

is reported of its breeding (Eisenmann, *op. cit.*; 35, 1952). *Nest and eggs*: On February 5, Robert Z. Brown showed me a nest under the canopy of large forest trees in a small bush, 42 inches above the ground. The nest was a deep cup, with thick sides, suspended from the fork of two branches, somewhat in the manner of a vireo nest. It was composed of dead leaves bound together with plant fibers and lined with finer black fibers. Measurements: outside diameter 3 inches, outside depth $3\frac{3}{4}$ inches, inside diameter $1\frac{3}{4}$ inches, inside depth $1\frac{3}{4}$ inches. The nest contained two eggs, white with small brown spots over the entire surface and with heavier blotches around the large end. *Development of young*: On February 6, at 10:30 a.m., two young were in the nest. A shell lay on the ground below. The egg sac was yellow. First day—February 6: No down, skin light flesh color, showing dark on outer wing joints and tail; mouth lining yellow; eyes closed. Third day—February 8: Dark ventral tract well defined; feet black; fear response present. Fifth day—February 10: Eyes open; dorsal tract showing; primary pins $3/16$ inch long. Sixth day—February 11: Ventral tract feathers out of sheath, rufous colored; primaries $\frac{1}{2}$ inch long. (Last record—nest found destroyed on February 12.) *Other notes*: When the nest was found, the male was incubating, but slipped away as soon as I came in sight. On the day of hatching, the female consumed a fecal sac; on the third day the male carried one away. From the first day the young opened their mouths when the nest was jarred. As the parents appeared to move their wings rapidly when they brought food, this may have functioned to vibrate the nest and serve as a mouth opening stimulus. Data on feeding and brooding of the young are summarized in the table.—R. A. JOHNSON, *State U. Teachers College, Oneonta, New York.*

Winter Feeding of the Red-wing (*Agelaius phoeniceus*).—During the winter of 1948–49 a group of about 35 Cowbirds (*Molothrus ater*), Grackles (*Quiscalus quiscula*) and Red-wings were present in Flushing (a suburb of New York City) in the same neighborhood as in previous years.

The birds were frequent visitors to the various feeding stations in the area, but the flock was difficult to locate away from a feeder, for the birds seldom made any sound. Tall sweet gums (*Liquidambar styraciflua*) are common in the region and often the group, especially the Red-wings, were detected working quietly on the seed capsules.

On December 19, 19.5 inches of snow fell on the area. From a window the following morning I watched an immature male Red-wing, probably a member of this flock, feeding in a manner new to me. The bird was on a dead ragweed (*Ambrosia trifida*) in a vacant lot. By forcing his bill along a stalk—he seemed to use the lower mandible most—the stem was split open and something was extracted, which was immediately eaten.

The first stalk I saw the Red-wing work on was split for a distance of about 15 inches. In one instance the bird started on a stalk that apparently held no food, for after splitting it open for only 6 inches he moved to another.

I watched this bird for almost 10 minutes and was impressed at the ease with which the plants were slit open. Only the main, upright stems were attacked, the lateral branches (averaging 0.25 inches in diameter) being ignored. Several English Sparrows (*Passer domesticus*) whose own sustenance was likewise buried under the snow, appeared interested in the Red-wing's manner of feeding, for they followed him about and watched intently from as close as two feet away.

Several days later I examined some of the ragweeds the bird had been feeding on and also some that were untouched. Along the stalks at intervals varying from three to six inches were small, orange-yellow larvae measuring from 0.3 to 0.4 inches

long and averaging 0.09 inches thick. They were moderately active when removed from the larval cases.

A number of larvae and some infested stalks were taken to the American Museum of Natural History and given to Dr. James McDunnough, an authority on the Lepidoptera, who placed them where they could transform. Unfortunately, nothing hatched but parasites. In a subsequent letter, Dr. McDunnough said it was quite safe to call the species *Epiblema strenuana* Walker, a tortricid moth that is a well-known borer in Ambrosia.

I am indebted to Mr. W. L. McAtee for reviewing the manuscript and suggesting ways to improve it.—RICHARD B. FISCHER, *Cornell University, Ithaca, New York.*

Surgery for Sexing and Observing Gonad Condition in Birds.—In many species of birds there are no suitable criteria by which the sex of individuals can be determined except by direct examination of the gonads. Even where there are differences in plumage, wing length, body weight, or coloration of bill and feet, sexing is often only a little better than guessing because of the overlap in these characters. In addition, many of the criteria useful during the breeding season (e. g., the incubation patch, song, nuptial plumage, and sexual behavior), are useless at other times of the year.

In field and laboratory studies it may be advantageous to know promptly and accurately the sex of individuals or to know precisely the condition of the ovary or testes. The latter is especially true in studies of photoperiodicity. The purpose of this paper is to describe in detail the surgical procedure used in sexing birds, to point out ways in which the operation will be useful in field and laboratory studies, and to indicate from my own results the degree of success that can be expected. This work was supported by a fellowship from the Bank of America-Giannini Foundation.

The operation consists of making a small incision on the left side between the last two ribs, thus permitting a satisfactory view of the ovary or left testis. The procedure varies somewhat according to the size and structure of the species concerned and according to the conditions under which the operation is performed. There are many advantages to be gained by bringing the birds into the laboratory, but satisfactory results can be had in the field. Elaborate sterility precautions are not necessary, but all instruments and materials should be scrupulously clean. When the operation is performed in the field it is best to maintain a special kit which can be kept separate from dissecting and skinning equipment.

Ether or intramuscular injections of a barbiturate can be used as an anesthetic. A barbiturate is preferred for smaller birds since ether causes excessive formation and accumulation of mucus in the respiratory tract. The birds should be anesthetized so that they will remain so for about 10 minutes; thus, the correct dosage of the anesthetic must be determined for each species. Sixty milligrams per kilogram of body weight is an approximate formula from which to work. With smaller birds I use a 2 per cent solution of Nembutal dissolved in 10 per cent ethanol, and inject in the following dosages: Oregon Junco (*Junco oreganus*) and Song Sparrow (*Melospiza melodia*), 0.05 ml.; White-crowned Sparrow (*Zonotrichia leucophrys*), 0.07 ml.; Brown Towhee (*Pipilo fuscus*) and Robin (*Turdus migratorius*), 0.10 ml.; and domestic pigeon (*Columba livia*), 1.5 ml. The Nembutal is injected into the breast muscle, and the operation is started as soon as the bird is anesthetized. Intra-peritoneal injections are to be avoided because of complications with the air-sacs. If the operation has not been completed by the time the bird revives, a second injection consisting of one-half of the original dosage should be administered.