THE STATUS OF THE CARDINAL IN CALIFORNIA

By ALDEN H. MILLER

SINCE THE YEAR 1880, reports of cardinals *(Richmondena cardinalis)* in California have from time to time appeared in ornithological literature. But until recently, the species has been considered merely accidental in occurrence within this state, by no means established. However, the increasing number of reports of the cardinal in later years forces the viewpoint that this bird must soon merit recognition as an established member of the state's avifauna. The addition of any species to an avian fauna is an event which may provide important opportunity to gain insight into the ecology and survival powers of that species, or if geographically variable, then, also, of its various races.

The known occurrences of cardinals in California may properly be reviewed at this point. Belding (Land Birds Pac. Dist., 1890, p. 175) reports the introduction near Galt, Sacramento County, of six cardinals from Missouri, and mentions their subsequent appearance in the nearby river bottoms during a period of several years. No permanent colony seems to have been established, however. Emerson (Ornith. and Ool., VII, 1882, p. 119) records the taking of a cardinal at Hayward, Alameda County, which was identified as *"Cardinalis igneus"* on the basis of the limited facial mask and the thick beak. The specimen was later reported to have been an escaped cage bird. Unfortunately, efforts to locate this specimen in order to check the description have failed.

Several sight records of cardinals have been made available to me for publication by Dr. Loye Miller. In 1883, cardinals were observed by his mother, Mrs. Cora H. Miller, at Riverside, California, and were later seen by her when in company of Dr. Miller. The birds were four miles distant from the then small town, and the region at that time was little more than unimproved desert. The brilliant red plumage and song of these birds were noted. In 1905, Dr. Miller observed two male cardinals at 5th Street and Grand Avenue, Los Angeles, on the grounds of the old State Normal School, where the pair remained for several days in a group of pepper trees. The red color of these birds was overcast with gray, pointing to the probability that they were recently escaped cage birds. In 1915, Grinnell (Distributional List of the Birds of California, 1915, p. 187) reviewed the occurrences of cardinals to date, and assigned the species to the state in the hypothetical list.

On March 17, 1923, the present writer located a pair of cardinals in the wild blackberry thickets in the river bottom east of El Monte, Los Angeles County. The male was in constant song, responded to whistled imitations, and appeared as though stationed in this locality; it was observed during a period of several hours. All efforts to locate a possible nest were futile, and the birds were left unmolested. On April 28 of the same year, the birds were again observed in the same brush thickets, and the male was finally shot. The female was not procured and could not be found on a subsequent visit, May 8. However, on this last day, not more than a quarter of a mile distant, another pair was found, the male singing repeatedly. On May 12, a pair was seen about two miles down-stream from the points of previous observation. In 1924, many of the thickets had been cleared away and the stream course altered. One male bird was seen during April in the locality where the birds were last noted the previous year. Cardinals were not seen in two visits to this neighborhood during April, 1925, but were again noted on April 17, 1926. No further opportunities to search this portion of the river bottom have been presented, and the status of the species there during the succeeding two years is not known.

Henderson's two reports (CONDOR, XXVII, 1925, p. 211, and XXVIII, 1926, p. 243) on the cardinals under his observation during the years 1924, 1925 and 1926 seemingly confirm the belief that the species is becoming established over a considerable area in the San Gabriel River bottom, since presumably his records refer to the willow thickets in the neighborhood of Whittier some distance from El Monte. More recently, Gander (CONDOR, XXIX, 1927, p. 245) has recorded a cardinal from Balboa Park, San Diego; but, as suggested by the author, evidence points to the bird's recent escape from captivity. The only record from northern California during late years is contributed by Mrs. G. Earle Kelly of Alameda, who informs me of the observation on January 28, 1928, of a singing male cardinal in the chaparral association in the Hillsborough district not far from Burlingame, San Mateo County. This individual was near human habitations.

The one available California skin, taken as above, now number 1091 in the collection of Dr. Loye Miller, has been checked as to identity. The nature of the facial mask, the color of the crest and back, and the measurements of wing and tail place the bird nearest the subspecies of the eastern United States. It certainly does not belong either to the *superba* or *ignea* type of cardinal. The edgings on the feathers of the back are olive gray in contrast with the gray of *canicauda,* and the black across the forehead is broad as in *cardinalis.* Wing and tail measurements place the bird nearest *floridana* as may be seen in the table of measurements taken from specimens in the museum of the California Academy of Sciences, San Francisco, and in the California Museum of Vertebrate Zoology. However, the coloration is that of *cardinalis,* and, all points considered, it seems best to call the specimen *Richmondena cardinalis cardinalis,* approaching *floridana.*

AVERAGE MEASUREMENTS IN MILLIMETERS OF CARDINALS

Subspecies	Number of Specimens	Wing	Tail
floridana	5	89.7	93.7
California specimen	1	89.4	93.3
cardinalis	9	93.9	101.5
canicauda	5	91.3	100.4
superba	3	98.7	113.2
ignea	6	90.4	101.2

At least part of the stock now becoming established in southern California, judging from field observations and this one specimen, is *cardinalis.* The birds that were apparently successful in maintaining themselves for a period of several years at Galt were of this same race. In the case of a species as little given to wandering and migration as the cardinal, that also seemingly requires the presence of several of its number before becoming successfully established, we may assume that our California representatives are the result of repeated or extensive liberations rather than the result of invasion by wild birds. The nearest naturally occurring subspecies of cardinal is *superba,* which has through long time become adjusted to the desert conditions of Arizona; it frequents the mesquite association there. Should this race be spreading to California, it would most readily find suitable conditions along the Colorado River and in the Imperial Valley; but it has not been recorded from these localities. Howell (Auk, XL, 1923, p. 591) has pointed out that the deserts of southeastern California seem to have formed an effective barrier against the spreading of cardinals. Whether *superba* would adjust itself to the coastal conditions of California is doubtful. It is more reasonable to find that the subspecies *cardinalis* is in a measure successful in the coastal environment, this territory perhaps affording conditions not radically different from those prevailing in certain parts of the normal ranges of *cardinalis* or *floridana.*

Unfortunately no records of birds brought into California from other parts of the United States, except at the ports of entry along the coast, are kept by the state or national government officials. The importation of birds from other countries, of course, is known. In a partial list of importations of cardinals for the years 1926 and 1927, compiled for the author by Dr. T. S. Palmer, the great number of birds brought to the state annually is surprising and illuminating. During the two years 1926 and 1927, 509 cardinals were brought into California, 221 of which went to southern California. Practically all these birds, according to Dr. Palmer, came from northeastern Mexico. Although these figures are not complete, the probability of the liberation or escape of cage birds is obvious, even though no record of deliberate introduction of the species is known. One can not help but feel that, from time to time, a number of the races of cardinal have had at least some opportunity to become established in California. Doubtless *canicauda* from northeastern Mexico has had frequent opportunity for establishment. The bird protection laws operating in the United States, that reduce the number of *cardinalis* and *floridana* kept in captivity, and the extensive traffic in cage birds carried on by the Mexican people would tend to favor the introduction of *canicauda* and others of the more southern races of cardinal.

Whether some of the California birds are indeed *canicauda,* or whether this race having been liberated has been unsuccessful, is an interesting question requiring the collection of specimens. We are perhaps loath to endanger the precarious foothold that the species has now gained, by shooting any more birds. But, if the species becomes better established, and before there is time for selection to operate and alter the various introduced stocks, effort should be directed toward ascertaining the exact nature of the original implantation. The ecologic niche into which this species will fit, as well as its powers of propagation, dissemination and competition with other species are topics which will require detailed field observation in the future.

To summarize the present situation, the species, *Richmondena cardinalis,* in California, represented by the typical race *cardinalis,* and possibly also *canicauda,* is limited to a few birds resident in the willow-cottonwood association along the lower part of the San Gabriel River bottom in southern California. So far as known, cardinals do not as yet occur regularly anywhere else in the state. The established colony doubtless owes its origin to the liberation or escape of caged birds.

Museum of Vertebrate Zoology, University of California, Berkeley, April 21, 1928.