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## A SYNOPSIS OF OUR KNOWLEDGE CONCERNING THE FOSSIL BIRDS OF THE PACIFIC COAST OF NORTH AMERICA

By LOYE MILLER

PREVIOUS to the discovery of the Pleistocene beds at Rancho La Brea only three localities on the Pacific Coast of North America had yielded any information regarding fossil birds. Of these three localities two were represented by but a single bone each.

Since the exploration of the Rancho La Brea deposits brought out the importance of the subject, avian fossils from four other localities have been studied, making thus a total of eight different horizons which now contribute to our knowledge of the birds of previous geological time.

In 1894 Cope (1) described the new pelecanid form *Cyphornis magnus* from a single bone taken in the Eocene of Vancouver. This specimen probably represents the largest known bird of flight.

Lucas (2) in 1901 described from the upper Miocene of Los Angeles the flightless diver *Mancalla californicus*, represented by the major part of a humerus.

All the other known specimens are from the Pleistocene of Oregon and California. Fossil Lake in Oregon is a lacustrine deposit. The Rodeo formation on San Francisco Bay is littoral marine, three localities in middle and northern California furnish cavern deposits, while the great mass of material from Rancho La Brea represents animals entrapped in soft asphalt.

The Fossil Lake beds yielded to Cope (3), to Shufeldt (4) and to Miller (5) fifty-two species of birds, the large majority of which were recorded by Shufeldt. Of these species 67.3 per cent are still living. All except one belong to recent genera.

The results thus far published on the Rancho La Brea collections by Miller

(6, 7, 8, 9) yield twenty-three species, all but eight of which still live. Three new genera of Raptores are represented and one new family is represented by the anomalous *Teratornis merriami*.

The discussion of the other four horizons is still in manuscript by Miller, and further study is required before publication. Results which are conclusive, however, though thus far unpublished would raise the number of fossil species known to the coast to the total of one hundred and fifteen. Of these 19.1 per cent are now extinct.

Anomalies in distribution are noticeable in the record of *Phoenicopterus* in Oregon by Shufeldt, and of *Sarcorhamphus*, *Catharista*, *Pavo*, *Ciconia* and *Jabiru* from Rancho La Brea by Miller. It will be noticed that most of these anomalies are cases of genera now more southern in their distribution.

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## A COLLECTION OF WINTER BIRDS FROM TRINITY AND SHASTA COUNTIES, CALIFORNIA

By LOUISE KELLOGG

**I**N FEBRUARY of this year Miss Alexander and the writer undertook a month's trip into Trinity County, partly as a preliminary survey for further work during the summer, and partly because we wanted to see how much and what kind of a collection of birds and mammals a person could make in the mountains in the winter. Hopes were entertained of getting all sorts of unusual birds that might come there as winter visitants, and in one respect at least these hopes were realized in the finding of the Bohemian Waxwing. Then, too, we had an interest in seeing what the winter pelage of such small mammals as do not hibernate might be.

We went from Redding by stage to Weaverville over the snow-covered Trinity divide, and hearing there that a good trapper was working at Helena we went on some eighteen miles farther to that town, if such it may be called, which is situated at the junction of the Trinity River and its North Fork. The town consisted merely of a hotel, a store and a couple of houses, and it was interesting to find that it was a settlement of native sons and daughters, whose parents had been drawn there by the gold excitement of earlier days. The narrow canyon of the North Fork opens out enough to make a little farming possible; but the wooded hills are close on every side and higher mountains are in sight just beyond. The life zone was considered high Upper Sonoran, some of the principal trees and shrubs being