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A Nesting Threesome of Lapland Longspurs

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During the summer of 1976 I studied a nesting threesome of Lapland Longspurs (*Calcarius lapponicus*) at Karrak Lake, N.W.T., (67°15'N, 100°15'W), making daily nest checks except when inclement weather during laying and incubation interfered (Table 1).

Nest A was discovered 17 June on a large, vegetated rock drumlin on the west shore of Karrak Lake (for more detailed habitat description see Ryder 1969). The nest, lined with Rock Ptarmigan (*Lagopus mutus*) feathers, was on the south-facing side of a flat rock in a clump of Labrador Tea (*Ledum palustre*). The nesting female was observed 18 June in conflict with an intruding female that appeared to be driven from the territory. The male was present during the conflict but did not assist the female. The intruding female may have been involved in a possible dump nest situation as noted 20 June (Table 1). On 25 June, a second female was noted in Nest B, which contained no feather lining, 34 cm from Nest A. On 26 June a female was observed on a third nest (C), lined with Rock Ptarmigan feathers, 19 cm from Nest A and 24 cm from Nest B, which was unoccupied. On both dates Nest A was occupied by the territorial female. Nest B was abandoned after 26 June. Nest A contained seven warm eggs while neither of the other nests contained eggs. The incubating female always flushed when I was within 2–3 m, but the second female flushed at a greater distance when her nest (C) was approached.

On 26 June while the two females were on their respective nests, a male was observed feeding with

TABLE 1. Lapland Longspur nest history, 1976

Date	No. Eggs	No. Young	Time	Remarks
17 June	0	0	1300	Nest construction
18 June	1	0	1300	Eggs cold
19 June	2	0	1030	Eggs cold
20 June	4	0	1815	Possible dump nest
21 June	6	0	1900	Eggs warm
22 June	7	0	1300	Eggs warm
2 July	5	1	—	—
4 July	0	3	—	—
6 July	0	2	—	After Arctic Fox predation
12 July	0	0	—	Both young left nest

another female approximately 7 m from Nest A. It appears from the lack of territorial aggression by another male or the female (Williamson 1968a) that the male was probably from Nest A, indicating possible polygamy (Custer and Pitelka 1977).

On 2 July, there were five eggs and a single young in Nest A. On this check one female was sitting on top of the female brooding the young. Nest C was unoccupied. On 4 July, there were three young and no eggs. Again one female was on top of the other and Nest C was again unoccupied. Lawrence (1947) observed similar behavior in Gray Jays (*Perisoreus canadensis*). Observations on 4 July were the first indication that the intruding female, which had lighter colored plumage, was brooding the young while the territorial female was on top of her. During subsequent visits, two females and a male actively fed the young.

On 6 July an Arctic Fox (*Alopex lagopus*) caught the intruding female and one young before being driven off. The two remaining young left the nest on 12 July when about 10 days old. Williamson (1968a) and Williamson and Emison (1971) indicated similar nestling periods. Maher (1964) found that the young flew at 12 days. The egg-nestling period was 25 days compared to 24 days for two other nests found in the study area.

It is difficult to assess the effect the second female had on the nesting success of the established pair. She may have increased the clutch size but seven-egg clutches have been reported by Wynne-Edwards (1952) and Watson (1957) and an eight-egg clutch by Custer and Pitelka (1977). Table 1 shows that in a 56.5-h period four eggs were deposited in Nest A. Wynne-Edwards (1952) found one nest in which two eggs were deposited in a 24-h period. An egg may have been laid just after the check 19 June and one just prior to each check 20 June and 21 June indicating only one extra egg. Daily maximum and minimum temperatures during the 56.5-h period at Karrak Lake were 5°C and -1°C, respectively. It seems very unlikely that the female would be physically able to expend the extra energy required to develop an additional egg (Romanoff and Romanoff 1949). It is likely that an egg was added to the clutch by the second female.

Four eggs disappeared from the nest (Table 1), one during incubation and three during hatching, resulting from theft, or damage from the activities of two females on the clutch. Drury (1961) indicates that damaged eggs are removed from the nest by the female.

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