

THE NEST OF THE COLIMA WARBLER IN TEXAS

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SINCE its discovery in the Sierra Nevada de Colima, Mexico, in 1889 the Colima Warbler (*Vermivora crissalis*) has remained one of the rarest and least known members of its family. As recently as 1928 the species was represented in collections by only 11 Mexican specimens collected in widely separated localities, and virtually nothing had been learned of its habits.

An adult male taken by Dr. Frederick M. Gaige in the Chisos Mountains, Brewster County, Texas on July 20, 1928 extended the Colima Warbler's range northward from the Sierra Guadalupe, Coahuila, and brought the species within the scope of the A.O.U. check-list for the first time. Four years later a concerted effort was made by competent ornithologists to study the breeding population found in Boot Canyon, locale of Gaige's first American record. The very satisfactory results of these studies, including photographs and a description of the first Colima Warbler nest and eggs known to science, have been published by Van Tyne (Misc. Publ., Mus. of Zool., Univ. Mich., No. 33, 1936, pp. 5-11).

In May and June, 1941, Melvin A. Traylor, Jr. and I spent approximately 4 weeks in the Chisos Mountains while conducting special studies of the nesting birds of the area for the Chicago Natural History Museum. We had numerous opportunities to observe the local, and evidently isolated, breeding population of Colima Warblers while occupying a camp maintained at Boot Spring (alt. 7500 ft.) from May 22 until June 7. Unfortunately the demands of other duties prevented our undertaking a detailed study of these birds, but certain observations made while photographing the nesting birds add somewhat to our knowledge of this exceedingly rare species.

Our initial camp in the Chisos Mountains was established May 15 in the "Bowl", present site of the Park Administration Headquarters. The semi-arid and generally precipitous slopes of the vicinity support a profuse upper Sonoran flora characterized by juniper, yucca, sotol and staghorn cholla. Ecological conditions in the Bowl itself do not at all meet the requirements of the Colima Warbler, nor was it found with representative Transition elements that occurred in an oak forest on the south-eastern perimeter.

Colima Warblers were first heard singing near the head of Boot Valley on May 22. The relatively well watered and untouched forest of this isolated valley consists principally of maple, oak, Arizona cypress and yellow pine, the latter being most prominent on exposed ridges above 7500 feet altitude. Colima Warblers were extraordinarily abundant throughout deciduous forest and it was not unusual to hear 3 or even 4 birds singing at once in as many directions,

particularly during the mornings. Although no methodical census in Boot Valley was undertaken, I am certain that not fewer than 15, and very probably more, individuals were identified in various parts of the area by song alone. An estimate of the total numbers of breeding pairs occupying the valley during the summer of 1941 should considerably exceed this figure if it is assumed that the species also occurred in those parts of the area, no less suited to its needs, that we failed to visit.

Discovery of the first Colima Warbler nest known to science was made by Van Tyne (loc. cit.) in Boot Canyon on May 7, 1932. A second nest was found in the same locality by Sutton on May 20, 1933. These and 4 additional nests subsequently found in the vicinity of Boot Spring by the Chicago Museum expedition evidently represent the only definite nesting records of a species that is believed to occupy a breeding range extending from Texas (Chisos Mts. only) southward at least to Miquihuana, Tamaulipas.

A nest containing 4 highly incubated eggs was found May 25 embedded in the earth at the base of a clump of "goats-beard" grass (*Piptochaetium fimbriatum*) from which an adult was flushed. The nest was perfectly concealed from all sides by the dense overhanging growth. It consisted solely of a symmetrical cup woven entirely from fine rootlets and grass stems to a thickness of 0.5 inches. Inside dimensions of the cup were approximately 2.25 by 2.25 inches. The eggs, which were permitted to hatch, were creamy white, unevenly speckled and rather boldly blotched—particularly at the larger end—with shades of brown and cinnamon.

On May 28 Traylor found a second nest containing 4 eggs under a root at one side of a dry stream-bed. In this instance also, the bird had to be flushed from the nest several times before its exact location among the oak leaves could be determined. The outer portion of this nest, which we collected, consists of moss, although the cup itself is woven from fine rootlets and grass stems. It has an inside diameter of 2.25 inches and measures 1.75 inches in depth. The eggs were entirely concealed from above by the root, and by dead leaves that formed a partial dome over the nest.

A third nest was discovered May 29 on a hillside about 200 yards above Boot Spring. Although not actually domed, this nest was well concealed by ground cover that prevented its detection at a distance of 6 or 8 feet. Four young birds approximately 2 days old occupied the nest. A fourth and last Colima Warbler nest containing 4 well-feathered juveniles was found June 6 embedded in the earth among clumps of grass (*Piptochaetium*) on a fairly open hillside near Boot Spring when an adult was flushed directly from the nest.

Absence of a brood patch in breeding male Colima Warblers has been remarked by others. Nevertheless, my observations indicate that the male attends the nestlings assiduously, as does the female. Between visits the male sang periodically, but briefly, in small trees in the vicinity. The young were

fed at frequent intervals by both adults. Food brought to the nestlings consisted solely of animal matter. Small, green caterpillars, otherwise unidentified, were most frequently provided, but the young occasionally received small grasshoppers, or similar insects as well. Cooperative care of the young also extended to the removal of fecal matter. This was accepted and carried away by the adults indiscriminately, but I was unable to determine its ultimate disposition.

The present status of the breeding colony of Colima warblers in the Chisos Mountains is uncertain. I have been informed (April 18, 1948) by Mr. Peter Kock, well-known wildlife lecturer of Marathon, Texas that he failed to find the species in Boot Valley during several summer visits in 1947, although he had noted it there in previous years.

SUMMARY

North of Mexico, Colima Warblers are known only from the Chisos Mountains, in Brewster County, Texas, where the species was first reported July 20, 1928.

Numerous breeding birds were observed in the Boot Canyon section of the Chisos from May 22 until June 7, 1941. The local population, estimated from singing males, exceeded 15 pairs.

Four nests discovered May 25, 28, 29 and June 6 were uniform in construction, the symmetrical bowl of each being woven from fine rootlets or grass stems, and embedded to ground level. Concealment was excellent. Four eggs constitute a normal clutch. Egg-laying occurs principally during the second half of May.

The Chisos population has been reported absent since 1946.