

FROM FIELD AND STUDY

The California Thrasher as a Mimic.—The reading of Dr. Loye Miller's informative discussion (Condor, vol. 40, 1938, pp. 216-219) of the mimetic activities of the mockingbird inspires the comment that the California Thrasher (*Toxostoma redivivum*) seldom receives due credit for his abilities in that direction. Probably the personal observations of others lead to a different conclusion, but it has seemed to me that it is *Toxostoma* rather than *Mimus* that really deserves the title of "mockingbird." Supplementing Dr. Miller's statement that "Certain mimetic notes are heard only in the area or at the season when the imitated species is present," it may be said that the thrasher, at least, seems able to remember them for a considerable time. Upon hearing the familiar and unmistakable notes of the male Bullock Oriole here at Azusa in midwinter I have found their author to be a thrasher. Late one summer, a thrasher's song included the call of a robin, a species which is an irregular winter visitant here; this, however, might more easily have been an accidental resemblance.

The most impressive example of mimicry which I have heard from the thrasher was an excellent imitation of the wail of a coyote. So perfect was the inflection that, had not the plaintive howls fitted neatly into the bird's song, it would have been hard to believe that they did not emanate from a coyote in the distance. The thrasher did not, however, attempt to reproduce the series of barks which ordinarily precedes the wailing note.—ROBERT S. WOODS, *Azusa, California, October 3, 1938.*

A Rattlesnake Kills a California Quail.—While checking over reports from several wildlife refuges under the supervision of the United States Biological Survey, I became interested in some notes concerning an encounter between a rattlesnake and a California Quail (*Lophortyx californica*) contained in the report of C. G. Fairchild, assistant refuge manager at the Tule Lake Wildlife Refuge, Siskiyou County, California. Mr. Fairchild is a careful and conscientious observer, and I believe his observations should be put on record. The substance of his report is as follows:

On July 26, 1938, a young California Quail was seen to fly under a bush at the Biological Survey headquarters. An enrollee of Camp Tule Lake B. F. 3 was approaching the bush to get a better view when he heard the buzz of a rattlesnake. Upon investigation the quail was found lying in a paralyzed condition beside the rattler; it died within 15 minutes. The snake was 2½ feet long and had six rattles. An autopsy was made and fang marks, surrounded by characteristic discoloration, were noted on the lumbar region. The antagonistic muscles of the legs were unequally paralyzed, and the heart was found to have stopped in diastole. These conditions indicate that the poison had a rapid lethal effect; otherwise the bird would have escaped the snake after being struck, unless the fangs were held in the wound until the quail was too weak to struggle.

The California Quail (*Lophortyx californica*) is a common permanent resident in the Tule Lake region, and rattlesnakes frequent the same kind of cover in considerable numbers. Additional studies of the relationship between these two species in this arid region are much needed.—STANLEY G. JEWETT, *Portland, Oregon, September 28, 1938.*

New Bird Records for Nevada.—The influence of Lake Mead upon the bird life of southern Nevada has already become apparent. During the past few months the following bird species, heretofore unrecorded in Nevada, have been observed:

Anser albifrons albifrons. White-fronted Goose. A lone individual was observed on the lake near the site of St. Thomas on May 6, 1938. It was in the company of a large number of teal.

Larus philadelphia. Bonaparte Gull. This species of gull was common along the lake shore near the site of St. Thomas on May 7, 1938. The birds were scattered along the shore in the company of Forster Terns.

Sterna antillarum. Least Tern. Nine of these terns were observed near the site of St. Thomas on May 7, 1938. One month later, on June 6, a single individual was seen flying along the lake shore at Hemenway Wash, below Boulder City.

It is believed that the presence of Lake Mead will attract other species to southern Nevada that are not recorded from the State at the present time.—RUSSELL K. GRATER, *Boulder City, Nevada, September 15, 1938.*

The Form and Pigmentation of a Supernumerary Secondary of a Flicker.—While examining a Red-shafted Flicker (*Colaptes cafer collaris*) taken last spring, I found an extra secondary present in one wing. The bird (F. H. T. no. 459) was an adult female captured alive at Davis,

California, on March 5, 1938. It was brought to Berkeley and kept in captivity, where it died on March 25. The extra feather was not discovered until the skin was being prepared.

This supernumerary feather lies between the seventh and eighth secondaries of the right wing, arising somewhat nearer the base of the former and about one millimeter ventral to the plane of the normal secondaries. The extra feather is accommodated between secondaries 7 and 8 in a two-millimeter space between their shafts where they emerge from the skin; normally shafts of adjacent secondaries nearly or quite touch each other. This accommodation apparently is made possible by a pushing apart of 7 and 8, resulting, in the mature feathers, in a distally directed bowing of the basal portion of the shaft of the former and a slight straightening of that of the latter. The base of the extra feather forms a slightly smaller angle with that of 8 than with that of 7. Both with the wing closed and with it open, the supernumerary feather apparently fitted in well with the rest of the series of secondaries.

The shape of the feather is similar to that of the seventh secondary, which is less rounded at the end than the eighth, but its sides are more nearly parallel and the tip more nearly square-cut. The shaft of this extra feather is somewhat curved, like normal seventh and eighth secondaries. Though mature, its size is small, as shown in the following table:

	Length (skin to tip)	Greatest width	Greatest width of shaft
Secondary 7	96.0 mm.	24.0 mm.	1.6 mm.
Supernumerary secondary	67.5	19.0	1.1
Secondary 8	90.5	25.5	1.5

The pigmentation also is abnormal and of some interest. In the remiges of *Colaptes cafer collaris* two classes of pigment are present, carotenoid and melanin. The orange-red carotenoid occurs normally in the shaft and rami, giving the under surface of the feather its characteristic orange-red color. In the supernumerary feather this pigment is typical in amount and distribution. The melanins of the normal feather appear to be two, a brown and a black. These may be different stages in the oxidation of the chromagen, or, their color difference may be related to differences in the physical conditions of the pigment. The melanins in the normal feather are so distributed as to form a very dark brown, almost black, central part, from which dark bars extend to the margin, while between the bars are light brown areas. The bars do not reach the feather margin on the inner vane, and this margin is white with a pink flush as a result of the absence of melanin and the presence of carotenoid-colored rami and colorless barbules. In the supernumerary feather there is no continuous melanized area along the rhachis. Instead, each vane has a series of dark brown spots. The three distal spots on each side reach the rhachis, but the remaining one on the inner vane lies 0.3 mm. from the rhachis, and on the outer vane four spots merge to form a longitudinal band. The limits of the spots in this band can be discerned, though the intervening areas are almost as heavily pigmented. There is a light deposition of brown pigment between the three distal spots on the outer vane but none between the joined spots and the rhachis.

Microscopic examination of individual barbs of a normal feather and of the supernumerary one shows that in the dark brown areas there are heavy deposits of both brown and black melanins. The light brown areas contain the same pigments, but the black melanin is much more restricted, being confined to the pennula and flanges of the distal barbules; brown pigment is present here only in slight amounts. The white portions of the feathers contain no melanin.

It will thus be seen that there is no difference between the supernumerary and a normal feather in kinds of pigments present; the difference comes in the extent of the melanized areas. The presence of a longitudinal band of color (melanin) separated from both the feather margin and the rhachis by non-melanized areas, as occurs in this extra secondary, is a much less common phenomenon in feathers than colored areas immediately beside the rhachis. Presumably, the basal regions of the barbs were, for some reason, not susceptible to melanization during their formation, whereas in the majority of feathers these portions seem to be most susceptible. This uncommon kind of pigmentation might be explained on the basis of such differential gradient functions as have been hypothesized recently by Fraps (*Physiol. Zool.*, vol. 11, 1938, pp.187-201). However, it would be necessary to postulate a condition inhibiting normal deposition of melanin instead of a pigmentation alternative to that of the black and brown melanin. The actual mechanism of the deposition of melanin and the effects of modifying factors are still not completely known, however. Abnormalities, such as this supernumerary secondary, may provide information for the formulation and testing of theories in regard to the processes involved. Sometimes in biology the abnormal condition assists in elucidation of the normal by throwing the latter and its causes into relief, as it were.

One wonders what the origin of this extra feather was. Its position indicates that it may have been formed by a papilla arising as an offshoot of that of secondary 7. It is unfortunate that the

feather was discovered too late to make histological preparations. It would be interesting to know whether this is a condition of the one year only or whether an extra feather had been present in the same position since the acquisition of juvenal plumage by the bird.

To summarize, there occurs in this female flicker a supernumerary feather lying between the seventh and eighth secondaries of one wing. It is smaller than either of the adjacent ones and slightly different in shape. The lipochrome pigmentation is normal, but the melanized areas are much restricted and somewhat unusual in pattern.—FREDERICK H. TEST, *Museum of Vertebrate Zoology, Berkeley, California, October 7, 1938.*

A Prehistoric Record of Holboell Grebe in Nevada.—A small collection of bones from Lovelock Cave, in west-central Nevada, was recently sent to me for identification by Mr. Robert F. Heizer of the University of California. The cave is located in a limestone outcrop on a high cliff in the Humboldt Mountains, overlooking the now dry Lake Humboldt. The presence of old beach lines along the mountains, and the occurrence of lake gravels on the floor of Lovelock Cave itself, indicate that this cave was originally formed by the wave action of the now extinct Lake Lahontan. The deposits, containing bones and many Indian objects, apparently represent an accumulation since the recession of that ancient lake. According to Loud and Harrington (Univ. Calif. Publ. Amer. Arch. and Ethn., vol. 25, 1929, pp. 120-122) in their description of the excavations of 1912 and 1924, the age of the earliest deposits is tentatively estimated at around four thousand years. At all events there is nothing to indicate geologic antiquity of the bones.

Among the 150 identifiable bird bones from Mr. Heizer's 1938 excavations are two which unmistakably are those of the Holboell Grebe (*Colymbus grisegena holboellii*), a species for which I find no previous record in Nevada.

The characters which distinguish these specimens from *Aechmophorus occidentalis*, the large grebe at present recorded from Nevada, are as follows:

Tarsometatarsus.—(1) Shorter and stouter than *A. occidentalis* (length, *C. grisegena* 61-64 mm., *A. occidentalis* 72-77.5 mm.; breadth of shaft, 3.3-3.7 mm. and 3.2-3.5 mm., respectively. (2) Height of facet for metatarsal 1 greater than in *Aechmophorus* (distance from top of facet to tip of median trochlea, *C. grisegena* 21-22.5 mm., *A. occidentalis* 20.1-22.2 mm.; ratio of this distance to length of bone, 35 per cent in *C. grisegena* and 28 per cent in *A. occidentalis*).

Femur.—(1) Distal end: well-marked ridge connecting tubercle above popliteal area with external condyle; ridge absent in *Aechmophorus*. (2) Proximal end: external contour of trochanter recedes slightly inward proximally in *C. grisegena*; more outwardly flared in *Aechmophorus*.

Aechmophorus, *Podilymbus* and one species of small *Colymbus* are also represented in the cave specimens. The remainder of the birds include loon, cormorant, night heron, goose, ducks, coot, shore-birds, grouse, pigeon, owl and corvids. With the exception of two gulls, all are of species recorded by Linsdale in his "Birds of Nevada." Linsdale lists only two species of gulls, *L. californicus* and *L. delawarensis*. In addition to several specimens of *L. californicus*, the cave material includes two bones whose size precludes the possibility of assignment to either of these species. One agrees in size with *L. occidentalis*, the other with *L. pipixcan*.—HILDEGARDE HOWARD, *Los Angeles Museum, Los Angeles, California, August 22, 1938.*

Notes on the Distribution of Sooty Shearwater, White Pelican, and Cormorants in California.—*Puffinus griseus*. Sooty Shearwater. In summer of 1925, first observed on San Francisco Bay off Alcatraz Island, July 18, a hundred or more birds. Noted frequently in same vicinity and numbers during ensuing month and at the same season in other years.

Pelecanus erythrorhynchos. White Pelican. Several seen June 13, 1925, on ponds bordering Butte Creek, west of Marysville Buttes, Sutter County. A local resident stated that they nested on a sandbar at the edge of a lake to the westward. Visitors in appropriate season should investigate actual breeding, no report of which is known to me for the Sacramento Valley since Heermann's (Pac. R. R. Rept., vol. 10, 1859, p. 72).

None seen in vicinity of Los Baños, May 20-22, 1925, but recorded as abundant there June 21. The observation suggests breeding in the San Joaquin Valley, not recorded for many years (Goldman, Condor, vol. 10, 1908, p. 201).

This stately bird unfortunately is unprotected by California State or Federal law and many are shot by fishermen. Such persecution was noted in Honey Lake Valley, June 21, 1931, when three of five birds were killed. They were thought to be foraging visitors from the Pyramid Lake, Nevada, breeding colony and were shot on a slough inhabited by black bass, catfish and roughfish. Report of similar pelican depredations near Loyalton in Sierra Valley was communicated to the Division of Fish and Game in the same month. The birds were said to come from the direction of Pyramid Lake.