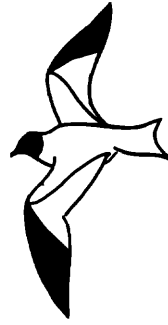


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NORTHERN AND LOUISIANA WATERTHRUSHES IN CALIFORNIA

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INTRODUCTION

No thorough summary of the California status of the Northern Waterthrush *Seiurus noveboracensis* and the Louisiana Waterthrush *S. motacilla* has been published since 1944 (Grinnell and Miller). Since then the status of the Louisiana Waterthrush has not changed, there still being only one record for the state.

For the Northern Waterthrush, on the other hand, the increase in number and sophistication of birders has produced many additional records, from which certain trends begin to emerge. One problem that renders these new data difficult to interpret is "observer bias." Field ornithologists tend to be selective in their birding habits in respect to localities and dates. As a result, large areas of the state remain virtually unworked, and other localities are visited only at certain times of the year. My remarks concerning the status of the Northern Waterthrush in California are therefore largely speculative.

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NORTHERN WATERTHRUSH

The Northern Waterthrush breeds from north-central Alaska and the tree line in northern Canada south to central British Columbia and the northern tier of states from Idaho eastward. In winter it occurs primarily from southern Mexico, the Bahamas, and Bermuda south through Central America and the West Indies to northern South America. It winters in smaller numbers on both coasts of Mexico north to San Luis Potosi, Sinaloa (rare), Nayarit (common), and southern Baja California, and casually in southeastern United States (Alden, 1969; American Ornithologists' Union, 1957; Miller, et al., 1957). Although this species migrates principally through central and eastern United States and across the Gulf of Mexico, it is known to be a regular but rather uncommon transient through eastern Arizona (Phillips, et al., 1964).

I have compiled for the Northern Waterthrush a total of 124 California records (see Appendix), of which 81 are from coastal counties (fall 53, spring 10, winter 18, summer 0) and 43 from eastern counties (fall 17, spring 22, winter 2, summer 2). For the purposes of this paper, coastal counties include San Benito and all San Francisco Bay area counties. Eastern counties are Mono, Inyo, San Bernardino, Riverside, and Imperial. The species has been recorded in 16 counties (see fig. 1) and during every month except July. There is only one record outside the counties that border either the states to the east or the ocean (San Benito Co.) and only one for the northern third of the state (Mendocino Co.). Interestingly, there are no reports from the Sierra Nevada proper, the Central Valley, or Imperial Co. Such distributional voids in part reflect the scarcity of observers. The absence of records from Imperial County, where the species should occur with some regularity, probably is a result of birds being overlooked in the abundant habitat on the shores of the Salton Sea and in irrigated land (McCaskie, *in litt.*). The lack of records from the high Sierras and the Central Valley perhaps requires a different explanation (see Discussion).

Figure 2 depicts the seasonal pattern of records on the coast and in the eastern counties. This histogram is not based on the figure of 124 records (in which each different date or locality is considered a distinct record) but instead stresses the number of individual birds observed at one time and deemphasizes consecutive records of the same individual. Each month is divided into four weekly periods, the extreme dates of which are 1-8, 9-16, 17-24, and 25-31. One square

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is shaded for each individual recorded on the same date in the same locality. For those individuals that remained in one locality for more than one day, only one square is shaded per week. For example, if two birds were present at the same locality from 23 through 25 September, only two (not four) squares are shaded above the week 17-24 and two above the week 25-31.

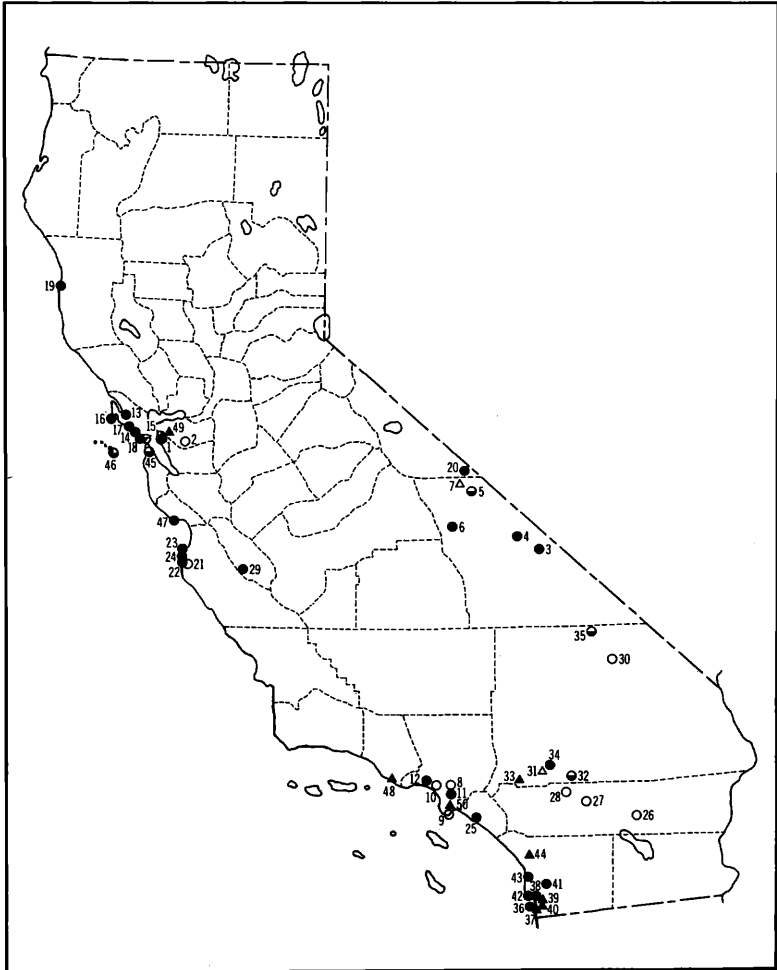


FIGURE 1. Geographic distribution of Northern Waterthrush records in California. Symbols represent the seasons and localities of occurrence, not individual records. Symbols: open circles indicate spring records; solid circles, fall; half-shaded circles, both spring and fall; solid triangles, winter; open triangles, summer.

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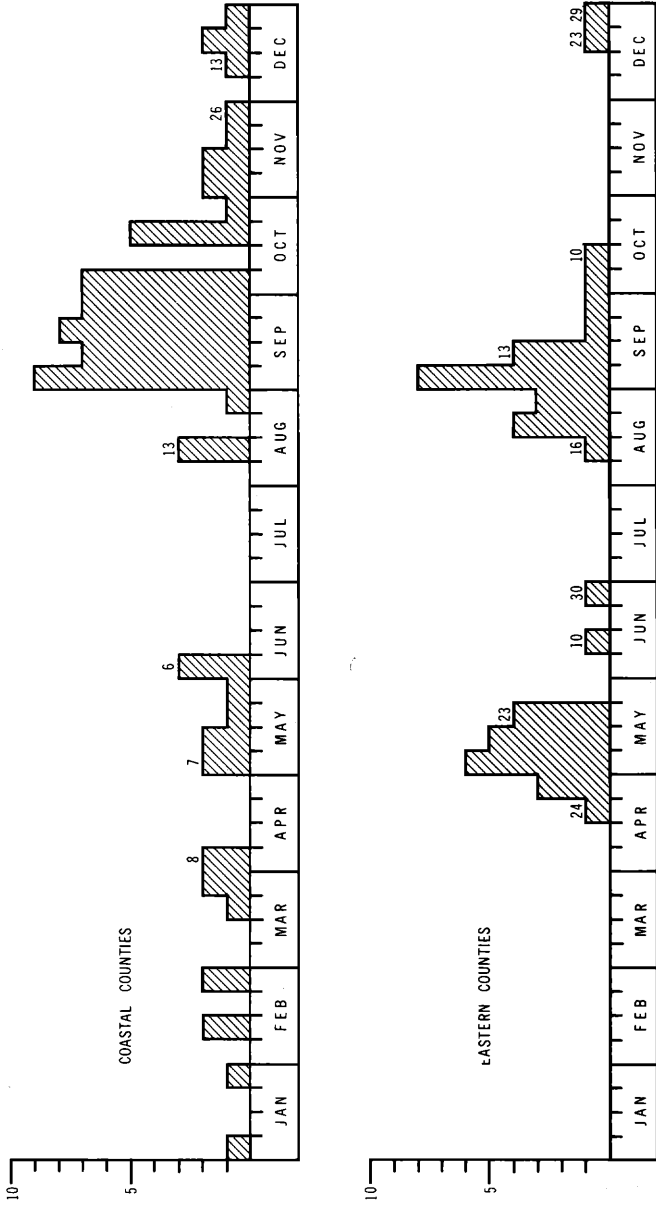


FIGURE 2. Seasonal pattern of Northern Waterthrush records in coastal and eastern counties of California. Numbers above columns indicate seasonal extreme dates. See text.

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In the following discussion, average arrival dates for the two migration periods have been computed simply by averaging the earliest dates for each year. For spring I have used only dates from the third week of April through the first week of June. For fall I have considered only dates from the second week of August through the first week of October. Because of the paucity of data, these average arrival dates are necessarily tentative. I doubt, however, that additional data will result in drastic modifications.

FALL

In fall the Northern Waterthrush is a rare but regular vagrant (not migrant — see below) along the coast and a rare but regular migrant in the southeastern counties and east of the Sierra Nevada from Mono Co. southward. With one exception, extreme dates are as follows: for the migration period in eastern counties, 16 August to 13 September; for the "vagrant period" in coastal counties, 13 August to 26 November (see section on winter occurrence for discussion of November dates). All fall records for eastern counties after 13 September are the result of a single bird that remained at Death Valley National Monument from 10 September through 10 October; I do not consider as normal the dates resulting from this occurrence.

In fall the Northern Waterthrush arrives an average of 16 days earlier in the eastern counties than on the coast, the average arrival dates being 27 August and 12 September, respectively. The peak of occurrence inland also appears to be about two weeks earlier than on the coast. However, arrival time (both on the coast and in eastern counties) is about the same in northern counties as in southern counties. For example, birds arrive in the San Francisco area about the same time as in San Diego Co., and in Inyo Co. at approximately the same time (or a few days earlier) as in San Bernardino Co.

If all birds were arriving from the north, there should be no time lag between arrival dates in eastern and coastal counties, but there should be a lag between northern and southern counties. The opposite is true in both instances. If all birds were arriving from the east, they should negotiate the short distance between eastern and coastal counties in much less time than 16 days, particularly in view of the absence of records from the Central Valley (which would indicate that the birds pass quickly over this area) and in view of the migratory urge that is so strong as to take birds out over the Pacific

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Ocean to the Farallon Islands and probably beyond.

I suggest that there are two phenomena occurring. Firstly, in the latter part of August (averaging about 27 August) a regular migration begins along the eastern side of the Sierras and through the southeastern counties, these birds originating from their breeding grounds in the northwest and heading southeastward to wintering grounds on the mainland of western Mexico. Supporting this theory is the fact that eastern California migration dates (16 August to 13 September) are strikingly similar to the normal extreme dates recorded for Arizona, which are 17 August and 16 September (Phillips, et al., 1964). Secondly, about 16 days later (averaging about 12 September) another flight commences, this one involving vagrants arriving from the northeast along a broad front and heading southwestward to the coast, where they arrive only a few days later than in the eastern counties.

This theory would account for the 16-day time lag in arrival dates, the two week difference in peak abundance, and the similarity in arrival dates at all localities on the coast. It would also account for the comparative scarcity of spring records on the coast, the birds that reached the coast in the fall having continued their southwestward passage and perished in the Pacific Ocean. If this theory is correct, we might expect to find in the eastern counties a surge in abundance, nearly corresponding with arrival on the coast, that represents the vagrants superimposed on the regular migrating population. If this surge of vagrants were synchronous with the maximum time of abundance in regular migrants, there would be only one peak in the eastern counties. If, however, there were a lack of correspondence, there should be two peaks in the eastern areas. Figure 2 suggests that there is indeed such a surge, occurring in the first week of September and corresponding with a major influx on the coast. There is even some very weak indication of an additional peak about two weeks earlier at the time one might expect the regular migrants to be in maximum abundance. Obviously, many more data are needed to test this theory.

The larger number of fall records along the coast as compared with the eastern counties undoubtedly in part reflects the greater number of observers and the daily activity of the Point Reyes Bird Observatory's Farallon banding station. However, it also reflects, in my opinion, two natural phenomena. One is the effect of the ocean barrier, which concentrates the birds along the ocean edge and on the Farallones and thus makes them readily observable. The other is that

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these coastal vagrants apparently tend to remain longer in the state, often at one locality, and thus account for more late fall records (into October and November).

SPRING

In spring the Northern Waterthrush is a casual vagrant along the coast from Los Angeles Co. northward and a rare but regular migrant in the southeastern counties and east of the Sierras from Inyo Co. (and probably Mono Co.) southward. Extreme dates are as follows: for the migration period in the eastern counties, 24 April to 23 May; for the "vagrant period" along the coast, 7 May to 6 June.

Because of the paucity of records, the data for spring are even more difficult to analyze than those for fall. Nevertheless, certain patterns seem to emerge. In the eastern part of the state migration appears to be normal, with the peak in early May and with the dates of occurrence progressively later from south to north (Riverside to San Bernardino to Inyo Cos.). The picture is quite different coastally, where there are only ten spring records, three from Los Angeles Co., one from Monterey Co., and six from the San Francisco Bay area. The species has not been recorded in spring in San Diego or Orange Cos.

The absence of records from San Diego and Orange Cos. indicates that the wintering populations in Baja California and western mainland Mexico do not return along the coast. I suggest that in spring, as in fall, there are two phenomena occurring. Firstly, birds wintering on the mainland of western Mexico and breeding in the northwest, pass regularly along a northwesterly course that takes them through northwestern Mexico, more or less parallel with the eastern shore of the Gulf of California, through Arizona and extreme southeastern California, and thence along the eastern side of the Sierras. Birds wintering in southern Baja California probably migrate north across the Gulf of California to Sinaloa and Sonora. Again, eastern California spring dates (24 April to 23 May) correspond well with the migration period in Arizona, which is 26 April to 24 May (Phillips, et al., 1964). The second phenomenon involves coastal occurrences, which I suspect represent a combination of three types of individuals: birds that wintered successfully in the state but were not detected until birders began to observe spring migration or until the birds moved into populated areas; birds that normally would migrate through eastern United States; and, finally, western migrants that are

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only slightly off course to the west, so that they intersect the coast from Los Angeles Co. northward. I consider all three types vagrants, in the broad sense of the term. Future investigation may indicate that there are different kinds of vagrancy. For instance, some birds could be irrevocably disoriented and never reach their breeding grounds. Others might be disoriented only temporarily. Still others might be headed correctly but be displaced by adverse environmental conditions (such as wind). Birds in the last two categories would be able to correct their direction and reach their destinations.

The very few records available suggest that the time lag noted between regular migrants and vagrants in fall also occurs in spring. The average arrival date for San Bernardino Co. is 7 May, while those for coastal counties are about two weeks later, 19 May for Los Angeles Co. and 22 May for San Francisco Co. The entire spring migration period is also about two weeks later on the coast: 7 May to 6 June vs. 24 April to 23 May. Again as in fall, coastal arrival dates for southern counties appear to be about the same as those for more northern counties, supporting the two-flight theory, with the vagrants arriving in the state some two weeks later, along a broader front from the southeast, and on long nonstop flights that carry them over the Sierra Nevada and Central Valley.

WINTER

The Northern Waterthrush appears to be a casual winter resident along the extreme southern coast and an even rarer winter resident farther north. There are four instances of apparently successful wintering. A single bird was observed from 15 November 1958 to 15 February 1959 in Charles Lee Tilden Regional Park, Contra Costa Co. In San Diego Co. one bird was seen near Imperial Beach on 29 February and 28 March 1964, a second near Imperial Beach during the winter of 1967-68 (23 and 24 December, 1 and 28 January, 25 February, and 24 and 31 March), and a third in National City on 9, 15, and 16 February 1969.

The proper treatment of November and December records is debatable. Aside from the four definite winter occurrences, there are six November dates (involving four birds), all from the central coast in Marin and Monterey Cos., and six December dates (six birds), all from the southern coast in Los Angeles Co., San Diego Co., and the extreme western part of San Bernardino Co. Because of the geographic distribution of these records, with the earlier (November)

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dates embracing more northerly areas, where wintering is least likely, and the later (December) dates involving more southerly localities, where wintering is more likely, I prefer to treat November birds as late-moving vagrants and December ones as stationary wintering individuals. A convenient break in records between 26 November and 13 December (perhaps a real break for more northern counties) further enhances this treatment. The one exception to this theory is, of course, the winter record from Contra Costa Co., which suggests that some November birds are attempting to winter in northern areas but either succumb to environmental conditions or are simply overlooked by observers.

The only record for the period from January through early April not mentioned above is of two birds collected at Pt. Mugu, Ventura Co., on 8 April 1966. These almost certainly were wintering individuals rather than early vagrants, as there is no other spring record for the state before 24 April.

Thus, with only one exception (Contra Costa Co.), all definite winter records (January, February, and March) and all suspected winter records (December and 8 April) are from the southern coast in the counties of Ventura, Los Angeles, San Diego, and nearby western San Bernardino. It follows from the previous discussion that coastally wintering birds should be considered vagrants in origin. Whether or not they are able to return to their breeding grounds is unknown.

SUMMER

There is only one record between 10 June and 13 August, a bird seen on 30 June 1968 at the east end of Big Bear Lake, San Bernardino Co. The Inyo Co. occurrence on 10 June, which represents either a vagrant from eastern United States or a very late western migrant, is here considered a summer record.

DISCUSSION

The lack of Northern Waterthrush records for the Central Valley requires an explanation. All other eastern warbler vagrants, including the comparatively common American Redstart *Setophaga ruticilla*, are also unaccountably rare or absent in the Valley. Many of these species, however, occur with much greater frequency along the Pacific coast and in the desert oases on the eastern side of the Sierra Nevada.

How do eastern vagrants reach the coast without being recorded in

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the Central Valley? The obvious explanation is that vagrants do land in the Valley, but observer coverage is inadequate to detect a relatively small number of birds in an area that contains a considerable amount of suitable habitat. When more data are available, this explanation may well prove to be correct. In my opinion, however, the amount of suitable habitat is small enough and observer coverage, at least in the Sacramento area, is good enough to force us to explore other possibilities.

One possible explanation is that vagrants arrive from the north in fall and the south in spring, encounter the mountain ranges that enclose the northern and southern ends of the Valley, and are forced to veer either along the coast or along the eastern slopes of the Sierra Nevada. This could be the case with species such as the Northern Waterthrush that breed due north of California and winter to the southeast. However, the data indicate that Northern Waterthrushes do not migrate along the coast but occur there as vagrants, approaching from the northeast in the fall and the southeast in the spring, paths that should take them over the Central Valley. Many other vagrant species have breeding ranges confined to the eastern portions of the United States or Canada and hence must approach California from an easterly direction.

I would like to advance a new theory — one that seems to account for all the facts. I suggest that eastern vagrants do not bypass the Valley but rather fly nonstop directly over it. In my opinion, the Sierra Nevada (together with associated high ranges such as the White Mountains) acts as a barrier to vagrants. Birds arriving from the east, northeast, or southeast are forced to land when they encounter the high Sierras. Most of these westward-flying vagrants are night migrants and originate the evening before at varying distances to the east. Some probably intersect the mountains at dawn and are able to see and immediately enter the oases (the most suitable habitat), while others must arrive during darkness. These latter birds probably land at random in the desert lowlands and foothills and then during daylight converge on the oases. This theory would explain the great turnover of species and individuals within a single day in a given oasis (such as Deep Springs or Scotty's Castle; personal observations). It would also account for the scattering of vagrant records in relatively unsuitable desert habitat away from major oases. Thus what we have considered primarily an "oasis effect" in concentrating vagrants is secondary to the "barrier effect" of the Sierras.

I further suggest that the mountains act only as a temporary

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barrier. After a day or more of rest and feeding in the oases, the birds continue their westward flight. Since the coast is only some 220 miles distant, the birds are able to reach it in one night, passing completely over the Central Valley during darkness.

When the sun rises the next morning, some birds find themselves over the Pacific. Many of these birds probably perish, while others are able to return to the mainland or to the Farallon Islands. Other individuals probably reach the coast at dawn and are thus able to avoid (for that night) oversea passage. Hence the ocean acts as a barrier only during daylight hours, while the mountains present a barrier even at night. I believe that a few of these westward-moving individuals winter on the coast, but most eventually continue west and drown in the ocean.

The effect of wind direction and speed on take-off patterns in the eastern oases is unknown but may be extremely important. Possibly, vagrants do not leave into westerly winds but wait for calm or easterly winds. If such is the case, birds originating in these oases most certainly would be carried far beyond the Central Valley and probably well out over the ocean. Indeed, we do find that eastern vagrants are most common along the central California coast after nights of easterly winds (Point Reyes Bird Observatory banding records). There is also the possibility that storms or strong adverse winds suddenly encountered over the Central Valley would stall bird movement and precipitate vagrants there. Valley birders should watch for such occurrences.

In southern California the Sierra Nevada is replaced by lower and more broken mountain chains that probably pose little barrier to vagrants. Hence we find vagrants scattered throughout the southern quarter of the state and concentrated only along the coast and in desert oases.

While the above statements do appear to be consistent with the available information, they are only theories, based on very little data. Hopefully, my attempts at solution of this portion of the vagrant problem will stimulate other investigators to publish their findings.

LOUISIANA WATERTHRUSH

The Louisiana Waterthrush has been recorded in California only once: a male specimen (Museum of Vertebrate Zoology, Berkeley, No. 1105) taken by Loye H. Miller (1908) on 17 August 1908 at

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Mecca, Riverside Co. Because the bird was found in a railroad yard, Dawson (1923) suggested that possibly it arrived through artificial means, either trapped in a freight car or as the captive of some passenger. These possibilities are, in my opinion, far less likely than natural occurrence. The bird was taken near an artesian well, which was surrounded by trees and was doubtless the only source of fresh water and the only suitable habitat within many miles.

Probably this species occurs with much the same frequency as the Hooded Warbler *Wilsonia citrina*, which has a similar range and migratory pattern, but has been overlooked because of its secretive habits or similarity to the Northern Waterthrush. While the Louisiana Waterthrush might occur anywhere in the state, and perhaps will be found first on the Farallon Islands, I suspect that it will prove to be of greatest frequency in the desert oases of the extreme southeastern counties. Since the species has been recorded in Arizona (Snider, 1970) and Sonora (Miller, et al, 1957) and winters regularly in the Pacific lowlands of central Mexico (Alden, 1969), it should be expected in California at least as a casual vagrant.

ACKNOWLEDGEMENTS

I wish to thank Theodore Chandik and Guy McCaskie for making available all the records in their possession. Don Bleiz, Howard Cogswell, Roland H. Wauer, and Vernal L. Yadon kindly supplied data on certain observations. The theoretical considerations presented herein benefited greatly from discussions with David DeSante, Ronald LeValley, and Tim Manolis.

SUMMARY

The Louisiana Waterthrush has been recorded only once in California: 17 August 1908 at Mecca, Riverside Co. Probably it has been overlooked and will prove to be a casual vagrant, at least in the southeastern portion of the state.

For the Northern Waterthrush I have located 124 California records, embracing 16 counties and every month except July. All but one record (San Benito Co.) are for counties that border either the ocean or the states to the east.

Along the coast, where all birds are here considered vagrant in origin, the species is casual in spring from Los Angeles Co. northward

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(7 May - 6 June) and rare but regular in fall (13 August - 26 November). In eastern counties it is a rare but regular migrant both in spring (24 April - 23 May) and fall (16 August - 13 September); numbers here are augmented by vagrants from farther east. The species is a winter resident along the coast, casual in San Diego Co. and probably in Ventura, Los Angeles, and western San Bernardino Cos., and even rarer farther north (one record: Contra Costa Co.). The only two summer records are from Inyo and San Bernardino Cos. There are no records for the Sierra Nevada proper or for the Central Valley.

Although based on very limited data, certain conjectures seem warranted. These may apply to other eastern vagrants as well. There is a regular migration through the eastern counties in both spring and fall. Two weeks after the commencement of this migration, a flight of vagrants arrives from the northeast, southeast, or east. It is suggested that the Sierra Nevada acts as a barrier that forces these night-moving vagrants to land in the desert region at the eastern base of the mountains. During daylight the oases further concentrate the vagrants. At a later date these birds continue westward, passing at night completely over the high Sierras and Central Valley. At dawn most birds find themselves over water and either drown or manage to struggle back to the coast or islands, where they are thus concentrated. A few of the latter individuals attempt to winter on the coast, but most probably continue their westward passage and perish in the ocean. The barrier effect of the Sierras is not felt in southern California; birds there are concentrated only along the coast or in the scattered desert oases.

APPENDIX

Listed below are the California records (through 1969) of which I am aware. Most are published, having been gleaned from Grinnel and Miller (1944), all issues from 1940 through 1969 of *The Auk*, *The Condor*, *The Wilson Bulletin*, and *Audubon Field Notes*, and from several miscellaneous papers that came to my attention. Additional notes were obtained from the banding records of the Point Reyes Bird Observatory and from several private individuals. I have made no attempt to verify most reports, although it should be noted that the records include 11 birds that were found dead or were collected and 21 others that were banded (some of which were photographed). Probably no more than one or two, if any, of the sight records represent misidentifications.

Records are listed alphabetically by county and exact locality and chronologically within each locality. Dates are followed by the names of the observers and number of birds recorded. Numbers in parentheses refer to localities on the map (fig. 1). Band numbers mentioned are of regulation U. S. Fish and Wildlife

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Service bands. Museum specimen numbers were obtained from the literature; I made no attempt to examine the specimens.

- Alameda Co. (1) Oakland, Dimond Canyon: 6 Sep. 1953, Kenneth Schulz, 1 seen.
- Contra Costa Co. (49) Charles Lee Tilden Regional Park (near Berkeley), Jewell Lake: 15 Nov. 1958 and 15 Feb. 1959 (and presumably on some intermediate dates), Edwin O. Willis, et al., 1 seen. (2) Along creek near St. Mary's College: 27 May 1962, Arthur S. Campbell, 1 seen.
- Inyo Co. (3) Death Valley National Monument, Furnace Creek: 21 Aug. 1960, Roland H. Wauer, 1 seen; 18 Aug. 1961, Roland H. Wauer, 1 collected (D.V.N.M. 4014); 28 Aug. 1961, Roland H. Wauer, 1 found dead (specimen at D.V.N.M.); 29 Aug. 1961, Roland H. Wauer, 1 seen; 1 Sep. 1968, Clifford R. Lyons, Guy McCaskie, 3 seen. (4) Death Valley National Monument, Emigrant Ranger Station: 10 Sep. to 10 Oct. 1964, Bruce B. Paige, 1 banded and remained. (5) Deep Springs: 24 Aug. 1963, Richard Stallcup, 2 seen; 12 (1 seen) and 13 (2 seen) Sep. 1964, Ted Chase, Art Wang; 13 Sep. 1967, Richard Stallcup, 1 seen; 4 Sep. 1968, Michael Perrone, 1 seen; 20 (1 banded), 21 (another banded), 22 (unbanded bird seen), and 23 (same two banded birds seen) May 1969, David DeSante. (6) near Lone Pine: 1 Sep. 1967, Mike San Miguel, 1 banded. (7) Wyman Canyon: 10 June 1967, Alan M. Craig, David DeSante, Guy McCaskie, Richard Stallcup, 1 seen and heard singing. Note: Wauer's (1960) record for Wildrose Campground, Panamint Mountains, Inyo Co., on 10 May 1959 was actually an Ovenbird (*Seiurus aurocapillus*) (Wauer, *in litt.*).
- Los Angeles Co. (8) Altadena: 15 May 1933, Jacob B. Abbott, 1 seen. (9) Averill Park: 7 May 1968, Grace Nixon, G. Shumway Suffel, 1 seen. (10) Los Angeles, U.C.L.A. Botanical Gardens: 4 June 1959, H. B. Chaney, 1 seen. (50) Los Angeles, Harbor City, Harbor Park, Harbor Lake (=Bixby Slough): Dec. 1958, observers unknown, 1 seen. (11) Pasadena, Johnson's Lake: 2 Sep. 1939, Howard Cogswell, 1 seen. (12) Topanga Canyon, about 1 mile north of Pacific Ocean: 14 Sep. 1962, Don Bleitz, 1 banded and photographed.
- Marin Co. (13) Inverness: 24 Nov. 1969, William M. Pursell, 1 seen. (14) Muir Woods, Bootjack Trail: 13 Aug. 1916, Harold E. Hansen, et al., 2 seen. (15) Point Bonita: 6 June 1965, Richard Stallcup, 1 seen. (16) Point Reyes Peninsula: 21 and 22 Oct. 1962, Janet Kroesen, Grace Miller, C. John Ralph, Richard Stallcup, 1 seen each day; 19 Sep. 1967, Richard Stallcup, 1 seen. (17) Point Reyes Bird Observatory: Abalone Flat, 9 (1 banded; band no. 114-03390) and 10 (same bird recaptured) Sep. 1966, Phil R. Lenna; 17 Sep. 1966, Phil R. Lenna, C. John Ralph, 1 banded (band no. 114-31186). (18) Rodeo Lagoon: south side, Oct. 1928, C. W. Lockerbie, 1 seen; south side, 18 Oct. 1931, Charles A. Bryant, 2 seen; 11 Sep. 1966, David DeSante, 1 (possibly 2) seen.
- Mendocino Co. (19) MacKerricher Beach State Park: 17 Oct. 1959 and for several days thereafter, James B. Stickel, 1 seen.
- Mono Co. (20) Oasis: 26 Aug. 1965, Marianne Shepard, 1 banded.
- Monterey Co. (21) Carmel River near Robinson Canyon: 8 May 1966, William Reese, 1 seen. (22) Carmel River at or near sewage disposal plant: 6 (Ronald L. Branson), 7 (William Reese, Vernal L. Yadon), and 14 (Ronald L. Branson) Nov. 1965, 1 seen each day; 18 and 25 Sep. 1966, Alan Baldrige, Ronald L. Branson, William Reese, Vernal L. Yadon, 1 seen each day; 9 Sep. 1967, Alan Baldrige, 1 seen; 26 Nov. 1967, William Reese, 1 seen; 23 Sep. 1968, Ronald L. Branson, 1 seen; 3 (Lee Jones) and 5 (L. C. Binford, Joseph Greenberg, Russ Greenberg) Oct. 1969, 1 seen each day.

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- (23) Pacific Grove, Nelson's residence: 4 Sep. 1969, Marguerite Johnson, Mr. and Mrs. B. Gordon Nelson, Vernal L. Yadon, 1 seen. (24) Pebble Beach: 2 Nov. 1965, Frank Culin, 1 found dead (specimen in Pacific Grove Museum).
- Orange Co. (25) Newport Beach: 19 Sep. 1963, Jim Lane, Vanche Plum, 1 seen.
- Riverside Co. (26) Joshua Tree National Monument, ¼ mile north of Cottonwood Springs Campground: 27 Apr. 1958, Don Bleitz, 1 banded. (27) Thousand Palms Oasis: 24 (Marion Wilson, Russell Wilson) and 27 (J. H. Comby) Apr. 1959, 1 seen each day. (28) Whitewater Canyon: 3 May 1969, Ralph Manke, 1 seen. Note: McCaskie (*in litt.*) suggests, and I agree, that the 4 June 1959 record mentioned by Pyle and Small (1961) was erroneously attributed to Thousand Palms Oasis, Riverside Co., and instead should have been cited for the U.C.L.A. Botanical Gardens in Los Angeles.
- San Benito Co. (29) Pinnacles National Monument, headquarters: 1 Sep. 1954, Betty Jackson, D. Bruce Jackson, 1 seen.
- San Bernardino Co. (30) near Baker: 17 and 18 May 1969, Ralph Manke, G. Shumway Suffel, 1 seen each day. (31) Big Bear Lake, at east end: 30 June 1968, Ellen Stephenson, 1 seen. (32) Morongo Valley: 12 May 1962, Guy McCaskie, 2 seen; 11 May 1963, Guy McCaskie, et al., 1 seen; 8 (2 seen) and 9 (1 banded) May 1965, Alan M. Craig, Guy McCaskie; 7 May 1966, Guy McCaskie, 1 seen; 3 (1 seen, Guy McCaskie), 10 (1 banded, Mike San Miguel) and 12 (banded bird retrapped, Mike San Miguel) May 1968; 3 and 4 May 1969, Mike San Miguel, 1 seen each day; 8 Sep. 1969, David Beyers, 1 seen. (33) near San Bernardino: 23 Dec. 1952, San Bernardino Audubon Society, 1 seen; 29 Dec. 1953, Ethel West, 1 seen. (34) San Bernardino Mountains, Cactus Flat, 100 yards behind Jim Johnson's house, 6,000 feet elevation: 16 Aug. 1905, Joseph Grinnell, 1 collected (immature female, Museum of Vertebrate Zoology, Berkeley, No. 37720). (35) Death Valley National Monument, Saratoga Springs: 25 and 26 Apr. 1968, George T. Austin, 1 seen each day; 1 Sep. 1968, Clifford R. Lyons, Guy McCaskie, 2 seen.
- San Diego Co. (36) Imperial Beach: 7 Sep. 1964, Guy McCaskie, 1 seen; 28 Oct. 1964, Guy McCaskie, 1 seen. (37) near Imperial Beach: 29 Feb. and 28 Mar. 1964, Guy McCaskie, 1 seen each day (believed by McCaskie to be same bird); 23 and 24 Dec. 1967, 1 and 28 Jan., 25 Feb., 24 and 31 Mar. 1968, various observers on different dates, including Pierre Devillers, Xenia Devillers, Joseph Greenberg, Guy McCaskie, and Edwin O. Willis, 1 seen each day; 13 Dec. 1969, Guy McCaskie, 1 seen. (38) near National City, about 1 mile from San Diego Bay: 29 Sep. 1906, C. B. Linton, 1 seen and another collected (female, Thayer Collection No. 16661). (39) in National City: 9 (Guy McCaskie), 15 (Virginia Coughran, Alan M. Craig, Pierre Devillers, Clifford R. Lyons, Guy McCaskie, Edwin O. Willis), and 16 (Virginia Coughran, Alan M. Craig, Pierre Devillers, Clifford R. Lyons, Edwin O. Willis) Feb. 1969, 1 seen each day. (40) near Otay: 20 Dec. 1968, Paul Opler, 1 seen. (41) Poway: 3 Oct. 1961, John D. Kent, 1 seen. (42) San Diego: 11 Sep. 1887, A. M. Ingersoll, 1 collected (found dead); 13 Aug. 1966, Richard Stallcup, 1 seen; Pt. Loma, 25 Sep. 1965, David Gaines, Guy McCaskie, Larry Sansone, 1 seen; Pt. Loma, 17 Sep. 1967, Alan M. Craig, et al., 1 banded. (43) Solana Beach: 2 Sep. 1965, Alan M. Craig, Guy McCaskie, 1 seen. (44) near Vista: 26 Dec. 1969, Alice Fries, 1 seen.
- San Francisco Co. (45) San Francisco: Golden Gate Park, Middle Lake in Chain of Lakes, 14 Sep. 1929, Mr. and Mrs. Albert B. Stephens, 1 seen; Golden Gate Park, pond west of Middle Lake, 8 Oct. 1932, Henry E. Parmenter, 1

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- seen; Lake Merced, 17 Oct. 1933, Henry E. Parmenter, 1 seen; Lake Merced, 9 May 1956, Ed Hase, Chas. Hines, et al., 1 seen. (46) Southeast Farallon Island: sometime between 7 and 14 June 1967, C. John Ralph, John Smail, 1 found dead; 24 (2 seen) and 25 (2 banded) Sep. 1967, C. John Ralph, Henry Robert, Richard Stallcup (band nos. 114-31571 and 114-31582; photographs of both banded birds in Point Reyes Bird Observatory file); 31 August, 1968, Ronald LeValley, 1 banded (band no. 117-74533); 1 Sep. 1968, Ronald LeValley, 1 banded (band no. 117-74573); 5 Sep. 1968, Point Reyes Bird Observatory personnel, 2 seen; 3 Oct. 1968, Guy McCaskie, L. Richard Mewaldt, 1 banded (band no. 117-74877); 4 Oct. 1968, Richard Stallcup, 2 seen and another banded (band no. 117-74905); 20 May 1969, Henry Robert, 1 banded (band no. 117-75621) and photographed; 2 June 1969, John Smail, 1 banded (band no. 117-75679); 10 Sep. 1969, Fred Sibley, 1 banded (band no. 117-76189).
- Santa Cruz Co. (47) Santa Cruz: a few days before 25 Sep. 1885, J. R. Chalker, 1 collected (female); 25 Sep. 1885, A. M. Ingersoll, 1 collected (female, U. S. National Museum No. 106062); 4 Oct. 1967, David Gaines, 1 seen.
- Ventura Co. (48) Pt. Mugu: 8 Apr. 1966, G. Shumway Suffel, 2 collected (Los Angeles County Museum).

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