County (Dawson, Birds Calif., 1, 1924:414); Saline and Death valleys, Inyo County (A. K. Fisher, *loc. cit.*; Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:94); Santa Paula, Ventura County, parasitism by cowbird (Friedmann, Auk, 48, 1931:63); vicinity of Los Angeles, and Colton, San Bernardino County (Willett, Pac. Coast Avif. No. 21, 1933:159); Banning, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913: 285); Escondido, San Diego County (J. S. Dixon, Condor, 17, 1915:204). Records of vagrants and migrants definitely outside of breeding range: Yosemite Valley, August 8 (E. Michael, Yosemite Nature Notes, 20, 1941:21); near Yermo, San Bernardino County, May 21, October 1 (Lamb, Condor, 14, 1912:39); Twentynine Palms, San Bernardino County, May 7 to 17 (F. Carter, Condor, 39, 1937:217); Cabezon, May, and Whitewater, May 26, Riverside County (Grinnell and Swarth, *loc. cit.*); Santa Cruz Island, April 30 (Mailliard, Bull. Cooper Ornith. Club, 1, 1899:44); San Clemente Island, April 21 (Kimball, Condor, 24, 1922:97).

Habitat—For nesting, low thick vegetation in the vicinity of water. Typical are thickets of willow, young cottonwoods, nettle patches, and knotweed along ditches, lower stream courses and sloughs. Although such cover is requisite, the singing posts frequently are exposed above the plant cover and foraging may occur in fairly open grain fields as well as in the vegetation and on damp ground. All activity centers near the ground; nests rarely are placed as high as 20 feet up, and usually from 2 to 10 feet. In migration, and after nesting, no particular adherence to damp situations is noted.

Passerina amoena (Say)
Lazuli Bunting

Synonyms—Spiza amoena; *Cyanospiza amoena*; Lazuli Finch; Lazuli Painted Finch; Blue Linnet.

Status—Summer resident from end of April to August; common. Of widespread occurrence as a migrant in late April and early May and in August and first three weeks of September.

Geographic range—Breeds throughout State except on coastal islands and in Lower Sonoran deserts of southeast. Tolerant of wide range in conditions of humidity. As a migrant occurs in all sections of State. Life-zones, chiefly Upper Sonoran and Transition; breeds also in Lower Sonoran. Altitudes of nesting range from near sea level as at San Jose, Santa Clara County, up to at least 7500 feet, as in Warner Mountains; occurs higher after nesting. Representative localities of summer residence: Eureka and Hoopa Valley, Humboldt County (W. K. Fisher, Condor, 4, 1902:134, *ibid.*, 6, 1904: 51); Sisson and slopes of Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:127); Modoc County generally (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:327); Baird, Shasta County, and Red Bluff, Tehama County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:221); Honey Lake, Lassen County (Ogilvie-Grant, Cat. Birds' Eggs Brit. Mus., 5, 1912:281); Clear Lake, Lake County (Dawson, Birds

Calif., 1, 1924:410); Fyffe, Eldorado County (Barlow and Price, Condor, 3, 1901: 174); Sacramento (Ridgway, U. S. Geol. Expl. Fortieth Parallel, Ornithology, 1877: 490); Berkeley, Alameda County (A. H. Miller, Condor, 41, 1939:255); Snelling, near Coulterville, Yosemite Valley, and Mono Lake, all in Yosemite transect (Grinnell and Storer, Animal Life Yosemite, 1924:491); vicinity of Fresno, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:89); Point Sur, Monterey County (Ray, Osprey, 5, 1900: 7); Panamint and Grapevine mountains, Owens Valley (south as a summer resident at least to Lone Pine), Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:108); Kingston Range, 4750 feet, June 4, and Clark Mountain, 4800 feet, female with brood patch, eastern San Bernardino County (D. H. Johnson MS; Mus. Vert. Zool.); Bakersfield, Walker Basin and Fort Tejon, Kern County (Fisher, *loc. cit.*); Santa Barbara, Santa Barbara County (Dawson, *loc. cit.*); Pasadena, Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:160); East San Bernardino, San Bernardino County, parasitism by cowbird (Hanna, Condor, 20, 1918:212); Santa Ana Canyon, San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:104); Twin Oaks, San Diego County (F. A. Merriam, Auk, 13, 1896:121). Some data pertaining to migrants: Lassen section, earliest arrival April 24, first appearance at Mineral, 4900 feet, June 13 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:392); earliest arrival in San Francisco Bay region, April 18, departure in August (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:126); Farallon Islands, June 1, 2, August 28 (Dawson, Condor, 13, 1911:182; Mus. Vert. Zool.); Santa Cruz, Santa Cruz County, April 12 (Cooper, Proc. U. S. Nat. Mus., 2, 1880:248); vicinity of Benton, Mono County, September 18, 21 (Mus. Vert. Zool.); Death Valley, Inyo County, May 5, August 20 (Gilman, Condor, 37, 1935:242, *ibid.*, 39, 1937:91); near Yermo, San Bernardino County, May 14, August (Lamb, Condor, 14, 1912:39); Twentynine Palms, San Bernardino County, April 17 to May 17 (F. Carter, Condor, 39, 1937:217); extreme dates for coastal southern California, April 4, September 18 (Willett, *loc. cit.*); Santa Cruz and Santa Catalina islands, April (Howell, Pac. Coast Avif. No. 12, 1917:87); Colorado River valley, April 11 to May 8 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914: 181); in general (Belding, Land Birds Pac. Dist., 1890:178).

Habitat—In breeding season, clumps of bushes, broken chaparral, weed thickets and other low vegetation on hillsides or in and about water courses, but not usually over water or damp ground. In arid regions, however, this bunting occurs chiefly or exclusively in such cover as grows near streams and springs. Diversity of plant growth and discontinuity of masses of it seem important as well as presence of a low dense tangle used normally for nesting. Foraging takes place in this cover, or in tall grass, but song posts are to varying degrees above it—even in the tops of tall trees if these are present. Plants often prominent on the nesting territory are: *Artemisia vulgaris*, *Artemisia californica*, poison oak in exposed clumps, rose and blackberry thickets, thistle patches, low growths of willows, and *Ceanothus cuneatus*.

Passerina versicolor dickeyae van Rossem
Sonora Varied Bunting

Synonyms—Passerina versicolor pulchra; Beautiful Bunting; Mrs. Dickey's Bunting.

Status—Casual visitant from the south. One report: fifteen or more seen in February, 1914, in the Colorado River valley at Blythe, Riverside County; two specimens

taken February 8 and 9 (Daggett, Condor, 16, 1914:260; van Rossem, Trans. San Diego Soc. Nat. Hist., 7, 1934:370), now in collection of Los Angeles Museum.

Hesperiphona vespertina brooksi Grinnell
Western Evening Grosbeak

Synonyms—Coccothraustes vespertinus; *Hesperiphona vespertina*; *Coccothraustes vespertinus montanus*; *Hesperiphona vespertina montana*; *Hesperiphona montana*; *Hesperiphona vespertina californica*; Evening Grosbeak; California Evening Grosbeak; Pacific Evening Grosbeak.

Status—Sparse to fairly common summer resident of boreal forests of northern and central sections of State, remaining to some extent as a permanent resident in these regions. Movements to lower levels irregular and apparently somewhat nomadic, occurring variously from September through to May. Appears occasionally in western lowlands and foothills as a winter visitant; in some years fairly common and more widespread, perhaps coincident with especially severe winter conditions in breeding range either in California or to northward.

Geographic range—As breeding, higher levels of Cascade Mountains and Sierra Nevada south to Tulare County; Warner, Siskiyou and Trinity mountains, and coastal forests of Humboldt County, at least sporadically. In winter, in addition to parts of breeding range, adjacent low mountains and foothills; west of Sierra Nevada extends to coast and south to San Bernardino and San Diego counties in mountains and occasionally in lowlands; has occurred as a late spring vagrant in desert mountains of Inyo and eastern San Bernardino counties; may breed in aspens in White Mountains. Lifezones, Transition and Canadian, more commonly the latter. Altitudinal range of summer residence from near sea level, as at Eureka, Humboldt County, up to at least 9000 feet in Sierra Nevada. Authentic records bearing on summer residence: head of Doggett Creek, Siskiyou Mountains, Siskiyou County, seen June 9 (Grinnell MS); near Beegum, western Tehama County, July 4 (Dawson, Birds Calif., 1, 1924:139); Trinidad, Humboldt County, June 22 (Dawson, *loc. cit.*); Eureka, Humboldt County, nesting (J. M. Davis, Condor, 24, 1922:136); Bray, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:83); Warner Mountains, Modoc County (Mus. Vert. Zool.); Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:122); vicinity of Lassen Peak (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:394); Buck[s] Creek, Plumas County (Sheldon, Condor, 9, 1907:189); Gold Lake, Sierra County (M. W. Wythe, Condor, 29, 1927:65); Cisco, Placer County (Ingersoll, Condor, 15, 1913:84); near American River, 4700 feet, Eldorado County (Beck, Nidologist, 4, 1896:3); Echo Lake and vicinity, Eldorado County (De Groot, Condor, 37, 1935:40); Hazel Green, Crane Flat, Chinquapin, Yosemite Valley, and Mono Meadow, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:417; E. Michael, Yosemite Nature Notes, 9, 1930:45); vicinity of Mammoth Lakes, Mono and Madera counties (Dawson, *loc. cit.*; J. B. Dixon, Condor, 36, 1934:36, and letter of July 30, 1942 [not Inyo County]; 12 miles northeast of Badger, 6000 feet, Tulare County, seen commonly throughout summer (J. T. Marshall, Jr., MS). Winters of noteworthy abundance in lowlands and to southward: 1898-1899, Point Reyes Station, Marin County, October 14, San Jose, Santa Clara County, January 2, Pescadero, San Mateo County, January 1 to April (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:107; Jackson, Condor, 6, 1904:78); foothills east of Stockton, San Joaquin County, February (Sampson, Condor, 3, 1901:37); Mount Wilson, Los Angeles Coun-

ty, October 30 (Swarth, Bull. Cooper Ornith. Club, 1, 1899:95). 1900-1901: many localities in San Francisco Bay region—Santa Rosa, St. Helena, Vacaville, San Geromino, San Rafael, Alameda, Hayward, Palo Alto, San Jose, Pescadero—October to April 29 (Grinnell and Wythe, *loc. cit.*; Mus. Vert. Zool.); Stockton, San Joaquin County, January 31, February 13 (Sampson, *loc. cit.*); Paicines, San Benito County, February, March (Mailliard and Mailliard, Condor, 3, 1901:124); Chualar, Monterey County, March 29 (Mus. Vert. Zool.); Mount Wilson, and Arroyo Seco above Pasadena, Los Angeles County, October 21, December 7 (Willett, Pac. Coast Avif. No. 21, 1933:160). 1919-1920: Oakland, Alameda County, February 27 (J. L. Schlesinger, Condor, 22, 1920:111); Los Angeles, December 22 (L. Miller, Condor, 22, 1920:78); Yucaipe Valley, March, and Redlands, November 2 to 4, San Bernardino County (Willett, *loc. cit.*; L. Zech, Condor, 22, 1920:111). 1931-1932: localities in Sacramento Valley—Marysville, Dunnigan, Woodland, Sacramento, Davis—February 13 to April 7 (Storer, Condor, 35, 1933:33); Lansdale and Ross, Marin County, January, February (Stephens and Pringle, Birds Marin Co., 1933:13); Bear Valley, San Bernardino Mountains, May 16 (Willett, *loc. cit.*). Other significant data on occurrence in winter and on vagrants: Weaverville, Trinity County, February 27, 1911 (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:383); Marin County, July 15, 1900 (Mailliard, Condor, 3, 1901:16); Smith Creek, 3000 feet, near Coulterville, Mariposa County, December 18, 1916 (Grinnell and Storer, *loc. cit.*); Monterey, Monterey County, November, 1896 (Emerson, Condor, 3, 1901:18); Hanaupah Canyon, 8000 feet, Panamint Mountains, Inyo County, May 12, 1917 (Mus. Vert. Zool.); Clark Mountain, 7100 feet, eastern San Bernardino County, May 24, 1939 (A. H. Miller, Condor, 42, 1940:163); Piute Mountains, Kern County, October 23, 26 (Mus. Vert. Zool.); Mount Pinos, Kern County, April 26, May 31, 1930, and Cahuenga Pass, Los Angeles, May 8, 1902 (Willett, *loc. cit.*); Cuyamaca Mountains, San Diego County, November 2, 1939 (J. G. Peterson MS).

Habitat—As breeding, primarily fir (*Abies*) forests of fairly dense mature type. Other trees such as lodgepole pine, white pine, ponderosa pine, and black oak may be occupied and nested in, but usually where these are in association with firs. Aspens, oaks, and willows as sources of buds often are available in the vicinity or are visited in extended foraging flights. Feeding takes place in the crowns of trees and on branch tips, but sometimes in low bushes and on the ground. Nests are placed at middle heights or above in the trees. In other seasons than summer, almost any bud- or berry-producing tree or bush may be visited; juniper, cascara and service berries have several times been reported as food items.

Carpodacus purpureus californicus Baird
California Purple Finch

Synonyms—Erythrospiza purpurea; *Carpodacus purpureus*; *Carpodacus californicus*; Purple Finch; Western Purple Finch.

Status—Resident in coastal and low-lying segments of breeding range. Altitudinal migration occurs along slopes of Sierra Nevada and in southern California. Winter visitant populations that scatter over western lowlands from October to April thus are composed of birds from near-by breeding areas mixed with at least a few individuals from far north. In general, common, both as a breeding bird and as a winter visitant.

Geographic range—As breeding, west slopes of Cascade Mountains and Sierra Nevada south through mountains of southern California to San Diego County; coastal districts and inner coast ranges from Oregon line south to Santa Barbara and Ventura counties. In winter or in migration, lower mountains and lowlands west of Cascade-Sierran axis, throughout the length of the State; occasional east of the axis, as in Modoc, Inyo, and Riverside counties, where recorded on basis of specimens, and on coastal islands. Life-zones in summer, high Upper Sonoran and Transition. Altitudes of known or probable nesting stations range from near sea level as at Point Lobos, Monterey County, up to about 6500 feet, as in San Jacinto Mountains; occurs higher in late summer. Representative breeding stations in the coastal regions: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:23); South Fork Mountain and 12 miles north of North Yolla Bolly Mountain, Trinity County (Mus. Vert. Zool.); Hearst, Mendocino County, Fouts Springs, Colusa County, Glenbrook [near Cobb], Lake County, and Mount St. Helena, Napa County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919:294); Nicasio, Marin County (Brewster, Bull. Nutt. Ornith. Club, 2, 1877:37); San Francisco (Hansen and Squires, Condor, 19, 1917:60); Mount Diablo, Alameda County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927: 108); Santa Cruz, Santa Cruz County (Cooper, Bull. Nutt. Ornith. Club, 3, 1878:8); Santa Lucia Mountains, Little Sur River, and Big Creek, Monterey County (Pemberton and Carriger, Condor, 17, 1915:198); near San Miguel, San Luis Obispo County (Willett, Condor, 10, 1908:138); Santa Barbara, Santa Barbara County (Dawson, Birds Calif., 1, 1924:208); Pine Creek, Sespe Canyon, Ventura County (Willett, Pac. Coast Avif. No. 21, 1933:161; Mus. Vert. Zool.). Some localities in the eastern segment of the breeding range: Bray, Yreka, and Weed, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:75, 92); Payne Creek P. O. to Mineral, Tehama County, and eastern base of Mount Lassen (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:396); Fyffe, Eldorado County (Barlow and Price, Condor, 3, 1901:169); Smith Creek near Coulterville, Hazel Green, and Yosemite Valley, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:420); Hume, Fresno County (Mus. Vert. Zool.); Mount Pinos, Kern County (Mus. Vert. Zool.); Alhambra, Los Angeles County (Rowley, Condor, 31, 1929:77); Mount Wilson, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:34); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:88); San Jacinto and Santa Rosa mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:266); mountains of San Diego County (Willett, *loc. cit.*). Reported summer residence in Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:315) doubtful, as records apparently confused with those of *Carpodacus cassinii*, at least in part; however, a specimen has been taken at Steele Meadow [Swamp], near Clear Lake, Modoc County, September 30, 1922 (Mus. Vert. Zool.). Other data indicating distribution and habits in winter: near Horse Creek, Siskiyou Mountains, Siskiyou County, February 1 (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:10); Helena, Trinity County, February (L. Kellogg, Condor, 13, 1911:120); Marysville, Yuba County, Murphy, Calaveras County, and Stockton, San Joaquin County, one specimen as late as May 1 (Belding, Proc. U. S. Nat. Mus., 1, 1879:413; Sampson, Condor, 3, 1901:37); Davis, Yolo County (Storer, Condor, 35, 1933:33); Berkeley, Alameda County (F. Carter, Condor, 41, 1939:87; Stone, 42, 1940:126); Coalinga, western Fresno County (Arnold, 39, 1937:35); Death Valley, Inyo County, April 11 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:81); Santa Cruz and Santa Catalina islands (Dickey and van Rossem, Condor, 25, 1923:127); Pasadena, Los Angeles County, January 1 to April 27,

banded bird recovered at Porter, Washington (Michener, Condor, 27, 1925:217); Twentynine Palms, San Bernardino County, sight records only, November 18 to April 13 (F. Carter, Condor, 39, 1937:217); Agua Caliente [=Palm Springs], Riverside County, April, specimens (Belding, Land Birds Pac. Dist., 1890:131; Morcom, Ridgway Ornith. Club, Bull. No. 2, 1887:48); San Diego, San Diego County (Gander, Condor, 31, 1929:131).

Habitat—As breeding, oak woodland and coniferous forest in which there are at least some densely foliaged trees or compact tree-clumps. Along the northwest coast much of the forest meets this requirement, but interiorly and to the south, streamside and canyon bottom woodland is usually resorted to because of the denser character of the forest there and apparently also because of the higher humidity and presence of surface water. Of the three finches of the genus *Carpodacus*, this species shows most liking for moist and shaded places; the choice is reflected both in the local distribution and in the limits of the range as a whole. Although the foregoing requirements seem to govern selection of the nesting area, commonly the plant cover is diversified in the vicinity of the nest, affording mixture with chaparral, grassland and meadowland in which foraging may take place as well as in the terminal foliage of the trees. Buds, flower parts, berries (at times only the seeds within them) and seeds make up a large part of the food both in summer and winter, and these food sources are often sought on wide-ranging forage cruises.

Carpodacus cassinii Baird
Cassin Finch

Synonyms—Cassin Purple Finch; Cassin Pine Finch.

Status—Resident in the high mountains of the State. Apparently only a small proportion of the birds move to the lowlands in midwinter and early spring; the others descend to lower levels in the mountains or even remain on the breeding grounds. As a summer resident, common.

Geographic range—As breeding, Cascade Mountains, Sierra Nevada, and mountains of southern California south to San Jacinto Mountains; higher ranges east of Sierra Nevada south to Inyo and Grapevine mountains, Inyo County; Siskiyou Mountains and inner coast ranges south to Tehama County and west to eastern Humboldt County. In winter spreads west to coast, scatteringly, from San Francisco Bay southward to San Diego and east of Sierran axis south to San Bernardino County. Life-zones, principally Canadian and Hudsonian, but also less commonly Transition and occasionally even the upper part of the piñon belt in the Upper Sonoran. Altitudes of nesting range from 3300 feet as at 4 miles southwest of Greenview, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:92) up to 10,500 feet in southern Sierra Nevada. Stations of summer residence west of Cascade Mountains in northern California: 15 miles west of Hilt, Siskiyou Mountains, Siskiyou County (Mus. Vert. Zool.); Horse Mountain, Humboldt County (Mus. Vert. Zool.); 8 miles west of Yreka (near Greenview (as above), and near Edgewood, Siskiyou County (Mailliard, *loc. cit.*); Jackson Lake, Siskiyou County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:383); South Fork Mountain, Trinity County (Mus. Vert. Zool.); South Yolla Bolly Mountain, Tehama County (Ferry, Condor, 10, 1908:42). Sample stations along Cascade-Sierran axis: Bray, Siskiyou County (Mailliard, *loc. cit.*); Mount Shasta, Siskiyou

County (Merriam, N. Amer. Fauna No. 16, 1899:123); Lassen Peak area (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:397); Sierra City, Sierra County (van Rossem, Condor, 23, 1921:163); Fyffe, 3700 feet, to Lake Tahoe, Eldorado County (Barlow and Price, Condor, 3, 1901:169; Ray, Condor, 14, 1912:146); Yosemite district, from Hazel Green, Mariposa County, east to Mono Mills, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:423); Mammoth Lakes, Mono County (Dawson, Birds Calif., 1, 1924:201); Big Cottonwood Meadow, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:79); Mount Pinos, Kern County (Miller and Benson, Condor, 32, 1930:103); Mount Waterman, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:34); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:89); San Jacinto Mountains (Grinnell and Swarth, *ibid.*, 10, 1913:267). Easternmost breeding localities: Warner Mountains, Modoc County (Mus. Vert. Zool.); White and Inyo mountains, Mono and Inyo counties (A. K. Fisher, *loc. cit.*); Grapevine Mountains, Inyo County (specimens taken in Nevada within one mile of state line; A. H. Miller MS). Some accounts of winter occurrence in foothills: lower McCloud River, Shasta County, November 16 (Townsend, Proc. U. S. Nat. Mus., 10, 1887:215); Grass Valley, Nevada County (Richards, Condor, 26, 1924:101); Tehachapi, Kern County, March 29 (Belding, Land Birds Pac. Dist., 1890:132); Providence Mountains, San Bernardino County, December (Arvey, Condor, 41, 1939:263; Mus. Vert. Zool.). Well-authenticated lowland records: 10 miles west of Gridley, Butte County, February 23 (Ellis Coll.); Berkeley, Alameda County, December 21, and San Jose, Santa Clara County, January 1 (A. S. Allen, Condor, 45, 1943:153; Barlow, Condor, 2, 1900:132); Carpinteria, Santa Barbara County, February 3 to April 8, and Fillmore, Ventura County, February 22 (Hoffmann, Condor, 26, 1924; Mus. Vert. Zool.); Los Angeles (Swarth, Condor, 3, 1901:66); Pasadena, Los Angeles County, February 9 to April 12 (Michener, Condor, 27, 1925:222); San Nicolas Island, May 1 (Willett, Pac. Coast Avif. No. 21, 1933:161); San Diego, March 23, February 25 (Gander, Condor, 31, 1929:131); near Yermo, San Bernardino County, November 8 (Lamb, Condor, 14, 1912:38); Quail Spring, near Twentynine Palms, San Bernardino County, December 20 (Mus. Vert. Zool.).

Habitat—Open, semiarid coniferous forests, fairly cool in summer by reason of altitude, and snow-covered through part of the winter. Although this finch regularly occurs in and about mountain meadows and in the red fir forests of the Canadian zone which may be fairly dense, its range of tolerance, in contrast to the California Purple Finch, extends toward the cool and arid extreme. In the lower levels of the breeding range which it shares sparingly with the California Purple Finch, it is to be found in the dry yellow pine forests, away from the stream courses. Greatest abundance is reached in forests of lodgepole pine, red fir (or related species) and mountain hemlock. Aspen groves are visited and may even be resided in when conifers are absent in the vicinity. Higher levels of the piñon belt may be sparsely occupied. Buds, especially needle buds of conifers, are preferred food, but these finches often drop to the dry ground or to the grass of meadows to forage.

Carpodacus mexicanus frontalis (Say)
Common House Finch

Synonyms (a distressing display of vacillation)—*Fringilla frontalis*; *Erythrospiza frontalis*; *Carpodacus frontalis*, part; *Carpodacus familiaris*; *Carpodacus rhodocolpus*; *Carpodacus frontalis*

rhodocolpus; *Carpodacus frontalis* var. *frontalis*; *Carpodacus clementis*, part; *Carpodacus mexicanus obscurus*; *Carpodacus mexicanus clementis*, part; *Carpodacus mexicanus*; *Carpodacus mexicanus solitudinus*; *Carpodacus mexicanus grinnelli*; Crimson-necked Finch; Crimson-fronted Purple Finch; Crimson-fronted Finch; Purple House Finch; California Purple Finch, part; Domestic Purple Finch; House Finch, part; Linnet; Burion; Red Linnet, part; House Linnet; Red-fronted Linnet; California House Finch; Crimson House Finch; San Clemente House Finch, part; California Linnet, part; Grinnell House Finch; Desert House Finch.

Status—Permanent resident. Abundant generally, except in situations marginal from the standpoint of zone and habitat. Wanders to some degree, especially in late summer, but definite migratory movements not apparent. Evidently departs in winter from some higher points in breeding range, especially along eastern flank of Sierra Nevada.

Geographic range—Breeds in all sections of State, exclusive of high montane areas and coastal islands from Santa Barbara Island southward, where replaced by the race *clementis*; of but scattered occurrence within northwest coastal belt. Life-zones, Lower Sonoran and Upper Sonoran; locally in Transition. Altitudes of nesting range from —200 feet as in Death Valley, Inyo County, up rarely to 8000 feet, as at Mammoth, Mono County (Dawson, Birds Calif., 1, 1924:213); may occur even higher in late summer. The literature pertaining to this species is voluminous—258 references for California up through 1943. A few stations of occurrence of marginal location or in sparsely populated regions may be cited: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:23); Hoopa Valley and Humboldt Bay, Humboldt County (W. K. Fisher, Condor, 6, 1904:51, *ibid.*, 4, 1902:133); Carlotta, Humboldt County, and Mad River, 2700 feet, Trinity County (Mus. Vert. Zool.); Hayfork, Trinity County (E. C. Mailliard, Condor, 19, 1917:166); Nashmead, Mendocino County (Bassett, Condor, 31, 1929:131); Cahto and Ukiah, Mendocino County (McGregor, Nidologist, 3, 1896:148); Farallon Islands (Ray, Auk, 21, 1904:440); Mayten and Scott River, Siskiyou County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916: 383); Cedarville, etc., Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:315); Lake Tahoe, Eldorado County (Ray, Auk, 20, 1903:187); Furnace Creek, Death Valley, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:81); Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:164); San Miguel, Santa Rosa, Santa Cruz and Anapaca islands (van Rossem, Condor, 27, 1925:177). Selected contributions to the natural history of House Finches are as follows: life history (Keeler, Zoe, 1, 1890:172); food (Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 30, 1907:13); behavior of captive young (L. Miller, Condor, 23, 1921:41); general accounts (Grinnell and Storer, Animal Life Yosemite, 1924:425; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:398; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:118); polygamy (Michener, Condor, 27, 1925:116); banding studies (Michener and Michener, Condor, 28, 1926:254); song (L. Miller, Condor, 31, 1929:221); nesting in November (P. Smith, Condor, 32, 1930:121); nest habits (Law, Wilson Bull., 41, 1929:192); ecology (Grinnell, Univ. Calif. Chronicle, 32, 1930:113); color variation (Michener and Michener, Condor, 33, 1931:12, and *ibid.*, 34, 1932: 253); weights (Partin, Condor, 35, 1933:60); age composition of population (Michener and Michener, Condor, 35, 1933:183); viability of ingested weed seeds (E. S. Roessler, Condor, 38, 1936:62); abnormalities (Michener and Michener, Condor, 38, 1936:102, and *ibid.*, 40, 1938:149); geographic variation (Moore, Condor, 41, 1939: 177ff.); molt (Michener and Michener, Condor, 42, 1940:140); salt-eating (Peterson, Condor, 44, 1942:73).

Habitat—Remarkably varied, the following apparent requirements being met by a great diversity of situations: (1) water, at least within a fairly wide daily cruising radius, fruits perhaps forming a satisfactory substitute; (2) open ground of limited or great extent thus affording growths of low seed-producing plants, especially composites; (3) sources of fruits and berries during part of year (possibly not essential); (4) trees, cliffs and earth banks, or man-made structures for roosting and placement of nests above ground in sites often partly enclosed. These requisites are not met in forest associations or continuous chaparral, although they may be found in woodland formations, in forest and chaparral edges and on treeless plains and deserts; low temperatures in summer and high rainfall and heavy wet fogs either hold low the number of individuals or seem to account for the absence of the species in some areas. Open places and sunshine are favored and in the foothill districts, great interior valleys and coastal plains the House Finch is the predominant avian species in fields and orchards, and about scattered trees and ranch buildings. Gregariousness is a conspicuous trait and the flocks that exist throughout most of the year move about, at least locally, making use of seasonal food and water supplies.

Note—Moore (*loc. cit.*) has pointed out average differences between the House Finches of the Great Basin and coastal regions. His findings have considerable significance as showing a type of incipient or imperfect geographic differentiation. However, we have not found the concepts of the proposed races *C. m. solitudinus* and *C. m. grinnelli* taxonomically practical. The instances are many wherein coastal and Great Basin birds completely reverse the characters typifying these regions. The constancy of characters seems even less than in the questionable insular race, *clementis*, and we think that soiling and fading are factors that contribute more than suspected to the characteristic appearance of many individuals from the two differentiation centers.

Carpodacus mexicanus clementis Mearns
San Clemente House Finch

Synonyms—Carpodacus frontalis, part; *Carpodacus mexicanus frontalis*, part; *Carpodacus clementis*, part; *Carpodacus frontalis clementae*; Red Linnet, part; House Finch, part; Island House Finch; San Clemente Linnet; California Linnet, part.

Status—Permanently resident; yet probably wanders occasionally from one island to another, as is known to have happened in one instance. Abundant except on San Nicolas Island.

Geographic range—Santa Barbara, San Nicolas, Santa Catalina and San Clemente islands. The birds of all islands except San Clemente may be considered intermediate toward the mainland race; intermediacy appears also in birds of the northern group of Santa Barbara islands, but populations there occurring are best referred to *frontalis* (see p. 453). Principal references: Grinnell, Pasadena Acad. Sci., publ. 1, 1897:6ff.; Mearns, Auk, 15, 1898:258; Linton, Condor, 10, 1908:84; Howell, Pac. Coast Avif. No. 12, 1917:73); van Rossem, Condor, 27, 1925:176; Willett, Pac. Coast Avif. No. 21, 1933:161; Moore, Condor, 41, 1939:193.

Habitat—In general, like that of the mainland form, but cactuses figure largely in the economy of this race, serving as a sources of fruit, affording secure nest emplacements, and probably meeting needs for water where springs are absent and vegetation otherwise is dry. Bluffs and canyon walls also are extensively used for roosting and nesting.

Pinicola enucleator californica Price
California Pine Grosbeak

Synonyms—Pinicola canadensis; *Pinicola enucleator*; *Pinicola enucleator* var. *canadensis*; *Pinicola enucleator kodiaka*; *Pinicola californica*; Pine Grosbeak; Kodiak Pine Grosbeak.

Status—Resident; there is no evidence that the species descends the mountains in winter. Sparse over most of range; only in a few localities rated as "fairly common."

Geographic range—High Sierra Nevada, from southern Plumas County, south of the Feather River, south to the headwaters of the San Joaquin River in Fresno County. Life-zones, Hudsonian and high Canadian. Altitudinal range, 6300 feet up to 10,000 feet; reported taken at Blue Canyon [4700], Placer County, but may have been taken at higher elevation in the vicinity of this station. Localities of record: 10 miles south of Blairsden [=Bear Lakes], 6300 feet, Plumas County (Hunt, Condor, 23, 1921:187); Independence Lake, Nevada County (Grinnell, Pac. Coast Avif. No. 11, 1915:106); Blue Canyon, Cisco Butte, Soda Springs, and Summit, Placer County (Hellmayr, Field Mus. Nat. Hist., Zool. Ser., 13, pt. 11:260; Grinnell, *loc. cit.*; Belding, Proc. U. S. Nat. Mus., 1, 1879:412; Belding, Land Birds Pac. Dist., 1890:131); Velma Lakes, vicinity of Pyramid Peak (many local stations), Echo Lake, etc., Eldorado County (Orr, Condor, 43, 1941:56; Price, Auk, 14, 1897:182; Ray, Condor, 14, 1912:157; De Groot, Condor, 36, 1934:8); Silver Lake, Amador County (Price, *loc. cit.*); Bloods, Alpine County (Belding, *loc. cit.*); McCabe Lakes [10,000 feet], vicinity of Tuolumne Meadows and Tenaya Lake, Ten Lakes, four miles southwest of Dark Hole, Pohono Trail, and vicinity of Moraine Mountain, all in Yosemite National Park (B. Hone, Yosemite Nature Notes, 19, 1940:62; H. C. Bryant, *ibid.*, 4, 1925:88; Grinnell and Storer, Animal Life Yosemite, 1924:419; Keck, Yosemite Nature Notes, 4, 1925:68; Webster, *ibid.*, 21, 1942:23); Mammoth Pass and vicinity, Mono County (Howell, Condor, 17, 1915:206; Dawson, Birds Calif., 1, 1924:153); head of San Joaquin River, Madera or Fresno County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:79); Evolution Creek, 8900 feet, Fresno County (J. S. Dixon, Condor, 44, 1942:280); "Little Doris" and Dinkey lakes, Fresno County (Dill, Condor, 46, 1944:90). Reports of occurrence at more southerly points are not considered to be valid (see Grinnell, Condor, 13, 1911: 141, and *ibid.*, 15, 1913:188).

Habitat—Coniferous forests, usually if not always in the vicinity of mountain meadows or streams. Typically the forest is somewhat open or scattered, is of subalpine type, or is broken at the edges of the meadows. Species of conifers involved are lodgepole pine, mountain hemlock, red fir, and white pine. Thickets of mountain alder, mountain ash, maple, willow, and *Ribes* are resorted to in foraging and with the grass and low annuals of the meadows themselves may govern local occurrence within the prevailing conifer timber of the bird's range. Needle buds, hemlock and fir seeds, and berries are taken from the trees, bushes, or indeed often the ground or snow surface. Feeding actions are deliberate and the feeding birds may remain quiet for long periods, thus escaping detection within the foliage screen.

Leucosticte tephrocotis tephrocotis (Swainson)
Swainson Gray-crowned Rosy Finch

Synonym—Gray-crowned Rosy Finch.

Status—Winter visitant in northeastern section of State. Probably more common

than the one specific locality of record would indicate. Seven specimens taken by Howard Twining (Miller and Twining, Condor, 45, 1943:78) at a point 2 miles south and 3 miles east of Chats, 5500 feet, Lassen County, March 30, 1941; the birds were members of a mixed flock of several kinds of rosy finches roosting in a vertical mine shaft.

Leucosticte tephrocotis littoralis Baird
Hepburn Gray-crowned Rosy Finch

Synonyms—Leucosticte tephrocotis, part; *Leucosticte tephrocotis tephrocotis*, part; *Leucosticte tephrocotis dawsoni*, part; Gray-crowned Leucosticte, part; Sierra Nevada Rosy Finch, part; Hepburn Rosy Finch.

Status—Occurs both as a summer resident and winter visitant; little known within State, but fairly common in restricted breeding area.

Geographic range—As breeding, Mount Shasta, Siskiyou County. In early spring detected in winter-visitant status in southern Lassen County. Life-zone in summer, Alpine; invades upper Hudsonian locally to forage. Recorded occurrences: head of Mud Creek, 10,000 feet, Mount Shasta (Merriam, N. Amer. Fauna No. 16, 1899:124; A. H. Miller, Condor, 41, 1939:219, and *ibid.*, 43, 1941:72); 2 miles south and 3 miles east of Chats, 5500 feet, Lassen County, March 30, 1941 (Miller and Twining, Condor, 45, 1943:78).

Habitat—In summer, cliffs, talus slopes, moraines, and snow and ice surfaces in high mountain canyons and glacial cirques.

Leucosticte tephrocotis dawsoni Grinnell
Sierra Nevada Gray-crowned Rosy Finch

Synonyms—Leucosticte tephrocotis, part; *Leucosticte tephrocotis tephrocotis*, part; *Leucosticte arctoa dawsoni*; Gray-crowned Finch; Gray-crowned Leucosticte, part; Gray-crowned Rosy Finch, part; Sierra Nevada Rosy Finch; Dawson Leucosticte.

Status—Resident of the high Sierra Nevada; descent eastwardly in non-breeding season has occurred, but whether this involves a large part of the breeding population is not known. Probably nomadic within mountains and over near-by eastern plateaus and valleys in winter and during heavy storms. Locally common; generally gregarious, even, to some extent, while nesting.

Geographic range—As breeding, Sierra Nevada from peaks immediately southwest of Lake Tahoe south to vicinity of Olancha Peak, Tulare County, and on White Mountains, Mono County. Life-zone for nesting, Arctic; forages also in high Hudsonian. Altitudinal range of nesting stations extends from 9500 feet up to over 14,000 feet, as on Mount Whitney (Daggett, Bull. Cooper Ornith. Club, 1, 1899:119); has occurred as low as 7800 feet in summer in the course of foraging (L. Miller, Condor, 22, 1920: 78). Areas of recorded summer residence: Mount Tallac and Pyramid Peak, Eldorado County (Mus. Vert. Zool.; Ray, Condor, 12, 1910:147); Spiller Creek, Virginia Canyon, Saddlebag Lake, Warren Mountain, Mount Dana, Mount Hoffmann, Mount Lyell, Mount Clark, etc., all in or near Yosemite National Park (Mowbray, Yosemite Nature Notes, 19, 1940:5; Twining, Condor, 40, 1938:246, and *ibid.*, 42, 1940:64; R. Wheeler,

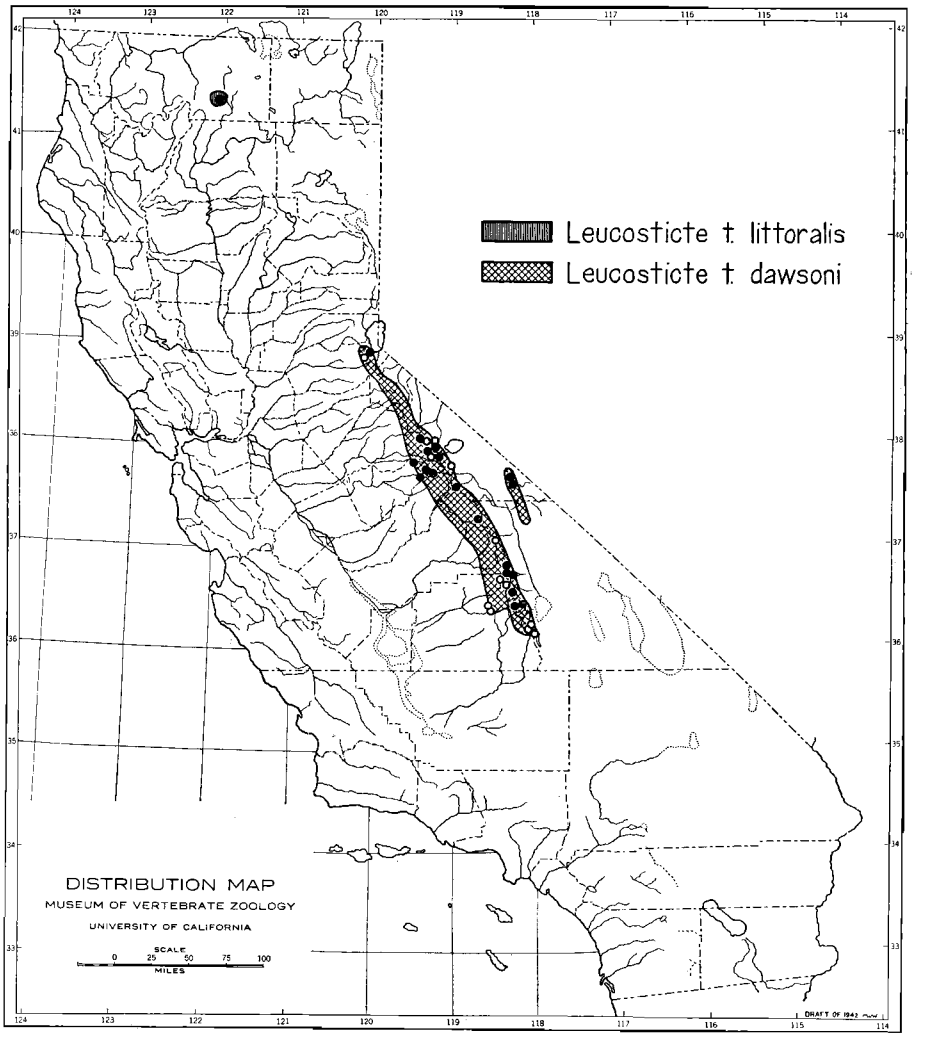

Fig. 47. Distribution of Gray-crowned Rosy Finches, *Leucosticte tephrocotis*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Condor, 42, 1940:133; Grinnell and Storer, Animal Life Yosemite, 1924:430; Taylor, Condor, 25, 1923:66); Mammoth Pass and vicinity, Mono County (Dawson, Jour. Mus. Comp Ool., 2, 1922:8, and Birds Calif., 1, 1924:156; J. B. Dixon, Condor, 38, 1936:1); North Palisade, Fresno County (Dawson, Condor, 16, 1914:41); Kearsarge Pass, etc., Fresno County, and Mount Brewer, Tulare County (Ray, *op. cit.*:160; J. S. Dixon, Condor, 45, 1943:217); vicinity of Mount Whitney—Big Cottonwood Meadow, Round Valley, Army Pass, etc. (A. K. Fisher, N. Amer. Fauna No. 7, 1893: 83; Grinnell, Pac. Coast Avif. No. 11, 1915:109); Olancha Peak, Monache Meadows and Mineral King, Tulare County, and White Mountains, Inyo County (A. K. Fisher, *loc. cit.*). Occurrences other than in breeding season or away from breeding grounds:

Lake Tahoe, taken in winter [race not determined] (Hoffman, Bull. U. S. Geol. Geog. Surv. Terr., 6, 1881:223); Bodie [8300 feet], Mono County, December 8 to April 7 (Swarth, Condor, 30, 1928:191); Kuna Glacier, 12,400 feet, Yosemite National Park, October (Presnall, Yosemite Nature Notes, 11, 1932:[November] 2); 5 miles west and 1 mile south of Independence, 6000 feet, Inyo County, May 30, and head of Lead Canyon, 10,000 feet, Inyo Mountains, Inyo County, May 18 to 21 [may represent breeding station] (Mus. Vert. Zool.).

Habitat—In summer, alpine cirques affording cliffs or talus slopes for nesting. Rock, snow and glacier surfaces, and patches of alpine turf serve as forage areas. Lake margins and edges of snow banks are searched especially, both for insects and plant material, notably the seeds of sedges. Insects other than those frozen in the snow are often taken on the wing, the birds showing great versatility in method of capture. Openness of terrain and great powers of flight make for extended and prolonged foraging expeditions away from the nesting places. Nest sites are in crevices on the cliffs or under rocks on the slopes below; protection from above thus usually is afforded in some measure, but the sites are shaded, cold and often damp. In winter, when at lower elevations, frequents sparsely vegetated ground in the artemisia belt.

Leucosticte atrata Ridgway
Black Rosy Finch

Synonym—Leucosticte tephrocotis atrata.

Status—Rare winter visitant to eastern border of State. Three specimens recorded: male taken (Calif. Acad. Sci. no. 15167) January 15, 1904, at Bodie [8300 feet] Mono County (Swarth, Condor, 30, 1928:191); two females (Mus. Vert. Zool. nos. 81656, 81657) taken March 30, 1941, 2 miles south and 3 miles east of Chats, 5500 feet, Lassen County (Miller and Twining, Condor, 45, 1943:78). The birds were taken in company with other kinds of rosy finches, the last two from a flock roosting in a vertical mine shaft.

Acanthis flammea flammea (Linnaeus)
Common Redpoll

Synonyms—Acanthis linaria; *Acanthis linaria linaria*; Redpoll.

Status—Irregular winter visitant to northeastern California. Known only as occurring commonly in 1899 from November 30 to December 23 in the vicinity of Eagle Lake, Lassen County (Willard, Condor, 4, 1902:45; Calif. Acad. Sci.). Large flocks were noted almost daily in pines, in bushes along streams and in artemisia brush, where they were feeding on buds.

Spinus pinus pinus (Wilson)
Northern Pine Siskin

Synonyms—Linaria pinus; *Chrysomitris pinus*; *Spinus pinus*; Pine Finch; Pine Linnet; Pine Goldfinch; Pine Siskin.

Status—Permanently resident in coastal districts and in some mountain areas, but much given to wandering and to irregular dispersal in winter such that definite schedule of migratory movements not discernible. Apparently there is both altitudinal and latitudinal migration which accounts for flocks in winter visitant status in lowlands, especially in Great Valley and in southern California. In general, common, occasionally abundant locally.

Geographic range—As a summer resident, Cascade Mountains and Sierra Nevada south to San Jacinto Mountains in southern California; humid coast belt and coast ranges south to southern Monterey County; at north extends eastwardly across State to Warner Mountains, Modoc County. Winter visitants, migrants or vagrants appear in all sections of State; probably absent from higher mountains in midwinter; vagrants may be expected in spring outside of breeding areas. Life-zones for nesting, Transition to Hudsonian, and where there are plantings of conifers, in some parts of high Upper Sonoran. Altitudinal range of nesting stations, from near sea level, as at Point Lobos, Monterey County, up to 10,600 feet in the San Bernardino Mountains. Selected accounts bearing on summer residence: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:24); Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:124); Warner Mountains area (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:316); Lassen section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:401); near Glen Alpine, Eldorado County (Barlow and Price, Condor, 3, 1901:171); Virginia Lakes and Mammoth Lakes, Mono County (Rowley, Condor, 41, 1939:252; Dawson, Birds Calif., 1, 1924:184); Tuolumne Meadows, Yosemite National Park (Grinnell and Storer, Animal Life Yosemite, 1924:439); San Francisco and San Mateo counties (Carriger and Pemberton, Condor, 9, 1907:18); Berkeley, Alameda County, and San Jose, Santa Clara County (Rodgers, Condor, 39, 1937:143); San Francisco Bay region generally from Fort Ross, Sonoma County, to Pescadero, San Mateo County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:111); near Felton, Santa Cruz County (McGregor, Pac. Coast Avif. No. 2, 1901:13); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:121); Big Creek, Monterey County (Jenkins, Condor, 8, 1906:128); Mount Pinos, Kern County (Grinnell, Auk, 22, 1905:386); Mount Waterman, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:35); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:92); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:270). Possible breeding areas from which birds have been reported in spring, but where no nests have been found: Santa Cruz Island, April 3-22 (Dawson, Condor, 17, 1915:204); Clark Mountain, eastern San Bernardino County, May 17-28 (A. H. Miller, Condor, 42, 1940:163). Some additional reports indicative of dispersal and activity in winter: Humboldt Bay, Humboldt County, November (Townsend, Proc. U. S. Nat. Mus., 10, 1887:217); Grass Valley, Nevada County (Richards, Condor, 26, 1924:102); Minkler, Fresno County (Swarth, Condor, 19, 1917:130); Walker Basin, Kern County, November 5 (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:239); Alameda, Alameda County (Bassett, Condor, 25, 1923:137); Los Angeles (Swarth, Condor, 2, 1900:38, and *ibid.*, 3, 1901: 66); San Diego (Gander, Condor, 31, 1929:251); Death Valley, Inyo County, November 14 (Gilman, Condor, 38, 1936:41); Twentynine Palms, San Bernardino County, October 30 to November 21, December 19, May 7 (F. Carter, Condor, 39, 1937: 217); Mecca, Riverside County, March 28, 29 (van Rossem, Condor, 13, 1911:136).

Habitat—For nesting, conifers of any type, except those native to the Upper So-

noran Zone, whether these trees be in forest formation or in scattered clumps. Plantings of pines in coastal central California have been adopted by the siskins, with resultant local increase in range. Thick tufts of needles and especially firm flat sprays of foliage well out from the trunk constitute suitable nest sites. Nesting activity centers at middle heights in the trees, for example in one survey of forty nests, from 12 to 15 feet above ground, less often up to 40 or 50 feet. However, foraging may be high in the crowns of trees or, much of the time, on or close to the ground where flower and seed heads of low annuals are utilized. Buds, cones of alders, redwoods, firs and hemlocks, and eucalyptus seed pods are worked upon by clinging to tips of limbs, often head downward. When resting, siskins typically are in high tree tops. Flocks, which persist through much of the year, often are intermixed with goldfinches and occasionally at other times with crossbills.

Spinus tristis salicamans Grinnell
Willow American Goldfinch

Synonyms—Carduelis tristis; *Chrysomitris tristis*; *Spinus tristis*; *Astragalinus tristis*; *Astragalinus tristis salicamans*; *Spinus tristis jewetti*; Yellow-bird; American Goldfinch; Goldfinch; Common Goldfinch; Willow Goldfinch; California Goldfinch; Northwestern Goldfinch.

Status—Resident in the sense that the population remains largely within the confines of the general breeding range; but, there is much local movement and dispersal from the breeding areas in winter. Common; in a few places abundant.

Geographic range—Valleys and lower canyons and foothills west of the Cascade-Sierran axis and the desert divides from the Oregon line south to the Mexican boundary. Vagrants occur rarely along the eastern side of the mountains. Life-zones, Lower Sonoran, Upper Sonoran, and, in vicinity of coast, Transition. Altitudes of nesting stations range from near sea level as at Alamitos Bay, Los Angeles County, up to about 3000 feet, as at Edgewood, Siskiyou County; in fall has been taken at 5800 feet, at Manzanita Lake, Shasta County (Vogt, Condor, 43, 1941:162). Stations of occurrence representative of sections where resident: Smith River, Del Norte County (Ferry, Condor, 10, 1908:42); Yreka and Edgewood, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:92); eastern Tehama County, resident up to 1000 feet elevation (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:402); Arcata, Humboldt County (W. K. Fisher, Condor, 4, 1902:133); Cahto, Mendocino County (McGregor, Nidologist, 3, 1896:148); Sacramento (Ridgway, Ornith. 40th Parallel, 1877:461); Davis, Yolo County (Storer, Condor, 33, 1931:125); Lake Merced, San Francisco (Hansen and Squires, Condor, 19, 1917:60); Watsonville, Santa Cruz County (Van Denburgh, Proc. Acad. Nat. Sci. Phila., 1898:213); Snelling, Merced County (Grinnell and Storer, Animal Life Yosemite, 1924:434); San Antonio Creek, Monterey County (Pemberton and Carriger, Condor, 17, 1915:199); near San Miguel, San Luis Obispo County (Willett, Condor, 10, 1908:137); vicinity of Fresno, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:76); Tulare Lake, Kings County, and Buena Vista Lake, Kern County (Goldman, Condor, 10, 1908:204); Pasadena, Compton, etc., Los Angeles County (Willett, Pac. Coast Avif. No. 7, 1912:75); parasitism by cowbird at Colton, San Bernardino County (Willett, Pac. Coast Avif. No. 21, 1933:163); Cabezon, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913: 269); vicinity of Escondido, San Diego County (Sharp, Condor, 9, 1907:89). Some records of vagrants eastwardly: Eagle Lake, Lassen County, October 12 (Grinnell,

Dixon and Linsdale, *loc. cit.*); Litchfield, Lassen County, December 27 (Mus. Vert. Zool.); Yosemite Valley, May 21, August 19 (Widmann, Auk, 21, 1904:69; Mailliard, Condor, 20, 1918:16); Lancaster, northern Los Angeles County, May 17 (Dawson, Birds Calif., 1, 1924:188); near Yermo, San Bernardino County, January 7 (Lamb, Condor, 14, 1912:38); Twentynine Palms, San Bernardino County, November 23 to December 16 (F. Carter, Condor, 39, 1937:218); Whitewater, May 27, Palm Springs, February 11, January 25, May 28 (Dawson, *loc. cit.*; Grinnell, Condor, 14, 1912:154). There is a single record for the coastal islands: Santa Rosa Island, April 3 (Pemberton, Condor, 30, 1928:147).

Habitat—For nesting, chiefly the riparian association in which willows and cottonwoods predominate. Nests are less commonly placed in other cover, as orchard trees, oaks, ceanothus bushes, and even low annual vegetation. In the vicinity of the nest open country ordinarily is available where the birds may forage near the ground and in bush tops. Thistle heads are especially sought by this species, perhaps even more assiduously than by its generic relatives. Continuous forest and treeless plains limit distribution in the summer, although vagrants, especially in winter, may enter a great variety of habitats. At all seasons, but especially in late winter and spring, foraging may be carried on in tree tops, where buds and seeds are available. Tree tops also are important as loafing places and for flock assembly.

Note—A badly sooted bird taken March 3, 1935, at Truckee, Nevada County (Mus. Vert. Zool. no. 66947) is large and hence suggestive of *Spinus tristis pallidus*, but it does not provide satisfactory basis for ascription of this race to California; it is probable that *pallidus* crosses the eastern border of the State at least as a vagrant or migrant. *Spinus t. jewetti* may extend into extreme northwestern California as van Rossem (Condor, 45, 1943:158) surmises; thus far we have not seen adequate material in fall plumage which would establish this point.

Spinus psaltria hesperophilus (Oberholser)
Green-backed Arkansas Goldfinch

Synonyms—Chrysomitris psaltria; *Carduelis psaltria*; *Chrysomitris mexicanus*; *Chrysomitris psaltria* var. *psaltria*; *Chrysomitris psaltria* var. *arizonae*; *Astragalinus psaltria*; *Spinus psaltria*; *Spinus psaltria arizonae*; *Astragalinus psaltria arizonae*; *Astragalinus psaltria psaltria*; *Astragalinus psaltria hesperophilus*; Arkansaw Siskin; Western Goldfinch; Arkansas Finch; Arkansas Goldfinch; Mexican Goldfinch; Green-backed Goldfinch; Arizona Goldfinch.

Status—Resident, but there is considerable local movement and vagrancy; probably leaves northeastern section in winter. In southern and west-central California, occasionally nests in fall. Common to abundant.

Geographic range—The entire State, except small districts in high mountains and heavily timbered areas; may appear even in such places as a vagrant, especially in late summer. Most abundant and most continuously distributed in southern and central California west of the Sierra Nevada. Nests in Lower Sonoran and Upper Sonoran life-zones, and in parts of Transition Zone. Altitudinal range extends from —200 feet at Mecca, Riverside County, up to 9800 feet, on Mount Tallac, Eldorado County; probably does not breed much above 6500 feet, as in San Bernardino Mountains and at Mono Lake. Some representative stations of occurrence: Requa, Del Norte County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:24); Nash and Mount Sanhedrin, Mendocino County (Mus. Vert. Zool.; Stone, Proc. Acad. Nat. Sci. Phila., 1904:583); Guerneville, Sonoma County (Mus. Vert. Zool.); Horse Creek, Siskiyou Mountains,

Siskiyou County, September 7 (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:10); Shasta Valley and Sisson, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:124); Sugar Hill [near Goose Lake], Eagleville, etc., Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:315); Lassen section, from Red Bluff east to Secret Valley in summer, up to 1000 feet on western slopes in winter (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:403); Mount Tallac and Fyffe, Eldorado County (Barlow and Price, Condor, 3, 1901:170); Big Trees and Murphy, Calaveras County, and Stockton, San Joaquin County (Belding, Proc. U. S. Nat. Mus., 1, 1879:413); Mount Diablo, Contra Costa County (Peterson, Condor, 44, 1942:73); Berkeley, Alameda County, nesting November 2 (Plath, Condor, 21, 1919:30; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:110; Nichols, Gull, 23, 1941:32); Farallon Islands, in winter (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:428); Palo Alto and Los Gatos, Santa Clara County (Van Denburgh, Proc. Amer. Philos. Soc., 38, 1899:170); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:122); Yosemite district east to Yosemite Valley, and Mono Lake and Williams Butte, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:435; C. W. Michael, Condor, 27, 1925:112); Fresno district, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:76); Buena Vista Lake, Kern County (Linton, Condor, 10, 1908:198); south fork of Kern River and Walker Basin, Kern County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:84); Santa Barbara, Santa Barbara County (Mailliard, Condor, 8, 1906:46); Los Angeles, nesting in November (Chambers, Condor, 17, 1915:166, and *ibid.*, 23, 1921:33); Azusa, Los Angeles County (Woods, Condor, 27, 1925:71, and *ibid.*, 32, 1930:126); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:92); Cabezon, Riverside County (Holterhoff, Amer. Nat., 15, 1881:213); Escondido and San Diego, San Diego County, fall nestings, and parasitism by cowbird (Carpenter, Condor, 21, 1919:86; Abbott, Condor, 29, 1927: 160; Friedmann, Wilson Bull., 46, 1934:109); Santa Rosa, Santa Cruz and Santa Catalina islands (Pemberton, Condor, 30, 1928:147; Howell, Pac. Coast Avif. No. 12, 1917:76); Mammoth, head of Owens River, and White Mountains, Mono County (A. K. Fisher, *loc. cit.*; Dawson, Birds Calif., 1, 1924:191); Inyo, Panamint, Grapevine and Argus mountains, and Owens and Death valleys, Inyo County (A. K. Fisher, *loc. cit.*; Mus. Vert. Zool.); Kingston Range and Providence Mountains, San Bernardino County (Mus. Vert. Zool.); Mecca, Riverside County, nesting (van Rossem, Condor, 13, 1911:136); Colorado River valley, from Needles to Pilot Knob (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:165). Food in general (Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:73).

Habitat—Open terrain with scattered trees or bushes. Brushland may be occupied if open land and edge situations are present in the vicinity. Of the four members of the genus *Spinus*, this goldfinch shows the widest range of tolerance with respect to rainfall, humidity and temperature. It appears to be the most water-seeking of all the goldfinches; yet this probably is a corollary of its occurrence in arid foothill regions and on the desert where its presence is sharply limited by water sources. Activity centers near the ground in foraging—on low-growing composites, for example, and seed heads on bush tops; seldom, as with the American Goldfinch and Pine Siskin, does it feed in the crowns of trees, and it less often comes to rest in tree tops. Nest emplacements are provided by a great variety of plants and usually are in fairly dense foliage, from two to thirty feet above ground.

Spinus lawrencei (Cassin)
Lawrence Goldfinch

Synonyms—Carduelis lawrencei; *Carduelis lawrencii*; *Chrysomitris lawrencei*; *Crysomitris lawrencii*; *Astragalinus lawrencei*; *Astragalinus lawrencii.*

Status—Summer resident from April through September. A small part of the population remains through the winter in the breeding range; also appears then in otherwise unoccupied areas southeastwardly. Fairly common in general, but numbers often variable from year to year in any given locality, and distribution notably discontinuous and movements erratic.

Geographic range—Breeds in coastal districts from Sonoma County south to Mexican boundary and interiorly, west of Cascade-Sierran axis, from Shasta and Trinity counties southward; extends eastwardly through mountains of southern California onto western edge of Mohave Desert in vicinity of Victorville. In winter, north rarely to San Francisco and Colusa, Colusa County, but in moderate numbers in coastal southern California and in Coachella, Imperial, and Colorado River valleys. Life-zone in nesting season chiefly Upper Sonoran, but also breeds sparingly in Transition Zone of southern mountains and regularly in some Lower Sonoran areas. Altitudinal range of known or probable nesting stations extends from near sea level as at Laguna Beach, Orange County, up to 6500 feet, as in the San Bernardino Mountains; vagrants have been taken as high as 8500 feet. Far northern records: McCloud River, near Baird, Shasta County (Mus. Vert. Zool.); Hayfork and Hyampom, Trinity County (A. H. Miller MS); Sebastopol, Sonoma County, where seen as late as October 25 (Belding, Land Birds Pac. Dist., 1890:138). Easternmost stations for nesting season: Murphy, Calaveras County (Belding, Proc. U. S. Nat. Mus., 1, 1879:414); Smith Creek, east of Coulterville, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924: 437); west base of Redwood Mountain, 5000 feet, Tulare County (Mus. Vert. Zool.); Weldon, Kern County (Grinnell, Pac. Coast Avif. No. 11, 1915:110); Hesperia, San Bernardino County (A. H. Miller MS); Amstott Creek, Santa Rosa Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:270). Other representative accounts of occurrence in summer: Sacramento (Heermann, Jour. Acad. Nat. Sci. Phila., ser. 2, 2, 1853:266); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:110); Diablo, Contra Costa County (Peterson, Condor, 44, 1942:73); Fresno district, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:76); Shandon, San Luis Obispo County (Dawson, Birds Calif., 1, 1924:197); Mount Pinos, Kern County (Grinnell, Auk, 22, 1905:386); Azusa, Los Angeles County (Woods, Bird-Lore, 26, 1924:5, Condor, 27, 1925:71); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:92); Santa Cruz Island, where stated to be breeding (Dawson, *loc. cit.*); Santa Catalina Island, May [breeding?] (Howell, Pac. Coast Avif. No. 12, 1927:76); Escondido, San Diego County (Sharp, Condor, 9, 1907:89). Some winter records: Colusa, Colusa County, February 14 (C. A. Harwell MS); Marysville, Yuba County, January 9 (Belding, Proc. U. S. Nat. Mus., 1, 1879:414); San Francisco, December (Cooper, Ornith. Calif., 1, 1870:171); Waltham Creek, western Fresno County, December 25 (Mus. Vert. Zool.); Los Angeles and Pasadena, Los Angeles County, and Grapelands [near Lytle Creek], San Bernardino County (Mus. Vert. Zool.; see also Willett, Pac. Coast Avif. No. 21, 1933:166); Volcan Mountains, San Diego County, January 25, 31 (Belding, Land Birds Pac. Dist., 1890:138); San Diego (Gander, Condor, 32, 1930:64); Twentynine Palms, San Bernardino County, October 17 to November 14, March 23 to May 26 (F. Carter, Condor, 39, 1937:218); Mecca, River-

side County, March, and Alamo River near Brawley, Imperial County, December, January (van Rossem, Condor, 13, 1911:132, 136); Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:166).

Habitat—As breeding, usually oak woodland and open or broken forest of the arid Transition Zone. Grassland, growths of tall annuals, and chaparral are plant formations where suitable and workable seed supplies may be found, often at some distance from the nests. Sources of water probably also are necessary. Nest emplacements originally must have been commonly in dense oak foliage, but this goldfinch has shown special liking for plantings of cypresses and deodars and now nests in them extensively, sometimes even gregariously. Nests are to be found, however, in a large variety of trees and bushes.

Loxia curvirostra sitkensis Grinnell
Sitka Red Crossbill

Synonyms—Loxia curvirostra minor, part; *Loxia curvirostra bendirei*, part; American Crossbill, part; Crossbill, part; American Red Crossbill, part; Sitka Crossbill; Bendire Crossbill, part.

Status—Irregular visitant from northward, most often appearing in winter. Probably breeds in northwestern section of State where it has been detected at all seasons of the year. Numbers usually small.

Geographic range—Coastal districts and mountain ranges west of Sacramento Valley south to San Francisco Bay region, rarely as far south as coastal slopes of southern California and east to Sierra Nevada. Life-zones of presumptive breeding area, Transition and Canadian. Records of occurrence based on specimens, most of which have recently been examined by Griscom (Proc. Boston Soc. Nat. Hist., 41, 1937:148) or by us: Requa, Del Norte County, April 21 to June 1, 1921 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:23); Samoa, Humboldt County, January 14, 1923 (J. M. Davis, Condor, 35, 1933:119); Eureka, November 2, 13, 1913, Carlotta, November 23, 1913, and South Fork Mountain, near Blake Lookout, 5700 feet, July 6, 1930, same county (Griscom, *loc. cit.*; Mus. Vert. Zool.); 12 miles north of North Yolla Bolly Mountain, 4400 feet, Trinity County, May 8, 14, 1926 (Mus. Vert. Zool.); Greenwood, Eldorado County (Calif. Acad. Sci.); Nicasio, Marin County, October 28, 1878, February 21, 1909 (Grinnell, Condor, 11, 1909:102, 139; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:109); Berkeley, Alameda County, February 10, 1920 (intergrade toward *L. c. bendirei*) and Hayward, same county, January 26, 30, 1899, March 22, 1909, and February 23 and April 1, 1914 (Grinnell and Wythe, *loc. cit.*); Pasadena, Los Angeles County, December 26, 1898 (Willett, Pac. Coast Avif. No. 21, 1933:165); Riverside, Riverside County, January 17, 1909 (Willett, *loc. cit.*).

Habitat—Coniferous forests, especially of Douglas fir, Sitka spruce and true firs of the genus *Abies*, wherein activity is centered about cone-bearing tree tops and tips of limbs, usually high above ground. As a consequence of the placement of the food supply, the vigorous and frequent flight movements and resting perches are over or in the crowns of trees. In the course of vagrant movements, particularly to the southward, may use other food sources such as buds of "poplars," toyon berries, eucalyptus and cypress seeds, and almonds fallen to the ground.

Note—The applicability of the name *minor* to this small northwestern race of crossbills as suggested by Griscom (*loc. cit.*) seems to us doubtful. The lectotype of *minor* is a small bird to be sure,

but direct comparison of it with *sitkensis* has not been carried out. There remains a possibility that it represents the middle-sized crossbills of the east coast. (Note also current usage of the name *sitkensis* by Griscom, Auk, 58, 1941:413.)

Loxia curvirostra bendirei Ridgway
Bendire Red Crossbill

Synonyms—Curvirostra americana, part; *Loxia curvirostra* var. *americana*, part; *Loxia curvirostra minor*, part; *Loxia curvirostra stricklandi*, part; Red Crossbill, part; American Crossbill, part; Crossbill, part; Mexican Crossbill, part; Sierra Cossbill, part; Bendire Crossbill, part.

Status—Irregular visitant from northward, appearing in fall, winter and spring, rarely in summer. Occasionally found in flocks of large size, but generally sparse, the total number of proved occurrences in the State small.

Geographic range—Mountains and foothills of Cascade-Sierran system, south to coastal San Bernardino County; also occurs along coast from Humboldt Bay south to Santa Cruz Island. The following records based on skins appear to us to relate to this race in the restricted sense (see Griscom, Proc. Boston Soc. Nat. Hist., 41, 1937:108ff.): Mount Shasta, Siskiyou County, September 6, 1883 (Townsend, Proc. U. S. Nat. Mus., 10, 1887:216; Griscom, *loc. cit.*); Fort Crook, Shasta County, January 3, February 3, March 11, 1860 (Griscom, *loc. cit.*); Broke-off Mountain, 9200 feet, Tehama County, July 27, 1925, intermediate toward *L. c. sitkensis* (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:404); Grass Valley, Nevada County, October 11, 1914 (Richards, Condor, 26, 1924:102); Summit Johnson's Pass [near Lake Tahoe], Eldorado County, September 26, 1863 (Mus. Vert. Zool.); Samoa, Humboldt County, January 14, 1923 (J. M. Davis, Condor, 35, 1933:119); 3 miles west of Knob, Shasta County, May 27, 1926 (Calif. Acad. Sci.); San Francisco, December 16, 1919 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:109); Santa Cruz Island, March 27 to April 3, 1920 (Dickey and van Rossem, Condor, 25, 1923:127; Griscom, *loc. cit.*); Pasadena, Los Angeles County, December 26, 1898, November 1, 1908 (Willett, Pac. Coast Avif. No. 21, 1933:164; Griscom, *loc. cit.*); San Bernardino Mountains, October 19, 1885 (Calif. Acad. Sci.).

Habitat—Coniferous forests, as with other races of crossbills. Trees known to be visited by this form in California include: firs, mountain hemlock, and Monterey, Bishop and yellow pines. There is no suggestion of preference for tree species with small and fragile cones as is the case in the extremely small-billed *L. c. sitkensis*.

Loxia curvirostra grinnelli Griscom
Sierra Red Crossbill

Synonyms—Loxia americana; *Curvirostra americana*, part; *Loxia curvirostra* var. *americana*, part; *Loxia curvirostra bendirei*, part; *Loxia curvirostra minor*, part; *Loxia curvirostra*; *Loxia curvirostra stricklandi*, part; Red Crossbill, part; American Red Crossbill, part; Bendire Crossbill, part; American Crossbill, part; Mexican Crossbill, part; Sierra Crossbill, part; Crossbill, part; Bendire Red Crossbill, part; Grinnell Crossbill.

Status—Resident in high mountains of interior, although nomadic within these areas; fairly common. Occasional vagrant beyond limits of breeding range.

Geographic range—As resident, Cascade Mountains and Sierra Nevada, from Mount Shasta southward, and continuing into southern California on Mount Pinos, and on San Bernardino and San Jacinto mountains. Apparently breeds throughout this area but decisive evidence of nesting meager. Extends eastwardly to Grapevine Mountains, Inyo County (breeding birds with juvenile taken in Nevada within one mile of State line). As a vagrant occurs west to coast from Marin County to Santa Cruz Island and south to mountains of San Diego County. Life-zones, Transition, Canadian and Hudsonian, vagrants occasionally appearing in lower zones. In "resident" status ranges altitudinally from 3500 feet, as at Sisson, Siskiyou County, up to 11,000 feet, as on Glass Mountain, Mono County; probably breeds chiefly between 5000 and 10,000 feet. Representative stations of record and accounts of natural history pertaining to normal range: Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:123); Eagle Lake and region east of Lassen Peak, Lassen County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:216; Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:405, part; Griscom, Proc. Boston Soc. Nat. Hist., 41, 1937:150); Summit, 7000 feet, Placer County, February, 1901 (Price, Condor, 6, 1904:73); Fyffe, 3700 feet, Glen Alpine Canyon, and Meyers, Eldorado County (Barlow and Price, Condor, 3, 1901:170; L. Miller, Condor, 22, 1920:78); Hazel Green, Tenaya Lake (with young), and Tuolumne Meadows (nesting), all in Yosemite National Park (Grinnell and Storer, Animal Life Yosemite, 1924:428; Butts, Yosemite Nature Notes, 19, 1940:23; L. M. Smith, *ibid.*:24; M. D. Bryant, *ibid.*:60); Glass Mountain, Mono County (Mus. Vert. Zool.); Horse Corral Meadows, Fresno County, Whitney Meadows, Tulare County, and Big Cottonwood Meadows, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:81); Mount Pinos, Ventura County (Grinnell, Auk, 22, 1905:385); vicinity of Dry Lake, San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:91); Round Valley, San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:268). Vagrants of this race, skins of which have recently been examined or measurements of which have been reported: Nicasio, Marin County, March 5, 1895 (Grinnell, Condor, 11, 1909:102); Pacific Grove, Monterey County, June 30, 1900 (Griscom, *loc. cit.*); Santa Cruz Island, spring of 1920 (Griscom, *loc. cit.*); Escondido, San Diego County, March 1, 1920 (Sharp, Condor, 22, 1920:159); Providence Mountains near Cima, 5500 feet, San Bernardino County, May 25, 1938 (Mus. Vert. Zool.). Additional records of vagrants that apparently pertain to this race: Santa Monica, Los Angeles County, January 1, 1920 (Willett, Pac. Coast Avif. No. 21, 1933:164); Vallevista, Riverside County, August 31 and September 3, 1908 (Grinnell and Swarth, *loc. cit.*); Campo, San Diego County, March 6, 1877 (Willett, *loc. cit.*).

Habitat—Coniferous forests, especially those of pines with moderately large cones. The forest tree most extensively inhabited is the lodgepole pine, but others commonly visited are white-bark, limber, fox-tail, and ponderosa pines and piñon. This race also feeds in firs and hemlocks and indeed in broad-leafed trees when buds are available. The forage beat includes tree tops and cone-bearing branch tips regardless of their height. Thus in alpine scrub the crossbills may be active within two feet of the ground and their flight lines are correspondingly low. Additionally the birds may feed on the ground, searching in the cone and leaf litter for seeds; salts also are obtained there by taking crystals or salt-impregnated earth. Crossbill activity in general centers in exposed places in the forest and is characterized by mobility and vigor.

Loxia curvirostra benti Griscom
Rocky Mountain Red Crossbill

Synonyms—Loxia curvirostra bendirei, part; Bent Crossbill(!).

Status—Rare vagrant from eastward. Known instances of occurrence based on recently determined specimens: Fort Crook, Shasta County, January 30, 1860 (Griscom, Proc. Boston Soc. Nat. Hist., 41, 1937:149); Mount Pinos, 8100 feet, Kern County, June 11, 15, 1929 (Griscom, *loc. cit.*; Mus. Vert. Zool.); 5 miles northeast of Granite Well, 5400 feet, December 28-30, 1937, January 2, 1938, and near Cedar Canyon, 5200 feet, May 25, 1938, both localities in Providence Mountains, San Bernardino County (Mus. Vert. Zool.). Eight birds of this race collected in the Providence Mountains showed no signs of breeding; all were taken in piñons where flocks numbering up to 20 individuals were seen (D. H. Johnson MS).

Loxia curvirostra stricklandi Ridgway
Mexican Red Crossbill

Synonyms—Loxia curvirostra bendirei, part; Sierra Crossbill, part.

Status—Rare vagrant from southward. There are four known localities of record from which recently determined specimens are extant; all stations are in the southern half of the State: Pacific Grove, Monterey County, January 23, 1897, September 19, 1914, 2 specimens, March 23, 1920, 2 specimens (Griscom, Proc. Boston Soc. Nat. Hist., 41, 1937:150; Calif. Acad. Sci.); Jackass Meadow [South Fork Kern River], 7750 feet, Tulare County, August 4, 1911 (Mus. Vert. Zool.); Santa Cruz Island, April 1, 1920, four specimens (Griscom, *loc. cit.*; see also Dickey and van Rossem, Condor, 25, 1923:127, part, and Willett, Pac. Coast Avif. No. 21, 1933:165, part); San Bernardino Mountains, July 22, 1934 (Griscom, *loc. cit.*). On Santa Cruz Island this crossbill occurred with *L. c. bendirei* and *grinnelli* in the Monterey pine forest, especially in a burned area.

Oberholseria chlorura (Audubon)
Green-tailed Towhee

Synonyms—Embernagra blandingiana; *Pipilo chlorurus*; *Embernagra chlorura*; *Atlapetes chlorurus*; *Oreospiza chlorura*; *Oberholseria chlorura zapolia*; Blanding Finch; Green Finch; Green-tailed Bunting; Green-tailed Finch; Oregon Green-tailed Towhee.

Status—Present in three seasonal rôles: common summer resident from May to early September in mountains, especially those of the interior; winter visitant, rarely, in coastal southern section; transient there and elsewhere, except along northwest coastal strip; migrants are most numerous in the interior; spring movement occurs in April, lasting well through May in the desert mountains; fall migration occurs in September and October.

Geographic range—As breeding, northern coast ranges, west to interior Humboldt County and south to northern Mendocino County; Cascade Mountains, Sierra Nevada, and high ranges of southern California west to Mount Pinos and southeast to Mount San Jacinto; mountains and high plateaus of Great Basin region from Modoc County

south through Inyo County. In winter, chiefly Pacific slope north to Los Angeles County, exceptionally as far as Sacramento Valley. Life-zones in summer period, Transition and Canadian. Altitudes of breeding localities range from 2500 feet, as at Nevada City, Nevada County (Nelson, Proc. Boston Soc. Nat. Hist., 17, 1875:359), up to 10,000 feet in White Mountains, Mono County (Mus. Vert. Zool.); in other areas where nesting occurs normally below 8500 feet, post-breeding wandering frequently carries birds up slope to higher levels. Western outposts for summer residents: Horse Mountain [near Willow Creek], Humboldt County, and South Fork Mountain, Trinity County (Mus. Vert. Zool.); Mount Sanhedrin, Mendocino County (Stone, Proc. Acad. Nat. Sci. Phila., 1904:583); Mount Pinos, Ventura County (Grinnell, Auk, 22, 1905:389). Southernmost stations for nesting: San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:283); Coso, Grapevine, and Panamint mountains, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:104). Other accounts bearing on natural history and representative of different parts of summer range: Bray and Salmon Mountains [near Greenview], Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:93); Black Butte, Glenn County (Clark, Condor, 34, 1932:117); Mount Shasta, Siskiyou County (Feilner, Ann. Rept. Smithsonian Inst., 1865:426; Merriam, N. Amer. Fauna No. 16, 1899:126); Goose Lake and Warner Mountains, Modoc County (Dawson, Birds Calif., 1, 1924:387); Lassen section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:406); Fyffe, Lake Tahoe, etc., Eldorado County (Barlow, Condor, 3, 1901:173); Yosemite National Park (Grinnell and Storer, Animal Life Yosemite, 1924:482); Convict Creek, Mono County (Dawson, *loc. cit.*; Rowley, Condor, 41, 1939:253); Mount Waterman, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:40); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:103; Law, Condor, 28, 1926:133). Representative data on migrants: Mineral, Tehama County, April 19 (Grinnell, Dixon and Linsdale, *loc. cit.*); Clear Lake, Lake County, September (Baird, Brewer and Ridgway, Hist. N. Amer. Birds, 3, 1874:517); Summit, September 25, and Cisco, October 2, Placer County (Belding, Land Birds Pac. Dist., 1890:173; Mus. Vert. Zool.); "central Sierra Nevada," first seen April 17 (Belding, *loc. cit.*); Glen Aulin, Tuolumne County, last seen October 4, and Williams Butte, Mono County, first seen May 6 (Grinnell and Storer, *loc. cit.*); San Francisco, May 9 (Emerson, Ornith. and Ool., 9, 1884:93); Berkeley, Alameda County, September 25, near Evergreen, Santa Clara County, April 30 (E. L. Sumner, Sr., Condor, 37, 1935:38); Mendota, September 10, and Minkler, October 6, Fresno County (Tyler, Condor, 18, 1916:198; Swarth, Condor, 19, 1917: 130); Piute Mountains, 6700 feet, Kern County, October 24 (Mus. Vert. Zool.); Mountain Spring, 5300 feet, Argus Mountains, Inyo County, October 25 (Mus. Vert. Zool.); Lavic, April 20, and Clark Mountain, May 24 (possibly breeding), San Bernardino County (Mus. Vert. Zool.); Los Angeles, October 10, Pasadena, Los Angeles County, April 4, 29, Buena Park, Orange County, April 19, 24, and Witch Creek, San Diego County, September 25 (Willett, Pac. Coast Avif. No. 21, 1933:165); La Jolla, San Diego County, September 15 (Sumner, *loc. cit.*); Colorado River valley, April 7 near Cibola to May 10 near Pilot Knob (Grinnell, Univ. Calif. Publ. Zool., 12, 1914: 178). Winter records: Marysville, Yuba County, February 12 (Belding, *loc. cit.*); San Jose, Santa Clara County, "winter" (Van Denburgh, Proc. Amer. Philos. Soc., 38, 1899:174); records for coastal southern California reviewed—Los Angeles, San Bernardino, San Diego (Willett, *loc. cit.*); Palm Springs, Riverside County, "winter" (Gilman, Condor, 5, 1903:13); Colorado River valley, specimens taken in Arizona

only, at Fort Mohave, February 13, March 11, seen March 14 above Bill Williams River (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:178).

Habitat—Chaparral types occurring in the Transition and Boreal zones. Most commonly this essential cover is composed of snow bush (*Ceanothus cordulatus*) and manzanita, or, eastwardly, of *Artemisia tridentata* and *Purshia*. Forest is avoided; only scattered trees within the brushland are tolerated, but they may be used as song posts. The brush cover is typically low (2 to 4 feet) and spreading, affording runways between plants and underneath the foliage. Within forested areas, the places occupied are comparatively dry and well insolated; in the Great Basin region the lower, warmer flats are avoided even though grown to sagebrush. The sphere of activity is low, foraging taking place on the ground in the leaf litter and in the tangle of branches. Retreat from danger often is accomplished by running into the cover and this method is used typically in flushing from the nests which are placed in bushes near the ground.

Pipilo maculatus curtatus Grinnell
Nevada Spotted Towhee

Synonyms—Pipilo maculatus megalonyx, part; *Pipilo maculatus falcinellus*, part; *Pipilo maculatus*, part; Long-clawed Towhee Bunting, part; Long-spurred Towhee, part; Spurred Towhee, part; Nevada Towhee, part; Sacramento Towhee, part.

Status—Summer resident in Great Basin region from late March to early October; partly migratory, some birds wintering far to southward in State. Common on breeding grounds in summer; winter visitants to other areas occur only in small numbers.

Geographic range—As breeding, northeastern section from Oregon line south to Mono Lake (see note, p. 470); limited to westward by high-zone forests of Cascade-Sierran system. In winter, occurs south to lower Colorado River valley; has appeared in fall on west slope of Sierra Nevada. Life-zones in summer, Upper Sonoran and Transition. Altitudes of known or probable nesting range from 4000 feet in Honey Lake Valley, Lassen County (Mus. Vert. Zool.) up to 8000 feet on Warner Mountains (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:327). Significant references to localities in breeding range: Sugar Hill and Dry Creek, in Warner Mountains area, Modoc County (Grinnell, Univ. Calif. Publ. Zool., 7, 1911:310; Swarth, Condor, 15, 1913:173); Steele Meadow [Swamp], Modoc County (Mailliard, *loc. cit.*); Secret Valley, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:409); Mono Lake, Leevining Creek, and Williams Butte, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:477). Data bearing on winter dispersal: Payne Creek P.O., 1600 feet, Tehama County, specimen taken December 22 (Grinnell, Dixon and Linsdale, *loc. cit.*); Glen Aulin, Tuolumne County, specimen taken October 4 (Grinnell and Storer, *loc. cit.*); near Needles, February 17, 20, near Riverside Mountain, March 17, etc., lower Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:177); near Potholes, Imperial County, January 23 (Howell and van Rossem, Condor, 17, 1915:234).

Habitat—Basic requirements much as in race *montanus*, which see. Brush cover inhabited includes willow thickets, artemisia and rabbit brush. In winter, in Colorado River valley, occurs in thickets of arrowweed and in atriplex bushes.

Pipilo maculatus montanus Swarth
Rocky Mountain Spotted Towhee

Synonyms—Pipilo maculatus megalonyx, part; *Pipilo maculatus curtatus*, part; Spurred Towhee, part; Nevada Towhee, part; Mountain Towhee.

Status—Resident, so far as known; probably descends from higher mountains in winter. Common.

Geographic range—Mountain ranges of Inyo district from southeastern Mono County south to northern San Bernardino County and from east side of Owens Valley to Nevada line. Life-zones, chiefly Upper Sonoran, with some extension into adjoining zones. Altitudinal range, 4300 feet to 8000 feet; may wander up to 10,000 feet in late summer. Representative areas of record (A. K. Fisher, N. Amer. Fauna No. 7, 1893: 102; Mus. Vert. Zool.): vicinity of Glass Mountain, Benton, and White Mountains, Mono County; Inyo and Coso mountains, Mountain Spring Canyon in Argus Range, and Panamint and Grapevine mountains, all in Inyo County; Kingston Range, Clark Mountain and Providence Mountains, San Bernardino County.

Habitat—Large, stiff-branched shrubs, particularly in bottoms of ravines and canyons and along bases of rock outcrops. For desert areas, the brush required is relatively dense and tall, and normally associated with it are piñons, junipers or mountain mahoganies which afford exposed elevated song posts essential for the males. Only in such brush is deep leaf litter likely to accumulate, protected from wind scattering, where these towhees can forage in instinctive scratching fashion and be hidden by the foliage screen above. *Purshia*, willow thickets and tall artemisia bushes commonly provide the necessary cover.

Note—The population of this race in California does not manifest the characters of *montanus* as uniformly or in such extreme degree as do the birds of Arizona and southeastern Nevada. Intergradation toward *falcinellus* and *curtatus* is particularly evident in birds from the White, Inyo, Coso and Argus mountains and their assignment to *montanus* is somewhat arbitrary. Examination of extensive material recently acquired in Inyo and Mono counties (Mus. Vert. Zool.) shows that the most noticeable breaks in the character gradients take place north of the Glass Mountain area and in the floor of Owens Valley.

Pipilo maculatus falcinellus Swarth
Sacramento Spotted Towhee

Synonyms—Pipilo arcticus, part; *Pipilo megalonyx*, part; *Pipilo erythrophthalmus oregonus*; *Pipilo maculatus megalonyx*, part; *Pipilo maculatus* var. *oregonus*, part; *Pipilo oregonus*, part; *Pipilo maculatus montanus*, part; *Pipilo maculatus*, part; Long-clawed Towhee Bunting, part; Oregon Towhee, part; Ground Robin, part; Long-clawed Towhee; Spurred Towhee, part; San Diego Towhee, part; Sacramento Towhee, part; Sacramento Spurred Towhee; Spotted Towhee, part.

Status—In general, resident; there is some altitudinal movement up mountain slopes after nesting and descent from higher parts of breeding range in winter, but no migration is known that carries birds outside of limits of breeding range. Common.

Geographic range—In general, the floor and slopes of the Great Valley and the northern inner coast ranges north to the Oregon line. More specifically, western slopes of Cascade Mountains and Sierra Nevada and floor of Great Valley south to Tulare County, thence eastward to eastern base of southern Sierra Nevada and north to northern Inyo County; Siskiyou and Trinity mountains west through Trinity County and thence south through eastern Mendocino, Lake, Napa and Solano counties; in San

Joaquin Valley limited westwardly along base of coast ranges in which populations more closely approaching *P. m. falcifer* and *P. m. megalonyx* occur. Life-zones, Upper Sonoran and Transition, and locally in river bottoms of Lower Sonoran. Altitudinal range, from 25 feet, as at Sacramento, up to 8500 feet on east slope of Sierra Nevada; wanders higher in late summer and fall. Selected references and representative localities of occurrence: Yreka, Weed, Mount Shasta, etc., Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:93; Merriam, N. Amer. Fauna No. 16, 1899: 126); Scott River and Summerville, western Siskiyou County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:385); Hoopa and Willow Creek, extreme eastern Humboldt County (Mus. Vert. Zool.); South Fork Mountain and Mad River, Trinity County (Mus. Vert. Zool.); 12 miles north of North Yolla Bolly Mountain, Trinity County (Mus. Vert. Zool.); Mount Sanhedrin and Covelo, Mendocino County (Mus. Vert. Zool.); Clear Lake, Lake County (N. Stone, Condor, 43, 1941:121); Vacaville, Solano County (Swarth, Condor, 15, 1913:173); Lassen section, from Red Bluff up-slope to 3500 feet, in nesting season (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:409); Grass Valley and Nevada City, Nevada County (Richards, Condor, 26, 1924:102; Nelson, Proc. Boston Soc. Nat. Hist., 17, 1875:359); Marysville Buttes, Sutter County (Swarth, *loc. cit.*); Sacramento (Ridgway, U. S. Geol. Expl. 40th Parallel, 4, pt. 3, 1877:491); Fyffe, Eldorado County (Barlow, Condor, 3, 1901:173); Yosemite Valley (Grinnell and Storer, Animal Life Yosemite, 1924:477; E. Michael, Yosemite Nature Notes, 9, 1930:60; Thaxter, *ibid.*:88); Snelling, Merced County (Kinsey, Condor, 36, 1934:236); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913: 86); Firebaugh and Kingsburg, Fresno County, and Visalia and Porterville, Tulare County [intermediacy toward *megalonyx* evident in this county] (Ray, Auk, 23, 1908: 416); Tulare Lake, Kings County (Goldman, Condor, 10, 1908:205); Laws, Independence, and Olancha, Inyo County [see note, p. 470] (Swarth, *loc. cit.*; Mus. Vert. Zool.).

Habitat—Chaparral, river bottom thickets, and brush patches in open forests. Among the widespread plant formations of such types available in the range of this race, the Spotted Towhees are to be found especially where there is a good accumulation of leaf litter and humus. For this reason partly dead or dying brush, ravine and river bottoms, and bases of cliffs or of steep slopes are favored situations. If the ground forage beat is thus supplied, sufficient screening plant cover is usually present and nest sites on the ground or in well supported vine tangles are also available. Some common plant associates are ceanothus bushes of several species, poison oak, willows, blackberry, cascara, and manzanitas.

Pipilo maculatus oregonus Bell
Oregon Spotted Towhee

Synonym—Oregon Towhee, part.

Status—Winter visitant to northern coastal district, where fairly common. Occurs rarely farther southward. Known records based on specimens (all in Mus. Vert. Zool.): 1 mile north of Big Lagoon, January 4, 5, 1942, 3 miles north of Trinidad, December 28, 29, 31, 1941, and vicinity of Willow Creek, January 8, 10, 1942, Humboldt County; 7 miles north of Colusa, Colusa County, February 26, 1923 (Grinnell, Condor, 25, 1923:176); San Clemente Island, December 4, 1908 (Linton, Condor, 11, 1909:194). Birds taken on the coast of Humboldt County were in the more open brush and forest undergrowth of this otherwise densely grown region.

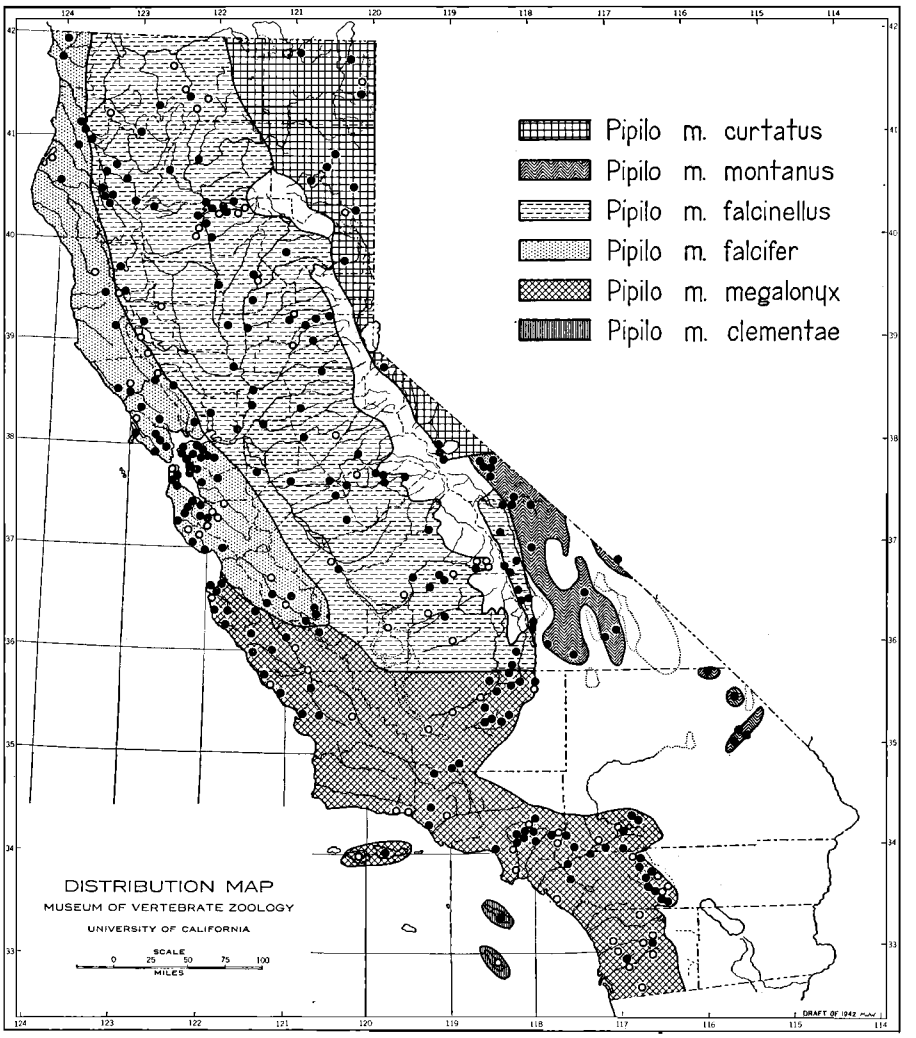

Fig. 48. Distribution of the subspecies of Spotted Towhee, *Pipilo maculatus*, in California. Dots indicate localities from which resident or breeding birds have been examined; circles, localities reported in the literature.

Pipilo maculatus falcifer McGregor
San Francisco Spotted Towhee

Synonyms—Fringilla arctica, part; *Pipilo arcticus*, part; *Pipilo oregonus*, part; *Pipilo megalonyx*, part; *Pipilo maculatus oregonus*, part; *Pipilo maculatus megalonyx*, part; *Pipilo maculatus*, part; *Pipilo maculatus falcinellus*, part; Arctic Ground Finch, part; Oregon Ground Robin, part; Oregon Finch; California Ground Robin, part; Long-clawed Towhee Bunting, part; Spurred Towhee, part; Oregon Towhee, part; San Francisco Towhee, part; Sacramento Spotted Towhee, part; Spotted Towhee, part.

Status—Permanent resident. Common generally, although sparse in extreme northwestern part of range.

Geographic range—Coastal section from Del Norte County south through Santa Cruz and San Benito counties. Extends interiorly through Humboldt County, central Mendocino County and western Lake and Napa counties; south of San Francisco Bay reaches inner coast ranges, although here as also southward in San Benito and northern Monterey counties mergence with adjoining races is gradual and the racial boundaries accordingly are rather arbitrarily drawn. Life-zones, Upper Sonoran and Transition. Altitudinal range, from near sea level, as at San Francisco, up to 5200 feet, as on summit of San Benito Mountain, San Benito County. Representative localities and references: 7 miles east of Smith River and 9 miles east of Crescent City, Del Norte County (Mus. Vert. Zool.); 4 miles northeast of Coyote Peak [between Klamath River and Redwood Creek] and Redwood Creek, 800 feet, Humboldt County (Mus. Vert. Zool.); Eureka, Humboldt County (W. K. Fisher, Condor, 4, 1902:131); Cuddeback, Humboldt County, and Van Duzen River at Trinity-Humboldt county line (Swarth, Condor, 15, 1913: 171); Cahto and Ukiah, Mendocino County (McGregor, Nidologist, 3, 1896:148); Guerneville and Cazadero, Sonoma County, and Inverness and Nicasio, Marin County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:124); Howell Mountain, Napa County (Clark, Condor, 32, 1930:51; Mus. Vert. Zool.); Berkeley, Alameda County (E. L. Sumner, Sr., Condor, 33, 1931:128; G. Tompkins, Condor, 35, 1933:98; Linsdale and Sumner, Condor, 39, 1937:162; A. H. Miller, Condor, 44, 1942:232); Alameda, Alameda County (Cohen, Bull. Cooper Ornith. Club, 1, 1899:61); Mount Diablo, Contra Costa County (Swarth, *loc. cit.*); San Francisco (Ray, Condor, 8, 1906:44); Palo Alto and Los Gatos, Santa Clara County (Stoner, Condor, 33, 1931:252; Van Denburgh, Proc. Amer. Philos. Soc., 38, 1899:173); Big Basin, Santa Cruz County (Orr, Amer. Midl. Nat., 27, 1942:335); near San Benito, Santa Rita Peak, and San Benito Mountain, San Benito County (Mus. Vert. Zool.).

Habitat—Chaparral and forest undergrowth as in other races of Spotted Towhees (which see). Apparently avoids the dense brushlands of the fog-swept coastal slopes of Humboldt and Del Norte counties, although *P. m. oregonus* finds suitable wintering grounds there in some of the less compact tracts of plant growth. Elsewhere *falcifer* occupies heavy chaparral on shaded canyon slopes, as also streamside tangles, low second growths of forest trees and the understory of oak and madrone woodlands. Blackberry vines, willow thickets, baccharis and poison oak brush, and ceanothus and manzanita bushes commonly constitute the essential plant cover.

Pipilo maculatus megalonyx Baird
San Diego Spotted Towhee

Synonyms—Fringilla arctica, part; *Pipilo arcticus*, part; *Pipilo megalonyx*, part; *Pipilo maculatus oregonus*, part; *Pipilo maculatus atratus*; *Pipilo maculatus clementae*, part; *Pipilo maculatus falcifer*, part; *Pipilo clementae*, part; *Pipilo maculatus*, part; Arctic Ground Finch, part; California Ground Robin, part; Southern Pipilo, part; Californian Finch; Long-clawed Towhee Bunting, part; Long-spurred Towhee; Spurred Towhee, part; Oregon Towhee, part; San Diego Towhee, part; San Clemente Towhee, part; Spotted Towhee, part.

Status—Permanent resident. Common; in some areas rated as "abundant."

Geographic range—Coastal districts from Monterey County west of lower (northern) Salinas Valley south to Mexican boundary; interiorly, from Kern County, southward. Included are the Kern River basin northeast to Walker Pass and the interior coast ranges north to extreme western Fresno County. Occurs also on Santa Rosa and

Santa Cruz islands. Intergradation with adjoining races to the northward is notably gradual. Life-zones, chiefly Upper Sonoran, but also locally in Lower Sonoran and Transition. Altitudinal range from near sea level, as at Laguna Beach, up to 7000 feet in San Bernardino Mountains; late summer vagrants range up to 9000 feet. Selected references bearing on natural history and distribution: Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481:28); Santa Lucia Peak, Monterey County (Pemberton and Carriger, Condor, 17, 1915:201); Waltham Creek, western Fresno County (Mus. Vert. Zool.); Paso Robles and Santa Margarita, San Luis Obispo County (Swarth, Condor, 15, 1913:170); Santa Cruz and Santa Rosa islands (Howell, Pac. Coast Avif. No. 12, 1917:85; Dawson, Birds Calif., 1, 1924: 397); Carpinteria, Santa Barbara County (A. K. Fisher, N. Amer. Fauna No. 7, 1893: 103); Mount Pinos, Ventura County (Grinnell, Auk, 22, 1905:389); west slope Walker Pass, Greenhorn Mountains, Mount Breckenridge, and Buena Vista Lake, Kern County (Swarth, *loc. cit.*; Linton, Condor, 10, 1908:198); Pasadena, Los Angeles County (Michener and Michener, Condor, 34, 1932:205); Los Angeles (H. W. Myers, Condor, 12, 1910:166; Atkins, Condor, 18, 1916:201); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:102); San Bernardino, San Bernardino County (Friedmann, Auk, 48, 1931:63); Cabezon and San Jacinto and Santa Rosa mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:282); Escondido, San Diego County (Sharp, Condor, 9, 1907:89); in general (Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:86; Grinnell and Swarth, Condor, 28, 1926:130). Vagrants have been collected on September 30, 1927, on San Miguel Island (Mus. Vert. Zool.) and birds probably of this race have been seen at Quail Spring, San Bernardino County (C. A. Harwell MS) and at Palm Springs, Riverside County (Gilman, Condor, 5, 1903:13).

Habitat—Principally river bottom thickets and chaparral. Tangles of blackberry, wild grape, willow thickets, poison oak, scrub oak, ceanothus and manzanita are prominent plant associates, but any brush cover appears to serve if it is fairly tall and produces abundant leaf litter either by reason of the plant types involved or because of favorable topography of the ground beneath. Placement of nests on or near the ground in brush cover is perhaps a factor which has led to several instances of joint use of nests by California Quail and Spotted Towhees of this and other races. Although foraging is chiefly on the ground, in summer and fall berries are taken from bush tops.

Pipilo maculatus clementae Grinnell

San Clemente Spotted Towhee

Synonyms—Pipilo megalonyx, part; *Pipilo maculatus megalonyx*, part; *Pipilo clementae*, part; *Pipilo maculatus clementis*; Southern Pipilo, part; California Ground Robin, part; Long-clawed Towhee Bunting, part; Spurred Towhee, part; San Clemente Towhee, part.

Status—Permanent resident. Common; even abundant on Santa Catalina Island.

Geographic range—Santa Catalina and San Clemente islands. Principal references: Santa Catalina Island (Grinnell, Auk, 15, 1898:235; Richardson, Condor, 10, 1908:68; Swarth, Condor, 15, 1913:172); Howell, Pac. Coast Avif. No. 12, 1917:85); San Clemente Island (Grinnell, Pasadena Acad. Sci., publ. 1, 1897:19; Linton, Condor, 10, 1908:85; Howell, *loc. cit.*).

Habitat—Fairly tall chaparral, especially along the dry water courses. Wild cherry

thickets are favored both because of associated ground conditions and the protection and fruit supply they afford. Towhees also have been noted in cactus patches and in scrub oak and toyon.

Pipilo fuscus bullatus Grinnell and Swarth
Oregon Brown Towhee

Synonyms—Pipilo fuscus crissalis, part; *Pipilo crissalis carolae*, part; *Pipilo crissalis crissalis*, part; California Towhee, part; Northern Brown Towhee, part.

Status—Permanent resident. Locally common, but aggregate numbers probably not large.

Geographic range—Shasta Valley and near vicinity, in Siskiyou County. Recorded stations extend along Klamath River from near Hornbrook (Grinnell and Behle, Condor, 39, 1937:178) to near Beswick (Ferry, Condor, 10, 1908:43), and south through Shasta Valley as far as Edgewood (Merriam, N. Amer. Fauna No. 16, 1899:126). Life-zone, Upper Sonoran; enters Transition marginally. Altitudes of known occurrence, 2100 to 3400 feet, the latter at Table Rock, ten miles east of Montague (Grinnell and Behle, *loc. cit.*).

Habitat—Broken chaparral, of which *Ceanothus cuneatus* is, in Shasta Valley, a conspicuous member species.

Pipilo fuscus carolae McGregor
Sacramento Brown Towhee

Synonyms—Pipilo fuscus [or *fusca*], part; *Pipilo fuscus* [or *fusca*] *crissalis*, part; *Pipilo crissalis*, part; *Pipilo crissalis carolae*, part; *Pipilo crissalis crissalis*, part; *Pipilo crissalis senicula*, part; Cañon Finch, part; Brown Finch, part; Brown Towhee, part; Crissal Towhee; Brown Bunting, part; California Towhee, part; California Brown Towhee, part; Northern Brown Towhee, part.

Status—Permanently resident. Common.

Geographic range—In general, valleys of northern inner Coast Ranges and Sacramento Valley, south along east side of San Joaquin Valley to Tulare County. In detail, northwest to upper Mad River, in Trinity County (Mus. Vert. Zool.), and down Trinity River [probably this race] as far as Hoopa Valley, Humboldt County (W. K. Fisher, Condor, 6, 1904:51); south, inside of northwest humid coast belt, through interior Mendocino County, Lake County, and interior Napa County to vicinity of Vacaville, Solano County; in San Joaquin Valley only eastward of arid, west-side plains. Northernmost record stations in Sacramento Valley, Tower House, Shasta County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:385), and Manton, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:410). Life-zone, essentially Upper Sonoran, but occurs locally in Lower Sonoran. Altitudes of known occurrence extend from 30 feet, at Tracy Lake, San Joaquin County, up to 5300 feet, at Hume, Fresno County (fully grown juvenile taken August 19; probably somewhat above breeding grounds). Other record stations and references: Covelo and Mount Sanhedrin, Mendocino County (Mus. Vert. Zool.); Fouts Springs, Colusa County, and near Cobb, Harbin Springs, and vicinity of Mount St. Helena, Lake County (Mailliard, Proc.

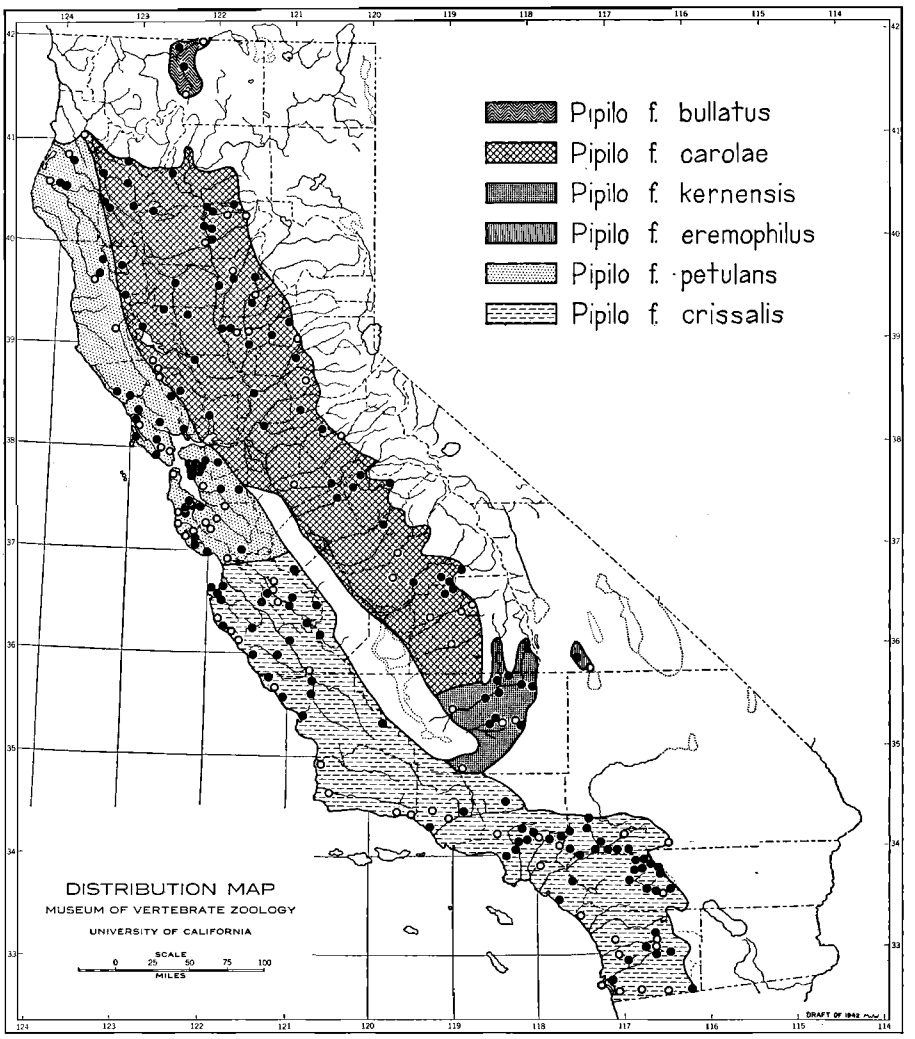

Fig. 49. Distribution of the subspecies of Brown Towhee, *Pipilo fuscus*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Calif. Acad. Sci., ser. 4, 9, 1919:295); Howell Mountain, Napa County (Mus. Vert. Zool.); Grass Valley, Nevada County (Richards, Condor, 26, 1924:102); Sierran foothills [of Placer County] (Ridgway, U. S. Geol. Expl. 40th Parallel, 4, pt. 3, 1877:498); Marysville, Yuba County, and Murphy, Calaveras County (Belding, Proc. U. S. Nat. Mus., 1, 1879:420); Snelling, Smith Creek, and El Portal in Yosemite sector (Grinnell and Storer, Animal Life Yosemite, 1924:480); Fresno, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:86); Visalia and Porterville, Tulare County (Ray, Auk, 23, 1906:416).

Habitat—Broken or marginal chaparral and vicinity of dense shrubby thickets; open ground closely adjacent to brush cover required for foraging purposes. Situations

which as a consequence are favorable are edges of fields and orchards and of woodland either in foothills or river bottoms, roadways through tracts of brushland, and grassy openings beneath blue oaks and digger pines. About ranches and gardens, vines, hedgerows and berry bushes may afford the essential shelter, and the typical forage beat on the ground may be enriched by barnyard gleanings, by lawns, and by close-cropped grass in pastures. Tall grass and poorly lighted ground beneath dense chaparral limit the activities of Brown Towhees. Trees of moderate height if available are used for lookouts and song posts, but they do not seem to be essential.

Pipilo fuscus kernensis Grinnell and Behle
Kern Brown Towhee

Synonyms—Pipilo fuscus, part; *Pipilo fuscus crissalis*, part; *Pipilo crissalis senicula*, part; *Pipilo crissalis*, part; *Pipilo crissalis carolae*, part; Cañon Finch, part; Brown Towhee, part; Brown Finch, part; California Towhee, part; Anthony Brown Towhee, part; California Brown Towhee, part; Northern Brown Towhee, part.

Status—Permanently resident. Locally common.

Geographic range—Extreme upper (southern) portion of San Joaquin Valley, chiefly within drainage basin of Kern River. Verified stations of occurrence are all in Kern County (Grinnell and Behle, Condor, 39, 1937:177). Recorded from Bakersfield (Belding, Land Birds Pac. Dist., 1890:174) up Kern River to Kernville (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:248); thence east through South Fork Valley to Walker Pass (A. K. Fisher, N. Amer. Fauna No. 7, 1893:105), and southwest through the Tehachapi country to vicinity of Fort Tejon (Xantus, Proc. Acad. Nat. Sci. Phila., 11, 1859:192). Life-zone, mainly Upper Sonoran. Extreme altitudes of occurrence, 400 and 4600 feet.

Habitat—Open brushland, both of riparian type and upland chaparral, much as in race *carolae*.

Note—Gradual intergradation toward this form occurs in *carolae* from the Yosemite region southward, and in *crissalis* along the southwestern rim of the Great Valley (Grinnell and Behle, *loc. cit.*).

Pipilo fuscus eremophilus van Rossem
Inyo Brown Towhee

Synonyms—Pipilo fuscus crissalis, part; *Pipilo crissalis crissalis*, part; *Pipilo crissalis senicula*, part; California Towhee, part; Argus Mountains Towhee; Brown Towhee, part; Argus Towhee.

Status—Permanently resident. Numbers small, and exceedingly localized as to occurrence.

Geographic range—Argus Range of mountains in Inyo County. Known stations of occurrence are: "Searl's Garden" [=below Indian Joe Spring on U.S.G.S. Searles Lake sheet?] (A. K. Fisher, N. Amer. Fauna No. 7, 1893:105); Mountain Springs Canyon, 4200-5500 feet (van Rossem, Trans. San Diego Soc. Nat. Hist., 8, 1935:69-71). Life-zone, Lower Sonoran where verging upon Upper Sonoran. A Brown Towhee taken on March 22, 1919, one mile south of Lone Pine, Inyo County (A. P. Smith, Condor, 21, 1919:213) has recently been examined and found to be referable to this race; Brown Towhees are not known to be permanently established at this locality.

Habitat—In, or near to, willow thickets which grow at permanent springs or seepages in canyons. In foraging, and even in nesting, ranges out into adjacent desert brushland of canyon slopes.

Pipilo fuscus petulans Grinnell and Swarth
San Francisco Brown Towhee

Synonyms—Pipilo fuscus [or *fusca*], part; *Pipilo fuscus crissalis*, part; *Pipilo crissalis*, part; *Pipilo crissalis crissalis*, part; *Pipilo crissalis carolae*, part; *Pipilo fuscus wrangeli*; Plain Ground Finch, part; Cañon Finch, part; Brown Finch, part; Brown Towhee, part; California Brown Towhee, part; California Towhee, part; Northern Brown Towhee, part.

Status—Permanently resident. Abundant, except toward northern periphery of range and in some areas close to the shore line. Has responded favorably to certain types of human culture, with result that aggregate numbers now are undoubtedly much greater than under original conditions, and new territory, locally, has been occupied.

Geographic range—Northern humid coast strip, from Humboldt Bay to Monterey Bay. Life-zone, essentially Upper Sonoran; but suitable parts of Transition inhabited, under the equable winter and summer temperatures obtaining coastwise. Altitudes of occurrence range from near sea level up to at least 3000 feet. Northernmost station, 5 miles southeast of Korbel, Humboldt County (A. H. Miller MS); southernmost, Watsonville, Santa Cruz County (Van Denburgh, Proc. Acad. Nat. Sci. Phila., 1898:215). Interiormost station, for this race, in San Francisco Bay region, Mount Diablo, Contra Costa County (Mus. Vert. Zool.). References and localities selected as bearing on natural history and distribution: near Maple Creek and Cuddeback, Humboldt County (Mus. Vert. Zool.); Alton, Humboldt County (Ferry, Condor, 10, 1908:43); 4 miles northeast of Bridgeville, Humboldt County (Calif. Acad. Sci.); Nash, Cahto and Ukiah, Mendocino County (Mus. Vert. Zool.; McGregor, Nidologist, 3, 1896:148); 7 miles west of Cazadero and Petaluma, Sonoma County (Mus. Vert. Zool.); Huichica Creek, Napa County (Mus. Vert. Zool.); Bolinas, Inverness, and Nicasio, Marin County (Swarth, Condor, 20, 1918:119); Berkeley, Alameda County (Keeler, Zoe, 2, 1891: 170; Plath, Univ. Calif. Publ. Zool., 19, 1919:196; Hunt, Condor, 24, 1922:194, part; Ritter and Benson, Auk, 51, 1934:170; Quaintance, Condor, 40, 1938:97, and *ibid.*, 43, 1941:152); Diablo, Contra Costa County (Leach, Condor, 29, 1927:236); San Francisco, rare (Schussler, Condor, 19, 1917:170; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:124); Palo Alto, Santa Clara County (Hunt, Condor, 25, 1923: 134; Grinnell and Swarth, Univ. Calif. Publ. Zool., 21, 1926:428ff.; Mailliard, Condor, 38, 1936:249); Big Basin, Santa Cruz and Watsonville, Santa Cruz County (Orr, Amer. Midl. Nat., 27, 1942:335; Van Denburgh, Proc. Acad. Nat. Sci. Phila., 1898: 215; Hawbecker, Calif. Fish and Game, 26, 1940:276); food in general (Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:89).

Habitat—Broken brushland, edges of solid chaparral and riparian tangles, and cultivated suburban territory where hedges and lawns alternate. Open ground for foraging must be close to plant growths of a sort to furnish refuge and nesting places (see also account of *P. f. carolae*). Some increase in area occupied has taken place in the northwest where towhees have invaded patches of ceanothus that grow up following lumbering and burning operations. Strong fog-laden ocean breezes may be a factor in restricting numbers of towhees on seaward exposures.

Note—Hellmayr (Cat. Birds Amer., pt. 11, 1938:464) has suggested that *Oriturus wrangeli* (Bonaparte) [exact locality unknown] may be an earlier name for *P. f. petulans*. It is reported that the type of *wrangeli* is more brownish on the upper parts than is *P. f. crissalis*, of which it has heretofore been considered a synonym; we note that the wing is short for *petulans*, although this feature is not conclusive. Van Rossem (Auk, 59, 1942:449), who examined the type, identifies it with the bird currently known as *petulans* but gives none of the essential details supporting this view. Since the decision would rest chiefly on the tone of brown of the bird, serious question arises whether such an antiquated type as that of *wrangeli*, whose colors probably have become altered to some degree, can be critically determined. For example, the decision as to the identification of birds from Monterey as between *crissalis* and *senicula* (Grinnell and Swarth, *loc. cit.*) was solved only upon acquisition of fresh-plumaged near-topotypes. The arguments for substituting *wrangeli* for *petulans* are not, to our minds, conclusive. Nomenclatural changes resting on dubious evidence are not advisable and the confusion which they entail can be avoided in some instances by admission that the types concerned are equivocal and can just as well be left assigned to the form with which they have been associated for many decades.

Pipilo fuscus crissalis (Vigors)
California Brown Towhee

Synonyms—*Fringilla crissalis*; *Pipilo fuscus* [or *fusca*], part; *Oriturus wrangeli*; *Pipilo crissalis*, part; *Pipilo fuscus senicula*, part; *Pipilo crissalis senicula*, part; *Pipilo crissalis crissalis*, part; *Pipilo crissalis carolae*, part; Plain Ground Finch, part; Cañon Finch, part; Brown Finch, part; Brown Towhee, part; Brown Bird; California Towhee, part; Anthony Towhee; San Fernando Towhee; Anthony Brown Towhee; Northern Brown Towhee, part.

Status—Permanently resident. In suitable places within general range, abundant. While human settlement of the country has rendered some localities of original occupancy now uninhabitable by this towhee, this adverse effect has been far more than compensated for by extension of favorable conditions over originally bare lowlands, through gardening and ranching there.

Geographic range—Southern coastal district, southward from Monterey Bay to Mexican boundary in San Diego County. Life-zone, essentially Upper Sonoran; enters Lower Sonoran marginally. Altitudes of occurrence range from near sea level, as at Laguna Beach, Orange County, up to as high as 5500 feet in the San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:103). Northernmost stations represented by specimens: Seaside, Monterey County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 21, 1926:430); Paicines, San Benito County (Swarth, Condor, 20, 1918: 119). Easternmost station in same sector: 22 miles south of Los Baños, Merced County, vicinity of Idria, San Benito County, and Waltham Creek, western Fresno County (intergrades toward *kernensis*; Mus. Vert. Zool.). Easternmost stations in southern California: Morongo Pass, San Bernardino County (Stephens, Condor, 5, 1903:103), Palm Springs, Riverside County (Gilman, Condor, 5, 1903:13; *et al.*), and Jacumba, San Diego County (Swarth, Condor, 20, 1918:121). Additional selected references: Chalk Peak in Santa Lucia Mountains, Monterey County (Hunt, Condor, 24, 1922: 193); Santa Barbara, Santa Barbara County (Mailliard, Condor, 8, 1906:45; Dawson, Birds Calif., 1, 1924:404); Ojai, Ventura County (Dickey, Condor, 18, 1916:91); Los Angeles (H. W. Myers, Condor, 12, 1910:66); Claremont, Los Angeles County (Pierce, Condor, 17, 1915:100); San Jacinto Mountain area (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:283); Buena Park, Orange County (Robertson, Condor, 33, 1931:138); nesting dates (Willett, Pac. Coast Avif. No. 21, 1933:166); food in general (Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:89).

Habitat—Edges of chaparral, open brushland and mixed live oaks and underbrush; vicinity of riparian growths; cultivated territory where hedges or other brush-like

growths provide shelter closely adjacent to forage areas on lawns or in open-type gardens. Trees as well as brush may be used for nesting, among which are elderberry, live oak and even the non-native eucalyptus (see also accounts for *P. f. carolae* and *P. f. petulans*).

Pipilo aberti Baird
Abert Towhee

Synonyms—Pipilo abertis; Abert Finch.

Status—Permanent resident. Usually abundant, with only local fluctuations in numbers.

Geographic range—Bottomlands of Colorado River, their entire length, from Nevada line above Needles to Mexican line below Fort Yuma; also Imperial Valley and suitable parts of Colorado Desert, northwest from Mexican line as far as Palm Springs and Whitewater, Riverside County (Dawson, Birds Calif., 1, 1924:398). Life-zone strictly Lower Sonoran. Altitudes of known occurrence range from about 200 feet below sea level, as near Mecca, Riverside County, to 1100 feet above at Whitewater, same county. Some other references: Needles, San Bernardino County (Hollister, Auk, 25, 1908:460); Colorado River valley generally south to Mexican boundary (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:177); Palo Verde, Imperial County (H. C. Bryant, Univ. Calif. Publ. Zool., 17, 1916:37); Mecca, Riverside County (van Rossem, Condor, 13, 1911:133, 136); Palm Springs, Indio, etc., same county (Gilman, Condor, 5, 1903:12; Grinnell, Condor, 14, 1912:154).

Habitat—Tracts of riparian and lake-basin brush, especially where constituent plants are predominantly mesquite and quail-brush (*Atriplex lentiformis*). Although a "desert" fringillid, this species appears to require presence of water in near vicinity of its headquarters.

Calamospiza melanocorys Stejneger
Lark Bunting

Synonym—Calamospiza bicolor.

Status—Irregular winter visitant, at times remaining well into spring or passing through as a spring migrant; sporadically common.

Geographic range—Southern section, chiefly south of Tehachapi Mountains, from the coast to the Colorado River, but more frequently and numerously to the eastward. Life-zones, Upper and Lower Sonoran. Northernmost records: Dudley, Mariposa County, September 13, 1924 (McLean, Condor, 38, 1936:17); Tulare Lake, Kings County (Cooper, Bull. Nutt. Ornith. Club, 2, 1877:92). Other reported occurrences of specific date and locality: Santa Barbara, Santa Barbara County, July 20, 1905 (Mailliard, Condor, 7, 1905:143); Newhall, Los Angeles County, May 3, 1897 (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:41); San Fernando Valley, December 13, 1901, January 16, 1902, and Rancho La Brea, October 29, 1914, Los Angeles County (Swarth, Condor, 4, 1902:95; Wyman, Condor, 18, 1916:203); Riverside, February 23 and April 21, 1888, and between Winchester and Elsinore, February 25, 1940, Riverside County (Swarth, Condor, 12, 1910:108; Hanna, Condor, 42, 1940:265); Stanton, Orange County, April 10, 1927 (Robertson, Condor, 29, 1927:203); Poway, May 25,

1886, El Cajon, December 14, 1881, and May 16, 1884, San Diego, April 1, 16, and 30, 1885, National City, May 6 and 25, 1884, and Campo, May, 1884, all in San Diego County (Belding, Land Birds Pac. Dist., 1890:180; Goss, Birds Kansas, 1891:496; Holterhoff, Auk, 1, 1884:293); Pilot Knob [Mohave Desert], April 6, and vicinity of Ludlow, April 17, 1921, and March 3, 1940, San Bernardino County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:108; Lamb, Condor, 24, 1922:29; Hanna, *loc. cit.*); Banning, Cabezon, May 7, 1883, Riverside County (Hoffmann, Condor, 24, 1922: 101; Herron, Condor, 18, 1916:205); Westmoreland, Imperial County, January 3, 1923 (Hoffmann, Condor, 25, 1923:107); Colorado River valley—opposite The Needles and Blankenship Valley, March 8, 1910, 10 miles below Cibola, April 8, 1910 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:182). Also recorded April 11, 1922, at Palm Springs, Riverside County (Mus. Vert. Zool.).

Habitat—Open terrain in general; not otherwise conspicuously limited as a winter visitant. Has been reported chiefly from relatively barren desert land and open fields, from desert scrub association, and from arid brushlands of the coastal slopes.

Passerculus sandwichensis alaudinus Bonaparte
Western Savannah Sparrow

Synonyms—Emberiza savanna; *Passerculus savanna*, part; *Passerculus alaudinus*, part; *Passerculus sandwichensis*, part; *Passerculus savanna savanna*; *Passerculus savanna alaudinus*; *Ammodramus sandwichensis alaudinus*, part; *Ammodramus sandwichensis savanna*, part; *Ammodramus savanna alaudinus*; *Passerculus sandiwichensis bryanti*, part; *Passerculus sandwichensis sandwichensis*, part; *Passerculus sandwichensis anthinus*, part; Savanna Finch; Skylark Sparrow; Savanna Sparrow, part; Lark-sparrow, part; Bryant Marsh Sparrow, part.

Status—Winter visitant, arriving chiefly in September and leaving in April. Abundant.

Geographic range—In winter residence, lower elevations (below 4000 feet) throughout State, extending to Santa Barbara Islands; possibly absent from the northeastern section in midwinter. In migration occurs with almost no restriction as to habitat and elevation, although grasslands and meadows are, as always, favored. West of the Sierra Nevada, this form is the dominant Savannah Sparrow in winter, yet reports of it can not be accepted as definitive unless based on carefully evaluated specimens. Selected data representative of seasonal and geographic occurrence, based unless otherwise indicated, on material in the Museum of Vertebrate Zoology, are as follows: Requa, Del Norte County, spring (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:24); Redwood Creek, 800 feet, Humboldt County, September 11; Edgewood, Siskiyou County, May 10; Sisson, Siskiyou County, August 20 to 25, sight records only (H. C. Bryant, Condor, 13, 1911:205); Eagleville, Modoc County, September 21, 30 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:317); Eagle Lake, Lassen County, October 18, and Red Bluff, Tehama County, winter and May 3 [specimen] (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:412); Norman, Glenn County, February (Grinnell, Condor, 25, 1923:174); Santa Rosa, Sonoma County, Palo Alto, Santa Clara County, etc., in San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:112); Ten Lakes, 9700 feet, Tuolumne County [not *P. s. nevadensis*] (Grinnell and Storer, Animal Life Yosemite, 1924:442); Wawona, Mariposa County, May 20, sight record only (Widman, Auk, 21, 1904:72); Fresno district, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:77); Earlimart, Tulare County,

May 4 (Grinnell, Condor, 13, 1911:110); Point Lobos, Monterey County, part, observation only (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:123); San Simeon, San Luis Obispo County, seen (A. K. Fisher, N. Amer. Fauna No. 7, 1893:86); San Miguel Island, specimen, and Santa Rosa Island, seen (Mus. Vert. Zool.; Pemberton, Condor, 30, 1928:146, 147); Anacapa Island, April 16; Santa Cruz, San Nicolas (sight record only) and San Clemente islands (Howell, Pac. Coast Avif. No. 12, 1917:76); Bakersfield, May 8, and Walker Basin, 3350 feet, November 3; Pasadena, Los Angeles County, September 18, May 3 (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:36); Cushenbury Spring, San Bernardino Mountains, August 12 (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:93); Cabezon, May 4, and Hemet Lake, August 11, 15, sight records (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:271); Volcan Mountains, San Diego County (Emerson, Zoe, 1, 1890:45 [not *A. s. savanna*; specimen subsequently examined by Grinnell]; 5 miles north of Benton, Mono County, September 20; Furnace Creek Ranch, —178 feet, Death Valley, Inyo County, January, April 28, October 21 (A. K. Fisher, *loc. cit.*; Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:84); Keeler, May 1, and Coso Mountains, October 23, Inyo County; Victorville, December, and Daggett, March 11, San Bernardino County; Mecca, Riverside County, April 27; 5 miles north of Laguna, Colorado River valley [in Arizona], April 22 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:167).

Habitat—In winter, chiefly grassland, but of wide variety; the grasses may be of "dry" or "wet" type, dense or open, tall or short, although the last evidently is favored. Occurs also in salicornia marshes, in growths of mesembrianthemum and along beach and shore lines if there is at least sparse vegetational cover. Openness of terrain generally, affording free movement and escape on the wing, and concealing ground cover in which to forage seem to be the basic requirements of this sparrow while it is away from its breeding grounds.

Note—The nomenclature of Savannah Sparrows herein adopted conforms in the main with that advocated in 1939 by one of us (Grinnell, Condor, 41, 1939:112ff.). See also in this connection: Peters and Griscom (Bull. Mus. Comp. Zool., 80, 1938:445ff.); van Rossem (Trans. San Diego Soc. Nat. Hist., 6, 1931:297; *ibid.*, 7, 1933:346).

Passerculus sandwichensis sandwichensis (Gmelin)
Aleutian Savannah Sparrow

Synonyms—Passerculus sandwichensis; *Ammodramus sandwichensis*; Large Savanna Finch; Aonalaska Sparrow; Sandwich Sparrow.

Status—Rare winter visitant, from October through April.

Geographic range—Sacramento and San Joaquin valleys south to Merced County; also known from San Francisco Bay region. Specific records: Sisson, Siskiyou County, April 22 (Mus. Vert. Zool.); Battle Creek, Shasta County, October 13 (McGregor, Condor, 2, 1900:35; 10 miles north of Red Bluff, Coyote Creek, near Tehama, and 8 miles south of Corning, all in Tehama County, December 18 to January 5, 10 specimens (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:411; Mus. Vert. Zool.); Gridley, Butte County, December 9 (Belding, Land Birds Pac. Dist., 1890:142; McGregor, *loc. cit.*); La Grange, Stanislaus County, December 19 (Mus. Vert. Zool.); Varain, Mariposa County, December 1 (Mus. Vert. Zool.); Snelling, Merced County, January 6, 8 (Grinnell, Pac. Coast Avif. No. 11, 1915:113); Planada,

Merced County, April 7, 12 (Mus. Vert. Zool.); 10 miles east of Suisun, Solano County, December 22, [El] Cerrito, Contra Costa County, November 11, and Berkeley, Alameda County, November 27 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:112).

Habitat—In Tehama County, noted especially in exceedingly sparse patches of dry grass which afforded only partial cover.

Passerculus sandwichensis anthinus Bonaparte
Kodiak Savannah Sparrow

Synonyms—Passerculus sandwichensis savanna; *Passerculus sandwichensis crassus*; Savannah Sparrow, part; Eastern Savannah Sparrow.

Status—Sparse winter visitant from September through April.

Geographic range—Lowlands west of Sierra Nevada south, throughout length of State, but chiefly from latitude 37° northward. Records based on specimens that seem certainly to pertain to the breeding population of southeastern Alaska and Kodiak Island, and hence to this race (see Swarth, Pac. Coast Avif. No. 22, 1934:49, and Condor, 38, 1936:30; Grinnell, Condor, 41, 1939:112): Requa, Del Norte County, May 4, 5 (Mailliard, Condor, 24, 1922:95); Redwood Creek, 800 feet, September 11, and Big Lagoon, September 19, 20, Humboldt County (Mus. Vert. Zool.); Kneeland Prairie, Humboldt County, September 29 (Mailliard, *loc. cit.*); Woodley Island, Humboldt Bay, December 4 (Clay, Condor, 17, 1919:68); 10 miles north of Red Bluff, January 2, near Coyote Creek, January 2, May 6, and 8 miles south of Corning, December 18, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930: 411; Mus. Vert. Zool.); 3 miles east of Norman, Glenn County, February 21 (Grinnell, Condor, 25, 1923:174); West Butte, Sutter County, April 13 (Mus. Vert. Zool.); 5 miles west of Elkhorn Ferry, Yolo County, September 13 (Mus. Vert. Zool.); Sebastopol, Sonoma County, October 31, 1936 (Mus. Vert. Zool.); 10 miles east of Suisun, Solano County, December 22 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:112; Mus. Vert. Zool.); Nicasio, Marin County, May 2 (Peters and Griscom, Bull. Mus. Comp. Zool., 80, 1938:461); Richmond, March 3 and [El] Cerrito, November 11, Contra Costa County (Grinnell and Wythe, *loc. cit.*); West Berkeley, Oakland, October 2, 8, and Hayward, April 29, Alameda County (Peters and Griscom, *loc. cit.*; Mus. Vert. Zool.; Grinnell and Wythe, *loc. cit.*); Snelling, January 2, and Planada, April 4, Merced County (Mus. Vert. Zool.); Greening, September 28, and Baker, October 23, Los Angeles County, and near Corona, Riverside County, March 14 (Willett, Pac. Coast Avif. No. 21, 1933:168).

Habitat—As in *Passerculus s. alaudinus*, which see.

Passerculus sandwichensis nevadensis Grinnell
Nevada Savannah Sparrow

Synonyms—Ammodramus sandwichensis alaudinus, part; *Passerculus sandwichensis alaudinus*, part; Western Savannah Sparrow, part.

Status—Summer resident, northeastwardly; probably permanently resident in southern parts of breeding range; migrant and winter visitant, commonly to south of breeding range on desert drainage and in lesser numbers to westward.

Geographic range—As breeding, elevated Great Basin region from Oregon line in Modoc County south to Owens Lake, Inyo County; an isolated colony occurs in the upper Kern Basin, Kern County. Extends westward in northern Sierra Nevada and in Cascade Mountains to headwaters of some of western drainage systems. In winter, southeastern deserts from Inyo County to Mexican boundary; Great Valley from Tehama County southward, and on coast from at least Marin County to Mexican boundary, reaching some of coastal islands. Life-zones in summer, Lower Sonoran (restrictedly), Upper Sonoran and Transition. Altitudinal range of nesting stations, 2400 feet, as at Bodfish, Kern County (Mus. Vert. Zool.), to at least 7000 feet as at Whitmore Tub, Mono County (A. H. Miller MS). Some representative breeding stations: Clear Lake, Modoc County (Willett, Condor, 21, 1919:205); Goose Lake, Surprise Valley, etc., Modoc County (Dawson, Birds Calif., 1, 1924:253; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:317); Battle Creek Meadows, Tehama County, and Petes Valley, Ravendale, Box Springs, etc., Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:412); Blairsden, Plumas County (Ewan, Condor, 38, 1936: 85); Sierra Valley, Sierra County (Mailliard, Condor, 21, 1919:74); Fredericksburg, Alpine County (Mus. Vert. Zool.); Mono Lake, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:442); near Benton, Mono County, and Laws, Independence, Lone Pine, and Olancha, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:86); south fork of Kern River and Kern River valley [south to Bodfish] (Grinnell, Pac. Coast Avif. No. 11, 1915:113). Records of specimens bearing on winter dispersal and migration: Coyote Creek, 6 miles south of Red Bluff, Tehama County, December 28, January 2 (Mus. Vert. Zool.); Butte Creek, Colusa County, March 2 (Mus. Vert. Zool.); Nicasio, Marin County (Hellmayr, Cat. Birds Amer., pt. 11, 1938:490); Cordelia, Solano County, December 1, Antioch, Contra Costa County, March 7, and Berkeley, Alameda County, October 3 (Mus. Vert. Zool.); Searsville, San Mateo County, and Palo Alto, Santa Clara County, January 29 (Hellmayr, *loc. cit.*; Mus. Vert. Zool.); Yosemite Valley, Mariposa County, September 27 (Mailliard, Condor, 20, 1918:17); Snelling, January 7, and Los Baños, Merced County (Mus. Vert. Zool.; Hellmayr, *loc. cit.*); San Lucas, Monterey County, November 25 (Mus. Vert. Zool.); Morro, San Luis Obispo County, September 26 (Mus. Vert. Zool.); Walker Basin, 3350 feet, Kern County, November 6 [resident?] (Mus. Vert. Zool.); Santa Cruz Island, April 6 (Willett, Pac. Coast Avif. No. 21, 1933:168); San Clemente Island, March 30 (Mus. Vert. Zool.); Los Angeles and Orange counties, numerous records, October 11 to March 2 (Willett, *loc. cit.*); Yucaipa, San Bernardino County, November 25, and Beaumont, Riverside County, December 27 (Mus. Vert. Zool.); Pacific Beach and San Diego, January 5, San Diego County (Hellmayr, *loc. cit.*; Mus. Vert. Zool.); Death Valley, Inyo County, April 4 to 24 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:85; Mus. Vert. Zool.); Little Lake, Inyo County, March 25 to 31, and Mohave, Kern County, March 13 (Mus. Vert. Zool.); Lavic, San Bernardino County, May 6 (Mus. Vert. Zool.); Oro Grande, San Bernardino County, February 18 to March 1 (Mus. Vert. Zool.); Mecca, Riverside County, March 10 to April 25, many specimens (Grinnell, Univ. Calif. Publ. Zool., 5, 1910:315); Colorado River valley—opposite The Needles, March 3, near Bill Williams River, March 13, 5 miles north of Laguna, April 22 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:167). Several tentative records of *nevadensis* listed by Bishop (Condor, 17, 1915:186) include three from Trinidad, Humboldt County, August 21, 26, and 31; these may relate to *brooksi*. Individuals of *nevadensis* may remain on the breeding grounds through September, as

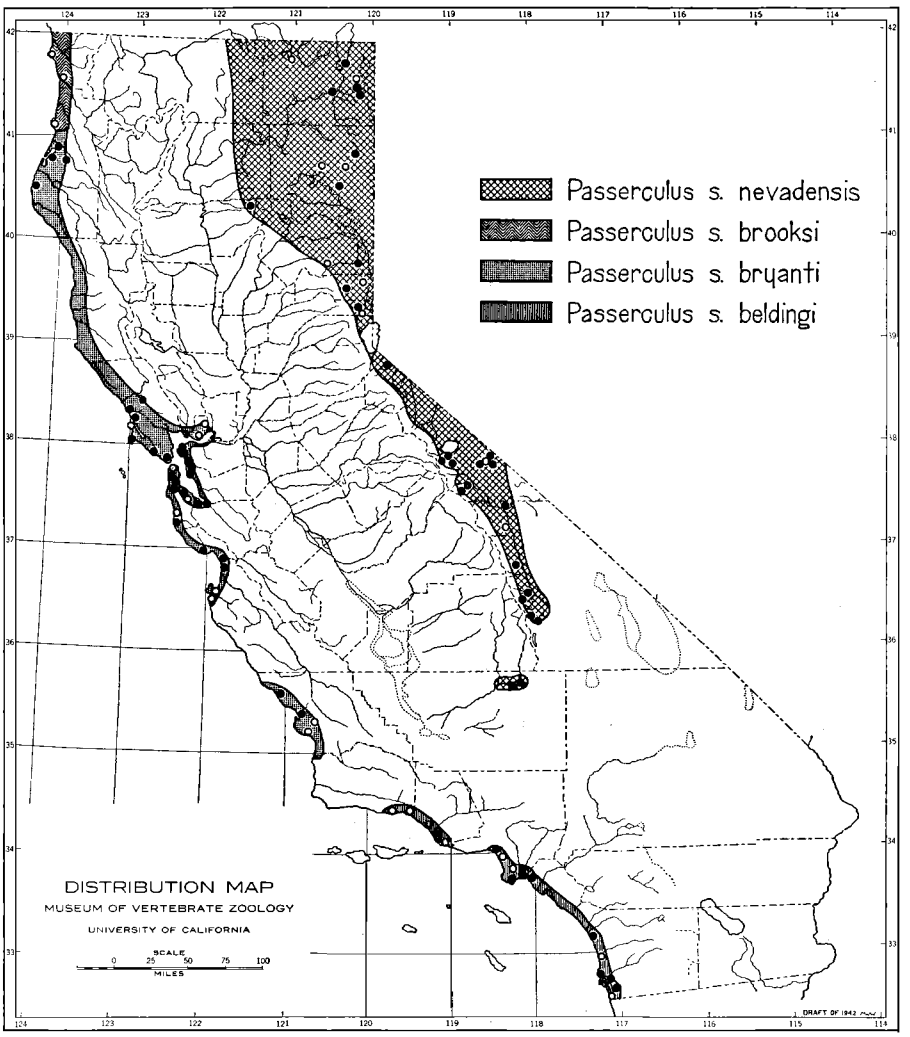

Fig. 50. Distribution of the subspecies of Savannah Sparrow, *Passerculus sandwichensis*, in California in the breeding season. Dots indicate localities from which resident or breeding birds have been examined; circles, localities reported in the literature.

for example in Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:317; Mus. Vert. Zool.).

Habitat—For nesting, grass- and meadowland in valleys, either along lower reaches of mountain streams or about alkaline sinks. The soil apparently must be moist, but perhaps merely because this makes possible the growth of dense ground cover. The grasses and sedges include a variety of species and may be no more than four inches high. Alfalfa fields and hay meadows have been adopted by this sparrow for nesting. Activity takes place close to the ground; tall clumps of meadow vegetation and scattered artemisia bushes and posts serve for song perches and represent normally the highest stations occupied in the habitat.

Passerculus sandwichensis brooksi Bishop
Dwarf Savannah Sparrow

Synonyms—Ammodramus sandwichensis alaudinus, part; Western Savannah Sparrow, part.

Status—Summer resident in extreme northwestern section in small numbers, locally. Sparse winter visitant southward along coast, from late August through March.

Geographic range—As breeding, narrow coastal strip from Oregon line south through Del Norte County, possibly as far as Trinidad, Humboldt County. In winter, coastal districts south to Mexican boundary, occasionally interiorward to Great Valley and western edge of Mohave Desert. Life-zone in summer, Transition. Known breeding stations are within 300 feet of sea level. Stations of record in summer season: Crescent City, Del Norte County (W. K. Fisher, Condor, 4, 1902:133); Requa, Del Norte County (Mailliard, Condor, 23, 1921:164); Trinidad, Humboldt County, August 19 [possibly on breeding grounds] (Bishop, Condor, 17, 1915:188). Specific records of occurrence in migration and in winter based on specimens: Kneeland Prairie, Humboldt County, September 29 (Mailliard, Condor, 24, 1922:95); South Fork Mountain, 3000 feet, Trinity County, March 30 (Mus. Vert. Zool.); Sonoma County (Peters and Griscom, Bull. Mus. Comp. Zool., 80, 1938:463); 5 miles west of Elkhorn Ferry, Yolo County, September 13 (Mus. Vert. Zool.); Albany, August 28, and Melrose [Oakland], October 6, Alameda County (Mus. Vert. Zool.); Palo Alto, Santa Clara County, August 29 (Mus. Vert. Zool.); Morro, San Luis Obispo County, October 17 (Mus. Vert. Zool.); Santa Cruz Island (Peters and Griscom, *loc. cit.*); Los Angeles, December 18, March 25, Del Rey, February 27, Redondo, March 1, San Pedro, December 6, and Long Beach, December 21, all in Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:168; Mus. Vert. Zool.); Sunset Beach, Orange County, December 20 (Willett, *loc. cit.*); Riverside, December 1, and Corona, March 18, Riverside County (Mus. Vert. Zool.; Willett, *loc. cit.*); Oro Grande, San Bernardino County, March 1 (Mus. Vert. Zool.); Poway, March 15, Pacific Beach, February 25, San Diego, February 14, and Tia Juana Valley, October 10, all in San Diego County (Mus. Vert. Zool.; Willett, *loc. cit.*).

Habitat—As breeding, meadowland close to seashore, as at mouths of rivers. In winter not sharply restricted (see *Passerculus s. alaudinus*).

Note—The breeding population in California is somewhat intermediate in character toward *P. s. bryanti* according to Mailliard (Condor, 23, 1921:164-165).

Passerculus sandwichensis bryanti Ridgway
Bryant Savannah Sparrow

Synonyms—Passerculus alaudinus, part; *Passerculus anthinus*, part; *Passerculus savanna*, part; *Passerculus savanna* var. *anthinus*, part; *Passerculus sandwichensis alaudinus*, part; *Ammodramus sandwichensis bryanti*, part; *Passerculus sandwichensis*, part; *Ammodramus beldingi*, part; Titlark Sparrow, part; Savannah Sparrow, part; California Shore Sparrow, part; Western Savannah Sparrow, part; Bryant Marsh Sparrow, part; Belding Marsh Sparrow, part; Bryant Sparrow.

Status—Resident. Common; in some localities abundant.

Geographic range—Coastal strip, principally in tidal marshes, from Humboldt Bay south to vicinity of Morro Bay, San Luis Obispo County. Intergradation with *P. s.*

beldingi through individual variation is shown in material from San Luis Obispo County (Mus. Vert. Zool.) as also in birds from farther south in Ventura County; the population in southern San Luis Obispo County conforms as a whole well with *bryanti* from the San Francisco Bay region. Life-zones, Transition, and to a limited extent Upper Sonoran. Occurs chiefly near sea level, but ranges up to 2800 feet, locally, as at Kneeland Prairie, Humboldt County (Mailliard, Condor, 18, 1916:199). Selected references and record stations: Humboldt Bay [intermediate toward *P. s. brooksi*] (W. K. Fisher, Condor, 4, 1902:133; Grinnell, Pac. Coast Avif. No. 11, 1915:114); divide between Bear and Eel rivers, 1800 feet, Humboldt County (Mus. Vert. Zool.); Sebastopol, Sonoma County (Belding, Land Birds Pac. Dist., 1890:144); Dillon Beach, Marin County (Mus. Vert. Zool.); Tomales Point, Black's Mountain, etc., Marin County (Mailliard, Condor, 19, 1917:69; Mailliard and Mailliard, Condor, 22, 1920:63); Benicia, Solano County (Baird, Pac. R. R. Rept., 9, 1858:445); San Pablo and Point Richmond, Contra Costa County, and San Francisco Bay region in general (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:112); Berkeley and Oakland, Alameda County (Keeler, Zoe, 2, 1891:118); Lake Merced, Islais Marsh, Twin Peaks, Presidio, all in San Francisco County (Ray, Condor, 18, 1916:225; Squires, *ibid.*:228); San Mateo County (H. H. Bailey, Condor, 22, 1920:188); Alviso and Palo Alto, Santa Clara County (Mus. Vert. Zool.); mouth of Pescadero Creek, San Mateo County (Orr, Amer. Midl. Nat., 27, 1942:335); Santa Cruz, Santa Cruz County (McGregor, Pac. Coast Avif. No. 2, 1901:13); 5 miles west of Watsonville, Santa Cruz County (Hawbecker, Calif. Fish and Game, 26, 1940:276); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:123); Cambria, Morro, San Luis Obispo, and Port Harford [Port San Luis], San Luis Obispo County (Mus. Vert. Zool.; Belding, *loc. cit.*; Grinnell, *loc. cit.*). The several reports of *bryanti* south of San Luis Obispo County all leave doubt concerning origin of these birds from within the breeding range of this race; those that are not certainly referable to *P. s. alaudinus* are probably variants of *beldingi* (see Grinnell, *loc. cit.*; Willett, Pac. Coast Avif. No. 21, 1933:191). Since Willett's survey of records, one report for Los Angeles County (Hellmayr, Cat. Birds Amer., pt. 13, 1938:490) has been published; this may be similarly questioned.

Habitat—Of two main types: most importantly the salicornia association of tidal marshlands, and secondarily upland grassy slopes in the coastal fog belt. The populations inhabiting salicornia are denser, the thick cover afforded by this plant and associated species apparently creating optimum conditions of shelter and forage beat. Nests on tidal land are ensconsed in the tangled vegetation, usually slightly above the mud so that flooding except by the highest spring tides is avoided. Foraging takes place on the mud or salt-encrusted ground and in and about the bases of the plants. Tall clumps of salicornia, grindelia bushes, fence posts and even telephone wires are adopted for song stations. In grassy uplands, tracts of moist ground around springs and in small swales seem to be favored, either because of the moisture or because of the dense grass cover it supports.

Passerculus sandwichensis beldingi Ridgway
Belding Savannah Sparrow

Synonyms—Passerculus anthinus, part; *Passerculus rostratus*, part; *Passerculus savanna* var. *anthinus*, part; *Passerculus alaudinus*, part; *Passerculus beldingi*; *Ammodramus beldingi*, part; *Passerculus sandwichensis*, part; *Ammodramus sandwichensis beldingi*; *Ammodramus sandwichensis*

bryanti, part; *Passerculus rostratus beldingi*; Titlark Sparrow, part; Sea-shore Sparrow, part; California Shore Sparrow, part; Long-billed Sparrow, part; Belding Marsh Sparrow, part; Belding Sparrow; Bryant Marsh Sparrow, part; Large-billed Sparrow, part.

Status—Resident. Abundant.

Geographic range—Coastal salt marshes from Santa Barbara, Santa Barbara County, south through San Diego County. Rarely extends inland to alkaline marshes within eight miles of coast. Life-zone, Upper Sonoran. All localities of occurrence are within 100 feet of sea level. Principal localities and references: Santa Barbara, Santa Barbara County (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:240; Dawson, Birds Calif., 1, 1924:257); Ventura, Hueneme, and Point Mugu, Ventura County (Mus. Vert. Zool.; A. H. Miller MS); Santa Monica, Los Angeles County (H. Robertson, Bull. Cooper Ornith. Club, 1, 1899:73); Ballona [=Playa del Rey], San Pedro, and Long Beach, same county (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:36; Coues, Ibis, ser. 2, 2, 1866:268); Nigger Slough, same county (Willett, Pac. Coast Avif. No. 21, 1933:169); Anaheim Landing and Newport, Orange County (Huey, Trans. San Diego Soc. Nat. Hist., 6, 1930:205, 206); Oceanside and Del Mar, San Diego County (Huey, *loc. cit.*); Pacific Beach, San Diego, National City, mouth of Tia Juana River, etc., all in San Diego County (Cooper, Ornith. Calif., 1870:183; Gault, Ridgway Ornith. Club, Bull. No. 2, 1887:58; Belding, Land Birds Pac. Dist., 1890:144; Huey, *loc. cit.*). General references bearing on taxonomy (Ridgway, Proc. U. S. Nat. Mus., 7, 1885:516; Bishop, Condor, 17, 1915:187; van Rossem, Trans. San Diego Soc. Nat. Hist., 6, 1930:218).

Habitat—Salicornia association on and about margins of tidal flats. Also, formerly at least, in similar plant formations about alkaline sloughs on the coastal plain. May range short distances from this habitat, especially in winter, but not known to establish residence in grasslands far removed from salicornia and low-growing atriplex as does *P. s. bryanti*, which otherwise it resembles in habitat relations. This difference may reflect merely the absence of suitably moist upland grassy areas within the range of *beldingi*.

Passerculus sandwichensis rostratus (Cassin)
Large-billed Savannah Sparrow

Synonyms—Emberiza rostrata; *Ammodramus rostratus*; *Passerculus rostratus*, part; *Passerculus guttata*; *Passerculus rostratus rostratus*; *Ammodramus rostratus rostratus*; *Passerculus rostratus guttatus*; Long-billed Swamp Sparrow; Large-billed Marsh Sparrow; Large-billed Sparrow, part; Long-billed Sparrow, part; Long-billed Beach Sparrow; Sea-shore Sparrow, part; San Diego Sparrow; San Lucas Sparrow; San Diego Large-billed Sparrow.

Status—Winter visitant, migrating northwestward in autumn from its breeding grounds along Gulf of California, Mexico. Appears in late August and remains at least until early March, possibly into April. Records of breeding within State not authentic. Common within restricted winter habitat.

Geographic range—Beaches and coastal marshes of southern section from Mexican boundary north to Morro Bay, San Luis Obispo County, rarely to Santa Cruz, Santa Cruz County. Also occurs on at least some of Santa Barbara Islands and along shores of Salton Sea, in Mecca and Imperial counties. Selected records of occurrence and accounts of natural history and distribution: Santa Cruz, Santa Cruz County, August 27 (Mailliard, Condor, 6, 1904:16); Morro, San Luis Obispo County (Mus. Vert. Zool.); San Miguel Island (Pemberton, Condor, 33, 1931:219); Santa Barbara (Heermann,

Pac. R. R. Rept., 10, pt. 4, 1858:446; Dawson, Birds Calif., 1, 1924:259ff.); Hueneme, Ventura County, August 23 (Mus. Vert. Zool.); Santa Monica, Los Angeles County (Mus. Vert. Zool.); San Pedro, Los Angeles County (Coues, Ibis, ser. 2, 2, 1866:268; W. E. Bryant, Forest and Stream, 27, 1886:62; Grinnell, Auk, 22, 1905:16); Long Beach and Alamitos Bay, Los Angeles County, August 17 (Willett, Pac. Coast Avif. No. 21, 1933:169; Cottam and Knappen, Auk, 56, 1939:165 [but inland record localities not authentic; Cottam, *in litt.*]); Anaheim Landing and Sunset Beach, March 8, Orange County (Brown, Auk, 34, 1917:340 [reported as *P. r. guttata*]; Oberholser, Ohio Jour. Sci., 19, 1919:349; van Rossem, Trans. San Diego Soc. Nat. Hist., 6, 1930: 215ff.; Willett, *loc. cit.*); Laguna Beach, Orange County (Oberholser, *loc. cit.*); San Diego, San Diego County, March 10 (Cassin, Ills. Birds Calif., etc., 1856:226; Anthony, Auk, 23, 1905:16; Belding, Land Birds Pac. Dist., 1890:145); San Clemente Island (Breninger, Auk, 21, 1904:223); Mecca, Riverside County, February 23 (Willett, Condor, 32, 1930:160; Hellmayr, Cat. Birds Amer., pt. 11, 1938:494); Salton Sea [Imperial County?], midwinter (van Rossem, Condor, 13, 1911:132).

Habitat—Strand line and salt marshes, either of open aspect or where grown to beach grasses and salicornia. The birds forage on the ground out into the open, even onto piers and breakwaters, and in and about kelp and other drift debris on beaches, as also in the denser cover of the salicornia association. Salt or alkaline impregnated ground seems required, whether for itself or the food types it supports is as yet unknown. Beach inhabiting insects and small marine crustaceans and gastropods are sought in addition to plant seeds.

Note—We follow van Rossem (*loc. cit.*) in merging *P. s. guttatus* with *P. s. rostratus*. Decision to treat *rostratus* as a race of *Passerculus sandwichensis* must of necessity rest solely with the junior author of this paper.

Ammodramus savannarum perpallidus (Coues)
Western Grasshopper Sparrow

Synonyms—Emberiza passerina; *Coturniculus passerinus*; *Coturniculus passerinus perpallidus*; *Coturniculus perpallidus*; *Coturniculus savannarum bimaculatus*; *Ammodramus savannarum bimaculatus*; *Ammodramus savannarum*; Yellow-winged Finch; Yellow-winged Sparrow; Yellow-winged Bunting; Western Yellow-winged Sparrow; Grasshopper Sparrow.

Status—Sparse and irregularly distributed resident; variable in occurrence from year to year and semi-colonial. Some seasonal movement takes place, but extent and direction not well known. Evidently leaves more northern and higher breeding stations in winter and scatters to otherwise unoccupied localities in lowlands at that season.

Geographic range—As breeding, foothills, lower valleys in mountains, and lowland plains west of Cascade-Sierran axis from Mendocino, Trinity and Tehama counties south to San Diego County; one known station to eastward in Lassen County. In winter, western lowlands, chiefly in southern California, but north as far as Fresno County and probably to San Francisco Bay region (at least in late fall). Life-zones in summer, Lower Sonoran, Upper Sonoran and Transition. Elevations of breeding stations range from near sea level, as at Point Sur, Monterey County, up to 4900 feet as in San Jacinto Mountains. Specific localities of known or probable summer residence: Petes Valley, Lassen County, and Battle Creek Meadows, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:413); Hayfork, Trinity County (Miller and Pitelka MS); near Ukiah, Mendocino County (Dawson, Birds Calif., 1, 1924:

264); Sacramento (Ridgway, Bull. Essex Inst., 6, 1874:171); Stinson Beach, Marin County (Pitelka MS); Nicasio, Tocaloma, Tomales Point, and Black's Mountain, Marin County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:113); Moraga Valley and Bald Peak, Contra Costa County (Mus. Vert. Zool.); Oakland and Hayward, Alameda County, and Berryessa, Santa Clara County (Grinnell and Wythe, *loc. cit.*); Santa Cruz, Santa Cruz County (Dawson, *loc. cit.*); Point Lobos and Point Sur, Monterey County (Williams, Condor, 39, 1937:229; Ray, Osprey, 5, 1900:7); Dudley [east of Coulterville], Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:443); 4 miles east of White's Bridge, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:79); Modesto, Stanislaus County (Calif. Acad. Sci.); Chowchilla, Merced County (Calif. Acad. Sci.); Earlimart, Tulare County, April 30 (Grinnell, Condor, 13, 1911:109); Santa Barbara, Santa Barbara County (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:240; Bowles, Condor, 13, 1911:35); mouth of Santa Clara River, Santa Monica Mountains, and Simi Valley, Ventura County (Hoffmann, Condor, 23, 1921:169; Pemberton, Condor, 19, 1917:24; Willett, Condor, 12, 1910:204); San Fernando Valley, Nigger Slough and Gardena, Los Angeles County (Willett, *loc. cit.*; Burnham, Pierce and White, Jour. Ent. and Zool., 9, 1917:58); Riverside, Beaumont, and Schain's Ranch, 4900 feet, San Jacinto Mountains, Riverside County (Willett, Pac. Coast Avif. No. 21, 1933:170; Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:171); Laguna Beach, Orange County (Gardner, Condor, 17, 1915:99); Escondido and San Diego, and San Diego County (J. [S.] Dixon, Condor, 18, 1916:84; Huey, Condor, 17, 1915:60). Other specific records indicative of occurrence in winter and dispersal after breeding: near Searsville, San Mateo County, October 25 (Mus. Vert. Zool.); Clovis, Fresno County, February 18 (Tyler, *loc. cit.*); Highland Park, August 10, and Los Angeles, October 15, Los Angeles County (Swarth, Condor, 12, 1910:108, and *ibid.*, 2, 1900:38); Pasadena, Los Angeles County, winter (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:36); mouth of Lytle Creek Canyon, San Bernardino County, September 11 (Burnham, Pierce and White, *loc. cit.*).

Habitat—Grassland—usually that with a considerable variety of plant species. Birds have been reported from such places as meadows, patches of tall "weeds," alfalfa, bunch grass, "wire grass," "salt grass." Usually the ground is dry or is well drained. Apparently thick cover of grass or annuals is essential for concealment while foraging and nesting on the ground, but particular plant types do not seem to limit occurrence.

Ammospiza caudacuta nelsoni (J. A. Allen)
Nelson Sharp-tailed Sparrow

Synonyms—Ammodramus caudacutus becki; *Ammodramus caudacutus nelsoni*; *Ammodramus nelsoni*; *Passerherbulus nelsoni nelsoni*; *Passerherbulus caudacutus nelsoni*; *Passerherbulus nelsoni*; *Ammospiza caudacuta*; Nelson Sparrow; Sharp-tailed Sparrow.

Status—Rare straggler from the interior of the continent. Three records, two at Milpitas, Santa Clara County: specimen taken by R. H. Beck, May 6, 1891 (Ridgway, Proc. U. S. Nat. Mus., 14, 1891:483); another, January 31, 1896 (Barlow, Condor, 2, 1900:132); both birds were taken "on the marsh," the first among tules at the edge of a small salt-water slough. For opinions on identification, see Dwight (Auk, 13, 1896: 273) and Grinnell (Pac. Coast Avif. No. 11, 1915:115). Also, the species observed, January 16 to February 12, 1944, near Venice, Los Angeles County; two individuals seen, on salicornia flats and in tules (Cogswell, Condor, 46, 1944:204).

Pooecetes gramineus affinis (G. S. Miller)
Oregon Vesper Sparrow

Synonyms—Zonotrichia graminea, part; *Poocaetes gramineus confinis*, part; Bay-winged Finch, part; Western Vesper Sparrow, part; Vesper Sparrow, part.

Status—Winter visitant from October to early April, migrating in late August, September and early October, and in April. Rated variously as "rare," "fairly common," or even "common," but total numbers evidently small, especially to northward in winter.

Geographic range—As winter resident, lowlands west of Sierra Nevada from San Francisco Bay region south through San Joaquin valley and coastal districts to San Diego County. In migration, occurs also in Sacramento Valley; detected once in Modoc County. Many early records of Vesper Sparrows can not be allocated certainly as to race. Some satisfactory records of *P. g. affinis* in winter are as follows: Fulton, Sonoma County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:111); Oakland, Alameda County, October 8 and 22, possibly migrants (Willard, Bull. Cooper Ornith. Club, 1, 1899:30); Lagrange, Stanislaus County (Grinnell and Storer, Animal Life Yosemite, 1924:440); Pasadena, Los Angeles County, September 16 through winter to April 25 (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:36); Cajon Valley [El Cajon], San Diego County (Belding, Land Birds Pac. Dist., 1890:142). Additionally, winter records for Vesper Sparrows at Gridley, Butte County, and 30 miles east of Stockton probably relate in part, at least, to this race (Belding, *loc. cit.*). Data on migrants: Steele Meadow [Swamp], Modoc County, September 29 [=30] (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:317); Battle Creek, Shasta County, October (McGregor, Condor, 2, 1900: 35); 10 miles north of Red Bluff, April 10, and 4 miles northeast of Red Bluff, March 31, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:414; DuMont and Stevenson, Condor, 34, 1932:192); 2 miles northwest of Thorn, Humboldt County, October 6 (Calif. Acad. Sci.); Healdsburg and Sebastopol, Sonoma County, October 3 to 13 (Edge, Condor, 35, 1933:233; Belding, *op. cit.*:141); Santa Cruz, Santa Cruz County, August 21, presumably this race (A. S. Allen, Condor, 42, 1940: 128); Dudley, Mariposa County, October 8 (Grinnell and Storer, *loc. cit.*); 10 miles north of Fresno, April 7, and Minkler, October 7, Fresno County (Mus. Vert. Zool.; Swarth, Condor, 19, 1917:130).

Habitat—Open ground with little vegetation or else areas grown to short grass and low annuals. Bushes and taller grass may be used as retreats or for shelter. Often seen in stubble fields and meadows and along road edges where they forage in a skulking manner.

Pooecetes gramineus confinis (Baird)
Western Vesper Sparrow

Synonyms—Emberiza graminea; *Poocaetes graminea*; *Zonotrichia graminea*, part; *Pooecetes gramineus*; *Poocaetes gramineus confinis*, part; *Pooecetes confinis*; *Pooecetes gramineus affinis*, part; *Pooecetes gramineus definitus*; Grass Finch; Bay-winged Finch; Grass Sparrow; Western Grass Bunting; Vesper Sparrow, part; Great Basin Vesper Sparrow.

Status—Summer resident in northeastern section and winter visitant in southern and west-central California. Migrates in September and in latter part of March and April. Fairly common to common.

Geographic range—As breeding, Great Basin plateau east of Cascade-Sierran axis, from Oregon line south to Inyo Mountains, Inyo County; also occurs in high meadows along crest of southern Sierra Nevada south to latitude 36° in Tulare County. In winter, southern deserts north to Owens Valley and coastal southern California north to Santa Barbara County; more sparingly in San Joaquin Valley and coastal valleys north at least to Fresno district and San Benito County. Life-zones in summer, Upper Sonoran and Transition; locally, Canadian. Altitudinal range of nesting stations, 4400 feet, as at Macdoel, Siskiyou County, to at least 10,500 feet on White Mountains, Mono County. Representative localities of summer residence: Bray, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:92); Goose Lake, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:316); Bogard Ranger Station east to Box Springs, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:414); Beckwith and Vinton, Plumas County (Mus. Vert. Zool.); Sierra Valley, Sierra County (Belding, Land Birds Pac. Dist., 1890:141); vicinities of Silver, Walker and Mono lakes, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:440; Rowley, Condor, 41, 1939:253); Long Valley and White Mountains, Mono County (Dawson, Birds Calif., 1, 1924:245); Inyo Mountains, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:85); Whitney, Monache and Troy meadows, Tulare County (Mus. Vert. Zool.). Some localities and accounts of occurrence in winter: 5 miles southwest of Lone Pine, Inyo County, December (Ellis Coll.); Fresno area, Fresno County, September 12 to April 7 (Tyler, Pac. Coast Avif. No. 9, 1913:77); Paicines, San Benito County, October 7 (Mailliard and Mailliard, Condor, 3, 1901:124); Carrizo Plain, San Luis Obispo County, and San Emigdio and Grapevine canyons, October, Kern County [race not verifiable] (Fisher, *loc. cit.*); coastal southern California in general, from Santa Barbara southward, September 14 to April 21 (Willett, Pac. Coast Avif. No. 21, 1933: 170); Cajon Valley [El Cajon], San Diego County (Belding, *op. cit.*:142); Brawley, El Centro and Calexico, Imperial County (van Rossem, Condor, 13, 1911:132; Hoffmann, Condor, 25, 1923:107 [presumably this race]); Chemehuevis Valley, San Bernardino County (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:166). Data relating especially to migratory movements: Summit, Placer County, September 9 (Belding, *op. cit.*:141); Yosemite Valley, Mariposa County, April 26, sight record (C. W. Michael, Condor, 27, 1925:112); Furnace Creek Ranch, April 4 to April 29, Inyo County (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:83); Bear Lake, September 17, and Bluff Lake, September 5, San Bernardino Mountains (van Rossem and Pierce, Condor, 17, 1915:164; Mus. Vert. Zool.); Goffs, San Bernardino County, April 12, 13 (Hollister, Auk, 25, 1908:460); Mecca, Riverside County, April 8 (Mus. Vert. Zool.). References bearing on geographic variation: Oberholser, Sci. Publ. Cleveland Mus. Nat. Hist., 4, 1932:11; A. H. Miller, Condor, 43, 1941:262.

Habitat—In summer, artemisia association in which the sagebrush is well spaced and either stunted or of no more than moderate height. Much open or sparsely grass-covered ground is required and this usually is level or gently sloping. Bush tops and occasionally higher points are employed as song posts but otherwise activity is on the ground and is carried on in inconspicuous manner; the birds freely use crouch-concealment and retreats under or within bushes for hiding. In winter not narrowly restricted as to plant association but physical aspect of environment generally similar to that of the summer season.

Chondestes grammacus strigatus Swainson
Western Lark Sparrow

Synonyms—Chondestes grammaca; *Emberiza grammaca*; *Zonotrichia grammaca*; *Chondestes grammica*; *Chondestes grammica strigata*; *Chondestes strigatus*; Lark Finch; Lark Bunting; Prairie Lark Finch; Lark Sparrow; Western Lark Finch.

Status—Resident over much of State, but summer resident only in northeastern section and winter visitant only southeastwardly. Local movements and formation of large flocks in winter within areas of permanent residence may obscure an influx of winter visitant birds from the north. In general, common.

Geographic range—As breeding, chiefly interior valleys, plains and low mountains west of Sierra Nevada and Cascade Range, but occurs at least scatteringly in all sections except eastern Mohave and Colorado deserts and valley of the Colorado River; probably nests on Santa Cruz Island. In winter, north at least as far as Tehama County, thence south throughout Great Valley and coastal districts to Mexican boundary; also east of principal mountains from San Bernardino County south through Imperial County and east, sparsely, to Colorado River. Life-zones, Upper and Lower Sonoran; locally, Transition. Nesting stations range in altitude from near sea level up to 6700 feet, as in San Bernardino Mountains (Willett, Condor, 12, 1910:44). Peripheral stations of record northwestwardly: Crescent City, Del Norte County, October (Ferry, Condor, 10, 1908:42); Hoopa Valley, Humboldt County (W. K. Fisher, Condor, 6, 1904:51); Fair Oaks [=Kneeland], Humboldt County (Mus. Vert. Zool.); South Fork Mountain, 3000 feet, and Mad River, 2300 to 2700 feet, Trinity County (Mus. Vert. Zool.); Nash [=Nashmead], Cahto and Ukiah, Mendocino County (Mus. Vert. Zool.; McGregor, Nidologist, 3, 1896:148). Extreme eastern localities of summer residence: Cedarville, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:317); 4 miles northeast of Red Rock P. O., Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:415); Owens Valley, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:87); Indian Wells, Kern [reported as Inyo] County (Dawson, Birds Calif., 1, 1924:235); 20 miles east of Palmdale, Los Angeles County (Dickey and van Rossem, Condor, 24, 1922:62); Barstow, August 5 [possibly not summer resident; vagrant near Yermo, July 19], San Bernardino County (Lamb, Condor, 14, 1912: 38); Palm Springs, Riverside County (A. H. Miller MS); Vallecitos, San Diego County (Mus. Vert. Zool.). Additional references to nesting areas selected from the abundant literature bearing on distribution and natural history: Macdoel and Gazelle, Siskiyou County, and Weaverville and Hayfork, Trinity County (Grinnell, Condor, 20, 1918: 190); Baird, Shasta County, and vicinity of Red Bluff, Tehama County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:218; Grinnell, Dixon and Linsdale, *loc. cit.*); Oroville, Butte County (W. B. Davis, Auk, 55, 1938:546); Sacramento (Ridgway, U. S. Geol. Expl. Fortieth Parallel, Part 3, Ornithology, 1877:469ff.); Fyffe, Eldorado County (Barlow, Condor, 3, 1901:171); San Francisco Bay region—Cazadero, Sonomo County, to Los Gatos, Santa Clara County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:113); San Juan, Tres Pinos and San Benito, San Benito County (Van Denburgh, Proc. Acad. Nat. Sci. Phila., 1898:214); Fresno district, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:79); Tulare Lake, Kings County (Goldman, Condor, 10, 1908:204); Big Creek, Monterey County (Pemberton and Carriger, Condor, 17, 1915: 200); Shandon, San Luis Obispo County (Dawson, *loc. cit.*); Santa Cruz Island, "mated pair," March 23 (Dickey and van Rossem, Condor, 25, 1923:128); Mount Pinos, Ventura County, including vagrant (?) at 8800 feet (Grinnell, Auk, 22, 1905:

386); southern California in general (Willett, Pac. Coast Avif. No. 21, 1933:171); Gorman, Los Angeles County, and Colton, San Bernardino County, parasitism by cowbird (Hanna, Condor, 36, 1934:249); Escondido, San Diego County (Sharp, Condor, 9, 1907:89). Some data on migratory movements and winter range: Red Bluff, Tehama County, February (Belding, Land Birds Pac. Dist., 1890:147); Upper Lake, Lake County, March 3 (Mus. Vert. Zool.); Grass Valley, Nevada County, winter (Richards, Condor, 26, 1924:102); Summit, Placer County, May 15, October 1 (Belding, Condor, 3, 1901:31; Mus. Vert. Zool.); Colfax, Placer County, and Murphy, Calaveras County, winter (Belding, *loc. cit.*); Nicasio, Marin County, winter (Grinnell and Wythe, *loc. cit.*); Yosemite Valley, Mariposa County, migrants or vagrants—April 12, August 16, 20, 30, September 11 (C. W. Michael, Condor, 27, 1925:112); Death Valley, Inyo County, migrants, April 13 to May 4 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923: 85); Santa Cruz Island, November (Linton, Condor, 10, 1908:128); Victorville, San Bernardino County, winter (Mailliard and Grinnell, Condor, 7, 1905:76); Volcan Mountains, 6000 feet, February 24 (Belding, *loc. cit.*); Mecca, Riverside County, April 27 [resident?] (Mus. Vert. Zool.); Brawley, Imperial County, winter (van Rossem, Condor, 13, 1911:133); Riverside Mountain, Colorado River valley, Riverside County, March 17 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:167). In general: food (Judd, U. S. Dept. Agr., Div. Biol. Surv., Bull. No. 15, 1901:67); nomenclature (A. H. Miller, Condor, 43, 1941:259).

Habitat—A combination of open terrain with scattered bushes and trees such that there is opportunity to forage on the ground and yet to utilize elevated places for viewpoints and retreats. The sphere of forage activity thus is low; that of nesting ranges from the ground up into trees to heights of about 20 feet, and the points for flock gatherings, lookouts and singing range from bush-top level up into trees of moderate height. Many situations afford these conditions: fields and semi-desert terrain bordered by fence row cover or supplied with scattered bushes; open brushland on hill slopes; widely open oak woodland; and orchards. Food is sought on foot on the ground with short flights often interspersed; grains and leguminous plants are important as vegetable foods and, among insects, grasshoppers especially are taken.

Aimophila ruficeps ruficeps (Cassin)
California Rufous-crowned Sparrow

Synonyms—Ammodromus ruficeps; *Ammodramus ruficeps*; *Peucaea ruficeps*, part; *Aimophila ruficeps*, part; Brown-headed Finch; Red-capped Finch, part; Rufous-crowned Finch; Rufous-crowned Sparrow, part; Rufous-headed Sparrow.

Status—Strictly resident. Common locally, but suitable habitat not widespread and birds observed with difficulty, hence seldom rated as "numerous."

Geographic range—Coast ranges from Marin and Sonoma counties south to San Luis Obispo County; Marysville Buttes, and Sierran foothills from Placer County south to Kern County. Intergradation with *A. r. canescens* poorly known; presumably it takes place in Kern and southern San Luis Obispo counties, possibly also in Tulare County. Life-zone, Upper Sonoran. Altitudinal range from about 300 feet, as in Berkeley Hills, Alameda County, up to 3200 feet, as at Fort Tejon, Kern County (Grinnell, Condor, 7, 1905:13). Localities marking northern periphery of range: Marysville Buttes, Sutter County (Grinnell, Pac. Coast Avif. No. 11, 1915:122); Colfax, Placer

County (Belding, Land Birds Pac. Dist., 1890:163); 3 miles north-northeast of Kellogg [=Mount St. Helena], Sonoma County (Mus. Vert. Zool.). Easternmost record: 7 miles northeast of Onyx, Kern County (Mus. Vert. Zool.). Other representative stations and accounts of natural history: Nicasio, Marin County (Brewster, Bull. Nutt. Ornith. Club, 2, 1877:37, and *ibid.*, 4, 1879:47); Berkeley, Alameda County (Grinnell, Condor, 16, 1914:35; Simpson, Condor, 27, 1925:97); Arroyo del Valle, southern Alameda County (Pemberton, Condor, 12, 1910:123); [near Milpitas,] Santa Clara County (Barlow, Condor, 4, 1902:107); [3 miles west of] Vacaville, Solano County, and Mount Diablo, Contra Costa County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:118); 3000 feet [near Murphy], Calaveras County, December 13 (Belding, *loc. cit.*); Orestimba Peak, western Stanislaus County (Mus. Vert. Zool.); Pleasant Valley [=Barrett] and El Portal, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:467); Minkler and Dunlap, Fresno County (Swarth, Condor, 19, 1917:130; Todd, Condor, 24, 1922:126); Poso Range, Kern County (Sheldon, Condor, 11, 1909:172); Posts [Big Sur], and Mount Mars, Monterey County (Jenkins, Condor, 8, 1906:128); [near] Morro, San Luis Obispo County (Mus. Vert. Zool.).

Habitat—Hillsides that are grass covered and grown to sparse low bushes, scarcely dense enough to constitute true chaparral. Rarely bushes may be absent if rock outcrops are present. Slopes frequented are sunny and well drained. Marked preference is shown for California sage (*Artemisia californica*). This in its typical open growth, associated with grass tussocks, is adhered to exclusively by these sparrows in many areas. Within the grass and beneath the bushes the birds forage and find retreats from disturbance, staying on or close to the ground and most of the time out of sight in the cover. Flights over the bush tops are rapid and short and usually down hill. Occasionally when alarmed or curious, and when singing, bush tops and rocks are mounted in order to survey the terrain. Grass clumps and bases of bushes are used to conceal the nests which are sunk level with the ground surface.

Aimophila ruficeps canescens Todd
Ashy Rufous-crowned Sparrow

Synonyms—Peucaea ruficeps, part; *Aimophila ruficeps*, part; *Aimophila ruficeps ruficeps*, part; Red-capped Finch, part; Rufous-crowned Sparrow, part; Ashy Sparrow.

Status—Permanently resident. Fairly common, locally.

Geographic range—Coastal southern California from Santa Barbara, Ventura and Los Angeles counties south to Mexican boundary. Life-zone, Upper Sonoran. Altitudinal range, from about 200 feet, as at Laguna Beach, Orange County, up to at least 2500 feet, as at Campo, San Diego County. Representative localities and citations: near Gaviota and Santa Barbara, Santa Barbara County (Willett, Pac. Coast Avif. No. 21, 1933:171; Mailliard, Condor, 5, 1903:99); near Sespe, Ventura County (Willett, *loc. cit.*); Castaic Canyon, Los Angeles County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:98); Arroyo Seco, in Los Angeles (H. W. Myers, Condor, 11, 1909:131); Santa Monica and Whittier, Los Angeles County (Willett, *loc. cit.*); Crafton Hills, east of Redlands, San Bernardino County (Williams, Osprey, 2, 1897: 27); Trabuco Canyon, 1700 feet, Riverside County (Mus. Vert. Zool.); Escondido, San Diego County (Carpenter, Condor, 9, 1907:158); San Diego, San Diego County,

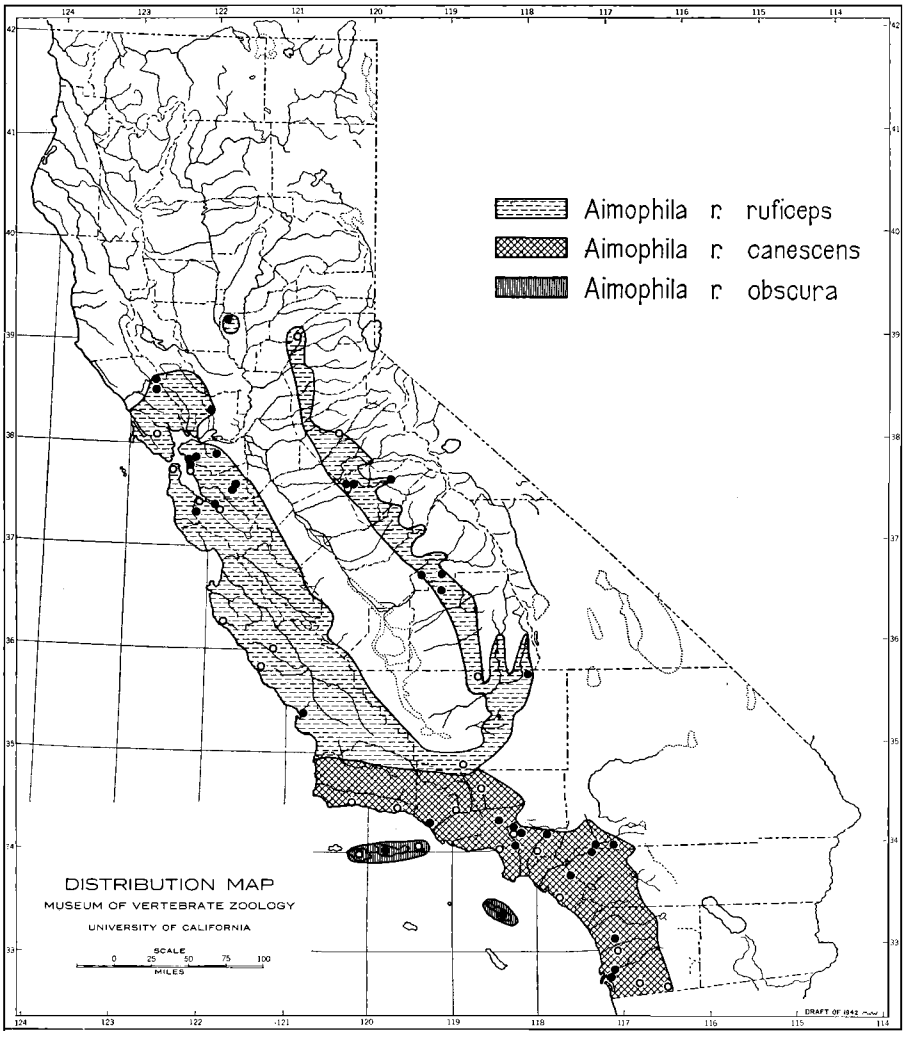

Fig. 51. Distribution of the subspecies of Rufous-crowned Sparrow, *Aimophila ruficeps*, in California. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

(Todd, Condor, 24, 1922:126; Dawson, Birds Calif., 1, 1924:271; Heaton, Oologist, 45, 1928:53); Dulzura, same county (Grinnell, Auk, 43, 1926:245).

Habitat—Sparse low brush on grassy hill slopes. Preference is shown for tracts of California sage (*Artemisia californica*). Requirements in general as in race *A. r. ruficeps*, which see.

Aimophila ruficeps obscura Dickey and van Rossem
Santa Cruz Island Rufous-crowned Sparrow

Synonyms—Peucaea ruficeps, part; *Aimophila ruficeps ruficeps*, part; *Aimophila ruficeps*, part;

Aimophila obscura; *Aimophila ruficeps canescens*, part; Red-capped Finch, part; Rufous-crowned Sparrow, part; Santa Cruz Island Sparrow; Santa Cruz Sparrow; Ashy Rufous-crowned Sparrow, part.

Status—Permanently resident. Common, at least on Santa Cruz Island.

Geographic range—Santa Rosa, Santa Cruz, Anacapa, and Santa Catalina islands; but not reported from the latter since 1863! Life-zone, Upper Sonoran. Principal references: Santa Rosa Island, sight record only (Pemberton, Condor, 30, 1928:148); Santa Cruz Island (Linton, Condor, 10, 1908:128; Howell, Pac. Coast Avif. No. 12, 1917:80; Dawson, Birds Calif., 1, 1924:271; Dickey and van Rossem, Condor, 25, 1923:128; Grinnell, Auk, 43, 1926:245; Willett, Pac. Coast Avif. No. 21, 1933:171); Anacapa Island (Willett MS); Santa Catalina Island (Cooper, Ornith. Calif., 1870:218; Dickey and van Rossem, *loc. cit.*).

Habitat—Grassy hill slopes and canyon walls where there are scattered bushes or clumps of cactus.

Amphispiza bilineata deserticola Ridgway
Desert Black-throated Sparrow

Synonyms—Poospiza bilineata; *Amphispiza bilineata*; Black-throated Finch; Black-throated Sparrow; Desert Sparrow.

Status—Summer resident from April to August; common, locally even abundant. In winter leaves segment of breeding range lying north of Mohave Desert. Presumed to be partly migratory elsewhere, as winter resident population to southward in State smaller and less widely dispersed than that of summer.

Geographic range—As breeding, desert and Great Basin regions entire length of State east of Cascade-Sierran axis and mountains of southern section; but absent in the middle, higher part of eastern border from Sierra County south to northern Mono County; extends westwardly through Walker Pass, Kern County, in reduced numbers to upper Kern Basin and even to edge of San Joaquin Valley in Bakersfield district (probably breeding). In winter, Mohave and Colorado deserts, north at least through San Bernardino County. Occurs sporadically in fall, winter and spring to westward of breeding range, principally south of Tehachapi Mountains. Life-zones, Lower Sonoran and lower part of Upper Sonoran. Altitudinal range in nesting season from —280 feet, as in Death Valley (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:91), up to 7500 feet in Grapevine Mountains, Inyo County (A. H. Miller MS); a vagrant juvenile has been taken at 10,400 feet, in Kearsarge Pass, Fresno County, September 3 (Swarth, Condor, 26, 1924:196). Representative stations in breeding range: Alturas, and Dry Creek at east base of Warner Mountains, Modoc County (Mus. Vert. Zool.); Petes Valley, Red Rock P. O., and Susanville, Lassen County (Grinnell, Dixon, and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:417; Dawson, Birds Calif., 1, 1924:274); Mono Lake and White Mountains, Mono County (Dawson, *loc. cit.*); Owens Valley, Coso, Argus, and Panamint mountains, Death Valley, etc., Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:95); Walker Pass and Bodfish, Kern County (Mus. Vert. Zool.); Poso Creek, Kern County [probably breeding] (Sheldon, Condor, 11, 1909:172); Antelope Valley, northern Los Angeles County (Grinnell, Pac. Coast Avif. No. 11, 1915:121); Mohave River sink and Providence Mountains, San Bernardino County (Cooper, Amer. Nat., 3, 1869:189; Ornith. Calif., 1, 1870:203);

desert base of San Bernardino Mountains and Twentynine Palms, San Bernardino County (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:97; Williams, Condor, 40, 1938: 258); Banning, Palm Springs, Palm Canyon, etc., Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:277; Hutchinson and Hutchinson, Aud. Mag., 43, 1941:484); La Puerta and Vallecitos, eastern San Diego County (Mus. Vert. Zool.); 11 miles northeast of Nyland, Imperial County (Mus. Vert. Zool.); Colorado River valley in vicinity of Cibola (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:173). Midwinter records: Providence Mountains, San Bernardino County (Mus. Vert. Zool.); Palm Springs, Riverside County (Grinnell, Condor, 6, 1904:43). Some data bearing on spring migration: arrival in Death Valley area, March 22, and Little Lake, March 21, Inyo County (A. K. Fisher, *loc. cit.*; Mus. Vert. Zool.). Known vagrants, probably in the main stray migrants, from west of breeding range: Chico, Butte County, November 27 (Ingles, Condor, 39, 1937:86); San Fernando Valley, Los Angeles County, April 23, September 12, and October 30, Los Angeles, January 16, and Pasadena, April 10, August 6 and 7, all in Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:172); vicinity of Claremont, Los Angeles County, March 14, May 21 (Pierce, Condor, 16, 1914:144; Mrs. N. E. Ayer, *fide* H. Michener MS); Vallevista, Riverside County, September 4 (Grinnell and Swarth, *loc. cit.*).

Habitat—Sparsely vegetated, strongly insolated desert terrain, either steeply sloping or essentially flat, but not ordinarily the floors of sinks or riparian borders. Most favored are desert uplands—alluvial fans and hill slopes, usually with much exposed rock or gravel pavement. Plants associated include a wide variety but especially favored are cholla cactus and creosote bush, at least where mixed with some other shrubs. Catclaw, small mesquites, artemisia, sages, rabbit-brush, and purshia are other plants which the birds often live in and about. Although Black-throated Sparrows run and forage extensively on the ground, they also move about freely on the wing in the open cover, resort to bushes for foraging, lookouts, and shelter, and nest above ground, preferably in thick twig growth or among cactus joints if available.

Amphispiza belli nevadensis (Ridgway)
Nevada Bell Sparrow

Synonyms—*Poospiza belli*, part; *Poospiza belli* var. *nevadensis*; *Amphispiza nevadensis*, part; *Amphispiza nevadensis nevadensis*, part; Bell Bunting, part; Bell Finch, part; Artemisia Sparrow; Sage Sparrow, part; Nevada Sage Sparrow, part; Northern Sage Sparrow.

Status—Summer resident of Great Basin region from April to September; possibly some individuals winter within breeding range. Migrant and winter visitant to southward. Common.

Geographic range—As breeding, northeastern plateau region from Oregon line south to Sierra County; also Mono Lake basin. In winter, from Owens and Death valleys, Inyo County, south throughout Mohave and Colorado deserts to Mexican boundary, and westwardly into San Joaquin Valley, to Walker Basin in Kern County, and to interior parts of coastal slope of southern California; rarely to San Clemente Island. Life-zone in summer, Upper Sonoran. Altitudes of nesting stations lie between 4000 and 6800 feet, the latter extreme being reached in vicinity of Mono Lake. Reported stations of summer residence: east base of Warner Mountains [=Dry Creek], Modoc County (Grinnell, Pac. Coast Avif. No. 11, 1915:122); Petes Valley, Ravendale, Red Rock P. O., and Jones', Lassen County (Grinnell, Dixon and Linsdale, Univ.

Calif. Publ. Zool., 30, 1935:417); Sierra Valley [=extreme southern Lassen County] (Grinnell, *loc. cit.*; Mus. Vert. Zool.); Mono Lake and Mono Craters, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:466; Nichols, Condor, 40, 1938: 262). Some evidence relating to migration and winter distribution: Surprise Valley, Modoc County, departure in late September, present October 4 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:324); north end of Eagle Lake, Lassen County, September 28 (Grinnell, Dixon and Linsdale, *loc. cit.*); Yosemite Valley, Mariposa County, September 13 (C. W. Michael, Yosemite Nature Notes, 13, 1934:94); Eureka Valley, December 16, near Kearsarge, January 24, Olancha, December 28, Keeler, September 27, and Junction Ranch, at 5500 feet in Argus Mountains, October 18, all in Inyo County (Mus. Vert. Zool.); Death Valley, Inyo County, January (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:91); Raisin, Fresno County, November 3 (W. N. Wear, Condor, 19, 1917:142); 7 miles east of Coalinga, Fresno County, February 21 (Mus. Vert. Zool.); McKittrick, February 23, Walker Basin, November 7, 13, Kelso Valley at 4500 feet, November 19-December 2, and Mohave, March 15, all in Kern County (Mus. Vert. Zool.); Victorville, San Bernardino County, winter (Mailliard and Grinnell, Condor, 7, 1905:76); near Yermo, same county, November 16 (Lamb, Condor, 14, 1912:38); Providence Mountains, same county, December 21, 22, 28 (Mus. Vert. Zool.); Riverside, Riverside County, midwinter (Johnson, Zoe, 2, 1891:22; Swarth, Condor, 12, 1910:108); Palm Springs, Riverside County, midwinter (Grinnell, Condor, 6, 1904:43); vicinity of Brawley, Imperial County, winter (van Rossem, Condor, 13, 1911:133); Colorado River valley 5 miles below Needles, San Bernardino County (Mus. Vert. Zool.; Grinnell, Univ. Calif. Publ. Zool., 12, 1914:173); San Diego County [no details reported, this race or *A. b. canescens*, or both] (Stephens, Trans. San Diego Soc. Nat. Hist., 1919:25 [of separate]); San Clemente Island, November 25, 1939 (L. A. Mus.).

Habitat—As in race *A. b. canescens*, which see; sagebrush is even more predominantly the habitat of this form than it is in *canescens*.

Amphispiza belli canescens Grinnell
Intermediate Bell Sparrow

Synonyms—Poospiza belli, part; *Amphispiza belli nevadensis*, part; *Amphispiza belli*, part; *Amphispiza nevadensis*, part; *Amphispiza nevadensis canescens*; *Amphispiza nevadensis nevadensis*, part; Bell Bunting, part; Bell Finch, part; Bell Sparrow, part; Sage Sparrow, part; California Sage Sparrow; Nevada Sage Sparrow, part.

Status—Summer resident; remains to some extent in breeding range, especially at lower elevations, as in San Joaquin Valley. Winter visitant to sections south of nesting areas. Common both in summer and winter.

Geographic range—As breeding, Inyo region north to extreme southern Mono County and east to Nevada line, thence south around western rim of Mohave Desert in southern Sierra Nevada to upper Kern Basin; San Joaquin Valley north to Fresno and eastern Merced counties; west in mountains encircling southern San Joaquin Valley to southeastern San Benito County, and Carrizo Plains in San Luis Obispo County; thence south and east through Mount Pinos area along crests and desert slopes of mountains to northeast side of San Bernardino Mountains. In winter, Mohave and Colorado deserts east to Colorado River; San Joaquin Valley, and coastal southern California south at least to Riverside County. Life-zone in summer, chiefly Upper

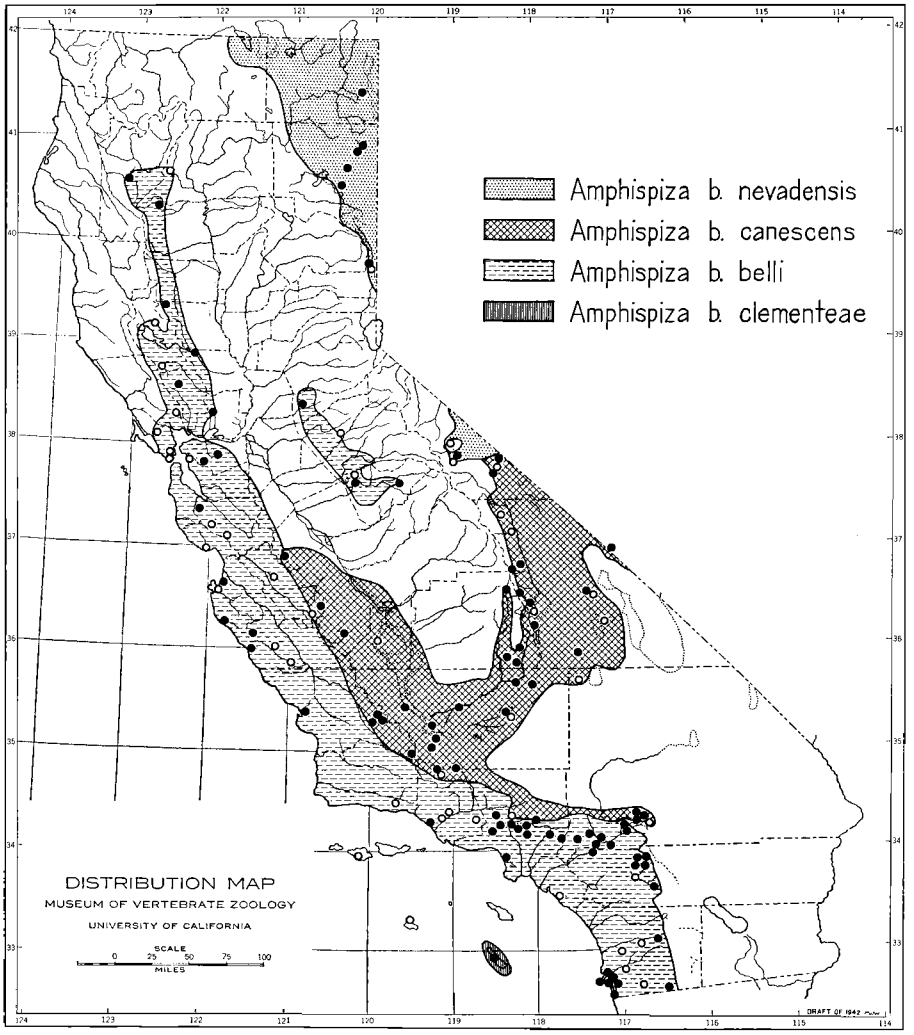

Fig. 52. Distribution of the subspecies of Bell Sparrow, *Amphispiza belli*, in California in the breeding season. Dots mark localities from which resident or breeding birds have been examined; circles, localities reported in the literature.

Sonoran; extends into Lower Sonoran marginally and occupies it extensively in San Joaquin Valley. Altitudinal range of nesting stations, from 200 feet, as at Tulare Lake, Kings County, up to about 8000 feet in mountains of Tulare and Inyo counties; moves up slope in midsummer to 8500 feet. Localities of summer residence serving to outline range: vicinity of Benton, Mono County, intergrades toward *A. b. nevadensis* (Mus. Vert. Zool.); White, Inyo, Panamint and Grapevine mountains, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:98); 2 miles north of Independence, Mountain Springs Canyon in Argus Mountains, and Walker Creek 4 miles southwest of Olancha, Inyo County (Mus. Vert. Zool.); Junction Meadow at 8200 feet on Kern River (J. Dixon Coll.) and Trout Creek, 6000 feet (Mus. Vert. Zool.), Tulare County; Walker

Pass, Kern County (Grinnell, Pac. Coast Avif. No. 11, 1915:122); Piute Mountains, Kern County (Richardson, Condor, 6, 1904:136); 8 miles north of Bakersfield, Buena Vista Lake, and McKittrick, Kern County (Swarth, Condor, 13, 1911:161; Dickey and van Rossem, Condor, 24, 1922:67); Carrizo Plains, San Luis Obispo County (Swarth, *op. cit.*:163); Tulare Lake, Kings County (Goldman, Condor, 10, 1908:204); Coalinga, western Fresno County (J. R. Arnold, Condor, 39, 1937:35); San Benito Mountain and 4 miles south of Hernandez, San Benito County, intergrades with *A. b. belli* (Mus. Vert. Zool.); Sweeney's Ranch [=Herrero Canyon, southwestern Merced County] (Mus. Vert. Zool.); Mount Pinos, Ventura County (Grinnell, Auk, 22, 1905: 387); Pine Flats at head of Tujunga Canyon, Los Angeles County (Grinnell, Condor, 7, 1905:18); east slopes of San Bernardino mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:97). Specific data on migration and winter range derived, unless otherwise specified, from recently determined skins in the Museum of Vertebrate Zoology: Raisin, Fresno County, December 11 (Tyler, Condor, 13, 1911:76); 7 miles east of Coalinga, Fresno County, February 21; McKittrick, Kern County, February 23; Walker Basin, 3300 feet, Kern County, November 18; Lone Pine, Inyo County, arrival March 21 (A. P. Smith, Condor, 21, 1919:213); Furnace Creek Ranch in Death Valley, April 3, Jackass Spring in Panamint Mountains, October 2, Junction Ranch in Argus Mountains, October 17, and Little Lake, March 20, all in Inyo County; Victorville, San Bernardino County, December 23, 25, 31, March 23 (Mailliard and Grinnell, Condor, 7, 1905:76; Mus. Vert. Zool.); San Fernando Valley, Los Angeles County (Grinnell, Condor, 7, 1905:18); Riverside, Riverside County, December 25, 26 (Swarth, Condor, 12, 1910:108; Mus. Vert. Zool.); Mecca, Riverside County, April 2; vicinity of Brawley, Imperial County (van Rossem, Condor, 13, 1911:133); Colorado River 5 miles below Needles, San Bernardino County, February 20; Palo Verde, Riverside County, February 18; Potholes, Imperial County, February 11 (Dawson, Birds Calif., 1, 1924:282).

Habitat—Brushland grown fairly densely with bushes of desert types. Most prevalent plants forming suitable cover are sagebrush (*Artemisia tridentata*), species of salt bush (*Atriplex*) and antelope brush (*Purshia*). These sparrows spend much time on the gravel pavement or alkali hardpan between and beneath bushes. There they forage from the ground surface and parts of the bushes within reach of it and run swiftly from the base of one bush to another, seeking concealment. Flight is resorted to when the bird is close pressed and at times when moving between lookout posts on bush tops or to and from nest sites in the bushes.

Amphispiza belli belli (Cassin)
California Bell Sparrow

Synonyms—Emberiza belli; *Poospiza belli*, part; *Amphispiza belli*, part; Bell Finch, part; Bell Bunting, part; Bell Sparrow, part.

Status—Resident; some local seasonal movements may take place but there is no evidence of migration to regions outside of broad outlines of breeding range. Fairly common to common.

Geographic range—Of two segments, as follows: western foothills of Sierra Nevada from Eldorado County south at least to Mariposa County; inner coast ranges from Shasta County southward, extending to vicinity of coast from Marin County to San Diego County; from southern San Benito County to San Bernardino County absent from innermost coast ranges and desert slopes of San Gabriel and San Bernardino

mountains where replaced by race *canescens*. Life-zone, Upper Sonoran; enters parts of coastal division of Lower Sonoran. Altitudinal range, from near sea level, as at El Segundo, Los Angeles County, up to 5000 feet in San Jacinto Mountains, with late summer vagrants ranging up to 9000 feet. Localities of record in Sierran foothills: Cosumnes River, Eldorado County (Heermann, Pac. R. R. Rept., 10, 1859:46); 5 miles east of Carbondale, Amador County (Mus. Vert. Zool.); Murphy, Calaveras County, February 1 (Belding, Proc. U. S. Nat. Mus., 1, 1879:416); near Coulterville, Pleasant Valley [=Barrett], Incline, and near El Portal [at 3300 feet], Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:464; Webster, Yosemite Nature Notes, 21, 1942:24). Representative stations in coastal division of range: Sawpit Gulch, 3000-3500 feet [near French Gulch], western Shasta County (Grinnell, Condor, 20, 1918:190); 2 miles east of Hayfork, Trinity County (A. H. Miller MS); 3 miles west of Stonyford, Colusa County (Mus. Vert. Zool.); between Bartlett Spring and Upper Lake, and near Middletown, Lake County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919:292); Rumsey, Yolo County, and 3 miles west of Vacaville, Solano County (Mus. Vert. Zool.); Sonoma, Sonoma County (Cassin, Proc. Acad. Nat. Sci. Phila., 5, 1850:104); Nicasio, Mount Tamalpais and Point Bonita, Marin County (Squires, Condor, 19, 1917:186; Stephens and Pringle, Birds Marin County, 1933:7); Mount Diablo, Contra Costa County, hills east of Berkeley and Oakland, Alameda County, and Black Mountain and Los Gatos, Santa Clara County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:118); Loma Prieta [Santa Clara County?] and Santa Cruz, Santa Cruz County (McGregor, Pac. Coast Avif. No. 2, 1901:14; Hellmayr, Cat. Birds Amer., pt. 11, 1938:542); Paicines, San Benito County (Mailliard and Mailliard, Condor, 3, 1901:125); Monterey, Sur River, Santa Lucia Peak, and Jolon, Monterey County (Cooper, Auk, 4, 1887:93; Pemberton and Carriger, Condor, 17, 1915: 200); near Morro, San Luis Obispo County (Mus. Vert. Zool.); Santa Ynez Mountains, Santa Barbara County (Dawson, Birds Calif., 1, 1924:281); Santa Paula, Ventura County (Evermann, Auk, 3, 1886:182); Newhall and San Fernando Valley, Los Angeles County (Mus. Vert. Zool.; Dawson, *loc. cit.*); Claremont, Los Angeles County (Pierce, Condor, 8, 1906:152); Pacific slopes of San Bernardino mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:97); Riverside, Riverside County (Johnson, Zoe, 2, 1891:23); foothills near Cabezon, Kenworthy, etc., in San Jacinto Mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:278); Julian and Campo, San Diego County (Mus. Vert. Zool.); Ocean Beach, San Diego, and mouth of Tia Juana River, same county (Huey, Trans. San Diego Soc. Nat. Hist., 6, 1930:230).

Habitat—Chaparral of arid, or "hard" type, usually fairly dense or continuous and 2 to 5 feet in height. Marked preference is shown for tracts of chamise (*Adenostoma*) which in many sections is the only plant association occupied. This sparrow occurs sparingly in baccharis and artemisia brush to northward and also is found in brush growing on sand dunes and mesas near seacoast, and in mixed brush and cactus patches in arid washes. Within the brush cover the birds find all requirements of existence: forage beat on the ground and low in the bushes, nest sites at low levels in concealing twigs, and avenues of escape by running through the bushes or by flight through or over their tops; this form is less given to running long distances than are *A. b. canescens* and *A. b. nevadensis*, perhaps because of the denser brushland habitat it selects.

Amphispiza belli clementeae Ridgway
San Clemente Bell Sparrow

Synonyms—Poospiza belli, part; *Amphispiza belli*, part; *Amphispiza belli belli*, part; Bell Finch, part, Bell Sparrow, part; San Clemente Sparrow.

Status—Resident; common.

Geographic range—San Clemente Island, and probably San Nicolas and Santa Rosa islands. Bell Sparrows occur on the latter two islands, but specimens from there have not been critically determined; there is a distinct possibility that the birds of Santa Rosa pertain to *A. b. belli*. For complete review of insular occurrences to 1917, see Howell (Pac. Coast Avif. No. 12, 1917:79); for nomenclatural treatment, see van Rossem (Auk, 49, 1932:490).

Habitat—Brushland of xerophilous aspect; this has been noted as consisting of scrubby brush on mesas (Howell, *loc. cit.*) and thorny brush growing in clumps and patches interspersed with cactus (Grinnell, Pasadena Acad. Sci., publ. 1, 1897:18).

Note—This is a weakly differentiated race. Some of the alleged characters are not present in series we have examined. Longer bill and lighter juvenal plumage seem to us to be the only characters that are reasonably constant.

Junco hyemalis hyemalis (Linnaeus)
Boreal Slate-colored Junco

Synonyms—Junco hyemalis, part; Slate-colored Junco, part; Eastern Slate-colored Junco.

Status—Rare winter visitant, from November to early April.

Geographic range—All sections of State except coastal islands and Colorado Desert. Stations of record based on skins recently determined (A. H. Miller MS) as *hyemalis* in contradistinction to *J. h. cismontanus*: Eureka, Humboldt County, March 17, 1935 (J. M. Davis, Condor, 42, 1940:222); vicinity of Red Bluff, Tehama County, December 29, 1927, and January 2, 1928 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:418); Gridley, Butte County, February 2, 1885 (Belding, Land Birds Pac. Dist., 1890:159; A. H. Miller MS); Saint Helena, Napa County, February 1, 4, 1899 (McGregor, Bull. Cooper Ornith. Club, 1, 1899:52, part); Berkeley, Alameda County, March 6, 1899, December 27, 1938, January 18, 1941 (Acad. Nat. Sci. Phila.; Mus. Vert. Zool.); Berryessa, Santa Clara County (Amer. Mus. Nat. Hist.); Stockton, San Joaquin County; Smith Creek [east of Coulterville], December 1, 1916, January 28 and March 9, 1919, Dudley, December 14, 30, 1931, Gentry's, December 30, 1914, and Yosemite Valley, November 12, 1915, all in Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:458; D. D. McLean Coll.); Victorville, San Bernardino County, December 30, 1904 (Mailliard and Grinnell, Condor, 7, 1905:76, part); Providence Mountains, December 29, 1937 (Mus. Vert. Zool.); Pasadena, Los Angeles County, November 14, 1896, February 27, 1897, March 4, 1897, March 15, 1893 (Willett, Pac. Coast Avif. No. 21, 1933:173); Riverside, Riverside County, February 10, 1888 (Emerson, Zoe, 1, 1890:45, part); 40 miles east of San Diego, San Diego County. Additional records of Slate-colored Juncos allocated only as to species are listed in connection with race *cismontanus*.

Habitat—Of wide variety, but always involving some sort of forest or brush cover, usually of fairly open character, with ground surface at least partly free of snow.

Junco hyemalis cismontanus Dwight
Cassiar Slate-colored Junco

Synonyms—Junco hyemalis, part; *Junco hyemalis hyemalis*, part; *Junco hyemalis connectens*; Slate-colored Junco, part; Cassiar Junco.

Status—Sparse but regular winter visitant from November to early April. More of the Slate-colored Juncos wintering in the State belong to this race than to *J. h. hyemalis*.

Geographic range—All sections of State except coastal islands and Colorado Desert. Stations of record based on recently determined skins (A. H. Miller MS): Seiad Valley P. O., Siskiyou Mountains, Siskiyou County, January 25 (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:10); Weed, Siskiyou County, January 2 (Mus. Vert. Zool.); Litchfield, Lassen County, December 29, 1942 (Mus. Vert. Zool.); Battle Creek, Shasta County; Butte Creek, 3 miles northeast of Colusa, Colusa County (Grinnell, Condor, 25, 1923:175); Drytown, Amador County; Berkeley, Alameda County, January 11, 1899 (Acad. Nat. Sci. Phila.); Oakland, Alameda County, March 25, 1899 (Mus. Vert. Zool.); Hayward, same county; Moraga Valley, Contra Costa County, February 5, 1922 (D. D. McLean Coll.); Berryessa and Mount Hamilton, Santa Clara County; Palo Alto [Portola Valley], same county, November 27, 1907 (Pemberton, Condor, 10, 1908:92); Pine Canyon near Salinas, March 19, 1920, and Palo Colorado Creek, February 25, 1933, Monterey County (Mailliard, Condor, 22, 1920: 161; Mus. Vert. Zool.); Bodie, Mono County; near Dudley, Mariposa County, December 19, 1921, December 25, 1918, and December 29, 1922 (Mus. Vert. Zool.; D. D. McLean Coll.); Johnson Canyon, Panamint Mountains, Inyo County, April 3, 1891 (A. K. Fisher, N. Amer. Fauna No. 7, 1893:92); Providence Mountains, San Bernardino County, December 25, 1937, and January 5, 1938 (Mus. Vert. Zool.); Victorville, same county (Mailliard and Grinnell, Condor, 7, 1905:76, part); Carpinteria, Santa Barbara County, January 27, 1927 (Hoffmann, Condor, 29, 1927:171); Mount Wilson, Los Angeles County, December 6, 1900 (Swarth, Condor, 3, 1901:17); Riverside, Riverside County, February 10, 1888, and February 16, 1899 (Emerson, Zoe, 1, 1890:45, part; Mus. Comp. Zool.); Dulzura, San Diego County, March 25, 1891. Of the considerable number of reports of Slate-colored Juncos unassignable as to race, the following may be selected as affording further evidence on the winter distribution of the species as a whole: Clipper Gap, Placer County, January, February, 1909 (Adams, Placer County Inst. Research, 1909:39); Folsom, Sacramento County, November 21, 1931 (Gabrielson, Murrelet, 15, 1934:26); Death Valley, Inyo County, April 4, 1920, and November 23, 1933 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:90; Gilman, Condor, 37, 1935:242); near Yermo, San Bernardino County, January 25, 1911, and September 22, 1910 [only fall record earlier than November] (Lamb, Condor, 14, 1912:38); Santa Barbara, Santa Barbara County, March 14, 1883 (Jeffries, Auk, 6, 1899:221). For discussions of nomenclature, see A. H. Miller, Univ. Calif. Publ. Zool., 44, 1941:321, 345, 403.

Habitat—As in race *J. h. hyemalis,* which see.

Junco oreganus mearnsi Ridgway
Pink-sided Oregon Junco

Synonyms—Junco mearnsi; Pink-sided Junco.

Status—Rare winter visitant to southeastern border, with one record for coastal

San Diego County. Known occurrences: vicinity of Potholes [Colorado River valley], Imperial County, male taken October 24, 1924, and female, January 15, 1925 (Huey, Condor, 28, 1926:44); California Lakes [near Potholes], female taken December 31, 1930 (no. 73273 Mus. Vert. Zool.); 4 miles southwest of Ramona, San Diego County, female taken December 18, 1930 (Huey, Auk, 48, 1931:621). Additionally, there is a sight record for Furnace Creek Ranch, Death Valley, Inyo County, November 6 and 7, 1933, which in view of the distinctive coloration of this race and the circumstances described by the observer may be given some credence (Gilman, Condor, 37, 1935:242). Specific habitats from which this race has been reported are: willows of riverbottom and live oak woodland (A. H. Miller MS; Huey, *loc. cit.*).

Junco oreganus montanus Ridgway
Interior Oregon Junco

Synonyms—Junco oreganus shufeldti, part; *Junco hyemalis shufeldti*, part; *Junco hyemalis connectens*, part; *Junco oreganus thurberi*, part; *Junco oreganus couesi*, part; Shufeldt Junco, part; Intermediate Junco; Western Snowbird, part; Sierra Junco, part; Coues Junco, part; Shufeldt Oregon Junco, part; Sierra Nevada Oregon Junco, part.

Status—Winter visitant from late September to early April. Common along eastern border; fairly common in Great Valley and in southern coastal district, but rare westwardly.

Geographic range—All sections of State below levels of heavy snowfall, with exception of coastal islands and narrow coastal belt in northwest. Principally, however, locally favorable areas east of main mountain axis from northeastern plateau south to Yuma district. Sample record stations based on recently studied specimens (all in Mus. Vert. Zool.): Helena, February 25, and South Fork Mountain at 3000 feet, January 16, 25, March 30, Trinity County; Saint Helena, Napa County, December 23, February 4, 5; Berkeley, February 24, March 20, and Oakland, March 13, Alameda County; Medicine Lake, eastern Siskiyou County, September 30; Battle Creek, Shasta County, October 15, 19; vicinity of Payne Creek P. O., Tehama County, December 21 to 30; Grass Valley, Nevada County, February 1, March 2; near West Butte, Sutter County, November 11; Amador County, November 8; Dudley, Mariposa County, December 27 and January 27; Walker Basin, Kern County, November 15; Altadena, March 9, and Pasadena, February 22, Los Angeles County; Honey Lake valley, Lassen County, 10 specimens, December, January; Big Pine, February 28, Independence, January 21, Olancha, December 27, Coso Mountains at 7500 feet, October 24, Argus Mountains at 6100 feet, October 19, and Furnace Creek Ranch, —178 feet in Death Valley, April 4, all in Inyo County; Providence Mountains, San Bernardino County, 22 specimens, December, January; 5 miles northeast of Ogilby, November 13, and California Lakes [near Potholes], Colorado River valley, 5 specimens, December, January, Imperial County. For nomenclature and range in general, see A. H. Miller, Univ. Calif. Publ. Zool., 44, 1941:251ff.

Habitat—Within principal range, juniper and piñon woodland with associated sagebrush, riparian plant growth, and farm land where fence rows, brush tangles and orchards supply cover. Not noticeably different from other Oregon Juncos in habitat preference where it occurs in western parts of State. However on the average this race occupies more open, more arid and colder situations than does its close relative *J. o. shufeldti.*

Junco oreganus oreganus (J. K. Townsend)
Northwestern Oregon Junco

Synonyms—Junco oregonus, part; *Junco hyemalis oregonus*, part; *Junco hyemalis oreganus*; *Junco oreganus shufeldti*, part; Oregon Junco, part; Shufeldt Junco, part.

Status—Winter visitant from late September to early April, although usually scarce before late October. Common northwestwardly; fairly common to rare interiorly and to southward.

Geographic range—Chiefly coastal districts south to northern Monterey County; less numerous in Great Valley and foothills of Sierra Nevada, extending rarely to coastal southern California and to Mohave Desert. Sample stations of record in principal range from which specimens have been examined (A. H. Miller MS): Seiad Valley P. O., Siskiyou Mountains, Siskiyou County, December 30, February 2, 18 (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:10); 3 miles north of Trinidad, September 23, and Humboldt Bay, Humboldt County; South Fork Mountain, 5200 feet, January 25, April 8, and Van Duzen River at county line, September 18, Trinity County; Laytonville, Mendocino County; Cloverdale, April 20, and Santa Rosa, Sonoma County; Saint Helena, Napa County; Nicasio, Marin County; Berkeley, Alameda County (Wolfson, Condor, 44, 1942:238ff.); Oakland and Livermore, Alameda County; San Francisco; San Bruno and Redwood City, San Mateo County; Palo Alto and Berryessa, Santa Clara County; Pescadero, San Mateo County; Santa Cruz, Santa Cruz County; Pacific Grove and Palo Colorado Creek, Monterey County. Outlying records to eastward and southward based on specimens (A. H. Miller MS): Picard, Siskiyou County, September 27; Battle Creek, Shasta County, October 8, 10, 16, 23; Paine's Creek, 600 feet, December 21, 22, and Tehama, December 28, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:418, part); Enterprise, Butte County, October 2, November 25, December 8, 11, 15, 17; Grass Valley, Nevada County, October 26, January 24; Colusa, Colusa County, January 13; Grafton, Yolo County, September 27; Cisco, Placer County, October 5; Fyffe, Eldorado County, November 24; Plymouth, December 22, and Drytown, November 10, Amador County; Stockton, San Joaquin County, November 12, December 13, January 1; Dudley, December 25, 26, El Portal, December 8, and Yosemite Valley, November 16, Mariposa County; Planada, Merced County, January 26; Santa Cruz Island, October 23, 2 specimens; Pasadena, Los Angeles County, January 13; Temescal, Riverside County, December 15; Providence Mountains, San Bernardino County, January 1, 8. Juncos, possibly of this race, have been reported in winter from the Farallon Islands (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 1, 1888:47).

Habitat—Open forest understory, woodlands, edges of chaparral, and fence rows. As with all wintering juncos, this race may be found in a wide variety of habitats; but there must always be some tree or bush cover and some patches of open ground. *J. o. oreganus* seems to favor the humid forests, shaded ground and denser brushland more than do related subspecies of juncos; this preference is reflected in the concentration of the winter population in the northern coastal district of the State.

Junco oreganus shufeldti Coale
Shufeldt Oregon Junco

Synonyms—Junco hyemalis oregonus, part; *Junco hyemalis shufeldti*, part; *Junco hyemalis connectens*, part; *Junco oreganus thurberi*, part; *Junco oreganus oreganus*, part; *Junco oreganus*

couesi, part; Shufeldt Junco, part; Western Snowbird, part; Sierra Junco, part; Oregon Junco, part; Coues Junco, part; Northwestern Oregon Junco, part; Sierra Nevada Oregon Junco, part.

Status—Winter visitant from October to early April. Common to northward, becoming scarce in southern half of State.

Geographic range—Northern coastal districts and valleys west of crest of Sierra Nevada south regularly as far as northern San Joaquin Valley and Monterey County, extending less commonly south through coastal southern California and to eastward, as on Mohave Desert. Citable record stations are few by reason of uncertain identity of all but the most recently studied specimens (see A. H. Miller, Univ. Calif. Publ. Zool., 44, 1941:258-259, 267-268). A few sample record stations considered to be well authenticated (specimens in Mus. Vert. Zool.); Seiad Valley P. O., Siskiyou Mountains, Siskiyou County, November 5; Humboldt Bay, November 29, and near Willow Creek, January 7, 8, Humboldt County; Helena, February 15, and South Fork Mountain at 3000 feet, April 2, 4, January 25, Trinity County; Tower House, February 15, and Battle Creek, November 4, Shasta County; Paine's Creek, 600-1000 feet, Tehama County, December 21, 25; Litchfield, Lassen County, December 27; Grass Valley, Nevada County, October 26; 3 miles north-northeast Kellogg, January 10, 11, and Santa Rosa, November 9, Sonoma County; Saint Helena, December 27, February 4, and Angwin, November 4, February 6, Napa County; Nicasio, February 19, and San Geronimo, March 11; Berkeley, Alameda County, many specimens (see Wolfson, Condor, 44, 1942:278ff.); Oakland, Alameda County, October 23, December 29, February 12; Lafayette, Contra Costa County, February 12; Palo Alto, Santa Clara County, January 17, 19, February 14; Yosemite Valley, Mariposa County, November 18, December 26; 10 miles northwest of Merced, Merced County, February 22; 5 miles southwest of Madera, Madera County, January 6; Pasadena, Los Angeles County, February 22; Riverside, Riverside County, March 24; 3 miles west of Kearsarge, Inyo County, January 24; Victorville, January 1, and Providence Mountains, December 25, January 5, San Bernardino County. Additional records of geographic significance probably relating to this race (A. H. Miller MS); Pacific Grove, Monterey County, January 4; San Emigdio Canyon, Kern County, October 18; Santa Cruz Island, October 17, November 28; Santa Barbara, Santa Barbara County, January; Witch Creek, San Diego County, October 31, February 4.

Habitat—As in *J. o. oreganus*, except that preference is less marked for humid localities with relatively dense vegetation.

Junco oreganus thurberi Anthony
Sierra Nevada Oregon Junco

Synonyms—Struthus oregonus, part; *Niphoea oregona*; *Junco oregonus*, part; *Junco hyemalis oregonus*, part; *Junco hyemalis thurberi*, part; *Junco thurberi*; *Junco oregonus thurberi*; *Junco hyemalis*, part; *Junco oreganus*, part; Oregon Snowbird, part; Western Snowbird, part; Oregon Snow Finch; Oregon Junco, part; Thurber Junco, part; Sierra Junco, part.

Status—Occurs in several seasonal rôles, according to locality: summer resident, altitudinal and latitudinal migrant, and winter visitant; in northwest coastal areas and lower western periphery of Sierran breeding range may remain on or near breeding grounds throughout the year. Migratory movements take place in late September, October, and even November, somewhat dependent on snowfall, and in late March and April. In general, abundant, although sparse in winter eastwardly and numbers small in summer near northwest coast.

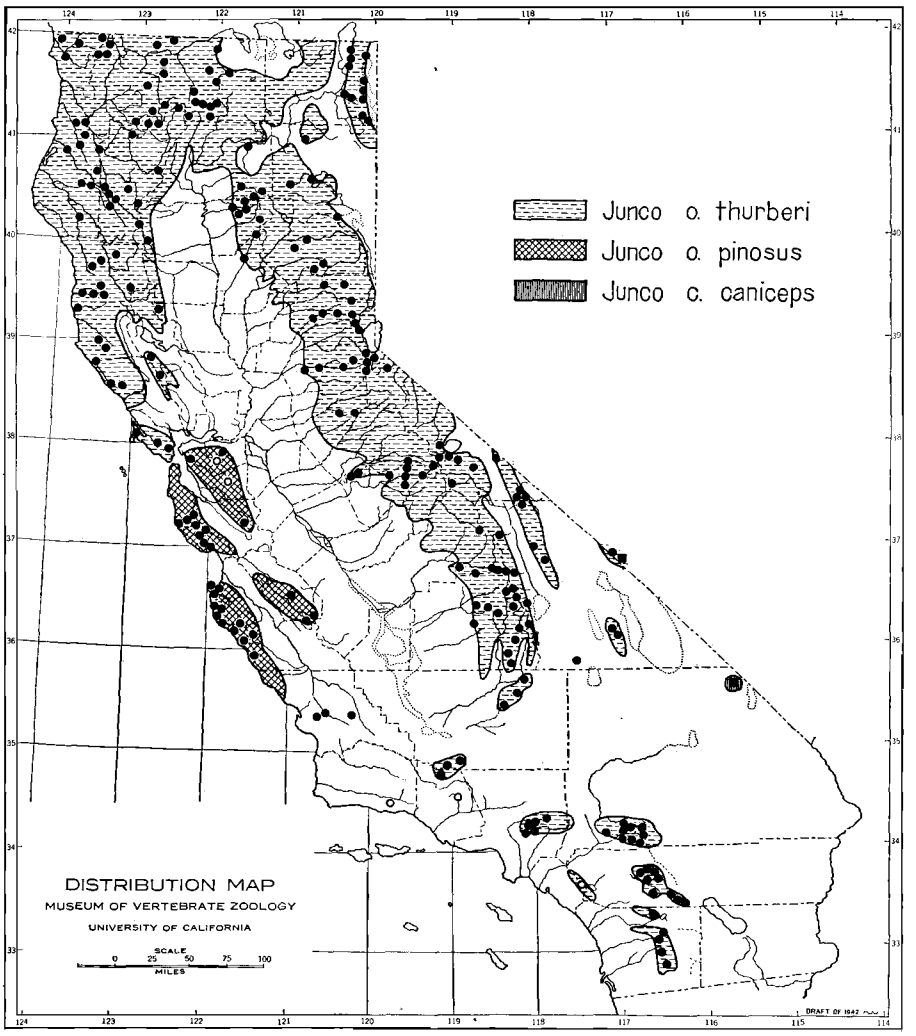

Fig. 53. Distribution of juncos in California in the breeding season. Dots indicate localities from which Oregon Juncos, *Junco oreganus*, have been examined; circles, localities reported in the literature. Squares mark stations for *J. c. caniceps*.

Geographic range—As breeding, mountains along northern border from coast eastward, with some discontinuity, to Warner Range; southward continuously in coastal forests to central Sonoma County and northern Napa County, and in Cascade-Sierran system to south fork of Kern River, thence discontinuously in Piute Mountains, vicinity of Fort Tejon, Mount Pinos and other isolated forest areas in Ventura County, and southeastward in San Gabriel, San Bernardino, Santa Ana, San Jacinto and Santa Rosa mountains to Palomar and Laguna mountains of San Diego County. *J. o. thurberi* intergrades with *J. o. pinosus* in Marin and San Luis Obispo counties and probably in Santa Barbara County. Populations of *thurberi* showing evidence of some hybridization with *J. c. caniceps* breed in White, Inyo, Argus, Panamint, and Grapevine moun-

tains in Inyo County. In winter, all sections of State below level of heavy snows, but rare or absent in most parts of northeastern plateau where *J. o. montanus* is the dominant wintering form; also scarce on southeastern deserts except along bases of mountains in which it breeds. The metropolis in winter is the foothill region and Upper Sonoran Zone of the Pacific slope of the State. Life-zones in summer, Transition up through Hudsonian. Altitudinal range extends from near sea level, as at Mendocino City, Mendocino County, up to 11,500 feet in vicinity of Mount Whitney, Tulare County. For full list of breeding stations see A. H. Miller, Univ. Calif. Publ. Zool., 44, 1938:412 (part), 419-420. Additional references selected from the extensive literature for their bearing on natural history and breeding range: Lassen section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:419); Cisco, Placer County (Ingersoll, Condor, 15, 1913:84); Fyffe, Lake Tahoe, etc., Eldorado County (Osgood, Osprey, 2, 1897:19; Barlow, Condor, 3, 1901:172; Ray, Auk, 20, 1903:189; I. G. Wheelock, Auk, 22, 1905:59; Ray, Condor, 20, 1918:76, and *ibid.*, 21, 1919:184; De Groot, Condor, 36, 1934:8); Yosemite area (Badè, Sierra Club Bull., 8, 1912:158; Grinnell and Storer, Animal Life Yosemite, 1924:459; E. Michael, Yosemite Nature Notes, 16, 1937:4, and *ibid.*, 18, 1939:23; Baysinger, *ibid.*, 20, 1941:12); Florence Lake and Middle Fork Kings River, Fresno County (L. M. Lofberg, Condor, 30, 1928: 310; Dawson, Birds Calif., 1, 1924:293); Mount Pinos, Ventura County (Grinnell, Auk, 22, 1905:387); San Marcos Pass, Santa Barbara County, and Santa Paula Canyon, Ventura County (Willett, Pac. Coast Avif. No. 21, 1933:174); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:95; Law, Condor, 28, 1926: 129; Sumner and Pierce, Condor, 29, 1927:116); food in general, Beal and McAtee, U. S. Dept. Agr., Farmer's Bull. 506, 1912:26). Some references and data (A. H. Miller MS) on migration: Eagleville, Modoc County, as late as October 14, possibly winters (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:324); Cisco, until October 9, Blue Canyon, October 15, Alta, November 30, all in Placer County; Leevining Creek, 9200 feet, Mono County, September 25; Yosemite Valley, Mariposa County, migration observed November 9 (Grinnell and Storer, *loc. cit.*); Fresno district, Fresno County, earliest October 24, latest April 11 (Tyler, Pac. Coast Avif. No .9, 1913:83); Oakland, Alameda County, October 15, April 6; King Mountain, San Mateo County, April 13; Pacheco Pass, Santa Clara County, October 14; Jolon, Monterey County, October 19; Olancha, Inyo County, as late as April 9; Goffs, eastern San Bernardino County, April 13; Riverside Mountain, Colorado River valley, March 17, and Mecca, March 23, Riverside County; Newhall, Los Angeles County, October 26; Santa Cruz Island, October 23; Santa Catalina Island, March 25 (Meadows, Condor, 32, 1930:211); San Clemente Island, October 13 (Linton, Condor, 10, 1908:85); San Bernardino Mountains, local movements in September (Law, Condor, 26, 1924:232); Riverside, Riverside County, September 3, October 19; Dulzura, San Diego County, April 12; migratory behavior in general (Wolfson, Condor, 42, 1940:94ff., *ibid.*, 44, 1942:238). Additional references and information (A. H. Miller MS) indicating dispersal in midwinter: Seiad Valley P. O., Siskiyou Mountains, Siskiyou County (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:10; Mus. Vert. Zool.); South Fork Mountain at 3000 feet, Trinity County; Upper Lake, Lake County; Payne Creek, Red Bluff and vicinity, Tehama County; Grass Valley, Nevada County; West Butte, Colusa County; Stockton, San Joaquin County; Nicasio, Marin County; Monterey and Point Lobos, Monterey County (Mus. Vert. Zool.; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:126); Yosemite Valley, Mariposa County (E. Michael, Yosemite Nature Notes, 9, 1930:58); Planada, Merced County; Florence Lake, Fresno County

(L. M. Lofberg, Condor, 35, 1933:243); Cambria, San Luis Obispo County; Bodfish, Kern County; Lone Pine, Inyo County; Mohave, Kern County; Victorville, Oro Grande and Granite Mountains, San Bernardino County; Mount Wilson, Los Angeles County; Cuyamaca Peak, San Diego County (Peterson, Condor, 44, 1942:80). Some juncos, probably of this race, observed March 31 on San Nicolas Island (Willett, *loc. cit.*).

Habitat—In summer, primarily coniferous forests, but not dense stands of trees. Within the forest there must be ground cover consisting of grass and low herbage. Meadows, streamside openings, and areas of partly downed or burned timber are particularly favored, doubtless because of the "edge effect," that is, the combination of much open ground grown to appropriate low plants with trees that afford retreats and song posts and which cast shade. Juncos prefer to forage in midday in the summer in the shade; the trees also prevent extreme drying of the principal forage beat on the ground. In coastal areas, madrone and oak woodland may be inhabited and to the southward deep shaded canyons with golden oaks and alders constitute suitable territory. Nests usually are on the ground, sometimes deeply hidden within the turf. If above ground, solid support and shade is sought, as is often available on low cliffs, in limb or root tangles, or about cabins.

Junco oreganus pinosus Loomis
Point Pinos Oregon Junco

Synonyms—Fringilla hudsonia; *Fringilla hyemalis*; *Struthus oregonus*, part; *Junco oregonus*, part; *Junco hyemalis oregonus*, part; *Junco pinosus*; *Junco hyemalis pinosus*; *Junco hyemalis thurberi*, part; *Junco oreganus thurberi*, part; *Junco oreganus*, part; *Junco oregonus pinosus*; Snow Bird; Western Snow Bird, part; Oregon Snow Bird, part; Oregon Junco, part; Point Pinos Junco; Sierra Junco, part; Thurber Junco, part.

Status—Resident; some local movement of flocks occurs in fall and winter but it does not take birds more than a few miles from breeding habitats. Common to abundant; has spread to residential districts of some cities in past 30 years.

Geographic range—Discontinuous areas in west-central section from the Golden Gate and Carquinez Straits in San Francisco Bay region south in hills and mountains of interior and in coastal wooded areas to southern San Benito and Monterey counties. Intergrades with *J. o. thurberi* in Marin and San Luis Obispo (Santa Margarita; La Panza) counties. Easternmost stations: Somersville, Contra Costa County, Arroyo Mocho, Alameda County, and San Benito Mountain, San Benito County (A. H. Miller, Univ. Calif. Publ. Zool., 44, 1941:294, 421). Life-zones, Upper Sonoran and Transition. Altitudinal range extends from near sea level, as at Monterey, up to 5600 feet on Santa Lucia Peak, Monterey County. Stations representative of areas occupied within general range: Las Trampas Creek and Mount Diablo, Contra Costa County (A. H. Miller, *op. cit.*:421); Berkeley and Oakland, Alameda County (A. S. Allen, Condor, 19, 1917:185, and Condor, 45, 1943:153; M. W. Wythe, Condor, 19, 1917:185; Dixon, Condor, 26, 1924:197; A. H. Miller, Condor, 40, 1938:92; Wolfson, Condor, 42, 1940: 94ff., and Condor, 44, 1942:238ff.); Hayward, Alameda County, independent young in early July, October 31 (McGregor, Pac. Coast Avif. No. 2, 1901:14; Mus. Vert. Zool.); Arroyo Mocho, Alameda County (A. H. Miller MS); east side of Mount Hamilton, Santa Clara County (A. H. Miller, 1941, *op. cit.*:421); San Francisco (Ray, Condor, 18, 1916:225); near San Bruno and King Mountain, San Mateo County

(Ray, Condor, 13, 1911:210, and Osprey, 6, 1902:26); Stanford University and Alma, Santa Clara County (W. K. Fisher, Condor, 6, 1904:108; Van Denburgh, Proc. Amer. Philos. Soc., 1899:172); Big Basin, Santa Cruz, etc., Santa Cruz County (Orr, Amer. Midl. Nat., 27, 1942:336; McGregor, *loc. cit.*); Monterey, Carmel, and Point Lobos, Monterey County (Loomis, Auk, 10, 1893:47; Williams, Wilson Bull., 54, 1942:238, 242; Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:124); Big Sur River, Santa Lucia Mountains, near Jamesburg, Chalk Peak, etc., Monterey County (Pemberton and Carriger, Condor, 17, 1915:200; A. H. Miller, 1941, *op. cit.*:421); vicinity of San Benito and Laguna Mountain, and San Benito Mountain, San Benito County (A. H. Miller, *loc. cit.*). Food: Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:82).

Habitat—A variety of plant associations: moist redwood forest in canyons; dense, though comparatively arid, live oak woodland; Monterey pine and cypress forests; yellow pine and Douglas fir forests; black oak, golden oak and madrone woodlands; and Coulter and digger pine "forests." Almost any forest or woodland, including plantings of eucalyptus, suffices if it affords shade and ground cover that remains green throughout the summer. Usually, perhaps always, water may be obtained, either from surface streams or from fog-drenched foliage. In summer, this race is more tolerant of low zonal conditions than is *thurberi*. Yet in its typical ground-foraging activity, presence of shade is just as much an essential factor. Usage of trees for nesting is more prevalent in this race than in others, but the bird is nevertheless predominantly a ground nester.

Junco caniceps caniceps (Woodhouse)
Northern Gray-headed Junco

Synonyms—Junco caniceps; *Junco phaeonotus caniceps*; Gray-headed Junco.

Status—Rare summer resident in atypical form along eastern border. Occasional winter visitant to coastal southern section.

Geographic range—In summer, two mountain areas on southern Nevada border: Clark Mountain, eastern San Bernardino County, in white fir association of Transition Zone, at 7300 feet, hybrid male obtained (*J. o. thurberi* x *J. c. caniceps*), most like *caniceps*, another seen (A. H. Miller, Condor, 42, 1940:163); Grapevine Mountains, Inyo County [hybrids and typical *J. c. caniceps* taken in dense piñons above 6700 feet in Nevada within one mile of state line] (A. H. Miller, Univ. Calif. Publ. Zool., 44, 1941:198, 412). In winter, coastal district from Los Angeles County to San Diego County. Record stations based on specimens: near Pasadena, Los Angeles County, October 26, 1894 (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:38); Oak Glen, Yucaipa Valley, San Bernardino County, two specimens, March 4, 1922 (Dickey, Condor, 24, 1922:138); Witch Creek, San Diego County, January 7, 1906 (Willett, Pac. Coast Avif. No. 21, 1933:175); La Puerta Valley, same county, November 3, 1923 (Stephens, Condor, 26, 1924:112); San Diego River gorge, December 18, 1924 (Covel, Condor, 27, 1925:179). Additionally, has been claimed to have been seen at Pasadena, January 17 to 20, 1932, on Mount Wilson, January 23, 1900, in Eagle Rock, November 10, 1920, and March 8, 1921, and in Griffith Park, Los Angeles, November 12, 1924, all in Los Angeles County (see Willett, *loc. cit.*); also seen at Julian, San Diego County, November 18 to December 3, 1906 (A. P. Smith, Condor, 9, 1907:199); although doubt may be entertained about the exact identification of any one of these birds which has

been observed, in the aggregate they significantly supplement the record specimens for this type of junco.

Habitat—In summer, as mentioned above. In winter, associated with other juncos, especially *J. o. thurberi*, in such places as open oak woodlands.

Spizella arborea ochracea Brewster
Western Tree Sparrow

Synonyms—Spizella monticola; *Spizella monticola ochracea*; Mountain Sparrow; Tree Sparrow.

Status—Rare winter visitant, chiefly to northeastern plateau region. Known records based on specimens: Fort Crook, Shasta County (Townsend, Proc. U. S. Nat. Mus., 10, 1887:218); 6 miles southeast of Standish, Lassen County, January 8, 1936, and 3 miles west of Wendel, same county, February 19, 1936, others seen February 20 (McLean, Condor, 39, 1937:229); Enterprise, Butte County, February 5, 1896 [some doubt remains concerning this record] (Camras, Condor, 42, 1940:307ff.); Pacific Grove, Monterey County, October 13, 1916 (Kimball, Condor, 24, 1922:97); Riverside, Riverside County, February 7, 1888 (A. H. Miller, Condor, 45, 1943:160). A record from Hayward by Hellmayr (Cat. Birds Amer., pt. 11, 1938:556) is erroneous (see Camras, *loc. cit.*). Birds noted in Lassen County were in open sagebrush and grassland, once at least in association with Gambel White-crowned Sparrows.

Spizella passerina arizonae Coues
Western Chipping Sparrow

Synonyms—Emberiza socialis; *Spizella socialis*; *Spizella socialis arizonae*; *Spizella arizonae*; *Spizella domestica arizonae*; *Spizella passerina*; *Spizella passerina stridula*; Chipping Sparrow; Pacific Chipping Sparrow.

Status—Summer resident, migrant, and winter visitant; in some lowland localities in southwestern section present throughout year. Appears in areas of summer residence in April, or at higher elevations in May; leaves in September and early October. Usually common on nesting grounds, sometimes abundant; in winter sparse to fairly common; numbers vary greatly according to area within the extensive and diversified range.

Geographic range—As breeding, all sections of State except Mohave and Colorado deserts. In winter, San Joaquin Valley, rarely, and coastal southern California and Mohave and Colorado deserts. Life-zones in summer, Lower Sonoran up through Hudsonian; greatest numbers occur in Upper Sonoran and Transition. Altitudinal range from near sea level as at Point Lobos, Monterey County, up to 11,000, in vicinity of Mount Whitney, Tulare County. Localities and accounts of breeding representative of different sections of range: Hoopa Valley and Eureka, Humboldt County (W. K. Fisher, Condor, 6, 1904:51; Grinnell, Pac. Coast Avif. No. 11, 1915:118); Shasta Valley and Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:125); Modoc County in general (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:323); Lassen section from Red Bluff to near Ravendale (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:423); South Yolla Bolly Mountain, Tehama County (Ferry,

Condor, 10, 1908:42); Marysville, Yuba County (L. P. Bolander, Condor, 9, 1907:22); Cisco, Placer County (Ingersoll, Condor, 15, 1913:83); Fyffe and Lake Valley, Eldorado County (Barlow, Condor, 3, 1901:171; Ray, Auk, 20, 1903:188); Yosemite Valley, Mariposa County (Grinnell and Storer, Animal Life Yosemite, 1924:452; Dawson, Birds Calif., 1, 1924:307; Thompson, Yosemite Nature Notes, 5, 1926:60); San Francisco Bay region in general (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:115); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:127); San Benito Valley, San Benito County (Van Denburgh, Proc. Acad. Nat. Sci. Phila., 1898:214); Fresno and Clovis, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:82); White, Panamint, Grapevine, and Argus mountains, Inyo County, and Sierra Nevada of Tulare County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:90); Mount Pinos, Ventura County (Grinnell, Auk, 22, 1905:386); Santa Rosa, Santa Cruz, Santa Catalina and San Clemente islands (Howell, Pac. Coast Avif. No. 12, 1917:78); coastal southern California in general (Willett, Pac. Coast Avif. No. 21, 1933:175); Buena Park, Orange County (Robertson, Condor, 33, 1931:205); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:93); Banning and San Jacinto Mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:272); vicinity of Escondido and Palomar Mountains, San Diego County (Sharp, Condor, 9, 1907:89; McGregor, Bull. Cooper Ornith. Club, 1, 1899:68); food in general (Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:80; Beal and McAtee, U. S. Dept. Agr., Farmers' Bull. No. 506, 1912:25). Some data relating to migration: Chico, Butte County, April 12, Gridley, same county, September 23 large flock, October 20 one specimen, Marysville, Yuba County, March 17, but principal migration April 21, 1884, March 29, 1885 (Belding, Land Birds Pac. Dist., 1890:156); San Francisco Bay region, extreme dates—February 25 at Palo Alto, September 21 at Berkeley, vagrants on Farallon Islands, May 22, June 2 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1917:115); Point Lobos, Monterey County, extremes, March 29, September 21 (Grinnell and Linsdale, *loc. cit.*); Fresno, Fresno County, last half of March, extreme—March 13 (Tyler, *loc. cit.*); Coso Mountains, October 23, Argus Mountains, October 20, Inyo County (Mus. Vert. Zool.); Death Valley, Inyo County, April 4 to 20 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:89); Piute Mountains, 6700 feet, Kern County, October 27 (Mus. Vert. Zool.); near Yermo, San Bernardino County, September 27 to October 3 (Lamb, Condor, 14, 1912:38); Twentynine Palms, same county, March 24 to May 17 (F. Carter, Condor, 39, 1937:218); Santa Barbara Island, March 29 (Mailliard, Condor, 20, 1918:189); San Nicolas Island, April 29 (Willett, *loc. cit.*). Some winter record stations: Snelling, Merced County, January 9 (Grinnell and Storer, *loc. cit.*); Victorville, San Bernardino County (Mailliard and Grinnell, Condor, 7, 1905:76); Palm Springs, Riverside County (Grinnell, Condor, 6, 1904:43); coastal southern California generally, at lower elevations (Willett, *loc. cit.*); San Clemente Island (Linton, Condor, 11, 1909:194); Colorado River valley, from Needles to Potholes, February 20 to May 1 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:170).

Habitat—Of great variety, but in summer seemingly always includes the following elements: trees, scattered or in open stands through which much light penetrates to the ground; ground forage area essentially bare or covered with sparse or dense grass, but usually not with continuous, tall grass; the ground usually is not heavily shaded or extensively bush covered. Preference for the more exposed sunny parts of forest and woodland is shown in the high mountains and near the coast. Habitat requirements are met by orchards and oak woodland at lower elevations and in coniferous forests of all

zones up to timber line. The trees seem to be essential as retreats, for song posts and for nest sites, although bushes may also be used for nesting. Foraging is carried on principally on the ground, but also in spring in the foliage of the trees when insect food and buds are there readily available.

Note—The Chipping Sparrows of the Pacific Coast and those of the Rocky Mountain region differ somewhat in average coloration and very slightly in size (see Grinnell, Condor, 29, 1927:81). Such a large proportion of birds recently acquired from Nevada and northern California can not be assorted accurately into racial categories that the junior author now thinks the nomenclatural recognition of two western races is not desirable.

Spizella breweri breweri Cassin
Southern Brewer Sparrow

Synonyms—Spizella pallida; *Emberiza pallida*; *Spizella breweri*; *Spizella pallida* var. *breweri*; Pale Sparrow; Clay-colored Sparrow.

Status—Summer resident, usually from May through mid-August; also migrant and winter visitant, according to locality; at some lowland stations, especially southwestwardly, present throughout the year, but it is not known that individuals are permanently resident at such places. Eastwardly, common to abundant in all three seasonal rôles; less numerous and less continuously distributed on Pacific slopes.

Geographic range—As breeding, artemisia belt of Great Basin region and east slopes and crests of Sierra Nevada south to higher parts of Mohave Desert and mountains bounding southern and western edge of San Joaquin Valley; also in mountains of southern California southeastwardly to San Jacinto Mountains and possibly to San Diego County; extends westwardly in a few places to arid foothills and valley floors. In migrations, all sections except northwest coastal districts north of Marin County and offshore islands, commonly east of principal mountains, fairly commonly in Great Valley and coastal southern California. As winter visitant, common on Mohave and Colorado deserts, sparingly in southern coastal district, and north rarely to San Francisco Bay region and Sacramento Valley. Life-zones in summer, chiefly high Upper Sonoran and Transition, but may follow artemisia association higher into Boreal zones; occasionally nests in Lower Sonoran in other brushland associations. Altitudinal range of known nesting stations, from 350 feet, as at Clovis, Fresno County (Tyler, Condor, 12, 1910:193) up to 10,400 feet on White Mountains (Grinnell MS). Westernmost stations of summer residence: Macdoel, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:11); Clovis, Fresno County (Tyler, *loc. cit.*); Carrizo Plains, San Luis Obispo County (Swarth, Condor, 13, 1911:163); Simi Valley, Ventura County (Appleton, Condor, 13, 1911:76). Early records of summer residence at Sacramento (Ridgway, U. S. Geol. Expl. Fortieth Parallel, 4, pt. 3, 1877:480) are doubtful. Additional references selected for natural history content and bearing on breeding range: Warner Mountains, Modoc County (Dawson, Birds Calif., 1, 1924:314); Lassen section, Manzanita Lake and from Bogard Ranger Station eastward (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:425); Haypress Meadow [near Echo], Eldorado County (De Groot, Condor, 36, 1934:8); vicinities of Silver, Walker and Mono lakes, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:456); Grapevine, Panamint, Inyo, Coso and Argus mountains and Owens Valley, Inyo County, and Walker Pass, Kern County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:91); Kingston and Providence mountains, San Bernardino County (D. H. Johnson MS; Mus. Vert. Zool.); 8 miles north of Bakersfield, Kern County (Swarth, *loc. cit.*);

Mount Pinos, Ventura County (Grinnell, Auk, 22, 1905:386); San Fernando Valley, Los Angeles County (Swarth, Bull. Cooper Ornith. Club, 1, 1899:94); Etiwanda and Highlands, San Bernardino County (Willett, Pac. Coast Avif. No. 21, 1933:176); San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:94); San Jacinto Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:273); east slopes of mountains of San Diego County, reported without confirming details (Stephens, Trans. San Diego Soc. Nat. Hist., 1919:24 [of separate]). Some accounts of migration: departure from Eagleville, Modoc County, in September (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:324); Nevada City, Nevada County, September, October (Nelson, Proc. Boston Soc. Nat. Hist., 17, 1875:358); Summit, Placer County, August 10 to 13 (Belding, Land Birds Pac. Dist., 1890:157); Stockton, San Joaquin County (Belding, Proc. U. S. Nat. Mus., 1, 1879:417); Lagrange, Stanislaus County, May 6, near Coulterville, Mariposa County, March 23, and Yosemite Valley, September 18 (Grinnell and Storer, *loc. cit.*); Death Valley, Inyo County, April 3 to 29 (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:89); Poso Range, Kern County, September (Sheldon, Condor, 11, 1909:172); near Saticoy, Ventura County, April 10 (Cooper, Auk, 4, 1887:93); Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:38); near Twentynine Palms, San Bernardino County, April 28 (Williams, Condor, 40, 1938:258). Significant winter records: Orland, Glenn County, February 27, 1937 (Ingles, Condor, 40, 1938:184); Marin County [date?] (Belding, 1890, *op. cit.*:158); Redwood City, San Mateo County, December 7, February 17 (Littlejohn, Condor, 14, 1912:41); Clovis, Fresno County, December 26 (Tyler, Pac. Coast Avif. No. 9, 1913:83); coastal southern California in general (Willett, Pac. Coast Avif. No. 21, 1933:176); Providence Mountains region, San Bernardino County, December (Mus. Vert. Zool.); Mecca, Riverside County, and Brawley, Imperial County (van Rossem, Condor, 13, 1911:133, 136); Colorado River valley, Needles to Potholes, January to April 23 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:171; Howell and van Rossem, Condor, 17, 1915:233).

Habitat—As breeding, typically sagebrush (*Artemisia tridentata*) in fairly extensive, continuous stands, unbroken by trees and thus well insolated. Other brushland species of plants may be intermixed but prove not as attractive as artemisia. In some lowland nesting areas, to the westward, this sparrow has adopted comparable low brush cover and in one instance has utilized stunted grapevines for nesting. Brush cover ranges from 18 inches to 4 feet in height, affording concealment for nests above ground in the firm branchwork. Foraging activity is chiefly on the ground but also at times in the bushes. Bushtops are resorted to regularly as waypoints in moving about the breeding territories and for lookout and song posts. In winter, brushland of similar physical aspect, but of a wide variety of species is frequented; adherence to such cover is not at all rigid in this season.

Spizella atrogularis evura Coues
Arizona Black-chinned Sparrow

Synonyms—*Spizella atrigularis*, part; *Spizella atrogularis*, part; *Spizella atrogularis atrogularis*; *Spizella atrogularis cana*, part; Black-chinned Sparrow, part; Mexican Black-chinned Sparrow; California Black-chinned Sparrow, part.

Status—Summer resident, arriving on the breeding grounds in April and May. Common locally in suitable habitat.

Geographic range—Mountains of Inyo district, west to east slope of Sierra Nevada in Inyo County, and north to White Mountains in same county; extends east to State boundary and south to Providence Mountains, San Bernardino County. Has been detected once in Colorado River valley, opposite the Needles in San Bernardino County, March 3, 1910 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:172; Grinnell and Swarth, Auk, 43, 1926:478). Life-zone in summer, Upper Sonoran. Nesting stations range from 4500 to 7500 feet. Localities of record: Silver Creek, White Mountains, Inyo County (Dawson, Birds Calif., 1, 1924:309); Independence Creek, 6 miles west and 3 miles south of Lone Pine, and Walker Creek, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:92; Mus. Vert. Zool.); Coso Mountains, Maturango Spring and Mountain Spring Canyon in Argus Range, Panamint Mountains, and Grapevine Mountains, all in Inyo County (Fisher, *loc. cit.*; A. H. Miller MS); Kingston Range, Clark Mountain, New York Mountains, and Providence Mountains, all in northeastern San Bernardino County (Mus. Vert. Zool.; Hollister, Auk, 25, 1908:460; Stephens, Condor, 5, 1903:103).

Habitat—Tall fairly dense sagebrush (*Artemisia tridentata*), or other brushland types of similar physical aspect. Usually the cover contains a variety of plant species, such as purshia, ephedra and coffee berry in addition to the prevailing artemisia. Sloping ground and rocky outcrops or scattered piñons and junipers interrupting the brush cover are characteristic. Activity of the birds in the plant environment is like that in the race *S. a. cana*, which see.

Spizella atrogularis cana Coues
California Black-chinned Sparrow

Synonyms—*Spizella atrigularis*, part; *Spizella atrogularis*, part; Black-chinned Sparrow, part.

Status—Summer resident, arriving in April and leaving in August and early September; fairly common to common, locally. Rarely remains through winter.

Geographic range—Breeds in mountains and foothills west of deserts from Monterey and Mariposa counties south to Mexican boundary, but seldom in immediate vicinity of coast; replaced on east slopes of Sierra Nevada by *S. a. evura*. In winter, coastal lowlands (two records); recorded once from San Clemente Island. Life-zone in nesting season, Upper Sonoran. Altitudinal range, from within a few hundred feet of sea level, as at San Diego, San Diego County, up to at least 6800 feet in San Bernardino Mountains; individuals wander up to 8000 feet in late summer. Principal reports of summer residence: Santa Lucia Peak and Big Sur River, Monterey County (Pemberton and Carriger, Condor, 17, 1915:200; A. H. Miller, Condor, 31, 1929:207); northeastern San Luis Obispo County (Dawson, Birds Calif., 1, 1924:309); near Santa Barbara, Santa Barbara County [summer resident?] (Dawson, Jour. Mus. Comp. Ool., 2, 1921:45); Mount Pinos and vicinity, Ventura County (Grinnell, Auk, 22, 1905:387; Willett, Pac. Coast Avif. No. 21, 1933:176); Black Creek, near Coulterville, Mariposa County, May 11 [presumably summer resident] (Grinnell and Storer, Animal Life Yosemite, 1924:458); Walker Pass and Walker Basin, Kern County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:92); Newhall, Arroyo Seco near Pasadena, and San Gabriel Mountains, Los Angeles County (Willett, *loc. cit.*); Cajon Pass, San Bernardino, Colton, and San Bernardino Mountains in general (Gunn, Ornith. and Ool., 10, 1885:30; Morcom, Ridgway Ornith. Club, Bull. No. 2, 1887:49; Grinnell, Univ. Calif. Publ.

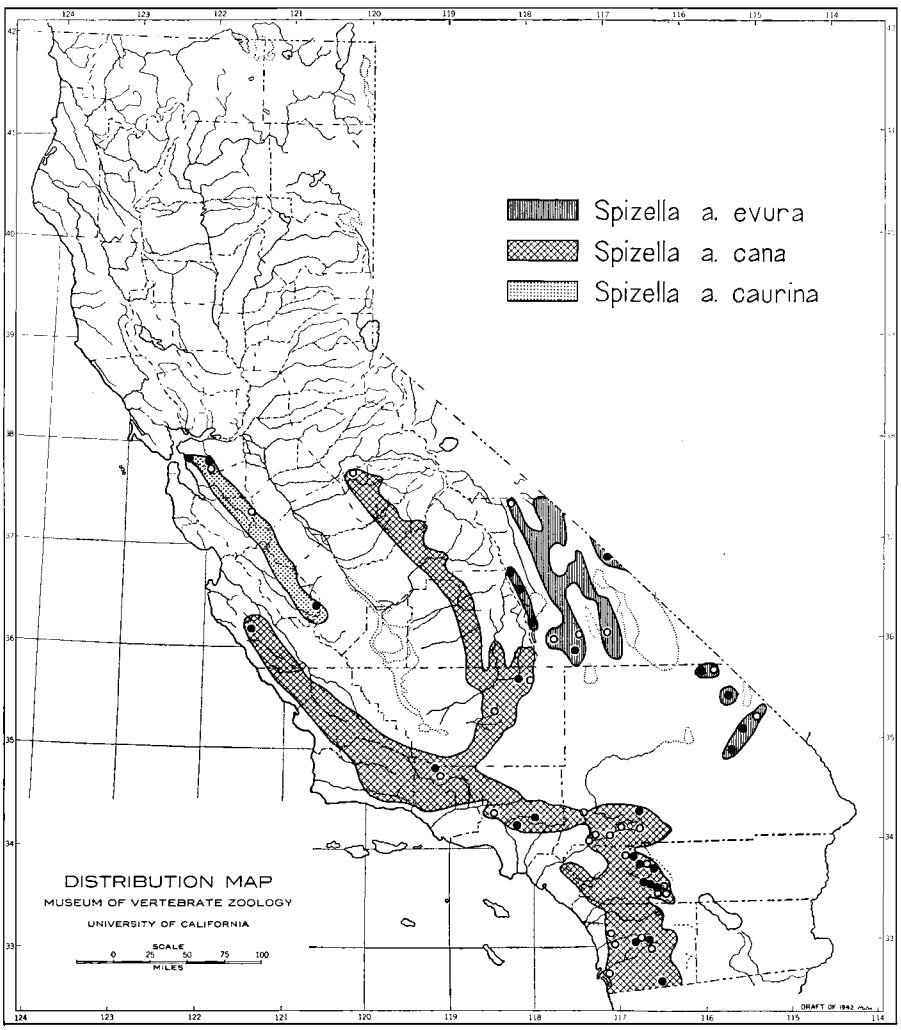

Fig. 54. Distribution of the subspecies of Black-chinned Sparrow, *Spizella atrogularis*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Zool., 5, 1908:95); San Gorgonio Pass and San Jacinto Mountains, Riverside County (Davie, Nests and Eggs N. Amer. Birds, 4th ed., 1889:309; Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:273; Dawson, *loc. cit.*); Witch Creek and Cuyamaca Mountains, San Diego County (Willett, *loc. cit.*); Escondido, Poway (as early as March 20), and San Diego, same county (Sharp, Condor, 9, 1907:89; Belding, Land Birds Pac. Dist., 1890:158; Huey, Condor, 17, 1915:60). Arrival and departure in Los Angeles County, April 1, September 10 (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:38). Specific winter records: San Fernando Valley, Los Angeles County, February 18, 1922 (Willett, *loc. cit.*); San Diego, December 21, 1927 (Abbott, Condor, 30, 1928:163).

San Clemente Island, December 5, 1908 (Howell, Pac. Coast Avif. No. 12, 1917:79).

Habitat—Arid, fairly tall and at least moderately dense chaparral, usually situated on sloping ground. Frequently the chaparral is of distinctly mixed composition and old burned-over tracts, well along in recovery of the vegetation, are often inhabited. Most prevalent plant associates are *Adenostoma*, *Artemisia tridentata*, species of *Ceanothus* and scrub oak. Tall bush-tops and occasional intermixed trees are used as song posts. In moving through the brush cover, chiefly on forage missions, the flight may be near the ground, through alleyways, or in the open over the bush-tops. Individuals are wide-ranging for a brushland species. Firm support and concealment for nests above ground are found in the rigid branch-work of the plant cover.

Spizella atrogularis caurina A. H. Miller
San Francisco Black-chinned Sparrow

Synonyms—Spizella atrigularis, part; *Spizella atrogularis*, part; *Spizella atrogularis cana*, part; Black-chinned Sparrow, part; California Black-chinned Sparrow, part.

Status—Summer resident from May until mid-August. Rare; local in occurrence.

Geographic range—Coast range hills of central section, chiefly interiorly, from Alameda and Contra Costa counties south to southern San Benito County. (Birds of Monterey County are closer to *cana* than to this race.) Life-zone, Upper Sonoran. Known record stations: Strawberry Canyon and Claremont Canyon [Oakland, 900 to 1300 feet], Alameda County, May 27 to August 13, in 1928 only (A. H. Miller, Condor, 31, 1929: 205); Las Trampas Peak, 1700 feet, Contra Costa County, May 22, 25, 1929 (A. H. Miller, *loc. cit.*); Alameda County, near San Ramon [Contra Costa County] (Cohen, Bull. Cooper Ornith. Club, 1, 1899:107); near San Antonio Valley [east of Mount Hamilton], Santa Clara County, nest and eggs, May 11, 1941 (Seibert, Condor, 44, 1942: 71); San Benito Mountain, 4400 to 5200 feet, San Benito County, June 9 to 18, 1936 (Mus. Vert. Zool.).

Habitat—Arid chaparral, in which adenostoma, ceanothus and scrub oak predominate. In one instance has nested in a tract of *Baccharis pilularis*. Bushes are fairly dense and 3 to 6 feet high, and occasional trees may be intermixed.

Zonotrichia querula (Nuttall)
Harris Sparrow

Synonym—Zonotrichia harrisi.

Status—Winter visitant and migrant, from October to April; relatively rare, but accumulation of records, as below, indicates regularity of appearance and likelihood of occurrence in fair numbers.

Geographic range—Apparently all sections of State except northwest coastal district and Mohave and Colorado deserts whence not thus far reported. Specific records: Standish and Buntingville, March 18, 1935, and Wendel, February 20, 1936, Lassen County, two specimens taken, and one other bird seen (McLean, Condor, 39, 1937: 228); Chico, Butte County, March 16, 1936, one seen (Ingles, Condor, 38, 1936:173);

Berkeley, Alameda County: one seen repeatedly, December 25, 1912, to February 11, 1913 (A. S. Allen, Condor, 17, 1915:80 and MS), one seen repeatedly in winter of 1924-25 (Foster and Foster, Condor, 30, 1928:252), birds banded, one on each date, November 21, 1927, December 8, 1928, December 1, 1931, and October 31, 1936 (Clabaugh, Condor, 30, 1928:163 and MS), one seen February 10, 1931 (M. W. Wythe, Condor, 33, 1931:127); Hayward, Alameda County, October 28, 1900, specimen (Emerson, Condor, 2, 1900:145); Lafayette, Contra Costa County, December 31, 1931 (Mus. Vert. Zool.); Gilroy, Santa Clara County, January 20, 1936, specimen (Unglish, Condor, 39, 1937:40); Yosemite Valley, Mariposa County, December 1, 1934, specimen (Beatty, Yosemite Nature Notes, 14, 1935:26); LeGrand, Merced County, April 6, 1936, specimen (Beck, Condor, 38, 1936:177); Death Valley, Inyo County, November 10, 1936, one seen (Gilman, Condor, 39, 1937:90); Pasadena, Los Angeles County, April 15, 1937, one banded (Michener and Michener, Condor, 40, 1938:39); San Gabriel River Sanctuary, 12 miles east of Los Angeles, one seen March 27 to April 25, 1943 (Comby, Condor, 45, 1943:199); Buena Park, Orange County, April 23, 1938, one seen (Robertson, Condor, 40, 1938:186); Smuggler's [now Pyramid] Cove, San Clemente Island, October 15, 1907, specimen (Linton, Condor, 10, 1908:84); Encinitas, San Diego County, December 21, 1927, one captured (Cozens, Condor, 30, 1928:164). For exhaustive account of the general distribution of the Harris Sparrow, see Swenk and Stevens, Wilson Bull., 41, 1929:129ff.

Habitat—The close association of this species with wintering Golden-crowned and White-crowned sparrows has been noted. Similar habitat preferences are to be inferred.

Zonotrichia leucophrys gambelii (Nuttall)
Gambel White-crowned Sparrow

Synonyms—Fringilla leucophrys; *Fringilla gambelii*; *Zonotrichia gambelii*, part; *Zonotrichia leucophrys intermedia*, part; *Zonotrichia intermedia*, part; *Zonotrichia gambeli intermedia*; *Zonotrichia leucophrys*, part; *Zonotrichia leucophrys nuttalli*, part; *Zonotrichia leucophrys leucophrys*, part; White-crowned Finch, part; Gambel Finch, part; Western White-crowned Finch, part; Western White-crowned Sparrow, part; Ridgway Sparrow, part; White-lored White-crowned Sparrow; Gambel Sparrow, part; Intermediate Sparrow; Nuttall Sparrow, part; Desert White-crowned Sparrow.

Status—Winter visitant from mid-September to late April, even to May 14 in exceptional cases. Abundant on suitable ground; at migration times appears in numbers where scarce or not present at all in midwinter.

Geographic range—Through the winter, practically everywhere in the State below the level of heavy snow and interiorly from the narrow humid coast belt. This includes the Colorado and Mohave desert regions, the San Diegan district and coast region south from San Francisco Bay, the coastal islands, the San Joaquin-Sacramento basin north at least to Tehama County, and lower areas east of Sierra Nevada north to Modoc Plateau district. In migration appears at many up-mountain points to as high as 9000 feet, and spreads widely over suitable ground in the northern end of the State; for example, abundant in September in parts of Modoc and Siskiyou counties. References selected from an extensive literature: Clear Lake, early April, Surprise Valley, banding of fall migrants, Modoc County (Willett, Condor, 21, 1919:205; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:318); Lassen section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:432); Honey Lake Valley, Lassen County, winter (A. H.

Miller MS); Davis, Yolo County, viability of weed seeds ingested (E. S. Roessler, Condor, 38, 1936:64); Marin County (Stephens and Pringle, Birds Marin Co., 1933: 14); Berkeley, Contra Costa and Alameda counties, banding, and hybrid with *Z. coronata* (Clabaugh, Condor, 35, 1933:120; A. H. Miller, Condor, 42, 1940:45); Yosemite section (Grinnell and Storer, Animal Life Yosemite, 1924:446); Fresno, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:81); Earlimart, Tulare County, May 1 (Grinnell, Condor, 13, 1911:110); Death Valley, Inyo County (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1928:88); Santa Barbara, Santa Barbara County (Dawson, Birds Calif., 1924:326); San Miguel, Santa Rosa, Anacapa, and San Nicolas islands (Pemberton, Condor, 30, 1928:145, and *ibid.*, 33, 1931:219); Santa Cruz, Santa Barbara, Santa Catalina and San Clemente islands (Howell, Pac. Coast Avif. No. 12, 1917:77); Pasadena and Altadena, Los Angeles County, molt, plumages, abnormalities (Law, Condor, 31, 1929:208; Michener and Michener, Condor, 38, 1936:102, *ibid.*, 40, 1938:154, *ibid.*, 45, 1943:113); Los Angeles, September 9 to May 14 (Willett, Pac. Coast Avif. No. 21, 1933:177); Claremont, Los Angeles County, homing experiments (Sumner and Cobb, Condor, 30, 1928:317); near Yermo, San Bernardino County, September 15 to April 23 (Lamb, Condor, 14, 1912:38); Twentynine Palms, same county, to May 6 (F. Carter, Condor, 39, 1937:219); Mecca, Riverside County, and near Brawley, Imperial County (van Rossem, Condor, 13, 1911:136, 133); Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:168); food in general (Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:75); banding in general (Law, Condor, 27, 1925:40); sex ratios (Emlen, Condor, 45, 1943:196). This race has been reported taken once in October at Alton Junction, Humboldt County (Ferry, Condor, 10, 1908: 42), but this record has not been recently verified.

Habitat—Typically, a low, scattering, bushy type of cover, whence foraging is carried out short distances onto adjacent open ground. Examples: in Death Valley, in Imperial Valley, and along Colorado River, tracts or clumps of atriplex bushes, catclaw and mesquite; elsewhere, sagebrush, poison oak thickets, broken chaparral, lines of small willows along stream courses, and the like; in cultivated territory, patches of tall weeds, piles of tree-trimmings, berry patches, accumulations of tumble-weeds along fences, hedges, and garden shrubbery. This sparrow avoids forests, heavy or continuous chaparral, open, unbroken prairie or desert, and swampy ground.

Zonotrichia leucophrys oriantha Oberholser
Mountain White-crowned Sparrow

Synonyms—Zonotrichia leucophrys intermedia, part; *Zonotrichia leucophrys* var. *gambeli*, part; *Zonotrichia leucophrys*, part; *Zonotrichia gambeli*, part; *Zonotrichia intermedia*, part; *Zonotrichia leucophrys leucophrys*, part; Western White-crowned Sparrow, part; White-crowned Sparrow, part; Gambel Finch, part; Ridgway Sparrow, part; Hudsonian White-crowned Sparrow; Oregon White-crowned Sparrow.

Status—Abundant summer resident of high mountains from late April through mid-September; winter visitant sparingly on Colorado Desert, rarely to westward; common migrant to east of principal mountains and in small numbers in coastal southern section in late April and throughout May.

Geographic range—In summer, Mount Shasta, Warner Mountains of Modoc County, Lassen Peak, White Mountains of Inyo County, and Sierra Nevada from Gold Lake

district, Plumas County, south through Tulare County. In winter, Colorado Desert east to Colorado River and coastal slopes of southern section from San Diego County north to vicinity of Los Angeles. In migration passes through winter range, and thence northward east of or along mountains to breeding range; occurs but rarely west of Sierra Nevada. Life-zones in summer, Hudsonian characteristically, but Canadian frequently, and Transition locally, especially along eastern side of Sierra Nevada. Ranges altitudinally in nesting season from as low as 4000 feet, rarely, as on floor of Yosemite Valley, up to 11,200 feet, as at Cottonwood Lakes, Mount Whitney region. Principal references pertaining to period of summer residence: Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1899:125); Warner Mountains, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:318); Lassen Peak area (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:430); Gold Lake district, southern Plumas County (M. W. Wythe, Condor, 29, 1927:63); Donner Lake, Nevada County (Ridgway, U. S. Geol. Expl. Fortieth Parallel, 4, pt. 3, Ornithology, 1877: 471); Pyramid Peak and Bijou, Eldorado County (Barlow, Condor, 3, 1901:171; Ray, Auk, 20, 1903:188); Bloods, Alpine County (Keyes, Condor, 7, 1905:16); islands in Mono Lake, Mono County (Dawson, Birds Calif., 1, 1924:321; Nichols, Condor, 40, 1938:262); Virginia Lakes, Mono County (Rowley, Condor, 41, 1939: 253); Yosemite region from Yosemite Valley to timber line (Grinnell and Storer, Animal Life Yosemite, 1924:446); Glass Mountain and White Mountains, Mono and Inyo counties (Mus. Vert. Zool.; A. K. Fisher, N. Amer. Fauna No. 7, 1893:88); Florence Lake, Fresno County, April 20 to September 1 (L. M. Lofberg, Condor, 30, 1928:313); Kaweah River and Sirretta Meadow, Tulare County (Van Denburgh, Proc. Acad. Nat. Sci. Phila., 1898:214; Grinnell, Pac. Coast Avif. No. 11, 1915:116). Some migration records: 5 miles east of junction of San Joaquin and Merced rivers, Merced County, May 14 (McLean, Condor, 38, 1936:17); Los Baños, Merced County, 2 specimens [no date given, presumably migrants] (Hellmayr, Cat. Birds Amer., pt. 11, 1938:567); floor of Surprise Valley, Modoc County (Mailliard, *loc. cit.*); Tuolumne Meadows, Tuolumne County, September 29 (Grinnell and Storer, *loc. cit.*); Death Valley, Inyo County, May 2, 7 (Gilman, Condor, 37, 1935:242); Clark Mountain, eastern San Bernardino County, May 21 (Mus. Vert. Zool.); Twentynine Palms, same county, March 3 and 16 [wintering?], May 14 (F. Carter, Condor, 39, 1937:218); Palm Springs, Riverside County, April 26 (Swarth, Condor, 12, 1910:108); spring migrants in southern coastal section in Los Angeles, Orange, Riverside and San Diego counties, March 16 [wintering?], April 8 to May 29 (Willett, Pac. Coast Avif. No. 21, 1933:177; Michener and Michener, Condor, 35, 1933:34); vicinities of Picacho and Laguna, Colorado River valley, Imperial County, March 11 [wintering?], April 11 to May 26 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:167). Winter records: Coachella, Riverside County (Clary and Clary, Condor, 35, 1933:119); Holtville, Imperial County (Robertson, Condor, 35, 1933:164); Volcan Mountains, San Diego County (Bishop, Condor, 7, 1905:142); Los Angeles (Mrs. G. H. Schneider, Condor, 25, 1923:108; Lincoln, U. S. Dept. Agr., Dept. Bull. No. 1268, 1924:36).

Habitat—In summer, willow thickets in mountain meadows, along upper stream courses, or around edges of lakes. Cover often utilized in addition to willows includes thickets of young lodgepole pines and artemisia brush, where they encroach on meadows, and tracts of corn lily (*Veratrum*). Basic requirements are a combination of damp, grass-covered ground, surface water, and bushes usable as retreats. Such combination of necessity involves low growths of mountain willows. Foraging is carried on about seepages and

on the wet ground, never far from cover. Nests may be placed on the ground at bases of bushes or above ground in bushes and in stunted or young conifers, occasionally as high as 5 feet. In winter and in migration, any form of bush cover that is adjacent to tracts of open ground supplies the necessary "edge" situation sought by these sparrows.

Note—For nomenclature, see Oberholser, Sci. Publ. Cleveland Mus. Nat. Hist., 4, 1932:12; A. H. Miller, Condor, 43, 1941:262.

Zonotrichia leucophrys pugetensis Grinnell
Puget Sound White-crowned Sparrow

Synonyms—Zonotrichia leucophrys gambelii, part; *Zonotrichia nuttalli*, part; *Zonotrichia gambeli nuttalli*, part; *Zonotrichia leucophrys nuttalli*, part; *Zonotrichia leucophrys*, part; Gambel Sparrow, part; Nuttall Sparrow, part; Nuttall White-crowned Sparrow, part; White-crowned Sparrow, part; Puget Sound Sparrow.

Status—Summer resident, locally common, in extreme northwest; also to some extent a year-round resident there; elsewhere transient or winter-visitant from mid-September to late March and early April, widely distributed but not especially numerous, except near coast, where for example common in San Francisco Bay region.

Geographic range—In summer, narrow humid coast belt of Del Norte and Humboldt counties, mostly close to the sea. Extends up river valleys, for example, reaching Carlotta on the Van Duzen (Grinnell, Condor, 30, 1928:188), and recurs on "bald hills," as on Coyote Peak up to 3000 feet, 16 miles east of Patrick's Point (Grinnell MS) and in clearings, as at Maple Creek, 18 miles inland (A. H. Miller MS). In winter, of wide occurrence east and south, but not east of the Sierran divides or western margins of the deserts; recorded east to near Red Bluff, Tehama County, December 29, and Dudley, Mariposa County, April 11, and south as far as San Marcos and La Jolla, San Diego County, January 29 (Ellis Coll.; Grinnell, *loc. cit.*). Records of "*nuttalli*" from Santa Cruz and Santa Catalina islands probably belong here (see Dickey and van Rossem, Condor, 25, 1923:128), as also all those from the vicinity of Los Angeles. Some additional references known to relate to the race *pugetensis*: migration in general, but especially in Humboldt district (B. D. Blanchard, Auk, 59, 1942:47); Davis, Yolo County, plucking experiments (Emlen, Wilson Bull., 50, 1938:57); San Francisco Bay region, annual cycle, migration, behavior, etc. (B. D. Blanchard, Univ. Calif. Publ. Zool., 46, 1941:1ff.); Stanford University, Santa Clara County, flocking habits (Price, Condor, 33, 1931:238); Watsonville, Santa Cruz County, bird banded at Seattle, Washington (Lincoln, Smithsonian Rept. for 1927, 1928:348); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:130); Santa Cruz Island, and Ventura and Los Angeles counties generally (Willett, Pac. Coast Avif. No. 21, 1933:178); Pasadena, Los Angeles County, April 25 (Michener and Michener, Condor, 45, 1943:116); Buena Park, Orange County (Robertson, Condor, 33, 1931:139).

Habitat—In summer, brushlands along unforested parts of slopes facing the sea. Prominent plant associates are *Ceanothus cuneatus*, *Baccharis pilularis*, and bracken. In winter, as far as now discernible, same as for *nuttalli* within the range of that race; elsewhere as for *gambelii*, within the Pacific-slope portion of the winter range of that subspecies.

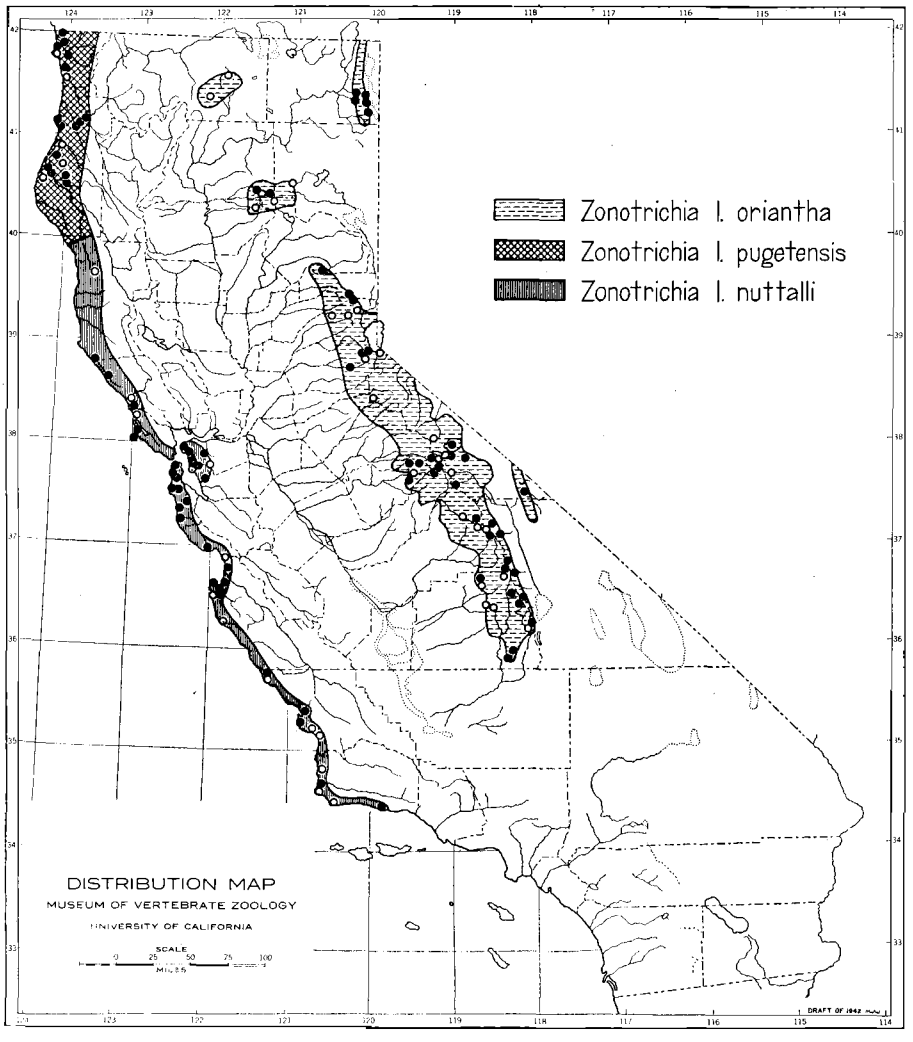

Fig. 55. Distribution of the subspecies of White-crowned Sparrow, *Zonotrichia leucophrys*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Zonotrichia leucophrys nuttalli Ridgway
Nuttall White-crowned Sparrow

Synonyms—Zonotrichia gambelii, part; *Zonotrichia leucophrys*, part; *Zonotrichia leucophrys gambelii*, part; *Zonotrichia nuttalli*, part; *Zonotrichia gambeli nuttalli*, part; Gambel Finch, part; White-crowned Finch, part; Western White-crowned Finch, part; Western White-crowned Sparrow, part; Gambel Sparrow, part; Gambel White-crowned Sparrow, part; Nuttall Sparrow, part.

Status—Permanently resident within its restricted range; sparingly vagrant in winter, and then only for a few miles inland from summering grounds. Locally abundant.

Geographic range—Breeds in a narrow sea-facing strip close to the coast, from

Mendocino County south to Point Conception, Santa Barbara County, rarely to near Santa Barbara [=Goleta Flat]. In places this strip is less than a mile wide and is interrupted altogether where high hills come down to the ocean. In the San Francisco Bay region, occurs east of the Bay on west-facing slopes chiefly opposite the Golden Gate, in the vicinity of Oakland and Berkeley, rarely east of first range of hills. Life-zones, Transition and Upper Sonoran, but the latter only locally where modified by cool ocean breezes. Nests from near sea level up to 1500 feet, as in Berkeley Hills, Alameda County. Selected references and record stations representative of the breeding range of the race: Cahto, Mendocino County [presumably breeding] (McGregor, Nidologist, 3, 1896:148); Duncan Mills on Russian River, Sonoma County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:114, part); Dillon Beach, Marin County (Pitelka, Condor, 44, 1942:172); Point Reyes, Marin County (Mailliard, Condor, 2, 1900:65); Berkeley, Alameda County (Plath, Condor, 21, 1919:31; G. Thompkins, Condor, 35, 1933:98; B. D. Blanchard, Condor, 38, 1936:145, Univ. Calif. Publ. Zool., 46, 1941: 1ff., and Auk, 59, 1942:47); Rocky and Las Trampas ridges, Contra Costa County (Seibert, Condor, 44, 1942:72); San Francisco (Ray, Condor, 8, 1906:43; L. P. Bolander, Condor, 8, 1906:73; Mailliard, Condor, 31, 1929:192, part, and *ibid.*:239, part); Daly City, San Mateo County (Grinnell, Auk, 42, 1925:246, part); Pescadero Creek, same county (Orr, Amer. Midl. Nat., 27, 1942:337); Santa Cruz, Santa Cruz County (McGregor, Pac. Coast Avif. No. 2, 1901:13); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:128ff.); coasts of southern Monterey County, San Luis Obispo County, and Santa Barbara County, to Point Conception (Hubbs, Auk, 35, 1918:321); Santa Barbara [Goleta Flat], Santa Barbara County (Bowles, Auk, 28, 1911:174; Willett, Pac. Coast Avif. No. 21, 1933:178); in general (Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:75, part, food; Dawson, Birds Calif., 1, 1924:331; Grinnell, Condor, 30, 1928:188, nomenclature).

Habitat—Characteristically, low, wind-swept terrain, often on or adjacent to sand dunes where grown to bushes of yellow or blue lupine; otherwise, on near-by hillsides grown to bushes of California sage or baccharis. In parks and gardens of the Bay region, lives in shrubbery of various sorts, foraging out on lawns. Nests are placed within 2 or 3 feet of the ground in dense bushes, rarely higher up in dense trees intermingled with bushes.

Zonotrichia coronata (Pallas)
Golden-crowned Sparrow

Synonyms—Emberiza atricapilla; *Fringilla aurocapilla*; *Zonotrichia aurocapilla*; *Zonotrichia atricapilla*; Black and Yellow-crowned Finch; Yellow-crowned Finch.

Status—Winter visitant, usually from mid-September to early May. Fairly common to abundant; numbers present vary greatly from place to place, even within the preferred type of country.

Geographic range—Metropolis of wintering ground, the lower western and southern portions of California lying west of the Sierran divides and below the 4000-foot contour of altitude. Winters regularly north to head of Sacramento Valley and on coast north at least to Humboldt County and south to San Diego County. Also winters in Honey Lake Valley and vicinity, Lassen County, occasionally up to 4800 feet (A. H. Miller MS). Recorded from most of the islands. At times of migration reaches prob-

ably nearly all parts of the State, as for example: Surprise Valley, Modoc County [extreme dates May 24 and September 10] (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:321); the summit of Mount Shasta, a waif (Chamberlin, Condor, 18, 1916: 30); Sierra City, Sierra County, and Potholes, Imperial County (van Rossem, Condor, 23, 1921:136). Selected references of distributional and natural history import: Requa, Del Norte County, late spring date May 10 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:24); Eureka, Humboldt County (Clay, Condor, 41, 1939:121); Helena, Trinity County (L. Kellogg, Condor, 13, 1911:120); Lassen section (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:428); vicinity of San Geronimo, Marin County, song, plumages, banding (Mailliard, Condor, 3, 1901:78, *ibid.*, 31, 1929:37, 194, 239, *ibid.*, 34, 1932:66, *ibid.*, 36, 1934:88, and *ibid.*, 38, 1936:169); Berkeley, Alameda County, age, behavior, banding, weights, plumages, homing (E. L. Sumner, Sr., Condor, 33, 1931:128, *ibid.*, 35, 1933:180, and Bird-Banding, 7, 1936: 128; G. Tompkins, Condor, 35, 1933:98; Clabaugh, Condor, 35, 1933:120; Linsdale and Sumner, Univ. Calif. Publ. Zool., 40, 1934:309, and Condor, 36, 1934:107; A. H. Miller, Condor, 42, 1940:45); Santa Cruz Mountains, San Mateo County (E. L. Sumner, Sr., Condor, 40, 1938:127); extreme dates in San Francisco Bay region, Farallon Islands, June 2, Los Gatos, Santa Clara County, August 31 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:115); Stanford University, Santa Clara County, flocking, longevity (Price, Condor, 33, 1931:238; M. T. Cooke, Bird-Banding, 8, 1937:65); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:131); Walker Basin, Kern County (Henshaw, Ann. Rept. Geog. Surv. . . . One Hundredth Merid. . . . Wheeler, App. JJ., 1876:243); Santa Rosa Island (Pemberton, Condor, 30, 1928:148); Santa Cruz, Santa Barbara, Santa Catalina and San Clemente islands (Howell, Pac. Coast Avif. No. 12, 1917:78); coastal southern California in general, extreme dates September 26, May 16 (Willett, Pac. Coast Avif. No. 21, 1933:179); near Yermo, San Bernardino County, October 14 (Lamb, Condor, 14, 1912:38); near Brawley, Imperial County, December 18 (van Rossem, Condor, 13, 1911:133); song in general (A. Head, Condor, 8, 1906:130; Bassett, Condor, 22, 1920: 136; Dawson, Birds Calif., 1, 1924:318); molt (Law, Condor, 31, 1929:208); food (Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:78).

Habitat—An interrupted type of brushland, such as constituted by streamside thickets, chaparral where broken up by patches of open ground, and garden shrubbery. The cover sought is somewhat shadier and cooler on the average than that frequented by Gambel White-crowned Sparrows, although commonly the two kinds of sparrows are members of the same flock. Foraging operations carry the birds out onto grassy or weedy ground and at times into scattering trees such as live oaks. Within the cover the birds hunt in the leaf litter on the ground, usually taking food from the surface, but occasionally scratching for it. In spring, foraging on the leaf buds of oaks and other trees may be noted.

Zonotrichia albicollis (Gmelin)
White-throated Sparrow

Status—Winter visitant; earliest and latest seasonal records, October 6 and May 10. Since the first recorded occurrence in the State, in 1888 (W. E. Bryant, Zoe, 1, 1890:46), instances have been reported with greater and greater frequency, seemingly correlated with growing number of observers; for example, 72 individual birds had been accounted

for up to the end of 1936. This means still a fair degree of scarcity, though hardly a winter goes by without report of at least one.

Geographic range—Chiefly middle and southern coastal districts; known centers of occurrence, San Francisco Bay and Los Angeles regions, where observers are concentrated. Northernmost station, Adams, Del Norte County, November 4 (Kimball, Condor, 24, 1922:96); interiormost stations, 3 miles southeast of Standish, Lassen County (McLean, Condor, 39, 1937:229) and 10 miles east of Porterville, Tulare County, October 12 (Rowley, Condor, 33, 1931:75); southernmost, Laguna Beach, Orange County, January 12 (F. B. Schneider, Bird-Lore, 25, 1923:137). For full survey of records and general account of distribution, see M. W. Wythe, Condor, 40, 1938:110. Still later reports: Eureka, Humboldt County, November 29, March 13, May 8 (Clay, Condor, 41, 1939:121; J. M. Davis, *ibid.*, 42, 1940:222); San Francisco Bay region, especially Marin County (G. Bolander, Gull, 18, 1936: June [2]; and others, Gull, 21, 1939:52, 57, 61, 73, and 1940:8, 12); Berkeley, Alameda County, February 20 to April 23, 1944 (Pitelka MS); Oakland, Alameda County (Seibert, Condor, 44, 1942: 72); J. W. Kelly, Gull, 26, 1944:7); Gilroy, Santa Clara County (Unglish, Condor, 39, 1937:40); near Jamesburg, Monterey County (Linsdale, Aud. Mag., 45, Sect. 2, April, 1943:14); near Pasadena, and near Los Angeles, Los Angeles County (Michener and Michener, Condor, 40, 1938:39; Comby, Condor, 45, 1943:154).

Habitat—Associated singly, as a rule, with Golden-crowned or White-crowned sparrows, and thus showing similar choice of forage beat and cover.

Passerella iliaca iliaca (Merrem)
Eastern Fox Sparrow

Synonyms—Passerella iliaca, part; Fox Sparrow; Fox-colored Sparrow.

Status—Rare visitant from north or northwestward, chiefly in midwinter; extreme dates September 27 and March 22.

Geographic range—So far as known, coastal areas from San Francisco Bay region south to San Diegan district; records are concentrated in areas where collecting of wintering Fox Sparrows has been most extensive, as about San Francisco and Los Angeles, suggesting that occurrence may be more general than here indicated. Well substantiated occurrences, based on Swarth's identifications (Univ. Calif. Publ. Zool., 21, 1920:114) unless otherwise indicated: 4000 feet, Plumas County, September 27, 1898; Nicasio, February 6, 1906, and San Geronimo, January 26, 1901, Marin County; Berkeley, Alameda County, November 8, 1926, February 18, 1931 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:122; E. L. Sumner, Sr., Condor, 33, 1931:124); Hayward, same county, December 12, 1898; Seaside, December 26, 1918, and Big Sur River, December 22, 1903, Monterey County; Santa Barbara, Santa Barbara County, January 1, 1911; Santa Monica Mountains, January 31, 1917, Lankershim, March 22, 1908, Burbank, November 11, 1911, Glendale, February 19, 1922 (Lamb, Condor, 24, 1922:184), Pasadena, December 13, 1907, Mount Wilson, October 31, 1897, and Palmer's Canyon, February 1 and 2, 1919, all in Los Angeles County. Among early records, unconfirmed since the description of *P. i. altivagans* and consequent restriction of *P. i. iliaca*, the only one of geographic significance is from Poway, San Diego County, January 3, 1888 (W. E. Bryant, Proc. Calif. Acad. Sci., ser. 2, 2, 1889:90).

Habitat—Chaparral and tangles of low vegetation along stream courses; not known to differ importantly from habitat of other winter-visitant Fox Sparrows in the State.

Passerella iliaca altivagans Riley
Alberta Fox Sparrow

Synonyms—Passerella iliaca schistacea, part; Slate-colored Fox Sparrow, part.

Status—Winter visitant, arriving in late September and leaving in April. Fairly common.

Geographic range—In winter residence, chiefly western foothills of southernmost Cascade Mountains and Sierra Nevada, and southern California west of desert areas. Winters rarely along central coast, at least in San Francisco Bay region; recorded north to Sonoma County. In migration, detected also in northeastern section of State, and in fall along crest of Sierra Nevada; one record for San Clemente Island at Wilson Cove, April 18, 1920 (Mus. Vert. Zool.). Stations of record selected from Swarth's listings (Univ. Calif. Publ. Zool., 21, 1920:185) with pertinent subsequent records as indicated (dates for periods of migration only): Eagleville, Modoc County, September 30, October 4 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:326); Fort Crook, Shasta County, April 12; Slate Creek, Lassen County, September 26, Lyonsville, Tehama County, April 27, and vicinity of Paine's Creek, same county, winter (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:440); Sierra City, Sierra County, September 24; Fulton, Sonoma County; Berkeley, Alameda County (Mus. Vert. Zool.); Moraga Valley, Contra Costa County (Mus. Vert. Zool.); Mount Hermon, Santa Cruz County (Mus. Vert. Zool.); Jolon, Monterey County; Modesto, Stanislaus County; near Coulterville, and El Portal, Mariposa County; Horse Corral Meadow, Fresno County, September 22; Piute Mountains, Kern County; near Yermo, San Bernardino County, September 22; Boquet and San Dimas canyons, and Santa Monica Mountains, Los Angeles County; Yucaipa, San Bernardino County; Flinn Springs, San Diego County (Willett, Pac. Coast Avif. No. 21, 1933:180).

Habitat—Chaparral-covered slopes, typically those of interior, semiarid areas; in winter stays below levels of heavy snow, where ground foraging activity may be carried on in the leaf litter.

Passerella iliaca unalaschcensis (Gmelin)
Shumagin Fox Sparrow

Synonyms—Inability to verify racial identity of many early records of Fox Sparrows renders futile a complete listing of names in synonymy; some names apparently used for this race: *Passerella iliaca townsendi*, part; Townsend Sparrow, part.

Status—Winter visitant, from early October through April. Sparse in most sections, but fairly common to southward.

Geographic range—Principally southern California in mountains and foothills west of desert areas; recorded from Santa Catalina and San Clemente islands. Remains through winter to northward in small numbers as far as Trinity and Tehama counties; not known with certainty from humid coastal strip north of San Francisco Bay region

nor from sections east of Sierran crests. Localities representative of range selected unless otherwise specified from listings in Swarth's monograph (Univ. Calif. Publ. Zool., 21, 1920:186): Helena, Trinity County, February 17; Dale's, on Paine's Creek, Tehama County, December 26 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:446); Lakeport, Lake County, December 13; Blue Canyon, Placer County; Drytown, Amador County; Berkeley, April 25, and Oakland and Alameda, Alameda County (Mus. Vert. Zool.; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:122); Snelling, Merced County; Yosemite Creek [7800 feet], Mariposa County, October 6; head of Pine Creek, Ventura County, May 3; Santa Monica Mountains, Pasadena, Palmer's Canyon, and San Dimas Canyon, Los Angeles County; Bluff Lake, San Bernardino County, October 7; Santa Catalina Island; San Clemente Island, April 18 (Linsdale, Univ. Calif. Publ. Zool., 30, 1928:273); Escondido, San Diego County.

Habitat—Chaparral, principally of "hard" or arid type. The ground litter beneath the screening cover of the chaparral plants is searched over and scratched through in foraging in a fashion typical of all winter visitant races of Fox Sparrows.

Passerella iliaca insularis Ridgway
Kodiak Fox Sparrow

Synonyms—See note, p. 527; names probably referable: *Passerella iliaca unalaschcensis*, part; *Passerella iliaca townsendi*, part; Townsend Sparrow, part.

Status—Winter visitant, from late September until mid-April. Fairly common to common.

Geographic range—Principally coast range mountains and hills from Sonoma County south to Los Angeles County, but also sparsely in northern interior coast ranges, on western slopes of Sierra Nevada and southeastwardly in southern section to interior San Diego County. The greatest concentration of this race in winter seems to be in areas fairly near the coast in southern California, as in the western part of the San Gabriel Range. Some localities of record established by Swarth (Univ. Calif. Publ. Zool., 21, 1920:188): Stonyford, Colusa County; Lakeport, Lake County, September 7, December 30; Alta, Placer County; Echo, Eldorado County, September 23; Stockton, San Joaquin County, April 8; San Geronimo, Marin County; Berkeley, Oakland, and Hayward, Alameda County; Pescadero Creek, San Mateo County; Pacific Grove, Monterey County; El Portal and Yosemite Trail [=Falls, 6500 feet], Mariposa County; Hume, Fresno County; Santa Monica Mountains, Mount Wilson, and San Antonio Canyon, Los Angeles County; Santa Catalina Island; Volcan Mountains, San Diego County. Also taken at Grass Valley, Nevada County (Mus. Vert. Zool.). Additionally, this race has been reported, but without recent critical verification, from Sherwood, Mendocino County (Bishop, Condor, 17, 1915:189), and San Clemente Island (Linton, Condor, 10, 1908:85).

Habitat—Chaparral areas, but apparently on the average of somewhat less arid type than those frequented by the races *P. i. altivagans* and *P. i. unalaschcensis*.

Passerella iliaca sinuosa Grinnell
Valdez Fox Sparrow

Synonyms—See note, p. 527; names certainly or probably referable: *Passerella iliaca townsendi*, part; *Passerella iliaca unalaschcensis*, part; *Passerella iliaca insularis*, part; *Passerella iliaca meruloides*, part; Oregon Finch; Townsend Sparrow, part; Shumagin Fox Sparrow, part; Kodiak Fox Sparrow, part; Yakutat Fox Sparrow, part.

Status—Winter visitant from late September until April. Generally common, in some areas abundant.

Geographic range—In winter, all sections of State except areas east of Sierran brushlands; not yet reported in midwinter from northern humid coastal strip; found in migration in northeastern plateau district. Within winter range numbers are much greater interiorly than coastwardly, especially on western flanks of Sierra Nevada and in San Bernardino and eastern San Gabriel mountains. Localities indicative of range selected unless otherwise specified from listings provided by Swarth (Univ. Calif. Publ. Zool., 21, 1920:189); Siskiyou Mountains [=Horse Creek], Siskiyou County, October 9, 31; near Eagleville, Modoc County, September 19, 28 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:326); Eagle Lake, Lassen County, October 27; Eureka, March 3, and Fortuna, September 23, 30, Humboldt County; Kunz, Trinity County, September 22; 6 miles southwest of Laytonville, Mendocino County, October 10 (Mus. Vert. Zool.); Red Bluff and Inskip Hill, Tehama County, and Warner Creek at 6600 feet, Shasta County, September 28 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:446); Sierra City, Sierra County, September 22, October 19; Stonyford, Colusa County; Lakeport, and Castle Hot Springs [near Cobb Mountain] (Mailliard, Condor, 23, 1921:180), Lake County; Fyffe, and Echo, October 7, Eldorado County; Camp Meeker, Sonoma County, October 27; San Geronimo, and Bolinas, March 31, Marin County; Berkeley, Alameda County; San Bruno, San Mateo County; Modesto, Stanislaus County; Aspen Valley, 6400 feet, Tuolumne County, October 17; Horse Corral Meadow, Fresno County, September 21; Monterey and Jolon, Monterey County; Morro, San Luis Obispo County; Piute Mountains, Kern County; Santa Barbara, Santa Barbara County; Santa Cruz Island; Santa Barbara Island (Pemberton, Condor, 33, 1931:219); Santa Catalina Island, April 27; Newhall, Santa Monica Mountains, Mount Wilson and San Dimas Canyon, Los Angeles County; Upland and Forest Home, San Bernardino County; Riverside and Strawberry Valley in San Jacinto Mountains, September 28, Riverside County. Additional references, possibly pertaining to this race: homing experiment, Sumner and Cobb (Condor, 30, 1928:318); age, E. L. Sumner, Sr. (Condor, 33, 1931:128); weights, Linsdale and Sumner (Condor, 36, 1934:107).

Habitat—A wide variety of chaparral cover or underbrush of forest and woodland is occupied, but preference is shown for inland areas and hence the majority of the birds occupy semi-arid chaparral of lower mountain slopes.

Passerella iliaca meruloides (Vigors)
Yakutat Fox Sparrow

Synonyms—See note, p. 527; names certainly or probably referable: *Fringilla meruloides*; *Passerella iliaca unalaschcensis*, part; *Passerella iliaca townsendi*, part; *Passerella iliaca annectens*; Townsend Sparrow, part.

Status—Winter visitant, from late September to mid-April. Abundant within normal range.

Geographic range—Primarily central coast district from Sonoma County south through Monterey County. In contrast, occurs but sparsely elsewhere in sections west of Sierran crests and in mountains of southern California south to Los Angeles and southwestern San Bernardino counties; many individuals taken outside of principal winter range prove to be intergradient in character with races adjacent in breeding season. Some localities representative of principal range (Swarth, Univ. Calif. Publ. Zool., 21, 1920:194): Fulton, and Sebastopol, September 25, Sonoma County; Point Reyes, Bolinas, March 31, and San Geronimo, Marin County; Berkeley, and Hayward, April 19, Alameda County; San Bruno, San Mateo County; Palo Alto and Los Gatos, Santa Clara County; Watsonville, Santa Cruz County; Monterey, April 6, Big Sur River, San Lucas, and Jolon, Monterey County; Cambria, San Luis Obispo County. Well substantiated records elsewhere in State based on Swarth's report unless otherwise specified: 3 miles north of Trinidad, January 2, Fortuna, September 20, and Redwood Creek at 800 feet, September 12, 14, Humboldt County (Mus. Vert. Zool.); South Fork Mountain, 3000 and 4800 feet, April 26, April 8 (Mus. Vert. Zool.); 8 miles northeast of Hyampom, Trinity County, September 25 (Mus. Vert. Zool.); Tower House, Shasta County, March 8; vicinity of Payne Creek P. O., Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:445); Stockton, San Joaquin County; Hume, Fresno County, September 26; Mount Wilson, vicinity of Pasadena, and San Dimas Canyon, Los Angeles County; Upland, San Bernardino County.

Habitat—Chaparral and underbrush of forest and woodland, normally, in view of concentration of population near coast, of fairly moist character. Thimble-berry, poison oak, nine-bark, ceanothus and baccharis are frequent components of the plant cover. The forage beat is accordingly well shaded and the leaf litter in which the birds forage is wet and soft through much of the winter season when the birds are present.

Note—Different opinions are held concerning the applicability of the name *meruloides* (see Swarth, *op. cit.*:141; Grinnell, Univ. Calif. Publ. Zool., 38, 1932:310; Hellmayr, Cat. Birds Amer., pt. 11, 1938:589). We still favor use of the name *meruloides* in the interests of stabilizing nomenclature; although of uncertain application initially, its subsequent restriction and application (Grinnell, Condor, 4, 1902:45) were quite definite and, we think, legitimate.

Passerella iliaca townsendi (Audubon)
Townsend Fox Sparrow

Synonym—See note, p. 527; Townsend Sparrow, part.

Status—Winter visitant, from mid-September to March and probably into April. Common northwestwardly, where with race *P. i. fuliginosa* it forms a remarkably dense population of Fox Sparrows.

Geographic range—Coastal areas south to Santa Cruz district. Not known to range farther inland in this State than extreme eastern Humboldt County and western Alameda County. Some authentic record stations as determined by Swarth (Univ. Calif. Publ. Zool., 21, 1920:198) unless otherwise stated: Trinidad, Eureka, March 3, Willow Creek (Mus. Vert. Zool.), Fields Landing, Fortuna, Carlotta, September 17 (Mus. Vert. Zool.), Petrolia and Thorn (Mailliard, Condor, 24, 1922:53), all in Humboldt

County; Camp Meeker, Sonoma County; Olema and San Geronimo, Marin County; San Francisco (Mus. Vert. Zool.); Berkeley, Oakland, and Hayward, Alameda County; Pescadero Creek, Santa Cruz Mountains, San Mateo County. Additional reference: Linsdale, Univ. Calif. Publ. Zool., 30, 1928:265ff.

Habitat—Typically, heavy forest undergrowth and tall dense chaparral in burned-over forest areas. The ground where activity centers is usually heavily shaded, moist, and well covered with soft leaf litter. Illumination of twilight intensity prevails throughout most of the day in the winter season in the habitat of this Fox Sparrow.

Passerella iliaca fuliginosa Ridgway
Sooty Fox Sparrow

Synonyms—See note, p. 527; names certainly or probably referable: *Passerella iliaca unalaschcensis*, part; *Passerella iliaca townsendi*, part; Townsend Fox Sparrow, part.

Status—Winter visitant, from mid-September to April; one straggler on May 31. Extremely abundant northwestwardly, fairly common to sparse elsewhere.

Geographic range—Chiefly humid northwest coastal district, extending southward in reduced numbers to San Francisco Bay region and rarely even to Monterey, San Luis Obispo, and Los Angeles counties and the eastern San Gabriel Mountains; two records for inland in Lassen and Shasta areas. Significant record stations: Big Lagoon, 3 miles north of Trinidad, Redwood Creek at 800 feet, September 14, Willow Creek, Carlotta, Humboldt County (Mus. Vert. Zool.); Kneeland, near Petrolia on Mattole River, and Thorn, Humboldt County (Mailliard, Condor, 24, 1922:49); 8 miles northeast of Hyampom, September 25, and South Fork Mountain at 4800 feet, April 8, Trinity County (Mus. Vert. Zool.); Healdsburg and near Kellogg, Sonoma County (Mus. Vert. Zool.); Berkeley, Alameda County (Swarth, Univ. Calif. Publ. Zool., 21, 1920:199); Lake Merced in San Francisco, and southeast Farallon Island, May 31 (Swarth, *loc. cit.*); Palo Colorado Creek, Monterey County (Mus. Vert. Zool.); near Morro, San Luis Obispo County, September 26 (Swarth, *loc. cit.*); Los Angeles (Willett, Condor, 41, 1939:33); San Antonio Canyon, San Bernardino County (Swarth, *loc. cit.*); 8 miles southwest of Weed, Siskiyou County, May 18 (Mailliard, Proc. Calif. Acad. Sci., 11, 1921:78); Manzanita Lake, Shasta County, October 23 (Vogt, Condor, 43, 1941:162). Additional references: Mailliard, Condor, 23, 1921:180, 182; Swarth, Univ. Calif. Publ. Zool., 24, 1922:262; Dawson, Birds Calif., 1, 1924:369; Linsdale, Univ. Calif. Publ. Zool., 30, 1928:265ff.

Habitat—Heavy coastal chaparral and forest undergrowth, typified by moist, weakly insolated thickets of thimble-berry, ceanothus, and salal. Through the damp, poorly-lighted alleyways beneath the bushes these birds move in search for food by the characteristic scratching method of this species. Concentration of birds in the bush tops at a source of disturbance suggests flocking, but merely because of close spacing of individuals; actually each Fox Sparrow moves independently along its forage beat on the ground and to some degree defends it against competing members of the species.

Passerella iliaca schistacea Baird
Slate-colored Fox Sparrow

Synonyms—See note, p. 527.

Status—Migrant and winter visitant. Appears within State at end of August and remains well through April. Fairly common.

Geographic range—In winter, chiefly southern California west of deserts, but also sparsely north along Sierran foothills to Tehama County; recorded likewise from San Francisco Bay region. Migrates along Sierra Nevada and through Modoc and Inyo regions. Record stations for winter period, based on typical specimens recently verified, or identified by Swarth (Univ. Calif. Publ. Zool., 21, 1920:200): vicinity of Paine's Creek, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:440); Alameda, Alameda County (Bassett, Condor, 31, 1929:127); Varain, Mariposa County; Piute Mountains, Kern County; Nordhoff, Ventura County; Tujunga, Mount Wilson, Palmer's Canyon and San Dimas Canyon, Los Angeles County; San Bernardino and Redlands, San Bernardino County (Swarth, *loc. cit.*; Mus. Vert. Zool.); Dehesa and Dulzura, San Diego County. Data on migration: Eagleville, Modoc County, September 14, October 7 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927: 325); Sierra City, Sierra County, September 22, and Blue Canyon, Placer County, August 31 (Swarth, *loc. cit.*); Rackerby, Yuba County, late September (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:39); Leevining Creek, 9200 feet, September 24, and Gem Lake, September 13, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:473); near Benton, Mono County, September 18, and Lone Pine, April 10, 16, and Cottonwood Lakes, September 3, Inyo County (Swarth, *loc. cit.*); Mountain Spring in Argus Mountains, Inyo County, October 25 (Mus. Vert. Zool.); Kings River Canyon, September 12, and Horse Corral Meadow, September 23, Fresno County (Swarth, *loc. cit.*); Ojai Valley, Ventura County, April 25 (Swarth, *loc. cit.*); Lytle Creek, September 2, 3, 5, and Seven Oaks, September 25, San Bernardino County (Swarth, *loc. cit.*). A straggler taken July 3, 1908, at Deer Spring, 7500 feet, in San Jacinto Mountains, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:281).

Habitat—Inland chaparral, prevailingly of somewhat arid character, as with other races that winter in the interior.

Passerella iliaca fulva Swarth
Warner Fox Sparrow

Synonyms—See note, p. 527; *Passerella iliaca megarhynchus*, part; Thick-billed Fox Sparrow, part; Warner Mountains Fox Sparrow.

Status—Summer resident in northeastern corner of State; common. Rare winter visitant in southern California.

Geographic range—As breeding, Warner Mountains of Modoc County and southwestward in suitable habitat to Hayden Hill, Lassen County; intermediates approaching *megarhynchus* occur at Butte Lake, Lassen County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:440). Known in winter from Santa Barbara, Los Angeles, western San Bernardino, and San Diego counties in southern California. Life-

zones, in summer, Canadian and parts of Transition; breeds from 5000 feet up to about 9000 feet. References bearing on natural history and breeding range: localities in Warner Mountains and Hayden Hill (Swarth, Univ. Calif. Publ. Zool., 21, 1920: 201); Warner Mountains, and Surprise Valley, October 7, 14, Modoc County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:326); habitat and variation (Linsdale, Univ. Calif. Publ. Zool., 30, 1928:277, 310ff.; Cushing, Condor, 40, 1938:75); range (A. H. Miller, Condor, 43, 1941:263). Record stations for specimens taken in migration and in winter (some not typical, see Swarth, *loc. cit.*): Eagle Lake, Lassen County, October 1; Sierra City, Sierra County, October 6; Santa Barbara, Santa Barbara County, January 11 (Dawson, Birds Calif., 1, 1924:378); Pasadena, Los Angeles County, February 22 (Mus. Vert. Zool.); San Dimas Canyon, same county, January 23; Cucamonga Canyon, January 12, and Bluff Lake, October 11, San Bernardino County; Volcan Mountains, San Diego County, February 9.

Habitat—In summer, large bushes and small conifers, and willow and aspen thickets, usually near water courses or meadows. Ceanothus patches in openings in the forest, streamside tangles, and artemisia brush near meadows or where mixed with other denser cover are typical situations occupied by this race. In each of these places, low, fairly dense, protective cover and leaf litter on the ground are afforded. Water or somewhat damp ground may also be a requirement. In winter, chaparral, as with other winter visitant races.

Passerella iliaca megarhynchus Baird
Yosemite Fox Sparrow

Synonyms—Passerella schistacea, part; *Passerella megarhynchus*, part; *Passerella townsendii schistacea*, part; *Passerella townsendi* var. *megarhynchus*, part; *Passerella schistacea* var. *megarhynchus*, part; *Passerella iliaca mariposae*; *Passerella iliaca monoensis*, part; Large-beaked Sparrow; Slate-colored Sparrow, part; Thick-billed Sparrow, part; Thick-billed Fox Sparrow, part; Yosemite Fox Sparrow; Mono Fox Sparrow, part.

Status—Summer resident, from May to September; common to abundant. Moves southward to winter commonly in southern section of State.

Geographic range—As breeding, Siskiyou Mountains, southern Cascade range, and Sierra Nevada south to Kings River Canyon, Fresno County, and Kearsarge Pass, Inyo County, but exclusive of Mono Lake Basin. Summer residents of Trinity Alps of northern Trinity County and southern Siskiyou County and of Siskiyou Mountains are, so far as known, in varying degree intermediate toward *P. i. brevicauda*. In winter chiefly southern districts west of deserts, from Tehachapi Mountains southward; extends to Santa Cruz and Santa Catalina islands; also occurs commonly to northward as far as Shasta County, but not east of Sierra Nevada nor in humid coastal belt north of Marin County. One record of a migrant on Mohave Desert. Life-zones in summer, high Transition and Canadian. Breeding stations range in altitude from 3500 feet at Mount Shasta City, Siskiyou County, up to 8700, as above Mammoth, Mono County (Mus. Vert. Zool.). Selected record stations and accounts relating to summer residence: Siskiyou Mountains, 5600 feet, Del Norte-Siskiyou County line, and head of Doggett Creek, same mountains, Siskiyou County (Mus. Vert. Zool.); Mount Orr (near Bray), Weed, Gazelle Mountain, and Salmon Mountains, same county (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:74, 93, 94, and *ibid.*, 13, 1923:19, 22, 25); head of Dog Creek, 4500 feet, western Shasta County (Mus. Vert. Zool.); Lassen Peak area, from

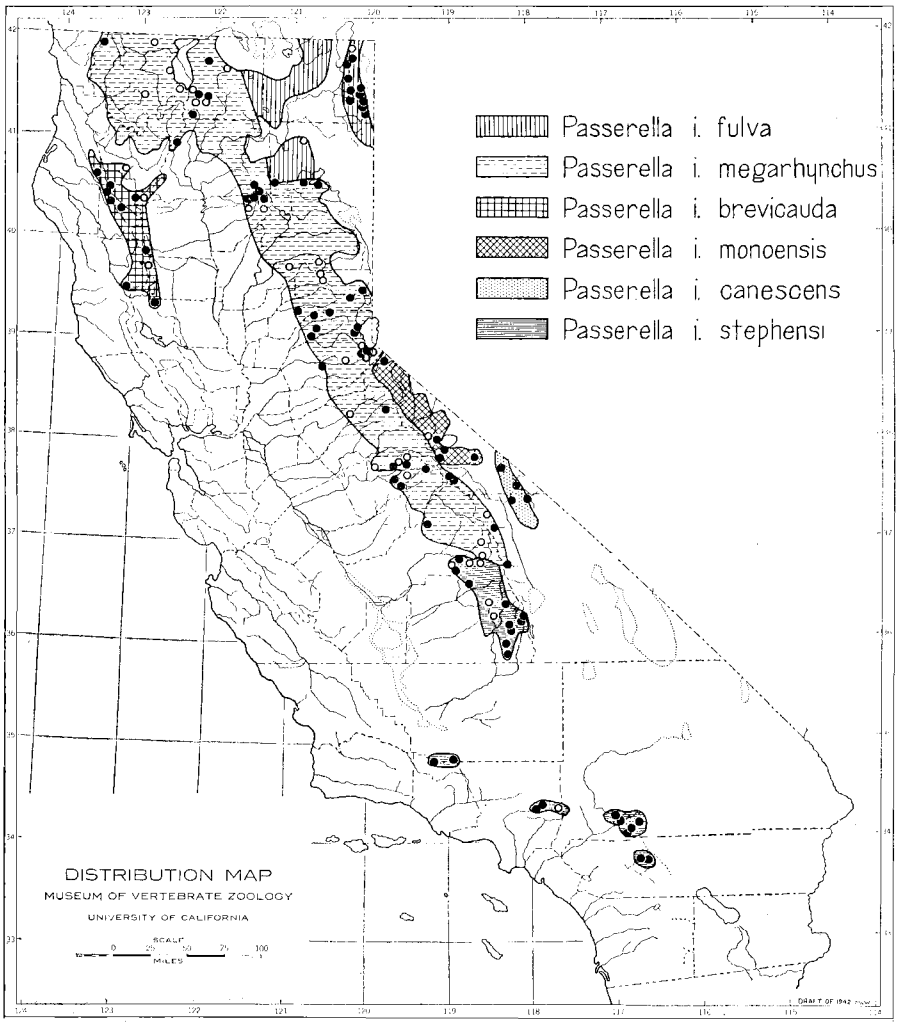

Fig. 56. Distribution of the subspecies of Fox Sparrow, *Passerella iliaca*, in California in the breeding season. Dots indicate localities from which specimens have been examined; circles, localities reported in the literature.

Battle Creek Meadows to Eagle Lake (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:441); Johnsville, Plumas County (Mailliard, Condor, 21, 1919:76); Grass Valley district (elevation?), Nevada County (Richards, Condor, 26, 1924:102); Cisco and Blue Canyon, Placer County (Ingersoll, Condor, 15, 1913:84; H. R. Taylor, Zoe, 2, 1891:123); Lake Tahoe near Blackwood Creek, Placer County (J. W. Mailliard, Condor, 23, 1921:73); Fyffe, Eldorado County (Barlow, Condor, 3, 1901:172; Ray, Condor, 16, 1914:59, 68); Yosemite area (Grinnell and Storer, Animal Life Yosemite, 1924:473); Mammoth, Mono County (Dawson, Birds Calif., 1, 1924:379); Shaver Ranger Station, 5300 feet, Fresno County (Linsdale, Univ. Calif. Publ. Zool., 30, 1928:280); Kearsarge Pass, Inyo County (Swarth, Univ. Calif. Publ. Zool., 21,

1920:206); Some winter records and other occurrences indicative of migration and dispersal from breeding areas (based on Swarth's, *op. cit.*, determinations of both *megarhynchus* and *mariposae* unless otherwise specified): Tower House, Shasta County, March 2; Inskip Hill, Payne Creek P.O., and Manton, December 22 to April 20 (Grinnell, Dixon and Linsdale, *loc. cit.*); Lakeport, Lake County, February 27; Grass Valley, Nevada County, November 8 (Mus. Vert. Zool.); Blue Canyon, Placer County, October 19; Nicasio, Marin County, January 30; Berkeley, Alameda County, November 14 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:123); El Portal, November 28, and Coulterville, January 20, Mariposa County; Seaside, Monterey County, December 30; Horse Corral Meadow, Fresno County, September 20, 22; Fort Tejon, Kern County (Baird, Pac. R. R. Rept., 9, 1858:925); Kelso Valley, 4500 feet, November 26, same county (Mus. Vert. Zool.); Santa Barbara, Santa Barbara County; Ojai Valley, Ventura County, April 27; Santa Monica Mountains, near Pasadena, September 15, and April 17, and San Dimas Canyon, Los Angeles County; Bluff Lake, San Bernardino Mountains, October 11; Santa Ana Canyon near Corona, Riverside County; San Diego, San Diego County, October 7; Santa Cruz and Santa Catalina islands [a bird from San Clemente Island reported as *megarhynchus* by Howell (Pac. Coast Avif. No. 12, 1917:83) is listed as *monoensis* by Swarth]; near Yermo, San Bernardino County, May 28.

Habitat—In summer, most typically, tracts of *Ceanothus cordulatus* and manzanita, either in the form of large brush fields or in large clumps scattered in broken forest. To less extent other low cover providing similar dense protecting foliage; aspen thickets and streamside willow and alder tangles in the mountains may be inhabited. The brush in which these birds live, owing to temperature conditions in the zones occupied, provides at ground level, cool and somewhat moist places—refuges during the day from the high temperature and insolation of the bush tops. A requirement of all Fox Sparrows—leaf litter in which to forage—is amply supplied, although it is drier and harsher than in the breeding ranges of more northern forms. Nest locations are either above ground in the rugged, thorny bushes or sunk in the ground at their bases. In singing, as from bush tops or young conifers, the birds do not venture far from the shelter of the bushes and in moving about over the nesting domain covered alleyways are used perhaps more than flight lines over the brush. In winter, chaparral of semi-arid type is occupied.

Note—Swarth in his revision of the Fox Sparrows (*op. cit.*:161-165, 173) carefuly developed his reasons for considering *megarhynchus* distinct from the breeding form of the central Sierra Nevada which he named *mariposae*. This left unknown the breeding grounds of *megarhynchus* which on the basis of its characters Swarth predicted must lie in the coastal mountains of extreme northwestern California and, probably, southwestern Oregon. Cushing (Condor, 40, 1938:73) after acquiring some birds from southwestern Oregon carefully reviewed the status of *megarhynchus* and showed that his birds did not match typical *megarhynchus* as a group and questioned whether the race existed as a natural population. With further knowledge of the areas lying between *brevicauda*, *fulva*, and *mariposae* in northern California and southern Oregon, it seems evident now that we must abandon hope of finding a typical breeding population of *megarhynchus*. Although we would like to have still more material further to prove the point, it appears that there is a large rather variable population of three-way intergrades in this sector which contribute the *megarhynchus* type of bird as known in winter to the southward but which as a population is closest to the birds of the central Sierra Nevada. In this complex darker birds are somewhat more frequent than in the Sierra and stubby-billed (=*megarhynchus*) birds are more frequent as *brevicauda* is approached. Apparent lack of a constant breeding population of *megarhynchus* type forces us to depart from Swarth's treatment and to synonymize *mariposae* with *megarhynchus*, the older name; the vernacular name, Yosemite Fox Sparrow, may conveniently be used.

Passerella iliaca brevicauda Mailliard
Yolla Bolly Fox Sparrow

Synonyms—Passerella iliaca megarhyncha, part; *Passerella iliaca stephensi*, part; *Passerella stephensi*, part; Thick-billed Sparrow, part; Stephens Fox Sparrow, part; Stephens Sparrow, part; Thick-billed Fox Sparrow, part, Trinity Fox Sparrow.

Status—Summer resident from May to mid-September; common. Winter visitant locally along coast; in some places common.

Geographic range—Breeds in high mountains of inner coast ranges south of Trinity River, extending west to South Fork Mountain in Humboldt County and south to Snow Mountain, Colusa County. In winter, locally in Marin and Napa counties and thence south along coast to western Los Angeles County and to Santa Catalina Island. Life-zones in summer, upper edge of Transition and Canadian. Breeding localities range from 4200 feet, as on South Fork Mountain, up to at least 7000 feet. Known breeding stations: Hayfork Baldy, 5300-6000 feet (A. H. Miller MS); South Fork Mountain, 4200 feet to 5700 feet, from Blake Lookout, Humboldt County, south to vicinity of Ruth, Trinity County (Mus. Vert. Zool.); Knob, Shasta County (Cushing, Condor, 40, 1938:75); 12 miles north of North Yolla Bolly Mountain, 4400 feet, Trinity County (Linsdale, Univ. Calif. Publ. Zool., 30, 1928:277); South Yolla Bolly Mountain, Tehama and Trinity counties (Mailliard, Condor, 20, 1918:133; Swarth, Univ. Calif. Publ. Zool., 21, 1920:204); Mount Sanhedrin, Mendocino County (Swarth, *loc. cit.*; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919:291); Black Butte, Glenn County, and Snow Mountain, Colusa County (Clark, Condor, 34, 1932:116). Some winter records and reports bearing on migration: Mount Sanhedrin, Mendocino County, September 22, Glenbrook, Lake County, September 23, 24, Castle Hot Springs (near Mount Saint Helena), Lake County, migrating chiefly in late September (Mailliard, Condor, 23, 1921:178ff.); Howell Mountain, and 12 miles north of Napa, Napa County, winter (Mailliard, Condor, 26, 1924:112); San Geronimo, September 23, Nicasio, April 29, and through winter season, Marin County (Swarth, *loc. cit.*; Mailliard, Condor, 14, 1912:63, and *ibid.*, 15, 1913:93); head of Turner Creek, 2700 feet, Monterey County, September 15 (A. H. Miller MS; Mus. Vert. Zool.); Santa Barbara, winter, and Little Pine, August 30, Santa Barbara County (Swarth, *loc. cit.*); Ojai Valley, Ventura County, April 18, and Santa Monica Mountains, winter, Sherman, October 4, and Hollywood, Los Angeles County (Swarth, *loc. cit.*); Santa Catalina Island, winter, and April 21 (Swarth, *loc. cit.*). A bird taken on Santa Cruz Island, December 14, 1907 (Linton, Condor, 10, 1908:128) may belong to this race, although it was reported as *P. i. stephensi*; its identification apparently has not been recently verified.

Habitat—In summer, brushland consisting of *Ceanothus cordulatus*, *Prunus emarginata* and manzanitas, often intermingled with young conifers, especially firs. The infrequent meadowland in the range of this race may be occupied also if alder thickets or growths of false hellebore provide protecting cover. The brushland may exist in large tracts or in clumps in the open Canadian-zone forest. Burned-over forest land in recovery stages with heavy growth of brush is particularly favorable terrain. Activity within this mountain chaparral is much as in the race *megarhynchus*, which see. In winter, fairly dry chaparral, especially on ridges and on canyon slopes near the coast.

Passerella iliaca monoensis Grinnell and Storer
Mono Fox Sparrow

Status—Summer resident from May to mid-September east of crest of central Sierra Nevada; common. Winter visitant to westward and southward in small numbers.

Geographic range—Breeds along eastern flank of Sierra Nevada, extending from northern Alpine County south through Mono County to southern rim of Mono Lake basin. In winter, known from vicinity of Coulterville, Mariposa County, in western foothills of the Sierra and from scattered localities in coastal southern California, including Santa Catalina and San Clemente islands. Life-zones in summer, high Transition and Canadian. Altitudes of nesting stations range from 5500 feet up to 9000 feet. Verified breeding stations: vicinity of Woodfords, 5500 to 5900 feet, Alpine County [population intermediate toward *megarhynchus*] (Mus. Vert. Zool.); Virginia Creek, 8500 feet, Mono County (Rowley, Condor, 41, 1939:254); Rough Creek, Mono Lake P. O. (6500 feet), Walker Lake, and Parker Creek, all in Mono County (Swarth, Univ. Calif. Publ. Zool., 21, 1920:206; Grinnell and Storer, Condor, 19, 1917:165, and Animal Life Yosemite, 1924:473ff.; 9 miles west of Benton and 7 miles west and 2 miles south of Benton, 9000 (Mus. Vert. Zool.). A bird taken June 25, 1917, at Jackass Spring, Panamint Mountains, Inyo County, apparently was breeding (see Swarth, *op. cit.*:170); it might either be regarded as a vagrant member of this race or as a variant of *P. i. canescens* which breeds in the near-by White Mountains; it clearly displays the characteristics of *monoensis* to which Swarth assigned it. Records of migrants (Swarth, *op. cit.*:206; Mus. Vert. Zool.); 4 miles west of Lookout Peak, 7900 feet, Alpine County, September 11; Tuolumne River, 6300 feet, Tuolumne County, October 1; Horse Corral Meadow, 7600 feet, Fresno County, September 19 to 23. Winter stations based on Swarth's determinations: vicinity of Coulterville, Mariposa County, December, January; Mount Wilson, Arroyo Seco Canyon, Pasadena, and San Dimas Canyon, Los Angeles County; San Antonio Canyon, September 24, and Cucamonga Canyon, San Bernardino County; Santa Catalina Island, February 15; San Clemente Island, March 28.

Habitat—In summer, brush composed of manzanita and ceanothus, and, commonly, streamside thickets of willows and wild rose and low aspen scrub with associated forbs about springs and wet meadows. Thus habitats characteristic for both *P. i. megarhynchus* and *P. i. canescens* are occupied.

Passerella iliaca canescens Swarth
White Mountains Fox Sparrow

Synonyms—Passerella iliaca schistacea, part; Slate-colored Fox Sparrow, part; Inyo Fox Sparrow.

Status—Summer resident in small numbers in White Mountains on eastern border of State. Sparse winter visitant to southern coastal areas.

Geographic range—As breeding, White Mountains of Mono and Inyo counties, from 8000 to 9600 feet, in the Transition and Canadian life-zones. In winter, known from Santa Barbara and Los Angeles counties; once recorded from the Colorado River valley. For specific breeding localities in White Mountains see Swarth (Univ. Calif. Publ. Zool., 21, 1920:205) and Linsdale (*ibid.*, 30, 1928:279). A Fox Sparrow reported as *P. i. schistacea* (A. K. Fisher, N. Amer. Fauna No. 7, 1893:102), taken March 28

in Johnson Canyon, Panamint Mountains, Inyo County, may belong to this race. Winter localities reported by Swarth (*loc. cit.*): Blythe, eastern Riverside County, October 25; San Antonio Canyon, October 19, San Dimas Canyon, December and January, Palmer's Canyon, February 1, and Mount Wilson, November 4, all in Los Angeles County; Santa Barbara, Santa Barbara County, December 9, January 11.

Habitat—Thickets of aspens and birches, with dense ground cover of rose, gooseberry, or alder, along streams where there is moist or springy ground.

Passerella iliaca stephensi Anthony
Stephens Fox Sparrow

Synonyms—Passerella schistacea, part; *Passerella townsendi* var. *schistacea*, part; *Passerella townsendi* var. *megarhynchus*, part; *Passerella schistacea* var. *megarhynchus*, part; *Passerella iliaca megarhyncha*, part; *Passerella megarhyncha*, part; *Passerella stephensi*, part; Slate-colored Sparrow, part; Thick-billed Sparrow, part; Stephens Sparrow, part.

Status—Summer resident from mid-April to early September; abundant in favorable habitat. Rare winter visitant in lowlands adjacent to summer range, most of the breeding population apparently moving out of the State.

Geographic range—As breeding, Pacific drainage of southern Sierra Nevada from southern Fresno County, south of Kings River, south through Tulare County; Mount Pinos in Kern and Ventura counties; and San Gabriel, San Bernardino and San Jacinto mountains. In winter, detected occasionally in Santa Barbara and Los Angeles counties in foothills and lower mountains. Life-zones in summer, upper part of Transition and Canadian. Breeding stations range from 5300 feet, as at Hume, Fresno County, up to 10,000 feet on San Jacinto Mountain (Mus. Vert. Zool.). Selected references and localities bearing on summer residence and natural history: Hume, Fresno County, one taken as late as September 26 (Swarth, Univ. Calif. Publ. Zool., 21, 1920:210; Linsdale, *ibid.*, 30, 1928:282); Sequoia National Park, and Monache, Taylor and Cannell meadows, Tulare County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:101; Swarth, *loc. cit.*); Mount Pinos, Ventura County, as early as April 8 (Grinnell, Auk, 22, 1905:388; Willett, Pac. Coast Avif. No. 21, 1933:183 and Condor, 36, 1934:178); Mount Waterman and Swartout Canyon, San Gabriel Mountains, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:40; Pierce, Condor, 23, 1921:83); Bear Lake, Bluff Lake, Sugarloaf Peak, Dry Lake, etc., in San Bernardino Mountains, as late as September 22 (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:99; van Rossem and Pierce, Condor, 17, 1915:164; Swarth, *loc. cit.*; Pierce, *loc. cit.*; Dawson, Birds Calif., 1, 1924: 283); San Jacinto Mountains (Anthony, Auk, 12, 1895:348; Mailliard, Condor, 14, 1912:66; Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:281). Authentic winter records: Santa Barbara, Santa Barbara County, October 27, January 11; Santa Monica Mountains, November 24, Hollywood, December, January and February (5 specimens), Palmer's Canyon (near Claremont), January 11, all in Los Angeles County (Swarth, *loc. cit.*; Willett, *loc. cit.*). Swarth reports a bird taken September 2 in the Piute Mountains, Kern County; apparently it was a migrant.

Habitat—In summer, chinquapin and ceanothus brush; less commonly brakes, willow thickets and gooseberry bushes about mountain streams and springs. Although the brushland provides the same essential protecting cover and the somewhat moist

ground-forage beat as in the ranges of more northern races of Fox Sparrows breeding in California, it is on the average drier and warmer. Presumably the leaf litter is prevailingly harsher. Less often are moist seeps available, although they are sought out by the birds when present. Nest sites and song posts are available much as in the ranges of *P. i. megarhynchus* and *P. i. brevicauda*.

Melospiza lincolnii lincolnii (Audubon)
Northern Lincoln Sparrow

Synonyms—Peucaea lincolni; *Melospiza lincolnii*, part; *Melospiza lincolnii gracilis*, part; *Passerella lincolnii lincolnii*, part; Lincoln Finch; Forbush Sparrow, part; Northeastern Lincoln Sparrow, part.

Status—Winter visitant from mid-September until mid-April. Migrant chiefly in late September and in April. Common in areas of principal winter range and, at times, in migration.

Geographic range—In winter, lowlands west of Sierra Nevada and in coastal districts from San Francisco Bay region southward; also, suitable localities on Mohave and Colorado deserts, especially in Colorado River valley. The numbers of this race in contrast to *M. l. gracilis* are greatest in southern and interior sections. In migration, more widely spread, as along east side of Sierra Nevada, but does not appear in high mountains and rarely in typical form along northern coastal belt. Some winter localities based on unequivocal specimens verified by us: 4 miles north of Knights Landing, Yolo County; Sebastopol, Sonoma County; San Geronimo, Marin County; Albany and Hayward, Alameda County; San Bruno and Daly City, San Mateo County; Palo Alto, Santa Clara County; Modesto, Stanislaus County; Planada, Merced County; Paicines, San Benito County; San Lucas, Monterey County; Little Lake, Inyo County, March 24; Victorville, San Bernardino County, March 21; Pasadena and Los Angeles, Los Angeles County; Sunset Beach, Orange County; Riverside, Riverside County; Volcan Mountains and Witch Creek, San Diego County; Palm Springs and Mecca, eastern Riverside County; Colorado River valley generally, as near The Needles, Chemehuevis Valley, and near Palo Verde. Reported in winter from Santa Catalina Island (Grinnell, Auk, 15, 1898:235) and Santa Cruz Island (Willett, Pac. Coast Avif. No. 21, 1933:184). Selected data on migration based on unequivocal specimens examined by us: Requa, Del Norte County, April 24; Lierly's Ranch, near Mount Sanhedrin, Mendocino County, September 22; Eagleville, Modoc County, September 11, 30; near Red Bluff, Tehama County, April 14, 24, May 12; San Francisco, September 13; Hayward, Alameda County, April 15; Paicines, San Benito County, April 24; Modesto, Stanislaus County, May 1; Earlimart, Tulare County, April 30; Independence, 3900 feet, May 10, and Lone Pine Creek, April 8, 17, Inyo County; Furnace Creek Ranch, Death Valley, same county, April 4, 21; Tejon Pass, Kern County, April 29; Santa Cruz Island, April 14, 20; San Clemente Island, March 24, 30; Campo, April 23, and San Diego, October 11, San Diego County; Mecca, Riverside County, April 11; Colorado River opposite Cebola as late as April 5. Selected references bearing on natural history and dispersal which relate in part at least to this race: migration at Red Bluff, Tehama County (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930: 433); Chico, Butte County, winter (Ingles, Condor, 39, 1937:87); San Francisco, migrant (Mailliard, Condor, 22, 1920:43); Death Valley, April (Grinnell, Proc. Calif.

Acad. Sci., ser. 4, 13, 1923:93); southern California in general (Willett, *loc. cit.*); Los Angeles, migratory behavior, May 12 (L. Miller, Condor, 43, 1941:196); Twentynine Palms, San Bernardino County, banding (F. Carter, 39, 1937:219); Colorado River valley (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:176); Potholes, Imperial County (Howell and van Rossem, Condor, 17, 1915:234); taxonomy and distribution (Miller and McCabe, Condor, 37, 1935:144ff.).

Habitat—Low-growing bushes and clumps of annuals interspersed with grass, especially on damp ground or near water. Ditch banks, brushy borders of sloughs, tangles of driftwood, and sedge clumps are typical situations. The birds adhere closely to cover and make the fullest use of its protection when alarmed, only momentarily exposing themselves in flight low over the ground between cover. In foraging they work inconspicuously and solitarily through the grass about the bases of bushes or within brush tangles.

Note—We favor merging of the genera *Passerella* and *Melospiza* as advocated by Linsdale (Condor, 30, 1928:349) but have not taken this step here since we think comparable action should be taken simultaneously with respect to several other genera of sparrows on the A.O.U. Check-list.

Melospiza lincolnii gracilis (Kittlitz)
Northwestern Lincoln Sparrow

Synonyms—Melospiza lincolni striata; *Melospiza lincolnii*, part; *Melospiza lincolnii lincolnii*, part; *Passerella lincolnii gracilis*; *Passerella lincolnii*; Lincoln Sparrow, part; Forbush Sparrow; Forbush Lincoln Sparrow.

Status—Winter visitant from mid-September until mid-April. Migrant in late September and in April. Common in principal winter range.

Geographic range—Chiefly coast of central section and lower Sacramento and San Joaquin valleys; sparse visitant to southward as far as San Diego County and east to Colorado River valley. Occurs as a migrant northwestwardly, as in Del Norte County, but thus far not known to remain through winter north of Lake County. Selected winter record stations based on typical examples examined by us: Lakeport, Lake County; 3 miles northeast of Colusa, Colusa County; Petaluma, Sonoma County; San Geronimo, Marin County; Suisun, Solano County; El Cerrito, Contra Costa County; Oakland and Hayward, Alameda County; Lake Merced, San Francisco; Daly City, San Mateo County; Palo Alto, Santa Clara County; near Modesto, and LaGrange, Stanislaus County; Snelling and Planada, Merced County; Varain, Mariposa County; Minkler, Fresno County; Paicines, San Benito County; Pacific Grove and San Lucas, Monterey County; San Carpojo Creek and Morro, San Luis Obispo County; Buena Vista Lake and Walker Basin, 3900 feet, Kern County; Victorville and Oro Grande, San Bernardino County; Colorado River valley at The Needles (specimen from Arizona side); Witch Creek, October 13, and mouth of Tia Juana River, San Diego County. Some significant data on migration: Eagleville, Modoc County, September 11; Requa, Del Norte County, September 16, April 24, 26; Redwood Creek at 800 feet, Humboldt County, September 12; Hearst P. O., Mendocino County, September 19; San Geronimo, Marin County, September 15; Yosemite Valley, Mariposa County, September 15, 18; 10 miles north of Fresno, Fresno County, April 10; Morro, San Luis Obispo County, September 29; Colorado River valley, 10 miles below Cibola (in Arizona), April 7. Selected references: Battle Creek, Shasta County, October (McGregor, Condor, 2,

1900:35); San Francisco Bay region (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:121); mouth of Tuolumne River, near Modesto, Stanislaus County (Mailliard, Condor, 14, 1912:74); Fresno district (Tyler, Pac. Coast Avif. No. 9, 1913:85); Mariposa and Merced counties (Grinnell and Storer, Animal Life Yosemite, 1924:470; Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1936:132); coastal southern California in general as late as April 25 (Willett, Pac. Coast Avif. No. 21, 1933:184); taxonomic revision (Miller and McCabe, Condor, 37, 1935:144ff.).

Habitat—In general as in race *M. l. lincolnii*. Has been noted particularly in thick growths of horehound bushes, about marshy ground, in tall, partly fallen grass on damp overflow land, and in scrubby growths of willows.

Melospiza lincolnii alticola (Miller and McCabe)
Montane Lincoln Sparrow

Synonyms—Melospiza lincolnii, part; *Melospiza lincolnii lincolnii*, part; *Passerella lincolnii alticola*; Northeastern Lincoln Sparrow, part; Montane Sparrow.

Status—Fairly common summer resident locally in high mountains, from May to early September. Migrates to lowlands where small numbers spend the winter.

Geographic range—In summer, high inner coast ranges from northern Siskiyou County south to South Yolla Bolly Mountain, Tehama County, Mount Shasta, Warner Mountains, and Lassen Peak, and thence south along Sierra Nevada to Tulare County; also restrictedly in San Bernardino and San Jacinto mountains. In winter, lowlands west of Sierra Nevada north at least to latitude 38° and on Colorado Desert. Life-zone in breeding season, chiefly Canadian, but extends into Hudsonian and locally into Transition. Altitudes of nesting stations range from 4000 to 9000 feet, as in Yosemite area. Representative breeding stations and accounts of natural history: head of Doggett Creek, 5800 feet, Siskiyou Mountains, Siskiyou County (Mus. Vert. Zool.); South Fork of Salmon River at 5000 feet, and Jackson Lake, Siskiyou County, and head of Bear Creek, 6400 feet, Trinity County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916: 384); North Yolla Bolly Mountain, Trinity County (Mus. Vert. Zool.); South Yolla Bolly Mountain, Tehama County (Grinnell, Pac. Coast Avif. No. 11, 1915:128); Mount Shasta, Siskiyou County (Merriam, N. Amer. Fauna No. 16, 1893:126); Warner Mountains, Modoc County (Grinnell, *loc. cit.*); Lassen Peak area, 4800 to 8200 feet (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:433); Jonesville, Butte County (Mus. Vert. Zool.); Blairsden, Plumas County (Ewan, Condor, 38, 1936:85); Summit, Placer County (Baird, Brewer and Ridgway, Hist. N. Amer. Birds, 3, 1874:514); Suzy Lake near Mount Tallac, Eldorado County (Keyes, Condor, 7, 1905:16); Yosemite National Park from Yosemite Valley up to Lyell Canyon, 9000 feet (Grinnell and Storer, Animal Life Yosemite, 1924:470; Dawson, Birds Calif., 1, 1924:361ff.; E. Michael, Yosemite Nature Notes, 8, 1929:100); Virginia Lakes, Mono County (Rowley, Condor, 41, 1939:254); Independence Creek, Inyo County, and Horse Corral Meadows, Fresno County (A. K. Fisher, N. Amer. Fauna No. 7, 1893: 100); Redwood Mountain, 5000 feet, Tulare County (Mus. Vert. Zool.); Bluff Lake and south fork of Santa Ana River, 8000-9000 feet, San Bernardino Mountains (Grinnell, Univ. Calif. Publ. Zool., 5, 1908:98; Pierce, Condor, 18, 1916:34; Miller and McCabe, Condor, 37, 1935:156); Tahquitz Valley and Round Valley, San Jacinto

Mountains (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:280). Records for winter season and periods of migration based on specimens examined by us: 10 miles north of Red Bluff, Tehama County, April 10; Russian River, Sonoma County, October 17; Hayward, Alameda County, February 8; Hollister, San Benito County, April 18; 6 miles west of Galt, San Joaquin County, March 28; Modesto, Stanislaus County, December and January; Planada, Merced County, April 12; Minkler, Fresno County, October 7; 5 miles north of Benton, Mono County, September 20; Lone Pine Creek, 4500 feet, April 10, and Little Cottonwood Creek, 9500 feet, September 6, Inyo County; Shoshone, Inyo County, May 12; Tejon Pass, Kern County, April 28; vicinity of Los Angeles, April 21, September 24, and in winter; Riverside, Riverside County, November 6; Santa Barbara Island, March 24; Daggett, San Bernardino County, March 5; Riverside Mountain at Colorado River, Riverside County, March 20; 7 miles northeast of Fort Yuma, Imperial County, December 28.

Habitat—In summer, mountain meadows of boggy type, grown to fairly tall grass, *Veratrum*, and sedges, and fringed or intermixed with willow thickets. Wet ground and wet dead grass invariably are present. The ground usually is flooded shallowly by melting snow or by springs or overflow from streams at the time nest sites are chosen. Nests are placed on the ground, sunk in dead grass, or at the base of willow trunks or clumps of tall forbs. The birds skulk through the cover in foraging and approaching nests, but when alarmed or when singing take up exposed perches, sometimes up to middle heights in surrounding conifers. Winter habitat as in race *M. l. lincolnii*, which see.

Melospiza georgiana ericrypta Oberholser
Western Swamp Sparrow

Synonyms—Melospiza georgiana; Swamp Sparrow.

Status—Rare autumnal vagrant from northeastward. Three records: Keeler, Inyo County, November 1, 1921, specimen taken at "a little spring" (Dickey, Condor, 24, 1922:136); Daly City, San Mateo County, specimen taken in brushy draw, October 21, 1923 (Grinnell, Auk, 27, 1925:247); Sweetwater Reservoir, San Diego County, specimen taken in a fresh-water marsh, November 4, 1943 (Huey, Condor, 46, 1944:201).

Note—The bird from San Mateo County displays the characteristics of *ericrypta* and presumably the other two also belong to this western race.

Melospiza melodia montana Henshaw
Mountain Song Sparrow

Synonyms—Melospiza melodia fallax, part; *Melospiza cinerea montana*, part; *Melospiza melodia virginis*; *Melospiza melodia fisherella*, part; Rocky Mountain Song Sparrow, part; Modoc Song Sparrow, part; Virgin River Song Sparrow.

Status—Winter visitant along eastern border of State; migrates northward in late March and early April. Common in suitable habitat.

Geographic range—Known principally from Death Valley, Inyo County, and Colorado River valley south to Fort Yuma, Imperial County; recorded also from Mecca, Riverside County (Mus. Vert. Zool.). Chief references: Furnace Creek, Saratoga Springs, and Resting Springs, Death Valley area, January 25 to April 6 (A. K. Fisher,

N. Amer. Fauna No. 7, 1893:99; Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:92); near Needles to Riverside Mountain, Colorado River valley, February 20 to March 17 (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:173) [reported incorrectly (J. T. Marshall, Jr., MS) to be *M. m. virginis* (=*M. m. fallax*) by Behle and Marshall, Condor, 44, 1942:124].

Habitat—Thickets of arrowweed, and willows and reeds at the edges of ditches and river courses. The birds forage short distances out into grassy or weedy places and about root tangles and piles of driftwood.

Note—This race is not sharply characterized in contrast to its counterpart, *M. m. fisherella*, in the western part of the Great Basin. Accordingly it is thought inadvisable to assign winter-taken specimens to *montana* if they are from localities farther west in California than the principal range here indicated even though they show resemblance to this race; they may be regarded as variants of *fisherella*. Some records allocated to *fisherella* in this way are: Eagleville, Modoc County, September 20 (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 16, 1927:325); Clipper Gap, Placer County, February 19 (Grinnell, Univ. Calif. Publ. Zool., 5, 1909:269); Victorville, San Bernardino County (Grinnell, *loc. cit.*); El Monte, Los Angeles County, December 12 (Howell, Condor, 16, 1914:93; *fide* van Rossem, see Willett, Pac. Coast Avif. No. 21, 1933:184).

Melospiza melodia fisherella Oberholser
Modoc Song Sparrow

Synonyms—*Melospiza fallax*, part; *Melospiza rufina*, part; *Melospiza melodia* var. *heermanni*, part; *Melospiza melodia* var. *guttata*, part; *Melospiza fasciata* var. *fallax*; *Melospiza fasciata heermanni*, part; *Melospiza fasciata montana*; *Melospiza melodia montana*, part; *Melospiza fasciata*; *Melospiza melodia merrilli*, part; *Melospiza cinerea montana*, part; *Melospiza melodia fallax*, part; *Melospiza cinerea fallax*, part; *Passerella melodia mailliardi*, part; *Passerella melodia fisherella*; Mountain Song Sparrow, part; Rusty Song Sparrow, part; Oregon Song Sparrow, part; Heermann Song Sparrow, part; Rocky Mountain Song Sparrow, part; Mountain Song Sparrow, part; Song Sparrow, part; Merrill Song Sparrow, part; Desert Song Sparrow, part; Modesto Song Sparrow, part.

Status—Summer resident in northern interior and eastern sections, and in considerable numbers present there throughout the year. Partial migration in late September and October accounts for appearance of winter visitants to southward and westward. In general, common, even abundant locally; sparse toward periphery of winter dispersal area.

Geographic range—As breeding, Great Basin region from Oregon line south along eastern flank of Sierra Nevada through Owens Valley, and to westward through lower mountains and valleys, exclusive of coastal belt, from Klamath River Valley and Shasta Valley south to upper Trinity River system and in Sacramento drainage to Tehama County. In winter occurs additionally south into lower Sacramento and San Joaquin valleys and on western part of Mohave Desert, rarely to Coachella Valley, coastal southern California and San Francisco Bay region. Life-zones in summer, Lower Sonoran, Upper Sonoran and Transition. Altitudinal range of nesting stations extends from 300 feet, as near Red Bluff, Tehama County, up to 8000 feet, as on Glass Mountain, Mono County (A. H. Miller MS). Westernmost localities of summer residence: 6 miles northwest of Callahan, Siskiyou County (L. Kellogg, Univ. Calif. Publ. Zool., 12, 1916:384); Hayfork, Trinity County, intergrades toward *M. m. cleonensis* (Mus. Vert. Zool.). References selected for bearing on natural history and serving to outline breeding range: Weed and Bray, Siskiyou County (Mailliard, Proc. Calif. Acad. Sci., ser. 4, 11, 1921:76, 93, and *ibid.*, 13, 1923:8); Clear Lake, Modoc County

(Willett, Condor, 21, 1919:205); Goose Lake and vicinity of Eagleville, Modoc County (Dawson, Birds Calif., 1, 1924:356); Lassen section, from Red Bluff to Secret Valley [includes both *mailliardi* and *fisherella* according to current concepts] (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:435); Honey Lake, Lassen County (Oberholser, Proc. Biol. Soc. Wash., 24, 1911:251); Mohawk, Plumas County (Mailliard, Condor, 21, 1919:75); Lily Lake and Lake Valley, Eldorado County (Price, Condor, 3, 1901:172; Ray, Auk, 20, 1903:189, and Condor, 14, 1912:143); Mono Lake and Convict Creek, Mono County (Grinnell and Storer, Animal Life Yosemite, 1924:468; Rowley, Condor, 41, 1939:254); Owens Valley, Inyo County (A. K. Fisher, N. Amer. Fauna No. 7, 1893:99). Some data on occurrence in winter and in migration: Edgewood, Siskiyou County, December 22 (Mus. Vert. Zool.); Litchfield, Lassen County, December 27 (Mus. Vert. Zool.); 6 miles southwest of Laytonville, Mendocino County, October 9 (Mus. Vert. Zool.); 5 miles east of Maxwell and 3 miles northeast of Colusa, Colusa County, February 20 to March 5 (Grinnell, Condor, 25, 1923: 175); Alta, Placer County, November 30 (Mus. Vert. Zool.); Petaluma, Sonoma County, December 29, 30, Huichica Creek, Napa County, October 21, and Lake Chabot, January 11, and Grizzly Island, February 23, Solano County (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:120; Mus. Vert. Zool.); Hayward, Alameda County, December 16 (Grinnell and Wythe, *loc. cit.*); Stockton, San Joaquin County, September 29 (Belding, Land Birds Pac. Dist., 1890:164); 10 miles east of Coulterville, October 22, Yosemite Valley, September 27, November 19, and El Portal, December 11, Mariposa County, and La Grange, Stanislaus County, and Snelling, Merced County, December, January (Grinnell and Storer, Animal Life Yosemite, 1924:468; Mus. Vert. Zool.); Oxalis, January 25, and Dunlap, September 28, Fresno County (Tyler, Condor, 18, 1916:198; Mus. Vert. Zool.); San Lucas, Monterey County, November 19 (Mus. Vert. Zool.); Little Lake, Inyo County, March 25, 30 (Mus. Vert. Zool.); Mohave River near Yermo, San Bernardino County, October 1 to April 16 (Lamb, Condor, 14, 1912:38); Oro Grande and Victorville, same county, winter (Mailliard and Grinnell, Condor, 7, 1905:76); Palms, December 27, and El Monte, December 12, Los Angeles County (Willett, Pac. Coast Avif. No. 21, 1933:184); Palm Canyon, Riverside County, December 28, and 8 miles northwest of Calipatria, Imperial County, April 29 (Mus. Vert. Zool.). For illustration, see frontispiece, 5 (no. 43360 Mus. Vert. Zool.; Honey Lake, Lassen County).

Habitat—Riparian vegetation, marshes, and lake borders. Willow thickets, cattails and bulrushes, and rose thickets are the common plant growths occupied in summer. Occasionally xerophilous shrubs and small conifers may be used for nesting if close to water. The combination of dense low cover and surface water with wet ground is essential for this race, as for most other Song Sparrows. Much activity in search for insects and seeds occurs on the moist ground or at the water's edge, or on plants over the water or floating in it. Cover is reluctantly left except as it is surmounted in ready response to alarm or in seeking moderately high song posts. Nest emplacements commonly are above ground in the branch-work of bushes. In winter, restriction to riparian growth is less rigid, yet seldom are the birds found far from moist situations and the associated plants species.

Note—Song Sparrows of this race are perceptibly darker on the average to the westward, especially in Tehama County, but we now follow J. T. Marshall, Jr. (MS) in regarding these birds as closer to *fisherella* than to the much darker populations (*mailliardi*) to the southward in the lower Sacramento Valley.

Melospiza melodia merrilli Brewster
Merrill Song Sparrow

Synonyms—Melospiza fasciata guttata, part; *Melospiza fasciata ingersolli*; *Melospiza melodia ingersolli*; *Melospiza cinerea merrilli*; *Melospiza melodia morphna*, part; *Melospiza melodia fisherella*, part; *Passerella melodia merrilli*; Rusty Song Sparrow, part; Tehama Song Sparrow; Modoc Song Sparrow, part.

Status—Fairly common winter visitant in interior of northern section from October to mid-March; rare southwestwardly.

Geographic range—Chiefly Sacramento Valley, northern San Joaquin Valley, and surrounding foothills, but recorded also from lower and middle elevations in State generally from Oregon line south to Mohave Desert and Los Angeles County, exclusive of the northern coastal strip. Selected records, inclusive of all known peripheral stations: Seiad Valley P. O., Siskiyou Mountains, Siskiyou County, December 14 (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:11, part); Helena, Trinity County, February 16, 23, and Tower House, Shasta County, March 4 (Mus. Vert. Zool.); Battle Creek, Shasta County, October 19 (McGregor, Bull. Cooper Ornith. Club, 1, 1899:35); near Red Bluff and Elliott's [on Paine's Creek], December, 12 specimens (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:439); Grasshopper Valley [near Eagle Lake] September 28, and 6 miles northwest of Amadee, October 4 (Mus. Vert. Zool.); 3 miles northeast of Colusa, Colusa County, March 1, 3 (Grinnell, Condor, 25, 1923:175); Clipper Gap, Placer County, February 19 (Mus. Vert. Zool.); Healdsburg, October, and Petaluma, March 15, Sonoma County (McGregor, *loc. cit.*; Edge, Condor, 33, 1931:75; Mus. Vert. Zool.); Saint Helena, Napa County, December 22, February 12 (McGregor, *loc. cit.*; Mus. Vert. Zool.); mouth of San Pablo Creek, Contra Costa County, December 14 (Mus. Vert. Zool.); Palo Alto, Santa Clara County, December 23 (Grinnell, Pac. Coast Avif. No. 11, 1915:126); Dudley, Mariposa County, October 17, December 19, and Snelling, January 7, and Planada, December 19, Merced County (Mus. Vert. Zool.); 5 miles southwest of Lone Pine, Inyo County, December 13 (Ellis Coll.); Victorville, San Bernardino County, December 30 (Mailliard and Grinnell, Condor, 7, 1905:76); San Francisquito Canyon, Los Angeles County, February 23 (Ellis Coll.); Altadena, same county, December 26, 1940 (Mus. Vert. Zool.).

Habitat—Has been noted particularly in weed thickets, old rice fields, tule beds and willow tangles. In general favors riparian growth and damp places as is true of most Song Sparrows.

Melospiza melodia caurina Ridgway
Yakutat Song Sparrow

Status—Rare winter visitant from late September until March.

Geographic range—Northwest coast-line south to San Francisco Bay. Eight records: Big Lagoon, Humboldt County, September 22, 1942 (A. H. Miller MS; Mus. Vert. Zool.); Eureka, Humboldt County, October 8, 1922, October 11, 1931, December 27, 1919, February 20, 1910, March 27, 1921 (Grinnell, Condor, 12, 1910:174; J. M. Davis, Condor, 26, 1924:105, and *ibid.*, 35, 1933:119); Fortuna, same county,

September 19, 1915 (Dickey, Condor, 24, 1922:65); Bay Farm Island, Alameda County, January 20, 1920 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:120).

Habitat—In spite of its rarity in the State, this race has clearly shown a habitat preference according with its littoral distribution in summer in Alaska. With one exception (record at Fortuna, in migration) it has been found in California on or near marine strand-lines. Noted specifically at edge of dense brush on steep rocky bank above coastal lagoon, about piles of beach driftwood, and in salicornia marshes.

Melospiza melodia morphna Oberholser
Rusty Song Sparrow

Synonyms—Fringilla cinerea (?); *Fringilla guttata* (?); *Melospiza rufina*, part; *Melospiza melodia guttata*, part; *Melospiza guttata*; *Melospiza fasciata guttata*, part; *Melospiza fasciata rufina*; *Melospiza cinerea morphna*; *Melospiza melodia rufina*; *Melospiza cinerea phaea*, part; *Melospiza melodia phaea*, part; *Passerella melodia morphna*; Sooty Song Sparrow.

Status—Winter visitant, from late September until mid-March. Fairly common.

Geographic range—Chiefly northern half of State, from Sierran foothills westward. Rarely east of principal mountains, as in Lassen County, and south as far as Riverside County. Selected records indicative of range, especially of its periphery: Seiad Valley P. O., Siskiyou Mountains, Siskiyou County (Anderson and Grinnell, Proc. Acad. Nat. Sci. Phila., 1903:11); Samoa, Humboldt County (Ellis Coll.); Helena, Trinity County, and Tower House, Shasta County (L. Kellogg, Condor, 13, 1911:120); vicinity of Red Bluff, Tehama County, and 5 miles north of Fredonyer Peak, Lassen County, September 30 (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:439); Laytonville, Mendocino County (Swarth, Condor, 25, 1923:221); 3 miles northeast of Colusa, Colusa County, March 5 (Grinnell, Condor, 25, 1923:175); Marysville, Yuba County, and Murphy, Calaveras County, March 20 [not recently verified as to identity] (Belding, Proc. U. S. Nat. Mus., 1, 1879:417); Sebastopol, Sonoma County, Berkeley, Alameda County, September 23 to March 27, Pescadero Creek, San Mateo County, and San Francisco Bay region generally (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:120; A. S. Allen, Condor, 22, 1920:16); Paicines, San Benito County (Mailliard, Condor, 4, 1902:46); Dudley, Mariposa County, and Snelling, Merced County (Grinnell and Storer, Animal Life Yosemite, 1924:469); Fort Tejon, Kern County [identity not recently verified] (Baird, Pac. R. R. Rept., 9, 1858:481); Placerita Canyon, Los Angeles County, February 18 (Brown, Auk, 35, 1918:350); Claremont, same county, December 1 (Pierce, Condor, 22, 1920:156); Riverside, Riverside County, November 3 (Swarth, Condor, 12, 1910:108).

Habitat—Has been noted specifically in weedy thickets, along grassy ditch banks, in old corn fields, and in wooded or brush-bordered gardens. This race is not noticeably restricted to the vicinity of water in the winter season in California.

Melospiza melodia cleonensis McGregor
Mendocino Song Sparrow

Synonyms—Melospiza fasciata samuelis, part; *Melospiza cinerea phaea*, part; *Melospiza cinerea samuelis*, part; *Melospiza cinerea cleonensis*; *Melospiza melodia phaea*, part; Samuels Song Sparrow, part; Oregon Song Sparrow, part.

Status—Permanent resident; abundant. One instance of autumnal vagrancy south of normal range.

Geographic range—Northwest coastal strip from Del Norte County south through Humboldt County to central Mendocino County, chiefly if not entirely within 20 miles of the sea. Life-zone, Transition. Known points of occurrence are within 2000 feet of sea level. Representative stations: Crescent City and Requa, Del Norte County (W. K. Fisher, Condor, 4, 1902:134; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 12, 1923:24); Trinidad, Arcata, Maple Creek, Eureka, near Fair Oaks [=Kneeland], Carlotta, Capetown, and 5 miles north of Weott, all in Humboldt County (Mus. Vert. Zool.; Mailliard, Condor, 18, 1916:199); Westport, Cleone, and Mendocino City, Mendocino County (McGregor, Bull. Cooper Ornith. Club, 1, 1899:87; Mus. Vert. Zool.). Record of vagrant: Olema, Marin County, September 17, 1909 (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:121). For illustration, see frontispiece, 1 (no. 16967 Mus. Vert. Zool.; Cuddeback, Humboldt County).

Habitat—Low dense cover of wide variety of types: blackberry patches, ceanothus clumps, bracken, weeds and brush-piles in logged- or burned-over land, pasture fencerow tangles, baccharis brush, willow thickets, and fresh- and salt-water marshes. Within the narrow coastal range of this race prevailing fogs and rain supply amply the moisture requirements of Song Sparrows even in cover some distance from streams or marshes. Undergrowth in forests is generally not occupied, the birds apparently seeking brush in openings and at forest edges.

Melospiza melodia gouldii Baird
Marin Song Sparrow

Synonyms—Melospiza gouldii; *Melospiza melodia samuelis*, part; *Melospiza samuelis*, part; *Melospiza fasciata samuelis*, part; *Melospiza cinerea samuelis*, part; *Melospiza cinerea gouldi*; *Melospiza melodia*, part; Samuels Song Sparrow, part; Song Sparrow, part.

Status—Permanent resident. Abundant.

Geographic range—Coast districts from interior and southern coastal Mendocino County and Lake County, south to northern shores of San Francisco Bay but exclusive of salt-marsh areas there and of the delta of the Great Valley; ranges from coast inland to western Solano and Yolo counties. Life-zones, Upper Sonoran and Transition. Nesting stations range from near sea level, as at Point Reyes Station, Marin County, up to at least 2300 feet, as at Lierly's, near Mount Sanhedrin, Mendocino County (Mus. Vert. Zool.). Northernmost stations: on coast, Gualala, southern Mendocino County (Grinnell, Pac. Coast Avif. No. 11, 1915:124); interiorly, 6 miles southwest of Laytonville, and Hearst, same county (Mus. Vert. Zool.; Mailliard, Proc. Calif. Acad. Sci., ser. 4, 9, 1919:295). Easternmost stations: Rumsey, Yolo County, and Vacaville, Solano County (Grinnell, *loc. cit.*). At the southern periphery, the range of *M. m. samuelis* of the salt marshes interdigitates with that of *gouldii*, but the two forms are well separated ecologically along the southern shores of Marin, Sonoma, Napa, and extreme southwestern Solano counties. Some stations where *gouldii* has been taken in fresh-water habitat along its southern border are: Elk Valley, hills above Sausalito, and Novato Creek, Marin County, Huichica Creek, 200 feet, Napa County, and Lake Chabot and Cordelia (in fresh-water marsh), Solano County (Mus. Vert. Zool.). Additional references: Grinnell, Univ. Calif. Publ. Zool., 5, 1909:267, and *ibid.*, 10, 1913:

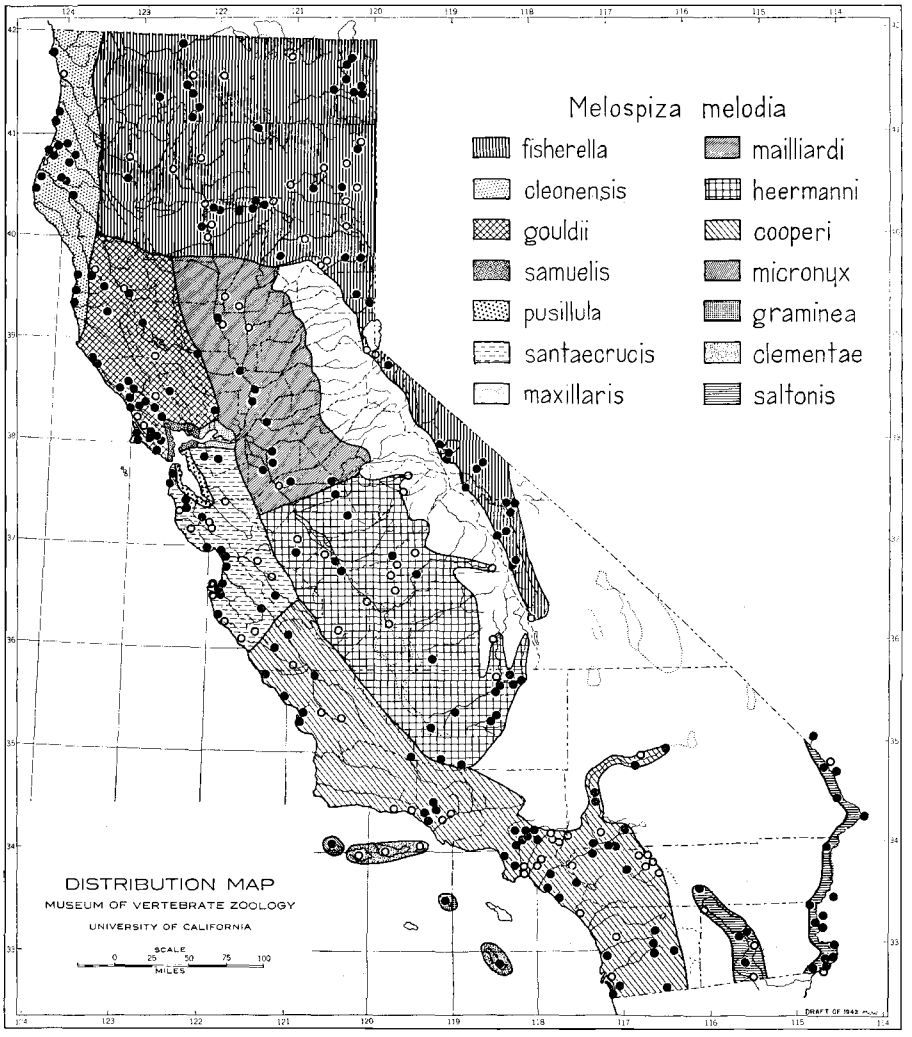

Fig. 57. Distribution of the subspecies of Song Sparrow, *Melospiza melodia*, in California. Dots indicate localities from which resident or breeding birds have been examined; circles, localities reported in the literature. Widths of ranges of races bordering San Francisco Bay necessarily exaggerated; plotting of localities omitted in this region.

191; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:119; Mailliard, Condor, 31, 1929:239; Pitelka, Condor, 44, 1942:172.

Habitat—Brushland on ocean-facing slopes, even down to the shore-line and to edges of salt marshes, but not in them; also, fresh-water marshes and riparian growth, especially willow clumps, bottomland shrubbery and tangles of nettles, blackberry and other vines. Shaded slopes with "soft chaparral" and its associated moist ground and seepages as well as fog-drenched coastal brushland seem to provide sufficient moisture for these Song Sparrows. Only interiorly is limitation to streamsides and fresh-water marshes conspicuous.

Melospiza melodia samuelis (Baird)
Samuels Song Sparrow

Synonyms—Ammodramus samuelis; *Melospiza melodia* var. *gouldii*, part; *Melospiza fasciata samuelis*, part; *Melospiza samuelis*, part; *Melospiza cinerea samuelis*, part; *Melospiza melodia pusillula*, part; Alameda Song Sparrow, part.

Status—Permanent resident. Abundant.

Geographic range—Salt marshes along north side of San Francisco and San Pablo bays, from Richardson Bay east to Carquinez Straits; also on south side of San Pablo Bay southwest to San Pablo Point on Richmond headland. Life-zone, Upper Sonoran; occurs only at sea level along tidal sloughs. Representative localities from which specimens have been examined (Mus. Vert. Zool.; J. T. Marshall, Jr., MS): mouth of Coyote Creek, 1½ miles east of Corte Madera and Saint Vincent, Marin County; Petaluma and Second Napa Slough, Sonoma County; Napa River, 5¾ miles south of Napa, Napa County; South Vallejo marsh, Solano County; near Pinole, Sobrante, and 2 miles west of San Pablo, Contra Costa County. Principal references: Grinnell, Condor, 3, 1901:92, Univ. Calif. Publ. Zool., 5, 1909:267, and *ibid.*, 10, 1913:191; Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:84; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:119. For illustration, see frontispiece, 2 (no. 35906 Mus. Vert. Zool.; Saint Vincent, Marin County).

Habitat—Tidal sloughs in the salicornia marshes, especially in the vicinity of the the taller grindelia bushes that commonly border the channels. The sparrows forage over mud banks, at the water's edge, and through and under the low tangle formed by the picklewood on the flats. The grindelia bushes are used for nesting and song posts and for refuges at high tide. Protecting cover is always close at hand and long flights in the open seldom are indulged in by this bird, indeed would seem not to be required.

Melospiza melodia pusillula Ridgway
Alameda Song Sparrow

Synonyms—Melospiza fasciata samuelis, part; *Melospiza samuelis*, part; *Melospiza fasciata pusillula*; *Melospiza cinerea pusillula*; *Melospiza melodia*, part; Californian Song Sparrow, part; Samuels Song Sparrow, part; Salt Marsh Song Sparrow; Song Sparrow, part.

Status—Permanent resident. Abundant.

Geographic range—Salt marshes bordering south arm of San Francisco Bay, from San Francisco on the west, south to vicinity of Palo Alto and Alviso, Santa Clara County, and thence north on east side of Bay to vicinity of El Cerrito, Contra Costa County. Life-zone, Upper Sonoran; occurs only at marshes at sea level. Representative localities from which specimens have been examined (Mus. Vert. Zool.): South San Francisco and near San Mateo, San Mateo County; near Palo Alto and Alviso, Santa Clara County; 2 miles west of Alvarado, Bay Farm Island, San Leandro Bay, Emeryville, and West Berkeley, Alameda County; mouth of Cerrito Creek and vicinity of Stege, Contra Costa County. Chief references: Emerson, Ornith. and Ool., 10, 1885: 143; McGregor, Bull. Cooper Ornith. Club, 1, 1899:87; Ridgway, Birds N. M. Amer., 1, 1901:370; Grinnell, Condor, 3, 1901:92; Cohen, *ibid.*:185; H. R. Taylor, Warbler, 1, 1905:19; Grinnell, Univ. Calif. Publ. Zool., 10, 1913:191; Hansen and Squires, Con-

dor, 19, 1917:61; Dawson, Birds Calif., 1, 1924:349; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:120; A. H. Miller, Amer. Nat., 76, 1942:35. For illustration, see frontispiece, 3 (no. 35922 Mus. Vert. Zool.; near Palo Alto, Santa Clara County).

Habitat—Salicornia marshes, as in race *M. m. samuelis*, which see. Many nests of this subspecies are reported from low in grindelia bushes, although high enough to escape flooding by high tides. Other nests are reported close to the wet ground in the salicornia.

Melospiza melodia santaecrucis Grinnell
Santa Cruz Song Sparrow

Synonyms—Melospiza heermanni, part; *Melospiza melodia heermanni*, part; *Melospiza melodia samuelis*, part; *Melospiza fasciata heermanni*, part; *Melospiza fasciata samuelis*, part; *Melospiza samuelis*, part; *Melospiza fasciata*, part; *Melospiza cinerea samuelis*, part; *Melospiza cinerea santaecrucis*; *Melospiza melodia*, part; Californian Song Sparrow, part; Heermann Song Sparrow, part; Samuels Song Sparrow, part; Song Sparrow, part.

Status—Permanent resident. Abundant.

Geographic range—Coast ranges and coastal valleys, exclusive of salt marshes of San Francisco Bay, from the Golden Gate and Carquinez Straits south to northern Monterey and San Benito counties; from these areas southward into San Luis Obispo County, intergradation with *M. m. cooperi* occurs. Eastwardly *santaecrucis* extends to the west base of Mount Diablo, Contra Costa County, and to the Hollister district, San Benito County. Life-zones, Upper Sonoran and Transition. Nesting stations range from near sea level up to about 3500 feet, as on Santa Lucia Peak, Monterey County (Pemberton and Carriger, Condor, 17, 1915:200). Selected references bearing on distribution and natural history: San Francisco (Ray, Condor, 8, 1906:44); Daly City, San Mateo County (Grinnell, Auk, 42, 1925:247); ½ mile south of Avon, Rodeo Creek, and Richmond Hills, Contra Costa County (J. T. Marshall, Jr., MS; Mus. Vert. Zool.); Berkeley, Hayward, and Irvington, Alameda County (Grinnell, Condor, 16, 1914:35; Hall, Condor, 29, 1927:274; Emerson, Ornith. and Ool., 10, 1885:143; Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:84, part; Friedmann, Wilson Bull., 46, 1934:114); Calaveras Valley, Santa Clara County (Carriger and Ray, Condor, 13, 1911:74); Palo Alto and Los Gatos, Santa Clara County (Grinnell, Condor, 3, 1901: 92; Van Denburgh, Proc. Amer. Philos. Soc., 38, 1899:173); Big Basin, Santa Cruz Mountains (Orr, Amer. Midl. Nat., 27, 1942:337); Paicines, San Benito County, intergrades (Mailliard and Mailliard, Condor, 3, 1901:125; Grinnell, Pac. Coast Avif. No. 11, 1915:125); Point Lobos, Monterey County (Grinnell and Linsdale, Carnegie Inst. Wash., publ. 481, 1933:132); Big Creek, Monterey County (Jenkins, Condor, 8, 1906: 128; Pemberton and Carriger, *loc. cit.*); in general (Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:119).

Habitat—Riparian brush, vine and weed thickets (except within forest or dense woodland), garden shrubbery, fresh-water marsh growth, and coastal, fog-swept chaparral. An essential combination of dense, tangled vegetation, and moist ground or surface water is provided by each of these types of habitat. The cover is not only required for safety retreats and nest sites at low levels but it is often hunted through in almost wren-like fashion; crevices, holes and branch tangles are entered and inspected for insect food. In fall and winter some scattering to drier situations is noted, especially to thickets of dead grass and annuals in fairly open fields.

Melospiza melodia maxillaris Grinnell
Suisun Song Sparrow

Synonyms—Melospiza cinerea heermanni, part; Heermann Song Sparrow, part.

Status—Permanent resident. Abundant.

Geographic range—Marshes surrounding Suisun Bay, more particularly from vicinity of confluence of Sacramento and San Joaquin rivers (near Antioch) west to Carquinez Straits. Life-zone, Upper Sonoran; breeds only in estuarine marshes at or near sea level. Specific localities whence reported: Antioch, Martinez (not typical), and Port Costa, Contra Costa County (Mus. Vert. Zool.); Grizzly Island, marshes near Suisun, Cordelia Slough, and Benicia, Solano County (Grinnell, Univ. Calif. Publ. Zool., 5, 1909:26, and *ibid.*, 10, 1913:191; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:120). Intergrades eastwardly with the rather heterogeneous *M. m. mailliardi*, as at Rio Vista, Solano County (Mus. Vert. Zool.). For illustration, see frontispiece, 6 (no. 10586 Mus. Vert. Zool.; Cordelia Slough, Solano County).

Habitat—Brackish-water marshes. Plant growths frequented include cattails, tules and other sedges, and salicornia. Tangles bordering sloughs and those growing in the water are occupied as well as cover over moist ground.

Note—We now doubt that individuals of *maxillaris* wander far from the normal range of the race (see Grinnell, Univ. Calif. Publ. Zool., 7, 1911:198); birds resembling this race occur as variants in *M. m. mailliardi*.

Melospiza melodia mailliardi Grinnell
Modesto Song Sparrow

Synonyms—Zonotrichia cinerea (?); *Melospiza heermanni*, part; *Melospiza fasciata heermanni*, *Melospiza fasciata*, part; *Melospiza cinerea heermanni*, part; *Melospiza melodia maxillaris*, part; Californian Song Sparrow, part; Heermann Song Sparrow, part; Mailliard Song Sparrow.

Status—Permanent resident. Common.

Geographic range—Central lower basin of Great Valley, from Colusa County south to Stanislaus County and east of Suisun Marshes. Life-zones, Lower Sonoran and Upper Sonoran. Breeds chiefly, perhaps entirely, below 200 feet elevation; Song Sparrows of undetermined status occur rarely at greater elevations along stream courses of Sierran foothills adjacent to this race and they possibly belong to it. Records and references known to pertain to *mailliardi*: Butte Creek in Colusa, extreme southwestern Butte, and Sutter counties (Grinnell, Condor, 25, 1923:175); Marysville, Yuba County (Hellmayr, Cat. Birds Amer., pt. 11, 1938:604); 5 miles northwest of Elkhorn Ferry, Yolo County (Mus. Vert. Zool.); Sacramento and 6 miles north of Courtland, Sacramento County (Ridgway, U. S. Geol. Expl. Fortieth Parallel, Ornithology, 1877:330; Mus. Vert. Zool.); Tracy Lake, Stockton, Lathrop, and Banta, San Joaquin County (Belding, Proc. U. S. Nat. Mus., 1, 1879:417; Grinnell, Pac. Coast Avif. No. 11, 1915:126; Mus. Vert. Zool.); confluence of Tuolumne and San Joaquin rivers near Modesto, Stanislaus County (Grinnell, Univ. Calif. Publ. Zool., 7, 1911:197, and Condor, 13, 1911:110).

Habitat—Fresh-water marshes and riparian thickets. Predominant plant cover consists of willow and nettle thickets and growths of tules and cattails.

Melospiza melodia heermanni Baird
Heermann Song Sparrow

Synonyms—Melospiza heermanni, part; *Zonotrichia guttata*; *Melospiza fasciata heermanni*, part; *Melospiza cinerea heermanni*, part; Brown Song Sparrow; Coast Song Sparrow, part; Californian Song Sparrow, part.

Status—Permanent resident. Common, locally abundant; numbers have greatly increased in the last thirty-five years owing to development of irrigation systems in previously unoccupied parts of its general range.

Geographic range—Southern part of San Joaquin Valley, from Merced County to Kern County, including river courses in foothills and lower mountains which drain into it. Life-zones, Lower Sonoran and Upper Sonoran, rarely Transition. Altitudes of nesting stations range from 100 feet, as near Los Baños, Merced County (Mus. Vert. Zool.) up to 5000 feet, at Zumwalt Meadow, Kings Canyon, Fresno County (J. S. Dixon, Condor, 45, 1943:219). Other localities selected to indicate range: Yosemite Valley and Wawona, Mariposa County (E. Michael, Yosemite Nature Notes, 18, 1939:99; Widmann, Auk, 21, 1904:72); Planada, Merced County (Mus. Vert. Zool.); Letcher, Lane's Bridge, Fresno, and Wheatville, Fresno County (Tyler, Pac. Coast Avif. No. 9, 1913:84); Coalinga, western Fresno County (J. R. Arnold, Condor, 39, 1937:35); Earlimart, Tulare County (Grinnell, Condor, 13, 1911:110); Tulare Lake, Kings County (Goldman, Condor, 10, 1908:205); Buena Vista Lake, San Emigdio Canyon, and Bakersfield, Kern County (Linton, Condor, 10, 1908:198; A. K. Fisher, N. Amer. Fauna No. 7, 1893:99); Onyx and Walker Basin, same county (Fisher, *loc. cit.*; Grinnell, Pac. Coast Avif. No. 11, 1915:126); Fort Tejon, same county (Baird, Pac. R. R. Rept., 9, 1858:478; Grinnell, Univ. Calif. Publ. Zool., 5, 1909:266). General references: Dawson, Birds Calif., 1, 1924:354; Beal, U. S. Dept. Agr., Biol. Surv. Bull. No. 34, 1910:84, part, food. For illustration, see frontispiece, 7 (no. 27333 Mus. Vert. Zool.; Minkler, Fresno County).

Habitat—Tules, cattails and nettles along lake shores, and in reservoirs, sloughs, and irrigation ditches, and willow thickets of river bottoms and lower mountain meadows. Adherence to the vicinity of water is close in this race because of the otherwise arid condition of the terrain within its range.

Melospiza melodia cooperi Ridgway
San Diego Song Sparrow

Synonyms—Zonotrichia fasciata; *Melospiza heermanni*, part; *Melospiza melodia heermanni*, part; *Melospiza fasciata heermanni*, part; *Melospiza fasciata samuelis*, part; *Melospiza samuelis*, part; *Melospiza fasciata graminea*, part; *Melospiza fasciata cooperi*; *Melospiza melodia graminea*, part; *Melospiza cinerea cooperi*; *Melospiza melodia santaecrucis*, part; *Melospiza melodia*, part; Song Sparrow, part; Californian Song Sparrow, part; Heermann Song Sparrow, part; Samuels Song Sparrow, part; Santa Barbara Song Sparrow, part.

Status—Permanent resident. Abundant.

Geographic range—Valleys of coast ranges from southern Monterey County southward, and Pacific slopes of southern California south to Mexican boundary; extends eastward across desert divides into Mohave River drainage and to streams on east side of San Jacinto Mountains and mountains of San Diego County. Life-zones, Lower So-

noran and Upper Sonoran. Altitudes of nesting stations range from near sea level, as at Santa Barbara, Santa Barbara County, up to 5000 feet, as at Seven Oaks, San Bernardino Mountains; late summer vagrants have been taken as high as 7500 feet. Northernmost localities (intergrades nearest *cooperi*): San Lucas and Jolon, Monterey County; San Carpojo Creek, San Luis Obispo County (Mus. Vert. Zool.). Easternmost stations: near Yermo, and Camp Cady [=Manix] San Bernardino County (Lamb, Condor, 14, 1912:38; Mus. Vert. Zool.); Palm Canyon, Riverside County (Grinnell and Swarth, Univ. Calif. Publ. Zool., 10, 1913:279); Vallecitos and Campo, San Diego County (Mus. Vert. Zool.). Selected references bearing on natural history and distribution: Cuyama Valley, San Luis Obispo County (Grinnell, Pac. Coast Avif. No. 11, 1915:125); Santa Barbara, Santa Barbara County (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:244; Dawson, Birds Calif., 1, 1924:351ff.); coast of Ventura County (van Rossem, Condor, 26, 1924:217, 220); vagrant to Santa Catalina Island (von Bloeker, Condor, 38, 1936:37); Los Angeles (H. W. Myers, Condor, 12, 1910:165); Pasadena and Azusa, Los Angeles County (J. R. Michener, Condor, 28, 1926:65; Woods, Condor, 34, 1932:239); Claremont, Los Angeles County, homing (Sumner and Cobb, Condor, 30, 1928:317); Arrowhead Hot Springs, Victorville, and San Bernardino Mountains, San Bernardino County (Mailliard, Condor, 21, 1919: 212; Mailliard and Grinnell, Condor, 7, 1905:76; Grinnell, Univ. Calif. Publ. Zool., 5, 1908:98); Escondido, San Diego County (Sharp, Condor, 9, 1907:89); extreme dates of nesting (Willett, Pac. Coast Avif. No. 21, 1933:185); occupation of nests by mice (Edwards, Condor, 21, 1919:68); parasitism by cowbirds (Friedmann, Wilson Bull., 46, 1934:114).

Habitat—Primarily riverbottom thickets of nettles, blackberries and willows; fresh-water marshes and at least margins of salt marshes, and garden shrubbery. The presence of water is essential coupled with cover. Some increase in total numbers has resulted from settlement of the coastal plain and the consequent development of water supply.

Melospiza melodia micronyx Grinnell
San Miguel Song Sparrow

Synonyms—Melospiza melodia clementae, part; *Melospiza cinerea clementae*, part; *Melospiza clementae*, part; San Clemente Song Sparrow, part.

Status—Permanent resident. Common.

Geographic range—Restricted to San Miguel Island off the coast of Santa Barbara County. Chief references: Oberholser, Proc. U. S. Nat. Mus., 22, 1900:232; Willett, Condor, 12, 1910:172; van Rossem, Condor, 26, 1924:219ff.; Grinnell, Proc. Biol. Soc. Wash., 41, 1928:37; Willett, Pac. Coast Avif. No. 21, 1933:186.

Habitat—Low shrubs and herbs, principally loco weed. Sand hills occupy much of the island and such vegetation as originally was present has been depleted through grazing and subsequent erosion. Accordingly, cover is exceptionally scanty for Song Sparrows; nevertheless they persist in good numbers (C. Lamb MS, 1927). Moisture requirements are met largely by condensation from fog.

Melospiza melodia graminea C. H. Townsend
Santa Barbara Island Song Sparrow

Synonyms—Poospiza belli, part; *Melospiza heermanni*, part; *Melospiza fasciata graminea*, part; *Melospiza cinerea graminea*, part; *Melospiza graminea*, part; Bell Finch, part; Coast Song Sparrow, part; Californian Song Sparrow, part.

Status—Permanent resident. Abundant.

Geographic range—Restricted to Santa Barbara Island. Chief references: Cooper, Proc. Calif. Acad. Sci., 4, 1870:78; Townsend, Proc. U. S. Nat. Mus., 13, 1890:139; Grinnell, Pasadena Acad. Sci., publ. 1, 1897:6; Howell, Pac. Coast Avif. No. 12, 1917: 80; van Rossem, Condor, 26, 1924:218ff.; Grinnell, Proc. Biol. Soc. Wash., 41, 1928: 38; Willett, Pac. Coast Avif. No. 21, 1933:185).

Habitat—Sparse brush cover of slopes and ravines (Grinnell, 1897, *loc. cit.*). Also reported in long coarse grass (Townsend, *loc. cit.*). Bushes are used for nesting. As in other island races, fog supplies moisture essential to birds of this type.

Melospiza melodia clementae C. H. Townsend
San Clemente Song Sparrow

Synonyms—Melospiza heermanni, part; *Melospiza melodia* var. *heermanni*, part; *Melospiza fasciata samuelis*, part; *Melospiza fasciata clementae*; *Melospiza fasciata graminea*, part; *Melospiza cinerea clementae*, part; *Melospiza cinerea graminea*, part; *Melospiza graminea*, part; *Melospiza clementae*, part; *Melospiza melodia graminea*, part; Coast Song Sparrow, part; Heermann Song Sparrow, part; Santa Barbara Song Sparrow, part.

Status—Permanent resident. Common on San Clemente Island, less numerous in northern part of range.

Geographic range—Santa Rosa, Santa Cruz, Anacapa and San Clemente islands; thus unexpectedly absent from Santa Catalina and Santa Barbara islands which lie between northern and southern parts of range (Santa Barbara occupied by *M. m. graminea*; Santa Catalina unpopulated, although vagrants, presumably of *M. m. cooperi*, reported). Possibly occurs on mainland rarely as a vagrant, as at Santa Barbara (Willett, Pac. Coast Avif. No. 21, 1933:186). Principal references: Santa Rosa Island (Townsend, Proc. U. S. Nat. Mus., 13, 1890:139; Oberholser, Proc. U. S. Nat. Mus., 22, 1900:232; van Rossem, Condor, 26, 1924:219; Willett, *loc. cit.*); Santa Cruz Island (Henshaw, Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:244; Mailliard, Bull. Cooper Ornith. Club, 1, 1899:44; Beck, *ibid.*:86; van Rossem, *loc. cit.*); Anacapa Island (Pemberton, Condor, 30, 1928:145); San Clemente Island (Cooper, Proc. Calif. Acad. Sci., 4, 1870:78; Townsend, *loc. cit.*; Grinnell, Pasadena Acad. Sci., publ. 1, 1897:18; Linton, Condor, 10, 1908:85; Howell, Pac. Coast Avif. No. 12, 1917:82). For illustration, see frontispiece, 4 (no. 8447 Mus. Vert. Zool.; San Clemente Island).

Habitat—Low vegetation, of considerable variety, such as provides retreats and nest sites above ground: brush in creek and canyon bottoms, low bushes and weed patches on mesas and in ravines, tangles of cactus and vines, grass clumps intermixed with cactus, and planted hedges about settlements. Water is usually not available except as it condenses on vegetation. The birds occur generally over the islands where suitable cover permits; however, they are notably local on Santa Cruz Island.

Melospiza melodia saltonis Grinnell
Desert Song Sparrow

Synonyms—*Melospiza fallax*, part; *Melospiza melodia fallax*, part; *Melospiza cinerea fallax*; Arizona Song Sparrow; Western Song Sparrow; Salton Sink Song Sparrow.

Status—Permanent resident. Abundant within narrowly circumscribed habitat.

Geographic range—Valley of Colorado River from Nevada line to Mexican boundary and waterways in Imperial Valley north to vicinity of Salton Sea in Imperial and Riverside counties. Twice recorded as a vagrant in Mohave-Inyo region. Life-zone, Lower Sonoran. Nesting stations range from —200 feet, as near Mecca, Riverside County, up to 500 feet in vicinity of Needles, San Bernardino County. Principal references pertaining to normal range: Needles (Hollister, Auk, 25, 1908:460); Colorado River valley generally, south to Pilot Knob (Grinnell, Univ. Calif. Publ. Zool., 12, 1914:174); Laguna Dam, Imperial County (J. B. Dixon, Condor, 36, 1934:36); Calexico, same county (Friedmann, Wilson Bull., 46, 1934:114); Alamo River, Salton Sea, and Mecca (van Rossem, Condor, 13, 1911:133, 136; Grinnell, Univ. Calif. Publ. Zool., 5, 1909:268); in general, Dawson, Birds Calif., 1, 1924:358). Vagrants: Oro Grande, San Bernardino County, February 18, 1918 (Pierce, Condor, 20, 1918:126); Furnace Creek Ranch, Death Valley, Inyo County, April 5, 1920, non-breeding (Grinnell, Proc. Calif. Acad. Sci., ser. 4, 13, 1923:93). For illustration, see frontispiece, 8 (no. 13266 Mus. Vert. Zool.; Colorado River, opposite Cibola).

Habitat—Riparian plant associations, most notably those dominated by arrowweed (*Pluchea*), guatemote (*Baccharis*) and young willows, and tule beds and cattails in marshes, overflow sumps and along irrigation systems. Nests are placed in the vegetation above the mud which marks flood level. Development of irrigation has undoubtedly increased the total population of this race in the last 30 years. Although usually sharply limited to water-seeking plants, and most abundant in cover growing over or at the edge of water, this Song Sparrow has occasionally been noted in mesquite thickets at some distance from water (van Rossem, *loc. cit.*).

Calcarius lapponicus alascensis Ridgway
Alaska Lapland Longspur

Synonym—Alaska Longspur.

Status—Rare and sporadic winter visitant; occasionally occurs in numbers in northeastern plateau region. Records based on specimens: False Bay, San Diego County, October 2, 1909 (Stephens, Condor, 12, 1910:44); Gunther's Island, Eureka, Humboldt County, on same date!—October 2, 1909 (Marsden, Condor, 12, 1910:110); 3 miles north of Standish, Lassen County, 4 specimens, January 20, 21, 24, 1935, others noted (McLean, Condor, 38, 1936:17); 8 miles east of Litchfield, Lassen County, January 2, 1937 (McLean, Condor, 39, 1937:229). These longspurs have been noted in open terrain, as on mud flats, in association with horned larks, and at the edge of tidal marshes.

Calcarius ornatus (J. K. Townsend)
Chestnut-collared Longspur

Status—Rare vagrant from northeastward. One record: immature female (no. 28260 Mus. Vert. Zool.) taken on Lee Flat, 15 miles north of Darwin, Inyo County, September 28, 1917 (Grinnell, Condor, 20, 1918:87). The bird was on the ground at the seepage from a water-trough.

SUPPLEMENTARY LIST

INTRODUCED SPECIES AND THOSE OF UNCERTAIN OCCURRENCE

Colymbus dominicus Linnaeus

Santo Domingo Grebe

Synonyms—Sylbeocyclus dominicus; *Podiceps dominicus*; *Colymbus dominicus brachypterus*; Mexican Grebe.

Status—William Gambel has been reported as ascribing "*Podiceps dominicus*" to "California" in "1847" (Coues, Birds Northwest, 1874:736; Coues, Bull. Nutt. Ornith. Club, 2, 1877:26; Cooper, *ibid.*, 97). Neither any such published ascription, nor a basis for it, has been uncovered (see Grinnell, Pac. Coast Avif. No. 11, 1915:174). The species (race *bangsi* van Rossem and Hachisuka) occurs as near to our southern boundary as latitude 27° in Lower California.

Diomedea chrysostoma Forster

Gray-headed Albatross

Synonyms—Diomedea culminata; *Thalassogeron culminatus*; *Thalassarche culminata*; *Thalassogeron chrysostomus culminatus*; *Thalassogeron chrysostomus*; Yellow-nosed Albatross; Culminated Albatross; Flat-billed Albatross.

Occurrence—A skull (formerly in Calif. Acad. Sci.) identified by Dr. J .G. Cooper as of the species *Thalassogeron culminatus* "was taken by Dr. W. O. Ayres [prior to 1868] from a dead specimen found on the outer beach near the Golden Gate," San Francisco (Baird, Brewer and Ridgway, Water Birds N. Amer., 2, 1884:359; Cooper, Proc. Calif. Acad. Sci., 4, 1868:12). Original identification corroborated by Loomis (Proc. Calif. Acad. Sci., ser. 4, 2, 1918:84-85). However, this skull, "wanting the lower jaw," was destroyed in the fire of 1906. Since there are several, not so very different species of albatross recognized from Pacific waters, it seems impossible to make sure of the identity as of one or another of the now known forms. Then there is the possibility of individual birds being brought on ship-board from distant seas, dying or being killed as port is entered, and the remains thrown overboard.

Phoebetria palpebrata (Forster)

Light-mantled Sooty Albatross

Synonyms—Phoebetria fuliginosa, part; *Phoebetria palpebrata auduboni*; Sooty Albatross, part; American Sooty Albatross.

Status—Ascribed to California (W. E. Bryant, Zoe, 3, 1892:137) merely because it is a southern species and had supposedly been found off the coast of Oregon. No more definite record for the State. The citation referred to by Willett (Pac. Coast Avif. No. 7, 1912:110) undoubtedly belongs under *Diomedea nigripes*. The species belongs to the antarctic fauna (see Murphy, Oceanic Birds S. Amer., 1936:498).

Macronectes giganteus (Gmelin)

Giant Fulmar

Synonyms—Fulmarus giganteus; *Ossifraga gigantea*.

Status—Known only from the statement by Cooper (Amer. Nat., 4, 1871:758; Baird, Brewer and Ridgway, Water Birds N. Amer., 2, 1884:365) that this "enormous Petrel or 'Gong' (*Ossifraga gigantea*), could often be seen" in the summer of 1861 about the whale fishery in Monterey Bay, "swimming lazily near the try-works to pick up scraps of blubber, sometimes accompanied by the dusky young of the Short-tailed Albatross (*Diomedea brachyura*)." Cooper's identification has been discredited (Loomis, Proc. Calif. Acad. Sci., ser. 4, 2, 1918:87) because no specimen came actually to hand. Even so, considering the habits of the Giant Fulmar (see Murphy, Oceanic Birds S. Amer., 1936:584ff.), its occurrence in our latitudes would be but little more astonishing than that of several other birds of south-equatorial seas, of which specimens have been taken here.

Priocella antarctica (Stephens)

Silver-gray Fulmar

Synonyms—Fulmarus glacialoides; *Priocella glacialoides*; Slender-billed Fulmar.

Status—A skeleton supposed by J. G. Cooper to be of this bird was found on the beach of Santa Catalina Island in June, 1863 (Baird, Brewer and Ridgway, Water Birds N. Amer., 2, 1884:374). The

fate of this specimen, whether saved, is not known. Also Cooper (*in op. cit.*:384) was under the impression he had seen this species in company of Pink-footed Shearwaters "along the coast from San Francisco south" in "the six warmer months of the year." It is likely that he misidentified or confused some of the shearwaters. The species here in question breeds in the antarctic zone and ranges only casually north of southern sub-tropical seas (see Murphy, Oceanic Birds S. Amer., 1936:596ff.).

Pterodroma inexpectata (Forster)

Scaled Petrel

Synonym—Mottled Petrel.

Status—Seven specimens (nos. 1134-1140 Calif. Acad. Sci.) taken by R. H. Beck, "November 19, 1906, in latitude 35° 40′ N., longitude 133° 10′ and 14′ W."; and seen further, up to November 26, then in latitude 36° 43′, longitude 129° 31′ (Loomis, Proc. Calif. Acad. Sci., ser. 4, 2, 1918:104). The last of these points is only about 400 miles off San Francisco; but even so, the record is hardly close enough to warrant putting this species into the regular California list. The species breeds in New Zealand and has been reported at non-breeding times from several widely separated places in the North Pacific Ocean (see Bent, U. S. Nat. Mus., Bull. 121, 1922:117ff.).

Pterodroma leucoptera masafuerae Lönnberg

Mas Afuera White-winged Petrel

Synonyms—Pterodroma longirostris; Stejneger Petrel.

Status—Five specimens (nos. 1141-1145 Calif. Acad. Sci.) taken by R. H. Beck, November 14 and 19, 1906, two of them in latitude 33° 6′ N, longitude 134° W, and three of them in latitude 35° 40′ N, longitudes 133° 10′ and 14′ W (Loomis, Proc. Calif. Acad. Sci., ser. 4, 2, 1918:92). The nearest of these stations is thus about 600 miles off San Francisco—hardly close enough for inclusion of the species in the fauna of California. But the chances are strong of nearer occurrences being detected whenever our off-shore waters are given thorough scrutiny all through the year.

Note—Several closely-related species and subspecies have been characterized, with breeding grounds in most cases south of the equator (see Murphy, Amer. Mus. Novitates No. 370, 1929: fig. 1). The specimens in question have been identified (Moffitt, Auk, 55, 1938:255) as of the race named from Mas Afuera Island, Juan Fernandez group, Chile.

Sula leucogaster brewsteri Goss

Brewster Brown Booby

Sula dactylatra californica Rothschild

Pacific Masked Booby

Synonyms—Sula bassana (?); *Sula fusca* (?); *Sula fiber* (?); *Sula brewsteri* (?); Gannet (?); Pacific Blue-faced Booby (?); Brewster Booby (?); Booby (part).

Status—Problematic: Newberry (Pac. R. R. Repts., 6, 1857:107, 108) records seeing two species of *Sula* "off the coast of California" during a voyage from San Francisco to Panama. One he calls: "Sula bassana. The Gannet"; the other: "Sula fusca. The Booby." Cooper (Bull. Nutt. Ornith. Club, 2, 1877:96) surmises that these may have been, respectively, "*S. piscator* (Linn.)" and "*S. cyanops*, Sund.," which, in modern nomenclature, would probably be *Sula leucogaster brewsteri* and *Sula dactylatra californica*. The latter form was named (Rothschild, Bull. Brit. Ornith. Club, no. 303, 1915:43) from San Benedicto Island, Mexico, and was ascribed also to "Coasts of California." But no basis is known to us for ascription to Upper California; and even from Lower California we know of only one verifiable record (Grinnell, Univ. Calif. Publ. Zool., 32, 1928:69). The Brown Booby is much the more likely of these two species to straggle up into California, for it breeds commonly in the Gulf of California. Obviously neither species can yet be added on regular status to the California state list.

Note—The colors of plumage and soft parts in *Sula* are so variable that reliance for identification of species upon anything less than a bird in hand is hazardous. (See also under *Sula nebouxii*, page 52.)

Anhinga anhinga (Linnaeus)

Water-turkey

Synonyms—Darter; Anhinga.

Status—Individuals scrutinized by Allan Brooks and W. L. Dawson, February 9 and 12, 1913, above Laguna Dam, at Potholes, on the California side of the lower Colorado River, Imperial County (Brooks, Condor, 15, 1913:182; Dawson, Condor, 18, 1916:24; Dawson, Birds Calif., 4, 1924:1936).

May prove of fairly regular occurrence in that locality, since this subtropical species has been reported also from the Arizona side of the Colorado River below Yuma. Also a vagrant Water-turkey, possibly escaped from captivity, seen repeatedly, June 2 to 29, 1939, at Lake Merced, San Francisco (G. Bolander, Gull, 21, 1939:70; Myer, *ibid.*:87; *et al.*). But, as yet, no actual specimen has been obtained in California. (The race *A. h. minima* van Rossem (Ann. Mag. Nat. Hist., 4, 1939:439) is the form most likely to appear in California.)

Fregata minor ridgwayi Mathews

Ridgway Man-o'-war-bird

Synonyms—Fregata minor palmerstoni, part (?); Pacific Man-o'-war-bird (?); Frigate-bird, part (?).

Status—"Birds from the coasts of California and Lower California" have been stated positively to belong to a race of the species *minor* (Oberholser, Auk, 34, 1917:469). However, while there is a fair chance of wanderers of this east-Pacific form reaching our coast, re-examination of available specimens shows none but what belong to the species *Fregata magnificens*, which see (pp. 54-55). (See also A.O.U. Check-list, ed. 4, 1931:25; Swarth, Condor, 35, 1933:148ff.; Murphy, Oceanic Birds. S. Amer., 1936:921, 937). Until such time as an actual specimen of *minor* from Californian waters is at hand, hypothetical status is in order.

Dichromanassa rufescens rufescens Gmelin

Northern Reddish Egret

Synonyms—Dichromanassa rufescens dickeyi; *Dichromanassa rufescens*; Lower California Reddish Egret.

Occurrences—One lone individual "closely scrutinized" by two observers, on February 12, 1931, on tidal flats at south end of San Diego Bay near Coronado Heights (Huey, Condor, 33, 1931:125). One seen on flats between North Island and Coronado, in same region, September 25, 1937 (Delareuelle, Condor, 40, 1938:183). Although there can be no question of the correctness of these identifications, the "records" do not, by our definition, warrant inclusion of the species in regular standing on our State list.

Florida caerulea (Linnaeus)

Little Blue Heron

Status—Probably sporadic winter visitant from the south, along the seacoast; but evidence not wholly conclusive in that no specimens have been taken.

Occurrences—Reported in rather casual fashion as a "rare winter visitant" to Sequoia and General Grant National Parks prior to 1912, but this record definitely to be ruled out (Grinnell, Condor, 15, 1913:188); one, at times two, birds watched on different occasions (specific dates given, January 2 and February 1, 1934) in the winters of 1931-32, 1932-33 and 1933-34, at Point Mugu, Ventura County (L. Miller, Condor, 36, 1934:178; but see L. Miller, Condor, 39, 1937:17); an individual seen almost daily during the three months up to January 8, 1936, in the environs of Santa Cruz, Santa Cruz County (Danby, Condor, 38, 1936:88); a bird in adult plumage watched by three observers on August 10, 1940, in Mountain View Marshes, Santa Clara County [much the most certain sight record] (Watson, Gull, 22, 1940:37). It is suggested that some of the recent sight records of "Snowy Heron" may really have pertained to the Little Blue Heron in white phase.

Nyctanassa violacea (Linnaeus)

Yellow-crowned Night Heron

Synonym—Nycticorax violaceus.

Status—Speculative: conjectured to occur on lower Colorado River in vicinity of Fort Yuma, Imperial County (Goss, Birds Kansas, 1891:130). There is even better ground to expect stragglers from the south across the Mexican line into San Diego County.

Chenopis atrata (Latham)

Black Swan

Status—Imported from Australia, and sometimes seen out of captivity, on lowland bodies of water in company of wild waterfowl. Cooper (Proc. Calif. Acad. Sci., 4, 1868:9) stated that he knew of five or six escaped birds having been brought in dead to "taxidermists as great curiosities."

Branta ruficollis (Pallas)

Red-necked Goose

Synonym—Red-breasted Goose.

Occurrence—A bird formerly in the collection of the California Academy of Sciences was bought by L. Belding in a San Francisco game market in the winter, probably, of 1892-93 and presented by him to the then curator, W. E. Bryant (Anthony, Condor, 31, 1929:181; see also earlier version given by Dawson, Birds Calif., 4, 1924:2100). Prior to its destruction in the fire of 1906, the specimen had been authoritatively identified as to species. While the evidence indicated fairly well that this bird had been shot by a market hunter on "the wheat fields of the country to the north of the city," still hesitancy is felt at placing this goose on full State-list rating. The species is native to Siberia.

Anas fulvigula maculosa Sennett

Mottled Ridgway Duck

Occurrence—A female duck taken near Los Baños, Merced County, October 7, 1908 (now no. 12581 Calif. Acad. Sci.) was hesitantly referred to this species [subspecies still more doubtful] (Mailliard, Condor, 23, 1921:28). Subsequently submitted to Mr. Wharton Huber, of the Academy of Natural Sciences, Philadelphia, the specimen was pronounced, with fair certainty, to be "a hybrid of a domestic mallard and muscovy."

Anas diazi novimexicana Huber

New Mexican Diaz Duck

Synonym—Huber Duck.

Occurrence—One record: female specimen (Biol. Surv. Coll., U. S. Nat. Mus.) taken in July, 1900, at Grafton, Yolo County (Phillips, Nat. Hist. Ducks, 2, 1923:56, 58). Much can be urged for considering this occurrence a perfectly "natural" one. On the other hand, the known zeal of certain sportsmen to stock their open-air aviaries, even their shooting grounds, with everything obtainable in the way of non-native waterfowl, serves to cast doubt on records like the present one. A non-game species of similar circumstance would probably be "accepted" without question.

Anas rubripes Brewster

Black Duck

Synonym—*Anas rubripes tristis.*

Occurrence—One formal record: adult, presumably a female (no. 17198 Mus. Vert. Zool.), taken at Willows, Glenn County, February 1, 1911 (Grinnell, Condor, 8, 1911:138; Grinnell, Bryant and Storer, Game Birds Calif., 1918:102). Because this species is one that is commonly "planted" on shooting preserves, the probability is strong that the occurrence here cited is not "natural."

Anas crecca Linnaeus

European Teal

Synonym—*Nettion crecca.*

Status—Known chiefly from J. G. Cooper's statement that this species had been "found not rarely in California" (Auk, 3, 1886:125). Also thought by Belding (MS) to have bred in marshes near Stockton (see Grinnell, Bryant and Storer, Game Birds Calif., 1918:119). No California-taken specimen is known to have been preserved in any museum. To say the least, these records "require further proof" (Phillips, Nat. Hist. Ducks, 2, 1923:217).

Anas formosa Georgi

Baikal Teal

Synonym—*Nettion formosum.*

Occurrence—One formal record, of adult male (now no. 61006 Mus. Vert. Zool.) taken by Frederick M. Johnson near Brentwood, Contra Costa County, December 13, 1931 (Moffitt, Condor, 34, 1932:193; see also A. M. Bailey, Auk, 50, 1933:97). This record has been rather positively disposed of, as of an "escape" (Swarth, Condor, 34, 1932:259). The species is commonly imported from Asia for the live-bird market.

Anas falcata Georgi

Falcate Teal

Synonym—*Eunetta falcata.*

Status—An Asiatic species often appearing in the live-bird market. Capture in the wild there-

fore to be expected but not to be considered "the result of a wild bird's volitional movements" (Swarth, Condor, 34, 1932:259). Swarth further remarks: "I have examined altogether 32 species of foreign wild ducks that have been brought here [San Francisco] alive, some in considerable numbers. Any of these, shot in a wild state, I would certainly regard as escaped or released from captivity unless there was absolute proof to the contrary."

Coragyps atratus (Bechstein)

Black Vulture

Synonym—Cathartes atratus.

Status—Cassin (Ills. Birds Calif., etc., 1856:58) includes "California" in his statement of habitat for this eastern and southern species. This inclusion was probably based purely on assumption. But even so, the appearance of Black Vultures in recent years in central Arizona makes likely a further westward extension of range, quite to or across the southeastern border of California.

Buteo albicaudatus hypospodius Gurney

Sennett White-tailed Hawk

Synonym—Buteo albicaudatus sennetti.

Status—A hawk thought to have been of this Mexican species was seen in Golden Gate Park, San Francisco, November 7, 1905 (Mailliard, Condor, 8, 1906:29); also a similar bird reported second-hand from near Bakersfield, Kern County. Mr. Mailliard subsequently expressed doubts as to this identity; possibly the bird seen by him was a Ferruginous Rough-legged Hawk.

Buteo solitarius Peale

Hawaiian Hawk

Synonyms—Onychotes gruberi; *Onychotes solitarius*; Gruber Hawk.

Status—Originally recorded under the name *Onychotes gruberi* (Ridgway, Proc. Acad. Nat. Sci. Phila., 1870:149) from a specimen (no. 41703 U. S. Nat. Mus.) received at the Smithsonian Institution in 1866; this bird came through a San Francisco taxidermist (Ferdinand Gruber), with no more definite locality given than "California" (see Grinnell, Univ. Calif. Publ. Zool., 38, 1932:315). A second specimen came to light surmised also to have come from California (Gurney, Ibis, ser. 4, 5, 1881:396, pl. 12). Later (Ridgway, Proc. U. S. Nat. Mus., 8, 1885:36), these specimens were found to be identical with the Hawaiian species, *Onychotes* [=*Buteo*] *solitarius*, thus making it seem improbable that they were really obtained in California. However, Henshaw (Auk, 18, 1901:162) records that an individual of the Hawaiian Hawk voluntarily accompanied a vessel from Hilo nearly to San Francisco. So there is a chance, still, that at least the bird first in question was a far vagrant naturally occurring, and actually captured, in California.

Buteogallus anthracina micronyx van Rossem and Hachisuka

Northwestern Mexican Black Hawk

Synonyms—Urubitinga anthracina; *Urubitinga anthracina anthracina.*

Status—Occurrence within the State dubious. Eggs described, said to have been taken in Los Angeles County, April 6, 1889, by R. B. Chapman (Reed, N. Amer. Birds Eggs, 1904:164); probably *Buteo swainsoni* (Willett, Pac. Coast Avif. No. 21, 1933:188). The record from National City, San Diego County, November 26, 1906 (Linton, Condor, 9, 1907:110) proved to be based upon a specimen of *Buteo abbreviatus* [=*B. albonotatus*] (Linton, Condor, 10, 1908:181). The Northwestern Mexican Black Hawk occurs regularly north to southern Arizona.

Polyborus cheriway audubonii Cassin

Audubon Caracara

Synonyms—Polyborus tharus; *Polyborus tharus* var. *auduboni*; *Polyborus audubonii*; *Polyborus cheriway*; Caracara Eagle; Caracara; Audubon Vulture Eagle; Caracara Buzzard.

Status—Occurs with very little doubt from time to time as a vagrant from the southward. Recorded first as seen at Monterey between October 18 and November 14 in 1837 (Prevost and Des Murs, Voyage of the Venus, 1855, Oiseaux: 277). One individual seen in winter of 1853 on Colorado River near Fort Yuma (Heermann, Pac. R. R. Rept., 10, 1859:30). One seen repeatedly along the wooded coast in the vicinity of Seal Rocks near Monterey, in February, 1916 (Heath, Condor, 21, 1919:125). However, no specimen from California is known to have been taken and identified.

Ortalis vetula (Wagler)

Chachalaca

Synonym—Mexican Chachalaca.

Status—"Introduced" as a game bird, probably more than once. The one definite record is of eleven birds liberated in the San Bernardino Mountains in the summer of 1908 (Grinnell, Bryant and Storer, Game Birds Calif., 1918:36). No further facts are available to us.

Tympanuchus cupido pinnatus (Brewster)

Greater Prairie Chicken

Synonyms—Tympanuchus americanus; Pinnated Grouse; Prairie Chicken, part.

Status—"Efforts" made to introduce "into California (about 1860)" (Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:16). Nothing further known, as to whether actual plantings were ever made, or otherwise.

Callipepla squamata pallida Brewster

Arizona Scaled Quail

Synonyms—Callipepla squamata; Scaly Quail.

Status—Ascriptions to California seem to date back to Gambel's (Jour. Acad. Nat. Sci. Phila., ser. 2, 1, 1849:219) statement that he found it "common [in 1841] along the banks of streams in New Mexico, and the adjoining parts of California," which, of course, means, at that date, Arizona.

Lophortyx californica plumbea Grinnell

San Quentín California Quail

Synonyms—Valley Quail; San Telmo Quail.

Status—In 1908, 1500 quail trapped at the instance of the California Fish and Game Commission somewhere in Lower California and brought to Los Angeles were liberated, presumably in that general locality (Grinnell, Bryant and Storer, Game Birds Calif., 1918:39). In the winter of 1933-34, the Commission repeated this effort to build up the game supply; and over 8000 birds from San Telmo, Lower California, were brought across the Mexican border, for liberation "throughout southern California" (True, Calif. Fish and Game, 20, 1934:365-370). The following spring, the liberated alien birds were found to be "mating freely with not only their own kind, but with native birds [*L. c. californica*] as well."

Lophortyx douglasii (Vigors)

Douglas Quail

Synonyms—Ortyx douglasii; *Callipepla douglassii*; *Ortyx elegans*; *Callipepla elegans*; *Lophortyx elegans*; *Lophortyx douglasii douglasii*; *Lophortyx douglasi bensoni*; Douglas Crested Quail; Elegant Quail.

History—Ortyx douglasii Vigors (Zool. Jour., 4, 1829:354) and *Ortyx elegans* (Lesson, Centurie Zoologique, 1832:189, pl. 61) were new names based on specimens of quail supposed to have come from California, the first, more exactly, from "Monterey"; and for many years ascriptions of the "Douglas Quail" and the "Elegant Quail" to this State were carried along in the literature, until it became known that the two names really applied to one species (though possibly to distinguishable subspecies) and that the type specimens likely came from localities on the west coast of Mexico, well south of the limits of "California" as latterly restricted (Grinnell, Univ. Calif. Publ. Zool., 38, 1932:316, 317). In 1904, at the instance of the State Fish and Game Commission, about four dozen "Elegant Quail," said to have been obtained in Sonora, Mexico (hence probably of race *bensoni*), were liberated in "suitable" localities in "central California"; these birds "quickly disappeared" (Grinnell, Bryant and Storer, Game Birds Calif., 1918:39; Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:24).

Philortix fasciatus (Gould)

Barred Quail

Synonym—Ortyx fasciatus.

Status—Ascribed to "California" by the original describer of the species (Gould, Proc. Zool. Soc. London, 11, 1843:133), and so quoted in other early literature. This geographic ascription without question is a mistake; the species belongs to western Mexico (Grinnell, Univ. Calif. Publ. Zool., 38, 1932:317).

Colinus virginianus virginianus (Linnaeus)

Eastern Bob-white

Synonyms—Bob-white; Bob-white Quail.

Status—The first recorded attempt to introduce this species into California "was made by Doctor Newell near Cloverdale, Sonoma County, in the fall of 1872 with 'several dozens of the best eastern variety'" (Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:28). According to Belding (Land Birds Pac. Dist., 1890:8), Bob-whites had been liberated previous to 1890 in Napa County, near Gilroy, in Santa Clara County (see also H. R. Taylor, Ornith. and Ool., 14, 1881:93), and near Chico, Butte County. Some years prior to 1900, an introduction was made at San Felipe, in southern Santa Clara County (Barlow, Condor, 2, 1900:131). Beginning about 1904, for a few years, the State Fish and Game Commission began to plant Bob-whites here and there in a number of widely separated localities. A planting near Sacramento was the only one that showed increase, but this seeming success was only temporary and after four years none remained. (See Grinnell, Bryant and Storer, Game Birds Calif., 1918:37.) In 1926, 57 "Mexican bob white quail" [subsp.?] purchased in Mississippi were liberated by a sportsmen's organization along the San Benito River, near Hollister, San Benito County (Anon., Calif. Fish and Game, 12, 1926:140). Doubtless there has been a number of other plantings. Suffice it to say, that now (1944) no free-living self-perpetuating Bob-whites are known to exist within the State.

Colinus cristatus Linnaeus

Crested Quail

Synonyms—Ortyx neoxenus; *Eupsychortix parvicristata*; *Eupsychortyx cristata*; Welcome Partridge.

Status—Some race of this species of quail has twice been ascribed to California. Audubon (Synopsis Birds N. Amer., 1839:200) specified "California" for *Ortyx neoxenus*, but Vigors, the describer, received his birds from a dealer and from unknown source (see Proc. Zool. Soc. London, 1, 1830:3; Garden and Menagerie Zool. Soc., 2, 1931:311). Bonaparte (Compt. Rend. Acad. Sci., 38, 1854:663) indicates he had a specimen of *Eupsychortyx parvicristata* from Bodega, California, but evidently there was some confusion in record; probably the bird was obtained by Delattre far to the southward.

Alectoris graeca chukar (Gray)

Chukar Partridge

Status—Introduced: Since 1932, a total of 3505 of these birds had (up to about November, 1936) been liberated in 26 counties of the State. Most if not all of these birds were bred on game farms; the original stock "was obtained . . . from Calcutta, India." The "heaviest plantings" were made in the arid southern parts of the State. Some have been seen since dates of planting, in "a remote section of the Mojave Desert," in Riverside County, in northern Los Angeles County, in Tuolumne County, and in "northern Siskiyou County" (Anon., Calif. Conservationist, 1, November, 1936:10-11, 2 figs.). Subsequently reported to have bred in San Joaquin Valley, in Kings Canyon, in Mohave Desert, in Siskiyou County, and in desert sections of Kern County (Bade, Calif. Fish and Game, 23, 1937:100ff., 233ff.). Although now reproducing in the wild, not yet to be viewed as permanently established in the sense of demonstrated survival through moderately long climatic cycles (True, Calif. Fish and Game, 23, 1937:229; Croker, *ibid.*, 28, 1942:63).

Perdix perdix perdix (Linnaeus)

European Partridge

Synonyms—Perdix perdix; Hungarian Partridge; European Gray Partridge.

History—Long-continued effort has been made by the California Fish and Game Commission, as well as under private initiative, to establish this Old-World species in California. There is record of such effort as long ago as 1877. In 1908, 395 birds, and in 1909, 2127 more, were purchased by the Commission from game dealers and planted in lots of 20 to 50 in more than ninety localities in the State, from Siskiyou County to San Diego County, and from sea level to high in the mountains. Introductions continued; by 1918, at least 3500 birds had been liberated, and many hundreds more were planted in various places in different years up to at least 1931. Despite extravagantly optimistic claims (for example, see Calif. Fish and Game, 18, 1932:73) there is no good evidence known to us now (in 1944) of complete establishment anywhere within this State. The region most qualified to permit long-range unassisted survival would seem to be the Modoc plateau. The chief sources of the above information are as follows: Oldys, Yearbook U. S. Dept. Agr., 1909:255; Calif. Fish and Game Commission, 22nd Biennial Rept., 1913:24; Grinnell, Bryant and Storer, Game Birds Calif., 1918:35;

Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:34; Yeatter, Univ. Mich. School Forestry and Conserv., Bull. No. 5, 1924:16; Croker, Calif. Fish and Game, 28,1942:64.

Coturnix coturnix japonica Temminck and Schlegel
Chinese Quail

Synonyms—Coturnix japonica; Migratory Chinese Quail.

History—Beginning about 1895, and until 1904, large numbers were brought in alive at San Francisco for restaurant purposes. Some of these were purchased by private persons and liberated "in various parts of the State." Also the California Fish and Game Commission, after 1901, confiscated several lots and liberated them; one of these lots numbering ten dozen birds was, in 1904, turned out in Mendocino County. There is no evidence that any of these planted birds survived the first year in the wild. (See Grinnell, Bryant and Storer, Game Birds Calif., 1918:38; Palmer, U. S. Dept. Agr., Bull. No. 1049, 1922:34; Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:39.)

Excalfactoria chinensis (Linnaeus)
Button Quail

Synonym—Painted Quail, part.

Status—A few individuals of this Asiatic and Australian species (subsp.?) were "turned out near Alvarado," Alameda County, about 1918 (Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:38). Nothing is known as to what became of these birds.

Gennaeus nycthemerus (Linnaeus)
Silver Pheasant

Status—Game-farm reared birds are reported to have been liberated from time to time, specifically on Goat (Yerba Buena) Island, in San Francisco Bay, in 1915. No evidence of any degree of "acclimatization" is on record. (See Grinnell, Bryant and Storer, Game Birds Calif., 1918:34; Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:40.)

Phasianus colchicus torquatus Gmelin
Ring-necked Pheasant

Synonyms—Phasianus colchicus; *Phasianus torquatus*; Chinese Pheasant; Mongolian Pheasant.

History—Efforts to introduce pheasants occurred under private auspices at least as early as 1885, in Santa Cruz County. In 1889 began a long series of plantings under the auspices of the State Fish [and Game] Commission; indeed hardly a year has gone by without some of the birds being liberated. By 1916 approximately 5000 had been liberated, in thirty-seven of the State's fifty-eight counties. (See Grinnell, Bryant and Storer, Game Birds Calif., 1918:30ff., 572ff.) In one year, 1925, 5000 pheasants were liberated, 3000 of them in Owens Valley, Inyo and Mono counties (Anon., Calif. Fish and Game, 11, 1925:172). Again, in 1926-27, nearly 3500 pheasants were liberated in sixteen localities from Siskiyou County to Imperial County (Anon., Calif. Fish and Game, 13, 1927:198). And so on, until, in 1936, it was reported (Anon., Calif. Conservationist, December, 1936:7) that 40,737 game birds, mostly pheasants, were liberated in the one "season." It is safe now to say that every county in the State has received plantings and that most of the seemingly "suitable" parts of the State have been persistently re-planted, whatever the degree of "success" attained. Thus an experiment in acclimatization of a non-native species has been made on a huge scale. Most of the current publicity has been of the exaggeratedly optimistic variety, and it is hard to estimate from it what the course of events has really been, although there is no question now that the species is thoroughly established in certain regions. At first, plantings were of imported birds, from China, or from Oregon, where first established. But of late years the liberated birds have been game-farm produced.

Geographic range—Where thoroughly established (by 1944), that is, wild-breeding, self-perpetuating, continued presence surely not dependent upon new plantings year-by-year: the Great Central Valley, from Butte County south to Fresno County; spottily elsewhere, as around Buena Vista Lake, Kern County, Bishop, Inyo County, and Tule Lake district, Modoc and Siskiyou counties. The centers of flourishing establishment are in the upper Sacramento Valley and in the delta region at the confluence of the Sacramento and San Joaquin rivers (see Hunter and Fry, Calif. Fish and Game, 26, 1940:318, map).

Habitat—Optimum, as judged from conditions in the restricted parts of the State where the pheasants are thriving "on their own": open valley lands where ground is moist the year through, from rainfall, seepage and (or) irrigation; open parts of river bottoms, where land is devoted to rice

growing or alfalfa raising; corn fields, weed-grown levees, margins of marshlands. Appears not to "take hold" in riparian timber or woodlands of any sort, or in chaparral, or on any terrain out of reach of water.

Note—The exact systematic status of our introduced pheasants has not been ascertained; no doubt more or less crossing has taken place between near-related races within the species *colchicus*, stocks of which have been farm-reared together.

Chrysolophus pictus (Linnaeus)

Golden Pheasant

Status—Frequently reared in captivity and occasionally turned out on estates. Some from the State Game Farm were put on Goat (Yerba Buena) Island, in San Francisco Bay, in 1915. In no known instance in California has this species bred in the wild. (See Grinnell, Bryant and Storer, Game Birds Calif., 1918:34; Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:41.)

Numida meleagris Linnaeus

Guinea Fowl

Synonyms—Numida galeata; Guinea Hen.

Status—Frequently maintained in semi-domesticated condition on lowland ranches or estates. There is on record a reference to an effort toward making the guinea fowl "a game bird" in California, with "temporary success," about 1893; but no detailed information is available to us. (See Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:11.)

Meleagris gallopavo Linnaeus

Wild Turkey

History—Attempts to establish Wild Turkeys in California began as long ago as 1877, when, under private auspices, a planting was made on Santa Cruz Island (Caton, Amer. Nat., 21, 1887:350-354); the birds bred there and progeny survived at least ten years. In 1908 began efforts under the State Fish and Game Commission, which have continued intermittently down almost to the present time. In that year turkeys procured from Mexico were liberated in the San Bernardino Mountains (Grinnell, Bryant and Storer, Game Birds Calif., 1918:36). By 1913, turkeys, of unknown subspecies, supposedly from wild stock in some part of Mexico, had been liberated in a number of counties from Humboldt and Shasta to San Diego, particularly "in the lower Sierra Nevada region" (Calif. Fish. and Game Comm., 22nd Biennial Rept., 1913:23-24; Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:10). According to information gathered by Ferguson (Calif. Fish and Game Comm., Game Bull. No. 1, 1913:35-40) the birds introduced in 1910-11 in the Sequoia National Park were up to 1913 apparently holding their own. Walter Fry (MS, March 28, 1932) states that the original introduction there totaled 130 birds and that these were liberated in that Park from November 2, 1909, to November 1, 1910, inclusive. While many young were raised the first season, the flocks thenceforth began to dwindle from year to year; and the last of the birds was seen on October 16, 1918. With the inauguration of state game-farming, stocks (from "Mexico" and "Virginia," thus of at least two subspecies) have been bred, and the progeny, amounting probably to many hundreds of individuals, has been planted in many places where it was supposed suitable conditions might obtain. At some points, plantings have been made again and again. A recent one, of "Mexican bronze turkey" in Humboldt County, is described optimistically in an unsigned account in California Fish and Game (17, 1931:454). Suffice it to say that at the present writing (1944) we are aware of no instance in California of unquestioned establishment of turkeys in the wild.

Note—Very many other species of non-native gallinaceous birds are known to have been imported and kept captive in this State. Some of these kinds may have escaped from captivity, or have been purposely turned out without record of the fact being kept. At any rate, of all the kinds tried out, at the present writing (1944) only the Ring-necked Pheasant has become fully established.

Grus americana (Linnaeus)

Whooping Crane

Status—We have the general statement of Audubon (Birds Amer., 5, 1842:195) that this species formerly bred "from Upper California northward." But however probable, there is no positive evidence to this effect. Belding (Zoe, 2, 1891:99) records that in the fall of 1884 he saw a flock of this crane, numbering about twenty, "flying over the tules on Butte Creek, Sutter County, and another flock of about the same number, April 15, 1891, near Gridley, Butte County." He says further: "Both

flocks were [of] large white cranes, with black wing tips, and the latter flock was soaring in the manner of sand-hill cranes." This is almost as conclusive determination, by sight only, as one could wish. A less convincing record is of three birds, thought to be Whooping Cranes, seen in flight near Calipatria, Imperial County, in 1922 [date not given] (Wyman, Condor, 24, 1922:182). It has been suggested that these were really Wood Ibises (Kimball, Condor, 25, 1923:109).

Porphyrio viridis Begbie

Edwards Moorhen

Synonym—Porphyrio edwardsi.

Occurrence—Specimen shot at Buena Vista Lake, Kern County, December 23, 1922, now in D. R. Dickey Collection (Anthony, Condor, 25, 1923:109). Doubtless an escape; for the species, native to southeastern Asia (see Riley, U. S. Nat. Mus., Bull. 172, 1938:82), has frequently been imported at San Francisco for aviary purposes.

Charadrius dubius curonicus Gmelin

Little Ringed Plover

Synonyms—Aegialitis microrhynchus; *Aegialeus microrhynchus*; *Aegialitis curonica*; *Aegialitis dubia*; *Charadrius dubius.*

Status—One instance of supposed occurrence: specimen (no. 39523 U. S. Nat. Mus.) recorded as taken at San Francisco by or for E. F. Lorquin, taxidermist, previous to 1874 (Ridgway, Amer. Nat., 8, 1874:109; Baird, Brewer and Ridgway, Water Birds N. Amer., 1, 1884:160). This record, for a long time considered doubtful, was later given full credence (Oberholser, Auk, 36, 1919:559); but still more recent re-examination of all the circumstances leaves now a considerable margin of doubt, not as to identification of the species and subspecies, but as to source of the specimen (see Grinnell, Univ. Calif. Publ. Zool., 38, 1932:318). The species is palearctic, and has occurred casually in Alaska.

Philohela minor (Gmelin)

American Woodcock

Status—One specimen listed from "California" by Sharpe (Cat. Birds Brit. Mus., 24, 1896:681); there is no corroboration of this record and all the circumstances point toward error concerning source as stated (see Fleming, Condor, 23, 1921:95). Pettingill (Mem. Boston Soc. Nat. Hist., 9, 1936:250) cites several reports of observed occurrence in California, from Humboldt Bay, from near Los Angeles and Pasadena, and from Casa Diablo [?], Mono County. None of the observers he names is known to have been a qualified bird student. The Woodcock, a common bird in parts of the eastern United States, has not been recorded indubitably from any point west of Colorado.

Numenius borealis (Forster)

Eskimo Curlew

Synonyms—Mesoscolopax borealis; *Phaeopus borealis.*

Status—Ascribed to the State three times: "A common game bird in the San Francisco market, though I did not myself procure it" (Heermann, Pac. R. R. Rept., 10, pt. 4, no. 2, 1859:66); specimen "shot" at San Diego in September, 1883 (Holterhoff, Auk, 1, 1884:393); "flock of about a dozen" seen "a number of years ago" by P. I. Hoagland "at Coronado Beach, near Tia Juana," San Diego County, and a few shot [but evidently not preserved] (Swenk, Proc. Nebraska Ornith. Union, 6, 1915:31). The first two of these records, at least, are believed to have been based upon small specimens of *Phaeopus hudsonicus* (see Belding, Zoe, 3, 1892:257). The third record is not now verifiable. As far as known, this American species (now probably extinct) passed north and south in migration entirely east of the Rocky Mountains.

Erolia fuscicollis (Vieillot)

White-rumped Sandpiper

Synonyms—Tringa fuscicollis; *Pisobia fuscicollis.*

Status—Reckoned only from the report by W. E. Bryant (Auk, 4, 1887:79) of a specimen taken by himself near Oakland, October 8, 1883. This specimen was in the first California Academy of Sciences Collection, and was doubtless destroyed in the fire of April, 1906. This record was initially queried by Goss (Birds of Kansas, 1891:174). Furthermore, "I [J. Grinnell] distinctly remember to have looked at the specimen, labeled in Bryant's handwriting. Mr. L. M. Loomis with whom I was at the time (fall of 1900) remarked that the identification was wrong, and that the bird was probably *Tringa* (=*Pisobia*) *maculata* [=*melanotos*]" (Grinnell, Pac. Coast Avif. No. 11, 1915:178). Subse-

quently (Grinnell, Bryant and Storer, Game Birds Calif., 1918:370), further evidence came to light indicating that the Bryant bird had been identified authoritatively as the Pectoral Sandpiper (Kobbé, *in* Bailey, Handbook Birds Western U. S., 1902:1). [See under *Pisobia melanotos*, p. 154.] The White-rumped Sandpiper migrates chiefly, if not altogether, east of the Rocky Mountains.

Limosa haemastica (Linnaeus)

Hudsonian Godwit

Synonym—Limosa hudsonica.

Status—Three specimens are listed as from "California," without statement of more exact locality, by Sharpe (Cat. Birds Brit. Mus., 24, 1896:391, 756). Two of these, still in the British Museum, have been examined by Fleming (Condor, 23, 1921:95), who found no evidence to support belief that they actually came from this State. We concur with him, that the record may "be disregarded." Sibson (Emu, 43, 1943:137) mentions casually a California-taken specimen of this species in the Christchurch Museum, New Zealand; this record requires verification. Although occurring in summer in subarctic America west to western Alaska, the Hudsonian Godwit appears to pass in migration wholly east of the Rocky Mountains.

Larus leucopterus Faber

Iceland Gull

Status—At least two supposed occurrences: specimen, no. J 1824 Dickey Coll., taken December 30, 1921, at Buena Vista Lake, Kern County (Dickey and van Rossem, Auk, 39, 1922:411); specimen, no. 14142 L. A. Mus. [orig. no. 992 L. E. Lyman], taken November 24, 1915, at Hyperion, Los Angeles County (Dwight, Bull. Amer. Mus. Nat. Hist., 52, 1925:255). These specimens are of dubious identity; see under *Larus hyperboreus.*

Creagrus furcatus (Néboux)

Swallow-tailed Gull

Synonyms—Larus furcatus; Xema furcata.

Status—This species was named as new (Néboux, Revue Zoologique, 3, 1840:290; Zool. Voyage Venus, 1942:277, pl. X of atlas) on the basis of a specimen (now no. 14622 Paris Mus. Nat. Hist.) said to have been taken at Monterey, Upper California (see Grinnell, Univ. Calif. Publ. Zool., 38, 1932:318). The "Venus" touched the coasts of Peru, Chile, the Galapagos Islands (the metropolis of this gull), and San Blas, as well as Monterey in California. It looks as though there might have been some mixing of labels, since several birds of tropical America are also ascribed to "Monterey." J. T. Howell (Leaflets Western Botany [Calif. Acad. Sci.], 1, 1935:189) has found a similarly faulty plant record. Under these circumstances, little faith can be placed in this record alone. The Swallow-tailed Gull has more recently been reported as seen, but not taken, off San Diego, April 12 and 14, 1895 (Anthony, Auk, 12, 1895:291)—still not completely satisfactory evidence for establishment on our list.

Pterocles sp.?

Sand-grouse

Status—Non-native; transplanted from Old World. Twenty-one birds liberated in March, 1934, on edge of Mohave Desert near Palmdale, Los Angeles County (Moffitt, Calif. Fish and Game, 20, 1934:292). Said to have been "imported from Calcutta." No word subsequently as to fate of these birds.

Columba livia Gmelin

Rock Dove

Synonyms—Common Blue Rock Pigeon; Tame Pigeon.

Status—Non-native; domesticated. Established in free-living state about many cities, where thrives often despite severe discouragements.

Habitat—Edificarian: nests about buildings, and forages in streets, parks and suburban yards and gardens.

Streptopelia chinensis (Scopoli)

Chinese Spotted Dove

Synonyms—Spilopelia chinensis; Spilopelia chinensis chinensis.

Status—Non-native: introduced, or escaped, probably prior to 1917, when already "common" in northern Hollywood, a suburb of Los Angeles. By 1921, "firmly established" over a considerable part of Los Angeles City (Wyman, Calif. Fish and Game, 7, 1921:180). By 1933, "abundant" and had

spread east to Pasadena and Alhambra, and west and south to Santa Monica and Inglewood (Willett, Pac. Coast Avif. No. 21, 1933:85). By 1941, established as far east as Redlands, Riverside County (M. Moore, Condor, 45, 1943:233).

Habitat—Suburban yards and parks; "most plentiful around evergreen and palm trees" (Willett, *loc. cit.*).

Streptopelia risoria (Linnaeus)

Ringed Turtle Dove

Synonym—Ringed Dove.

Status—Non-native; domesticated. Now apparently well established in City of Los Angeles. First reported in 1926 from Central Park (Pershing Square); in 1929 there were about 20 pairs there; by 1933, common also in Westlake and Echo parks (Grinnell, Condor, 31, 1929:130; Willett, Pac. Coast Avif. No. 21, 1933:85). Also a few reported in 1929 as gone "wild" in vicinity of Fairoaks, Sacramento County (Grinnell, *loc. cit.*).

Scardafella inca (Lesson)

Inca Dove

Status—Known only from one instance: "In mid-February [1928] Mrs. Bates found a pair of Inca Doves at Palm Springs [Riverside County]" (F. B. Schneider, Bird-Lore, 30, 1928:208). Upon enquiry, the observer, Mrs. Josephine J. Bates, wrote under date of January 28, 1929, that she and a friend saw the two birds "perched on one of the top branches of a little tree some fifteen feet high." With binoculars they were watched several minutes before they flew, exhibiting the markings characteristic of this species as contrasted with those of the Mourning Dove and the Ground Dove. For a sight record, this one is almost unassailable.

Ocyphaps lophotes (Temminck)

Australian Crested Dove

Status—"This common cage bird appears to have escaped and established itself in a small way at Berkeley, Calif., in the trees and shrubbery near the Claremont Hotel at the edge of town" (Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:47). This statement was based on a letter from H. S. Swarth written July 6, 1925, a "carbon" of which is at hand (Mus. Vert. Zool.). It is further stated therein that "several individuals" were seen, and that these or others were reported by "a number of people" in the same neighborhood. No further report of the species has appeared, but an injured individual was found on the streets of Berkeley, November 6, 1943 (Mus. Vert. Zool.).

Melopsittacus undulatus (Shaw)

Australian Shell Parrakeet

Status—Has been recorded as an "escape," but without definite details (Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:48). Kept commonly in aviaries; might "some day become established in the warmer parts of the State."

Crotophaga sulcirostris Swainson

Groove-billed Ani

Status—Said to be "casual" in "California" (Bendire, Life Hist., 2, 1895:9; F. M. Bailey, Handbook Birds Western U. S., 1902:193). We have found no specific basis for such statement. Possibly Lower California was meant, although the species is well known to occur regularly in the vicinity of Cape San Lucas.

Caprimulgus vociferus arizonae (Brewster)

Stephens Whip-poor-will

Synonyms—Antrostomus macromystax; *Antrostomus nigrescens*?.

Status—Cassin (Proc. Acad. Nat. Sci. Phila., 5, 1841:184) mentions two specimens of this species purportedly from "California." It seems likely that they were obtained elsewhere as were many other early specimens of birds ascribed to the State. Cooper (Bull. Nutt. Ornith. Club, 2, 1877:93) reports a dubious observation of some "Whip-poor-will" in Ventura County.

Caprimulgus californianus Bonaparte

Synonym—Antrostomus californianus.

Status—Antrostomus californianus was a name applied by Bonaparte (Consp. Gen. Avium, 1, 1850:61) to a bird which may not have come from California. It is not certainly a synonym of

Phalaenoptilus nuttallii californicus as has sometimes been supposed (see Grinnell, Univ. Calif. Publ. Zool., 38, 1932:319).

Archilochus violajugulum (Jeffries)

Violet-throated Hummingbird

Synonym—Trochilus violajugulum.

Status—The type and only known specimen was obtained at Santa Barbara (J. A. Jeffries, Auk, 5, 1888:168). This specimen is with little doubt a hybrid, probably between *Archilochus alexandri* and *Calypte anna* (see Thayer and Bangs, Auk, 24, 1907:313).

Selasphorus floresii Gould

Floresi Hummingbird

Synonyms—Trochilus floresii; *Selasphorus rubromitratus.*

Status—Three instances of the occurrence in California of this supposed species have been reported: male, near San Francisco, May, 1885 (W. E. Bryant, Forest and Stream, 26, 1886:426); male, Hayward, Alameda County, February 20, 1901 (Emerson, Condor, 3, 1901:68); Nicasio, Marin County, February 26, 1909 (Taylor, Auk, 26, 1909:291). These examples may be accounted for as resulting from hybridization between *Selasphorus alleni* and *Calypte anna* (see Thayer and Bangs, Auk, 24, 1907:313; Taylor, *loc. cit.*; Ridgway, Auk, 26, 1909:440).

Eugenes fulgens (Swainson)

Rivoli Hummingbird

Status—One record, of an adult male said to have been taken in San Gorgonio Pass, July 15, 1899 (Loomis, Auk, 19, 1902:83). The authenticity of the locality of capture has been doubted (see Stephens, Condor, 4, 1902:45).

Chloroceryle americana leucosticta van Rossem and Hachisuka

Western Green Kingfisher

Synonyms—Ceryle americana; *Ceryle americana cabanisi*; *Ceryle cabanisi*; *Ceryle americana septentrionalis*; Texas Kingfisher.

Status—Recorded twice: observed in the fall of 1865 "at several points on the Colorado River between Forts Mojave and Yuma" (Coues, Proc. Acad. Nat. Sci. Phila., 1866:59); seen at Poway Valley, San Diego County (Emerson, Ornith. and Ool., 9, 1884:144). The latter is very likely a misidentification. Coues, however, recorded both the Belted and Green kingfishers at the same time, and furthermore repeated his Colorado River record over and over again. There has never been a verification, however.

Ceophloeus lineatus scapularis (Vigors)

Vigors Lineated Woodpecker

Synonyms—Picus scapularis; *Dryocopus scapularis*; *Dryotomus delattri* (?).

Status—Reported erroneously from "San Blas, California" (Baird, Expl. . . . Salt Lake . . . Stansbury, 1853:333) on basis of Vigors' description from San Blas in Mexico. Presumably this species, under the name *Dryotomus delattri*, also incorrectly ascribed to California by Bonaparte (see Cooper, Bull. Nutt. Ornith. Club, 2, 1877:94).

Melanerpes erythrocephalus (Linnaeus)

Red-headed Woodpecker

Status—Reported by Gambel (Jour. Acad. Nat. Sci. Phila., ser. 2, 1, 1847:55) as common in oak timber near San Gabriel, Los Angeles County. There has been no later corroboration and evidently some mistake was involved in the record (see Grinnell, Pac. Coast Avif. No. 11, 1915:183). This eastern species of woodpecker (race *M. e. caurinus* Brodkorb) occurs west to Colorado and has been found casually in Arizona.

Picoides tridactylus fasciatus Baird

Alaskan Lesser Three-toed Woodpecker

Synonyms—Picoides americanus dorsalis; Alpine Three-toed Woodpecker.

Status—Mentioned as of accidental occurrence in California by Oberholser (Bird-Lore, 31, 1929: 110). In a letter of May 26, 1932, Dr. Oberholser states he was at that time unable to determine the

basis for this ascription. This woodpecker extends south through the Cascade Mountains as far as southern Oregon.

Campephilus imperialis (Gould)

Imperial Woodpecker

Synonyms—Picus imperialis; *Dryotomus imperialis*.

Status—Described originally from "that little-explored district of California which borders the territory of Mexico" (Gould, Proc. Zool. Soc. London, 2, 1932:140), but this probably represents some section of Mexico as now constituted. The type locality has been fixed as Bolaños, Jalisco (see Grinnell, Univ. Calif. Publ. Zool., 38, 1932:320). Also there is an extremely dubious sight record (Cassin, Ills. Birds Calif., 1856:285).

Muscivora tyrannus (Linnaeus)

Fork-tailed Flycatcher

Synonym—Milvulus tyrannus.

Status—Toppan (Ornith. and Ool., 9, 1884:48) states: "I have lately received from a dealer in California curiosities at Santa Monica, Cal., a fine specimen of the Fork-tailed Flycatcher, (*Milvulus tyrannus*,) which was shot near that place in the latter part of the Summer of 1883." The circumstances of capture are questionable (see Grinnell, Pac. Coast Avif. No. 11, 1915:185).

Pitangus sulphuratus sulphuratus (Linnaeus)

Cayenne Kiskadee Flycatcher

Synonyms—Pitangus sulphuratus derbianus; Derby Flycatcher; Kiskadee Flycatcher.

Status—Female taken at Inglewood, Los Angeles County, September 4, 1926 (Wyman, Condor, 29, 1927:73); determined as to race by Griscom (Willett, Pac. Coast Avif. No. 21, 1933:190). Not likely to have been of "natural" occurrence in California; native of South America.

Myiodynastes bairdii (Gambel)

Baird Flycatcher

Synonyms—Saurophagus bairdii; Baird Lizard-eater.

Status—Originally described from "California," but doubtless the type specimen came from Guayaquil, Ecuador (Ridgway, Birds N. M. Amer., 4, 1907:656).

Alauda arvensis Linnaeus

Sky-lark

Synonym—European Skylark.

Status—Known to have been introduced twice, but establishment has not followed: 75 pairs of unknown race liberated near San Jose, Santa Clara County, about 1896; these were reported the following year as doing well, but all eventually vanished. In Santa Cruz County, in 1908, about 200 were liberated; no further reports of these were received (Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:50; Twomey, Ecology, 17, 1936:127).

Psilorhinus morio (Wagler)

Brown Jay

Synonyms—Corvus morio; *Psilorhinus morio morio*.

Status—A specimen stated to have been obtained at "San Francisco, California" (Eydoux and Gervais, Voyage of the Favorite, 5, 1839:54). A specimen is listed by Baird (Pac. R. R. Rept., 9, 1858:592) as from "San Diego, Cal." The first record is open to serious question. The second, is a pure mistake, for the bird is still in the United States National Museum (no. 4115 [not "4118," which is a raven], examined by Grinnell, October 31, 1929), and the records show that it was obtained by Lieutenant Couch at San Diego in the State of Nuevo Leon, Mexico. The species is native to northeastern Mexico.

Calocitta colliei (Vigors)

Collie Magpie-jay

Synonyms—Pica bullockii; *Cyanurus colliei*; Columbia Magpie; Columbia Jay.

Status—"Woody portions of North California" (Audubon, Synopsis, 1839:153). No doubt an

inferential blunder based upon a bird mislabelled as from the "Columbia River." The species belongs to western Mexico.

Calocitta formosa (Swainson)

Magpie-jay

Synonym—Calocitta formosa formosa.

Status—A specimen of this species is in the collection of the Academy of Natural Sciences of Philadelphia labelled "California" (Stone, Proc. Acad. Nat. Sci. Phila., 1891:442). "No doubt an error." The species is native to southwestern Mexico and Central America.

Cissilopha beecheii (Vigors)

Beechey Jay

Synonyms—Cyanocorax beecheii; *Cyanocorax geoffroyi*; *Pica beecheii*; *Cyanocitta beecheii*; *Cyanocitta geoffroyi*; *Cyanocitta beecheyi.*

Status—A species of western Mexico, originally described from "Montereale" (Vigors, Zool. Jour., 4, 1829:353). The type locality later was corrupted to "Monterey, California" (Prevost and Des Murs, Voy. Venus, Zool., 5, 1849:203; Baird, Stansbury Expl. Salt Lake, 1853:333). Thus through apparent error the species was for a time attributed to California. There is in the collection of the Academy of Natural Sciences of Philadelphia a specimen labelled "California" (Stone, Proc. Acad. Nat. Sci. Phila., 1891:444); "doubtless an error."

Corvus cryptoleucus Couch

White-necked Raven

Status—Of alleged occurrence in southern California: recorded as nesting at Fort Tejon, Kern County (Bendire, Life Hist. N. Amer. Birds, 2, 1895:402, 403, identity based on eggs, not skins); specimen, not now extant, said to have been identified from San Fernando Valley, Los Angeles County (Grinnell, Pasadena Acad. Sci., publ. 2, 1898:32). Rumors of existence on the Mohave Desert are not found to be satisfactorily grounded. The species is plentiful in southeastern Arizona, thence east to western Texas and south into Mexico.

Auriparus flaviceps flaviceps (Sundevall)

Cape Verdin

Synonym—Ægithalus flaviceps.

Status—The species and hence the "typical" race was based on a bird taken either from Sitka or California. It has since been shown (Grinnell, Condor, 33, 1931:163) that the type almost certainly was obtained in Lower California, probably in the vicinity of Loreto, latitude 26°. *A. f. acaciarum* is the race that occurs in California.

Heleodytes brunneicapillus brunneicapillus (Lafresnaye)

Guaymas Cactus Wren

Synonym—Picolaptex brunneicapillus.

Status—Originally named from "Californie." The type of this species proves to correspond to the race of Cactus Wren occurring in southern Sonora (Bangs, Bull. Mus. Comp. Zool., 70, 1930:313) and the type locality has been fixed as Guaymas, Sonora. The race *H. b. brunneicapillus* does not reach California where *H. b. couesi* alone is found.

Toxostoma longirostre longirostre (Lafresnaye)

Southern Long-billed Thrasher

Synonyms—Orpheus longirostris; *Mimus longirostris.*

Status—Originally this species was described from Mexico and California. The type later was shown to be from Mexico (Grinnell, Univ. Calif. Publ. Zool., 38, 1932:321). There is thus no specific record for California and no likelihood that this thrasher has been taken on the Pacific coast.

Turdus rufo-palliatus Lafresnaye

Mazatlan Robin

Synonym—Turdus flavirostris.

Status—A species of western Mexico, originally described from "Monterey en Californie" (Lafresnaye, Revue Zool., 1840:259). This locality ascription doubtless was a mistake; Acapulco, Mexico,

has been "substituted" as the type locality (Bangs and Penard, Bull. Mus. Comp. Zool., 63, 1919:31; Grinnell, Univ. Calif. Publ. Zool., 38, 1932:322).

Turdus merula Linnaeus

European Blackbird

Synonym—Merula migratoria propinqua, part; Western Robin, part; English Blackbird.

Status—One example, thought most likely to have been an introduced bird, taken at Oakland, December 6, 1891 (see Storer, Condor, 25, 1923:67).

Luscinia megarhyncha Brehm

Nightingale

Status—Reported to have been liberated in California, but details are not available; evidently the birds did not survive (Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:51).

Motacilla alba ocularis Swinhoe

Swinhoe White Wagtail

Synonyms—Motacilla ocularis; Swinhoe Wagtail.

Status—A bird "believed to be of the species" seen by Bradford Torrey at Santa Barbara [in 1912?] (Dawson, Birds Calif., 4, 1924:2098).

Lanius excubitor algeriensis Lesson

Algerian Boreal Shrike

Synonyms—Lanius elegans; *Collurio elegans*; *Collurio ludovicianus* var. *robustus*; *Lanius robustus*; *Lanius fallax*; *Lanius algeriensis*; White-winged Shrike; Baird Shrike; Algerian Shrike.

Status—A specimen supposed to have been obtained by Gambel in "California" (Cassin, Proc. Acad. Nat. Sci. Phila., 1857:213), undoubtedly belongs to this form, which is native to northwestern Africa. The specimen is still extant, but that the bird was captured wild in California is altogether unlikely (A. H. Miller, Univ. Calif. Publ. Zool., 38, 1931:85; Grinnell, *ibid.*, 1932:322).

Sturnus vulgaris Linnaeus

Starling

Synonym—European Starling.

Status—This non-native, European species, has, so far as known up to 1944, reached California but once. More occurrences are to be expected in the light of the history of emigration westward through the Rocky Mountain area. "A flight of about forty," noted east of the town of Tulelake, Siskiyou County, and approximately four seen at Peninsula Cabin, same area, in January, 1942, by Howard Cantrell (Jewett, Condor, 44, 1942:79). A specimen from the last-named place, taken January 10, 1942, was sent to Jewett.

Acridotheres tristis (Linnaeus)

Common Mynah

Status—A small colony of this Asiatic species was discovered nesting in Los Angeles in 1930. The method of introduction is unknown. The colony is thought to have been exterminated (L. Miller, Condor, 32, 1930:302; Willett, Pac. Coast Avif. No. 21, 1933:138).

Vireo solitarius plumbeus Coues

Plumbeous Solitary Vireo

Synonyms—Lanivireo solitarius plumbeus; Plumbeous Vireo.

Status—But one record: adult female taken by H. W. Henshaw in the mountains near Fort Tejon, August 1, 1875 (Ann. Rept. Geog. Surv. . . . Wheeler, App. JJ, 1876:236). Enquiry in 1909 showed the specimen in question to be probably still extant in the National Museum, but it could not at the time be found. Henshaw was confident of its identity, as careful examination was made by Ridgway as well as by himself. The specimen was in poor plumage, however, and re-examination of it would seem to be necessary before according this race a place as a vagrant on the California list.

Dendroica graciae graciae Baird

Northern Grace Warbler

Synonyms—Dendroica graciae; Grace Warbler.

Status—A male recorded as taken at Santa Paula, Ventura County, May 3, 1881 (Evermann, Auk, 3, 1886:185); specimen later destroyed by fire. Possibly the bird was misidentified (see Grinnell, Pac. Coast Avif. No. 11, 1915:188), although the species occurs regularly in the mountains of Arizona.

Geothlypis aequinoctialis velata (Vieillot)

Dufresne Masked Yellow-throat

Synonyms—Sylvia delafieldii; *Trichas delafieldii*.

Status—Described as "Sylvia Delafieldii" from California (Audubon, Ornith. Biog., 5, 1939:307). Nuttall (Man. Ornith., ed. 2, 1940:458) states that the type specimen was taken "in the Oregon Territory, near Fort Vancouver." Undoubtedly the bird was really obtained in South America, where it is native.

Wilsonia canadensis (Linnaeus)

Canada Warbler

Status—One observed, October 11, 1943, in Mission Canyon, Santa Barbara, Santa Barbara County, by A. E. Hutchinson (Cogswell, Aud. Mag., sect. 2, April, 1944:80). Record specimens from the State are lacking.

Passer domesticus domesticus (Linnaeus)

English House Sparrow

Synonyms—Passer domesticus; *Passer domesticus hostilis*; English Sparrow.

History—First appeared within the State at San Francisco in about 1871 or 1872 (Barrows, U. S. Dept. Agr., Div. Econ. Ornith. Mamm., Bull. 1, 1889:19, 201, 262). It is supposed to have been purposely introduced from some point in the eastern United States where the species already had become abundant. Probably, however, it has repeatedly entered the State along railroad lines, of its own volition or through adventitious transportation in grain and stock cars. By 1886 it had appeared generally throughout the San Francisco Bay region; also at Eureka, Stockton, and Hollister (Barrows, *loc. cit.*). Principal records of further spreading are as follows: Sacramento, Marysville, Yuba County, and Gridley, Butte County, 1888 (Belding, Land Birds Pac. Dist., 1890:168); Bakersfield, 1901, and Tehachapi, 1903, Kern County (Howard, Condor, 8, 1906:67); Oxnard, Ventura County, 1905 (Willett, Pac. Coast Avif. No. 7, 1912:76); Newhall, Los Angeles County, 1906 (Law, Condor, 9, 1907:28); Los Angeles, 1907 (Willett, *loc. cit.*); Santa Barbara, Santa Barbara County, 1909 (Torrey, Condor, 11, 1909:208); Banning, Riverside County, 1910 (Willett, *loc. cit.*); Long Beach, Los Angeles County, 1911 (Grinnell, Pac. Coast Avif. No. 11, 1915:112); San Bernardino, San Bernardino County, 1912 (Grinnell, *loc. cit.*); San Diego, San Diego County, 1913 (Grinnell, *loc. cit.*); Death Valley, Inyo County, 1914 (Grinnell, Amer. Nat., 53, 1919:471). By 1915 had spread to virtually all sections of State, at least locally in towns and about ranches, inclusive of desert areas and the larger islands offshore. Greatest numbers to be found in Great Valley and in central and southern coastal districts, where generally abundant. Some decrease in population has been noted locally in the last two decades. Great range in tolerance of climatic conditions is shown. Selected general accounts of distribution and natural history additional to those cited above: Dawson, Birds Calif., 1, 1924:223ff.; Grinnell and Storer, Animal Life Yosemite, 1924:439; Grinnell and Wythe, Pac. Coast Avif. No. 18, 1927:111; Willett, Pac. Coast Avif. No. 21, 1933:151; Grinnell, Condor, 39, 1937:207; Lack, Condor, 42, 1940:239; Pitelka, Condor, 44, 1942:173; Weaver, Auk, 60, 1943:62ff.

Habitat—Most notably the vicinity of buildings and their associated trees where there are nest sites and refuge places in the form of cavities, crevices or dense branch-work. Also food supply seems most accessible to this species in such places. Even though highly adaptable with respect to foraging method and its physical surroundings, the House Sparrow nonetheless has not come to occupy regularly or permanently uncultivated and forested areas. However, it commonly wanders far from places of permanent residence.

Pezites militaris (Linnaeus)

Red-breasted Starling

Synonyms—Sturnella militaris; *Trupialis militaris*; Red-breasted Lark.

Status—Specimen supposed to have been shot at Monterey (Prevost and Des Murs, Voyage Venus, 1855:277); more probably taken on the west coast of South America where the species is native. Another specimen, purportedly from San Francisco (Baird, Pac. R. R. Rept., 9, 1858:534), is still

extant in the United States National Museum (no. 4230). Baird has written on the label [*fide* Grinnell]: "This was not shot by Mr. C. [R. D. Cutts] but given by another as California. Doubtless a fraud."

Icterus icterus (Linnaeus)

Troupial

Status—Two occurrences: Santa Barbara, Santa Barbara County, April 30, 1911, male taken (Bowles, Condor, 13, 1911:109); Pasadena, Los Angeles County, June 16, 1928, male taken (Michener and Michener, Condor, 34, 1932:209). Both probably were escaped birds. The species is native to South America.

Cassidix mexicanus (Gmelin)

Great-tailed Grackle

Synonyms—*Quiscalus major*; *Megaquiscalus major macrourus*; Boat-tailed Grackle.

Status—According to Gambel (Proc. Acad. Nat. Sci. Phila., 1847:203) this "blackbird" was occasionally seen in his day as far north as "Upper California"; Woodhouse makes a similar statement (Rept. Sitgreaves' Exp., 1853:79). But both reports may actually have related to areas south and east of the present confines of the State, or as far as California is concerned they may have pertained to the Brewer Blackbird.

Piranga rubriceps Gray

Columbian Red-headed Tanager

Synonym—Gray Tanager.

Status—One instance: specimen claimed to have been shot by W. G. Blunt "about 1871" at Dos Pueblos (=Naples), Santa Barbara County (W. E. Bryant, Auk, 4, 1887:78). We agree with Ridgway (Birds N. M. Amer.,2, 1902:776) who says: "The identification of the specimen . . . is undoubtedly correct; but even granting no mistake has been made as to the specimen having actually been taken in California, the occurrence must have been purely fortuitous, most likely an escape from captivity." The species is South American.

Eophona melanura (Gmelin)

Black-tailed Hawfinch

Synonym—Canton Grosbeak.

Status—One instance of occurrence in the wild, evidently the result of accidental or purposeful liberation: bird observed from November 25, 1923, through succeeding winter near Vacaville, Solano County (H. C. Bryant, Condor, 26, 1924:154). The species is native to the Orient.

Passerina cyanea (Linnaeus)

Indigo Bunting

Status—Reported seen on at least three different occasions in 1939 in San Francisco Bay region: Strawberry Canyon, June 24, near Mills College in Oakland, August 3, and Oakland, August 26, all in Alameda County (Linsdale, Bird-Lore, 41, suppl., October, 1939:12; Seibert, Condor, 44, 1942:71). No specimen of this eastern species has yet been obtained in California.

Richmondena cardinalis cardinalis (Linnaeus)

Eastern Cardinal

Synonyms—*Cardinalis igneus*; *Cardinalis cardinalis*; *Cardinalis cardinalis cardinalis*; Cape Cardinal; Cardinal.

Status—Cardinals of one race or another have been introduced in the State on a number of occasions since 1880, most often in southern California. Persistence for more than one or two seasons has been rare. Birds have been seen or taken in the wild at such scattered localities as Galt, Sacramento County, Hayward, Alameda County, Los Angeles, Riverside, Riverside County, and San Diego, San Diego County (for review, see A. H. Miller, Condor, 30, 1928:243). The only area of permanent establishment has been the San Gabriel River bottom from El Monte south to the vicinity of Whittier, Los Angeles County; apparently this population has been self-perpetuating since 1923 when it was first definitely reported (Henderson, Condor, 27, 1925:211; Willett, Pac. Coast Avif. No. 21, 1933:158). The group may be of mixed racial origin (see Michener and Michener, Condor, 40, 1938:39) but one example taken has proved referable to *R. c. cardinalis* (A. H. Miller, *loc. cit.*).

Richmondena cardinalis superba (Ridgway)

Arizona Cardinal

Synonym—Cardinalis cardinalis superba.

Status—Once recorded from a specimen: male found dead at Redlands, San Bernardino County, April 9, 1926 (Abbott, Condor, 30, 1928:353). It is uncertain whether this bird was a straggler from Arizona or an escape from captivity. This race is known to have been liberated repeatedly in southern California (Michener and Michener, Condor, 40, 1938:39).

Pyrrhuloxia sinuata fulvescens van Rossem

Arizona Pyrrhuloxia

Synonyms—Pyrrhuloxia sinuata; *Pyrrhuloxia sinuata sinuata*; Texan Cardinal-bird; Arizona Cardinal, part.

Status—Possibly a rare visitant to extreme southeastern corner of State: Fort Yuma (Coues, Proc. Acad. Nat. Sci. Phila., 1866:90); specimen from "California" (Sharpe, Cat. Birds Brit. Mus., 12, 1888:158). In each instance the specimen obtained is not likely to have been secured within the present limits of the State (see Fleming, Condor, 23, 1921:95). The species is common in southern Arizona.

Spiza americana (Gmelin)

Dickcissel

Status—Erroneously reported as straying to California (Gross, Auk, 38, 1921:3); the supporting reference cited specifies "Lower California."

Fringilla coelebs Linnaeus

Chaffinch

Synonym—European Chaffinch.

Status—Two instances of occurrence: bird taken by Joseph Clemens at Monterey, March 4, 1905 (Grinnell, Condor, 8, 1906:58); one seen in Berkeley, May 14, 1908 (Palmer, Condor, 10, 1908:238). Each had probably been purposely liberated, or else had escaped from some aviary. The species is palearctic.

Pyrrhula pyrrhula (Linnaeus)

Bullfinch

Synonym—European Bullfinch.

Status—Liberated in California in 1891 (Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928:58). No survivors have been reported.

Carduelis carduelis (Linnaeus)

European Goldfinch

Status—Planted near San Francisco in 1891 (Phillips, U. S. Dept. Agr., Tech. Bull. No. 61, 1928: 57), and doubtless also occasionally in subsequent years. As many as twelve observed in Elk Valley, Marin County, March 30 and April 4, 1937; also noted at Larkspur, same county, in 1936 (L. A. Stephens, Gull, 19, 1937: May [p. 1]).

Spinus yarrellii (Audubon)

Yarrell Goldfinch

Synonyms—Carduelis yarrellii; *Fringilla yarrellii*; *Chrysomitris yarrellii*; *Astragalinus yarrelli*; Yarrell Siskin.

Status—Described from a specimen thought to have come from "Upper California" (Audubon, Synopsis Birds N. Amer., 1839:117). Grinnell examined this specimen (no. 2037 U. S. Nat. Mus.) on October 31, 1929, and found it to show indication of captivity, just as commented upon by Baird (Pac. R. R. Rept., 9, 1858:421). A further comment, written upon the present type label, reads: "Audubon rec'd it from Swainson." Thus there is abundant ground for doubt as to its source. The species is native to Brazil.

Spinus barbatus (Molina)

Stanley Goldfinch

Synonyms—Carduelis stanleyi; *Fringilla stanleyi*; *Chrysomitris stanleyi*; *Astragalinus barbatus*; Black-chinned Siskin.

Status—Two specimens supposed to have come from "Upper California" (Audubon, Synopsis Birds N. Amer., 1839:118; Baird, Pac. R. R. Rept., 9, 1858:420); they showed evidences of having been kept in a cage (Baird, *loc. cit.*). Grinnell examined Audubon's type of *Carduelis stanleyi* (no. 2035 U. S. Nat. Mus.), but there is nothing about it or its labels to indicate its true source; quite certainly it did not come from California (see Hellmayr, Cat. Birds Amer., pt. 11, 1938:293). The species is native to extreme southern South America.

Spizella pallida (Swainson)

Clay-colored Sparrow

Status—Ascribed to California by Cassin (Proc. Acad. Nat. Sci. Phila., 8, 1856:40). This record remains unconfirmed (Grinnell, Pac. Coast Avif. No. 5, 1909:14); the specimen on which it was based may have been misidentified.

Zonotrichia capensis chilensis (Meyen)

Chilean Cape Sparrow

Synonyms—Fringilla mortonii; *Zonotrichia matutina*; *Zonotrichia pileata*; *Brachyspiza capensis*; *Zonotrichia capensis*; Morton Finch; Cape Sparrow; Chilean Sparrow.

Status—The type of *Fringilla mortonii*, which belongs to this species of sparrow, and presumably to the race *chilensis* (Hellmayr, Cat. Birds Amer., pt. 11, 1938:575), was said to have been procured by J. K. Townsend in "Upper California" (Audubon, Ornith. Biog., 5, 1939:312). The specimen evidently was obtained in Chile, and was wrongly labelled (Grinnell, Univ. Calif. Publ. Zool., 38, 1932:323-324).

Rhynchophanes mccownii (Lawrence)

McCown Longspur

Synonym—Plectrophanes McCownii.

Status—Ascribed to "California" by Cassin (Ills. Birds Calif., etc., 1856:231), but no satisfactory details are given.

Plectrophenax nivalis nivalis (Linnaeus)

Eastern Snow Bunting

Synonyms—Passerina nivalis; Snowflake; Snow Bunting.

Status—Known only from the statement by Belding (Condor, 5, 1903:19) that a flock visited Marysville, Yuba County, in the winter of 1872-73. No specimen was preserved. The species is of arctic breeding range, coming south irregularly in winter to the northern tier of states. We know of no record nearer California than Harney County, eastern Oregon.

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