

## A NESTING COLONY OF RING-BILLED GULLS IN CALIFORNIA

By JAMES MOFFITT

The nesting colony of Ring-billed Gulls (*Larus delawarensis*) here reported may be the southernmost one occupied today. W. W. Cooke (Colo. Agric. Exp. Sta. Bull. 56, 1900:192) reported that in 1898 this gull bred at San Luis Lakes, Alamosa County, Colorado (approximately 37° 45' N. lat.), but it is not known whether the bird still nests there. Otherwise, the A. O. U. Check-list (4th ed., 1931:133) records the species as breeding south to southern Oregon, northern Utah, and elsewhere in the United States, only north of the 42nd parallel of latitude. The Check-list apparently considered as indefinite Willett's (Condor, 21, 1919:196) record strongly suggesting breeding at Clear Lake, Modoc County, California, just south of the 42nd parallel. Furthermore, there appears to be considerable doubt attached to the nesting record from northern Utah (see Behle, Condor, 37, 1935:26).

On April 26 and July 1, 1931, the writer found Ring-billed Gulls to be numerous about Tule Lake, eastern Siskiyou County, California, where they were apparently nesting on islands in the Federal Wildlife Refuge. No California Gulls (*Larus californicus*) were observed here. An adult male Ring-billed Gull, whose testes each measured 10 by 18 mm., was collected immediately south of the refuge boundary on the earlier date.

In the spring of 1940, J. S. Dow of the California State Division of Fish and Game advised me that Ring-billed Gulls were nesting in Honey Lake Valley, Lassen County, California. On May 3, 1940, he and the writer visited an islet-studded body of water which is variously known as Hartson Reservoir or Dakin Lake. This artificial lake of approximately 1000 acres extent adjoins the northwestern shore of Honey Lake, from which it is separated by a sand ridge of from 150 to 300 yards width. The locality is at approximately 40° 15' north latitude. Inquiry of residents of the region elicited the information that the gulls had nested here for a number of years, certainly for 20 or more, and because Hartson Reservoir contained water in the interval from the middle 1920's to 1938, when Honey Lake was dry, the colony was able to persist throughout this period.

It is of interest to note that the California Gull is known to nest at Eagle Lake, Lassen County, California (Grinnell, Dixon and Linsdale, Univ. Calif. Publ. Zool., 35, 1930:226), a distance of about 28 miles, air-line, northwest of the present colony. It also breeds commonly at Pyramid Lake, Nevada (Hall, Condor, 28, 1926:87), about 45 air-line miles distant, east-southeast of Honey Lake. Thus, the present colony of nesting Ring-billed Gulls is, as it were, sandwiched between two breeding localities of the larger species.

Dow took the writer to a grass-covered islet about an acre in extent upon which were found approximately 150 gull nests. No completed sets were observed, most nests containing only one or two eggs, while many were empty. Other gulls appeared to be nesting on a near-by islet. Several fresh eggs were collected from the incomplete clutches. All of the gulls observed appeared to be Ring-bills. Later, on June 9, 1940, Dow collected three gulls of this species from the colony, which he presented to the California Academy of Sciences where they are now preserved as skins in the ornithological collection, numbers 57506-57508.

The writer alone visited Hartson Reservoir on May 14, 1941, when numbers of gulls were observed from a distance to be nesting on the islet from which the eggs were collected the previous season. Two other colonies of nesting Ring-billed Gulls were found on neighboring islets close to shore, a half a mile distant. One of the latter con-

sisted of about 75 nests, nearly all containing completed sets with the birds incubating. The majority of nests contained three eggs, but two sets of five and one of four eggs, each seemingly the product of a single female, were collected. Also seven sets of three eggs each were taken. Incubation of these eggs ranged from just started to one-fourth completed. The average measurements of 20 of these eggs are 60.25 by 42.87 millimeters. The eggs of this series have the following extreme measurements: 65.6 by 43.25, 62.38 by 45, 55.6 by 41.45, and 58.8 by 40.7 millimeters. These measurements are slightly greater in average, and for maxima and minima, than measurements of 40 eggs of this species provided by Bent (U. S. Nat. Bull. 133, 1921:135); but they are considerably less than his average and maxima measurements for eggs of the California Gull (*op. cit.*:127). An adult male Ring-billed Gull whose testes each measured 8 by 16 millimeters was collected from this colony on May 14, 1941, and is now preserved as a complete skeleton in the ornithological collection of the California Academy of Sciences. This bird weighed 511 grams.

The fresh gull eggs collected by Dow and Moffitt were in the ensuing 24 hours transported to San Francisco, where on noon of May 4, 1940, they were set in a small electric incubator. The eggs did not move on cooling until the twenty-third day of incubation, when motion of the chicks caused all four to do so. At 9 a.m. on May 28, or when incubated three hours less than 24 days, one egg, the first one to hatch, was observed to be pipped and the other three were cracked at the place where they soon were pipped. The young did not hatch, however, until more than 48 hours later. During this period, they uttered frequent chirps within the shells. One of these eggs hatched on the morning of May 30, two others at 4:30 p.m. that day, and a fourth at 11 a.m. on May 31. Their incubation periods, therefore, ranged from somewhat less than 26 days to nearly 27 days. Bent (*op. cit.*:135) states that the incubation period in this species is about 21 days.

The young gulls became quite active a few hours after hatching, pushing themselves about within the incubator. They frequently uttered their raucous call note which was not like the adults' cry but was similar to the warning note given by the Forster Tern (*Sterna forsteri*), when its nesting colony is disturbed.

The four young gulls were killed at ages of 24, 17 (two individuals), and 2 hours, respectively, and then prepared as study skins. At these ages, the first three mentioned birds weighed, respectively, 37, 34.3, and 35.2 grams. The egg tooth was present in each individual at the time of its death.

Considerable variation in color existed in the plumages of these four young gulls, no two being exactly alike. Bent (*op. cit.*:136) states that two distinct color phases occur in the downy plumage of this species. One which he terms the gray phase has the upper parts "smoke gray" or "pale smoke gray;" the other, or buffy phase, has these parts "pinkish buff" or "vinaceous buff." One of the present downies is clearly of the gray phase, its upper parts being a mixture of "pale smoke gray" and white, with no buffy tint here or on the flanks. Two other downy young are close to this bird in color, but exhibit varying degrees of faint "vinaceous buff" tipping on the longer plumage of their backs and flanks. The fourth downy has considerably more of this buffy tint so as to give to its dorsal and ventral surfaces and flanks a decided "vinaceous buff" hue, overlying basal down close to "smoke gray" in color. Thus, none of the present series of downy young seems to exhibit the extreme buffy phase of Bent, with the upper parts "pinkish buff" (colors from Ridgway, 1912).

Variation also existed in the colors of the feet and legs of the young gulls, upon which notes were taken both in life and immediately after death. One downy had these parts, including the webs, "pale vinaceous-drab." In another, the same parts were much darker, ranging between Ridgway's "Quaker-drab" and "deep Quaker-drab." The other

two downies were intermediate in this respect, having slightly darker feet and legs than were recorded for the first bird.

The four young agreed in colors of other soft parts. Their irises were dark hazel, nearly black. Their bills were pinkish flesh color at the tips of both mandibles, with the egg tooth clear white. Elsewhere, the bills were dark slate, nearly black, with the gapes and insides of the mouth pinkish flesh color.

*Summary.*—Ring-billed Gulls probably breed regularly at Tule Lake, Siskiyou County, and at Clear Lake, Modoc County, California. Both localities are just south of latitude 42. Several nesting colonies, totaling 250 or more pairs, nest regularly near Honey Lake, Lassen County, California, in approximately latitude 40° 15' N. Adult gulls and their eggs, from which downy young were hatched, were collected here in 1940 and 1941. The incubation period was determined to be about 26 days, instead of about 21 days as reported by Bent. Call notes of the downy young are described. Considerable variation in color of the plumage and of the feet and legs was found to exist among four young Ring-billed Gulls, which were less than 24 hours old.

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