

Chipping Sparrow
(*Spizella passerina*)

Although the Chipping Sparrow is a common victim, Friedmann (1963) stated that he knew of no records of nest desertion due to the presence of cowbird eggs. On May 29, 1969 we discovered a nest of this species containing one sparrow egg and one cowbird egg. A visit to the same nest on June 5 revealed only the cowbird egg in the nest and it was cold. Kondla found three cowbird eggs in a Chipping Sparrow nest which contained no sparrow eggs at Norman Lake on June 19, 1968. The nest was one foot up in a white spruce sapling. The eggs were cold when found.

Chestnut-collared Longspur
(*Calcarius ornatus*)

Friedmann (1963) states that observations of parasitism in nests of this species have been reported regularly only from North Dakota, and that most of these were in the 1890's. One of the most recent observations is again from North Dakota on June 19, 1933 by George C. Whitney. Kondla found a Chestnut-collared Longspur nest on May 27, 1967 at Lake Newell which contained two longspur eggs and two cowbird eggs. This appears to be one of the most recent observations and the first record from Alberta.

SOME BREEDING ASPECTS OF HERRING GULLS AT KAWINAW LAKE, MANITOBA

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Incidental to a study of egg laying chronology and food habits of Herring Gulls (*Larus argentatus*) during May and June, 1971 on two small islands in Kawinaw Lake, 52°50'N; 99°29'W, Manitoba, data were collected on egg size, egg laying intervals, incubation periods, clutch size and hatching success. Little is known about these subjects for inland populations of this species in North America.

Egg measurements were taken of the first (I egg), second (II egg) and third eggs (III egg) laid in 39 clutches and are compared with those of Herring Gull eggs measured in Europe

(Table 1). The third egg was on the average smaller than the first two eggs laid, a common phenomenon in gulls (Vermeer, 1969). Egg dimensions at Kawinaw Lake appear similar to those in Denmark and Norway, but dissimilar to those in England. According to Barth (1967), who extensively measured body parts of Herring Gulls in northern Europe, the British population is a separate form of that in Fennoscandia. No body measurements of Herring Gulls were made at Kawinaw Lake.

Egg laying intervals and incubation periods were determined for clutches

Table 1. Mean length and width of eggs I, II and III in mm in Herring Gulls.

Authority	Location	No. of clutches measured	Mean length of eggs in mm			Mean width of eggs in mm		
			I	II	III	I	II	III
Harris, 1964	England	100	68.7	68.7	66.5	48.3	48.4	46.3
Paludan, 1951	Denmark	57	72.4	72.1	69.2	50.6	50.5	49.2
Barth, 1967	North Norway	59	73.7	73.5	71.4	50.6	50.7	49.5
Barth, 1967	Middle Norway	76	72.8	72.3	70.2	49.4	49.7	48.3
Barth, 1967	South Norway	18	73.2	72.2	71.2	50.2	50.5	49.5
This study, 1971	Canada	39*	72.7	73.7	71.9	50.1	50.5	49.3

* Standard errors for the mean length and width of the I, II and III eggs were 0.6, 0.3, 0.5, 0.3, 0.7 and 0.4 respectively.

Table 2. Egg-laying intervals between successive eggs in clutches and incubation periods* of Herring Gulls, 1971.

Egg-laying intervals, days	1	2	3	Incubation period, days	24	25	26	27
No. of laying intervals	1	43	18	No. of incub't'n periods	1	7	24	1
Mean \pm SE of laying interval	2.3 \pm 0.6			Mean \pm SE incubation period	25.8 \pm 0.1			

* Incubation periods are the intervals between laying and hatching of the third egg.

Table 3. Comparison of hatching success between Herring Gull clutches initiated during the first and second half of the egg-laying season.

Time of clutch initiation	No. clutches	No. eggs	Hatched No. eggs	%
First half of season	107	321	226	70.4
Second half of season	54	151	94	62.2
Total	161	472	330	69.9

Table 4. Comparison of hatching success between different clutch sizes of Herring Gulls in the second half of the egg laying season.

Clutch size	No. clutches	No. eggs	No. eggs Hatched	(%)
3	44	132	89	67.4
2 and 1	10	19	5	26.3

which were visited daily during laying and hatching. The mean laying interval of 62 known intervals was 2.3 days and the mean incubation period of 33 known periods was 25.8 days (Table 2). The mean incubation period and standard error for 67 known periods for a Herring Gull population in Denmark was 27 ± 0.08 days, which is significantly different.

The mean clutch size for 102 clutches initiated to May 17, the mean date for clutch initiation, was 3.00. That for 82 clutches started after May 17 was 2.74 ± 0.06 (SE). Coulson (1966) found that female Black-legged Kittiwakes (*Rissa tridactyla*) with greater breeding experience, and which retained their mate of the previous breeding season, laid on the average earlier and had larger clutches. Perhaps the same is true for Herring Gulls.

The hatching success of 161 Herring Gull clutches was 69.9 percent (Table 3). The difference in hatching success between clutches initiated during the first and second half of the season was not significant ($p=0.08$). Table 4 relates hatching success to clutch size for clutches initiated during the second

half of the egg laying season. Smaller clutches produced significantly fewer chicks than larger clutches ($p < 0.05$).

Of 142 eggs which did not hatch, 97 were addled, 37 disappeared or were preyed upon, and eight chicks died during hatching. As no predators other than Herring Gulls were observed near the nesting islands it is thought that those gulls were responsible for missings eggs and eggs which were preyed upon.

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