

decidedly smaller), the possibility exists that these are only small eggs of the Avocet.

Arnold is known to have told L. B. Bishop (Bishop in litt. to P. A. Taverner, September, 1925) that he had sent the eggs to Major C. E. Bendire for identification. Thus obviously Arnold did not identify the parent birds at the time he collected the eggs. This is suggested also by the data label on which the data are written in ink but the identification and A.O.U. number are pencilled in, presumably at a different time.

Thus the validity of this strange breeding record rests solely on the identification of the eggs. As they cannot be distinguished with complete certainty from the eggs of the American Avocet, which breeds regularly in southern Saskatchewan, the evidence for the nesting of the Black-necked Stilt in Saskatchewan, or indeed anywhere in Canada, is not acceptable.—W. EARL GODFREY, *National Museum of Natural Sciences, National Museums of Canada, Ottawa, Ontario.*

Differential survival among nestling Redwinged Blackbirds after a storm.

—Great Gull Island, 7 miles east-northeast of Orient Point, Long Island, New York, is about 17 acres in area and the site of a large tern colony. A few Redwinged Blackbirds (*Agelaius phoeniceus*) forage in the grassy sections of the island and nest in its scattered patches of bayberry (*Myrica carolinensis*) and rose (*Rosa* sp.).

In 1967 6 male and 21 female Redwinged Blackbirds remained on the island during the summer. Cold weather persisted through the end of May and nesting began 10 days to 2 weeks later than in 1966. We found 10 nests early in June and 1 nest on 21 June. Using Allen's (Abstr., Proc. Linnaean Soc. New York, 24-25: 43, 1914) determination of 12 days for the incubation period and his criteria for aging the young, egg laying in 10 nests started between 1-10 June: 5 nests, 1-5 June; 4 nests, 5-9 June; and the 10th contained 1 egg 10 June. Eggs in the 11th nest did not hatch and later disappeared. We checked the nests 17 June, 21 June, and 26 June (Table 1).

A 2-day storm 19-20 June (Table 2) limited production in all but one nest. Clutches in the five nests initiated 1-5 June hatched before the storm and the young ranged from 2 to 6 days in age on 19 June. None of the young in these nests survived more than a few days after the storm. Clutches in the four nests initiated 5-9 June hatched 17-21 June, just before and during the storm. Two out of three young survived in each of these nests. The clutch in the last nest, begun 10 June, hatched

TABLE 1
NEST CONTENTS FOR REDWINGED BLACKBIRDS ON THREE JUNE CHECKS

Nest No.	June 17		June 21		June 26	
	Eggs	Young	Eggs	Young	Eggs	Young
1	0	4	0	0	0	0
2	0	3	0	0	0	0
3	0	2	0	1	0	0
4	1	2	0	1	0	0
5	1	3	0	0	0	0
6	3	0	3	0	0	0
7	—	— ¹	0	3	0	2
8	3	0	1	2	0	2
9	3	(1 hatching)	0	2	0	2
10	3	0	0	2	0	2
11	3	0	3	0	0	3

¹ Nest not found until June 21.

TABLE 2
WEATHER RECORDED ON LITTLE GULL LIGHT¹ 17 TO 21 JUNE 1967

Date	Temperature (°C)	Wind velocity (mph)	Wind direction	Weather description
17 June	15.6–17.8 (16.4) ²	5–15 (8.0) ²	SW-SSW	Blue sky, hazy
18 June	12.8–15.6 (14.0)	5–6 (5.2)	ESE-NE	Fair, rain midnight
19 June	12.8–14.4 (13.4)	10–20 (14.7)	NE-NNE	Rain through 16:00
20 June	8.9–11.7 (10.7)	20–35 (26.2)	NNE-NW	Overcast, midnight rain
21 June	11.1–14.4 (12.9)	15–0	N-calm	Rain through 8:00, clearing rest of day

¹ Located about 1 mile northeast of Great Gull Island.

² Averages in parentheses.

after the storm and all three young survived. Two stomachs of five nestlings found dead after the storm were empty, the rest contained a few remains of insects.

Willson (Ecol. Monogr., 36: 51, 1966) reports five female Yellow-headed Blackbirds (*Xanthocephalus xanthocephalus*) spent 45 per cent of their time brooding the young during the first 2 days after hatching; from the 3rd day on the time spent brooding decreased. Willson also noted a statistically significant difference between the average rate of deliveries of food to nests containing 1- to 3-day-old young and those containing 4- to 6-day-old birds, the rate being higher in the older group. Fautin (Auk, 58: 215, 1941) found nestling mortality in Yellow-headed Blackbirds to be highest among 3- to 6-day-old young. He suggested that younger birds are protected against poor weather conditions by being brooded and that older ones are feathered and able to regulate their body temperature.

The differential mortality observed in the nestling Redwinged Blackbirds on Great Gull Island suggests that the brooding and feeding requirements of these nestlings are similar to those Willson and Fautin discuss for the Yellow-headed Blackbird. The female Redwinged Blackbirds whose nests hatched first were probably unable either to protect their young during the storm or to gather enough food for them. The small amount of food in the stomachs of the five young examined contrasts sharply with what Jehl and Hussell (Arctic, 19: 185, 1966) found in dead nestling passerines after a storm near Churchill, Manitoba, Canada. As most of the stomachs of their dead young were at least half filled with food, they concluded that exposure rather than starvation was the primary cause of mortality.

The data are not adequate to determine the balance of factors responsible for the mortality in the Great Gull Island nestling Redwinged Blackbirds, but I think both starvation and exposure deserve consideration. An actual shortage of food during the cold, wet storm period may well have caused a higher mortality in the older nestlings, which require more food than those just hatched, and in trying to feed these young the females would have to leave them unbrooded longer than those whose eggs hatched during the storm.

This note is based on data members of a group sponsored by the American Museum of Natural History collected on Great Gull Island in 1967. Of the several who contributed observations, I particularly thank Donald Cooper for his notes on six nests he found early in June, and for letting me dissect and examine the stomach contents of five young he preserved. Thanks also to Jack Levy of the U. S. Coast Guard for weather data taken on Little Gull Light.—HELEN HAYS, 14 East 95th Street, New York, New York 10028.