

## GENERAL NOTES

**A Great Flight of Kittiwakes (*Rissa tridactyla*).**—The weather was sunny and cold, with a twenty-mile wind from the north when we arrived at Halibut Point on Cape Ann, Essex County, Massachusetts, January 1, 1953. It had cleared after the previous day's northeaster, and this outlying point was chosen for the New Year's first birding in the hopes of finding pelagic birds driven near shore by the storm. Nor were we disappointed; though the Red-throated Loons (*Gavia stellata*), Red-necked Grebes (*Colymbus grisegena*), Eiders (*Somateria mollissima*), and Scoters (*Melanitta deglandi*, *M. perspicillata*, and *Oidemia nigra*) were normally few, the count of large alcids was impressive. Twenty-seven of the ninety-eight which flew by were close enough to be identified as Razor-billed Auks (*Alca torda*); in addition Dovekies (*Plautus alle*) to the number of twenty-one passed the point.

But the major flight was of Kittiwakes, which were passing in a steady stream. To count minute after minute was impossible, but a careful one-minute count was made every ten minutes. One observer, Robert Wood, acted as timer and recorder; I counted the birds within eye and binocular reach; Robert Smart using a 35× telescope concentrated on the distant birds. The flight appeared to be split; one stream of birds passed close to Halibut Point, and another half-way to the horizon; few birds were seen between the two flight lines. The Kittiwakes, whether near or far, all flew due East, going out of sight well north of the Salvages. They were moving steadily, feeding little, and passing in numbers such as we had never seen or heard of before.

From 9:30 to 10:30 the counts ran over 90 birds a minute (93 to 96) then dropped to 75-plus (78 to 83) and finally, before noon to the 30s. Soon after noon the flight practically ceased and our count ended. Carefully checked and added, these figures gave the impressive total of 11,100 *Rissa tridactyla* passing in two and a half hours.

Although Kittiwakes were not seen in such numbers on any other date, they were more than normally abundant on the Atlantic Coast. Four hundred were recorded from Cape Ann on January 4, and an estimated thousand on January 29, when over two hundred were floating in the cove just south of Halibut Point. By February, only the usual single bird or two could be found.

This great flight was foreshadowed by the unusual count of 172 Kittiwakes for the Cape Ann Christmas census on December 21; while 55 were noted on western Long Island, December 28. Of interest also is the fact that the bird was added to the Virginia state list by specimens picked up on January 3 and 18. (Audubon Field Notes, 2: 55 and 3: 204, 208, 1953.) Kittiwakes were reported by Phillips B. Street off Cape Hatteras and Kittyhawk, North Carolina during late December and early January, and he "found them in numbers between Nassau and Havana, January 1." (Audubon Field Notes, 3: 209, 1953.)

Detailed weather reports furnished by the East Gloucester Coast Guard Station have been reviewed for the dates from December 13 to January 1. During this period the prevailing winds were largely west and northwest, moderate to strong, with none over force 6 (25 to 31 mph), and there were no unusually severe storms. There was a three-day northeaster, December 21 to 23, when the winds blew rather steadily from that quarter, force 4 to 6; again on December 31, winds were from the NNE to N, averaging force 4 (13 to 18 mph) for the day. Barometer readings on the latter date were 30.03 to 30.23, the weather overcast with some snow, but this was no major storm. There is nothing in this weather report to indicate why these masses of Kittiwakes were near land, and with the clearing weather of January 1, were steadily beating their way out to the open sea. Yet their course, as laid out

afterwards on a chart, was directly from west to east. It appeared to originate near the entrance to Plum Island Sound, or from the southern tip of Plum Island, a narrow sand spit extending south from the mouth of the Merrimac River at Newburyport to within 6.6 nautical or 7.5 statute miles of our observation point.

Gloucester fishermen, queried afterwards, could offer no suggestion as to why these gulls, which normally fish well off-shore, should have been found near land. There seems to be no explanation, unless a violent storm far out at sea was responsible for the sight witnessed that cold New Year's morning when it looked as though all the Kittiwakes in eastern North America were streaming past Halibut Point. DOROTHY E. SNYDER, *Peabody Museum, Salem, Mass.*

**A Technique for Recording Rapid Consecutive Field Observations.**—During a recent study of a blackbird roost, I was confronted with the problem of keeping close track of the time, light intensity, and number of each of three species entering or leaving the roost area and recording the data at the same time. It was impossible to do all this satisfactorily by myself, and I had no one on whom I felt free to call for continual assistance. A technique was developed which I felt might be of value in other types of field operations.

With the help of Mr. Don Curtis of our Audio-Visual Center a 6 volt D. C. to 110 volt A. C. inverter was rigged with a jack to fit the cigarette lighter of a car. With the car at the site for observations, a wire recorder was plugged into the inverter, a clock and light meter set in a conspicuous place, and observations dictated into the wire recorder. Later, at home, the recording was played back so that the data could be recorded on mimeographed forms. This arrangement proved of even greater value than I had anticipated. If the wire recorder had been in continuous operation during a period when a desired time check or light intensity reading had slipped by unnoticed, then it was possible afterward to construct a graph of light intensity against time from the recorded data. With such a graph, I could interpolate data in the desired units of time or light intensities. As an example, on August 11, 1952, the birds entered the roosting area "thick and fast" between 6:20 and 6:28 p.m. (E.S.T.). During this time only the following time and light readings were noted: Light 250 at 6:20; 180 at 6:28; 160 foot candles at 6:30. It was desirable to have a count of each species for the interval when the light ranged from 250 to 200 foot candles, and for the time interval from 6:20 to 6:25. From these and other recorded data a graph of light intensity against time was constructed. From this graph it was apparent that a light reading of 200 foot candles occurred at 6:26. The wire was rewound to the point on which the previous time check had been dictated in the field (6:20 p.m.). Then a clock was set at this time and the wire recorder started. The number of each species was recorded until the clock read 6:25, and the total for this time interval was taken as the number of birds entering the roosting area during the five-minute period between 6:20 and 6:25. One more minute of recording added to this gave the number of birds entering from the time the light reading was 250 foot candles until it was 200 foot candles. Had it not been for the fact that the observations were recorded on wire, the data for this and several other evenings could not have been included in the analysis.

One disadvantage in the continuous day-to-day use of this arrangement is the heavy drain on the car battery. As a consequence, the car must be operated enough to keep the battery fully charged and a close check must be kept on the water level in the battery. L. M. BARTLETT, *Department of Zoology, University of Massachusetts, Amherst, Massachusetts.*