

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.*