

A high percentage of the acorns (I) worked upon are rejected because of resistance to splitting. Frequently a bird will seize an acorn and fly into a tree where much more persistence is shown in the attempt to open it than when the bird is on the ground. It is not uncommon for the Grackles to feed on acorns that they pick from the tree.

Several pin oaks have been planted in Madison for ornamental purposes. Their acorns are approximately 12.5 mm. in length and the width usually exceeds this dimension. Curiously enough the shell fragments showed that the split was made about 3 mm. from the base (L) instead of near the middle as was the case with acorns from most species. When an acorn of the pin oak was placed in the bill of a freshly collected bird and pressure applied, the acorn automatically took such a position that the keel would cut near the base. Regardless of how the acorn was inserted on its side, the result was the same. This is due to the peculiar shape of the acorn (K), pressure causing it to incline from the perpendicular.

Wetmore stated that the kernel is swallowed entire. This appears to be the case; however, only fragments of the meat were found in the birds collected even early in the morning, the largest being 8 mm. in length. The gulping action is probably accompanied by crushing of the kernel. Unfortunately no bird was found in the act of swallowing a kernel where it could be collected with discretion. Secondary evidence for crushing is the fact that in no case was even so small an object as a grain of maize found entire in the stomach.

A large percentage of the acorns in this region are parasitized by weevils of the genus *Balaninus*. The egg is deposited in the growing acorn, the larva eventually cutting in the shell a hole by which it escapes to the soil. The Grackle appears to be unable to distinguish between sound and unsound acorns. Many opened acorns were found containing nothing but excreta and decayed portions of the meat (E, F, G, and H). In "H" it will be noted that the line of cleavage runs across the hole by which the larva made its exit. No evidence could be obtained that the acorns were opened from a desire to secure the larvae.—A. W. SCHORGER, 168 North Prospect Avenue, Madison, Wisconsin.

**Crossbills Breeding in Northern Michigan.**—During a field trip from January 27 to February 12, 1941, to the Huron Mountains of Marquette County, in northern Michigan, I observed unusual numbers of crossbills. Both the Red Crossbill (*Loxia curvirostra minor* Brehm) and the White-winged Crossbill (*Loxia leucoptera leucoptera* Gmelin) were present. Identification of specimens collected has kindly been made by Pierce Brodkorb, following Ludlow Griscom's revision (*Proc. Boston Soc. Nat. Hist.*, 41, No. 5, 1937). W. B. Barrows stated ("Michigan Bird Life," 1912: 472) that "Occasionally both forms are found in the same flock, but this is unusual . . ." In the present instance they occurred together, the Red Crossbills outnumbering the White-winged by more than three to one. There were literally hundreds of the birds throughout the region, often mingled with great numbers of Redpolls (*Acanthis linaria linaria*) and Pine Siskins (*Spinus pinus pinus*). Chickadees (*Penthestes atricapillus atricapillus*) were distinctly less common in the region at this period than in previous seasons, a fact possibly due to competition with the great numbers of these other birds.

A good crop of pine cones probably attracted the crossbills, which were found everywhere in conifer stands. However, Red Crossbills were also observed in virgin hardwood forests; and about a dozen pairs of White-winged Crossbills were present in a large swamp of alders and small spruces. At one group of buildings both species were commonly seen in white birches and nearby Norway pines. Often the birds were grouped about the bases of hard maples and hemlocks, pecking at the bark; also they were greatly attracted to spots of dog urine in the snow. During this period the temperature ranged approximately from 10° to 30° F., and the snow depth from 16 to 30 inches on the level.

A continuous chattering was plainly audible while the birds were feeding in flocks on conifers. The ordinary call note was a sharp whistle. Frequently the birds were heard in full song—a sweet, warbling melody. Often they were seen flying about in pairs. In one case, a lone pair of White-winged Crossbills was present in a meadow, singing and perching in an alder at the edge of a stream. The female was collected, at which the male appeared greatly disturbed. Griscom (*loc. cit.*, p. 82) states: "I have been able to find only a very few definite records of the two species ever breeding commonly together at the same time in any particular locality or region." In the present case they certainly were. Four males and three females of each species were collected. Subsequent examination by Leslie D. Case proved them to be in breeding condition, as shown in the accompanying table.

CROSSBILLS COLLECTED AT HURON MOUNTAINS, 1941

No.	Sex	Date	Breeding condition
<i>Loxia curvirostra minor:</i>			
4B	♂	Jan. 28	Testes approximately 2 mm. greatest diameter.
6B	♂	Jan. 29	Testes approximately 2.5 mm. greatest diameter.
16B	♂	Jan. 30	Largest ovum approximately 4 mm. diameter.
27B	♀	Feb. 4	Largest ovum 9 mm. diameter.
31B	♂	Feb. 9	Testes approximately 2.5 mm. greatest diameter.
32B	♂	Feb. 9	Testes approximately 2.5 mm. greatest diameter.
33B	♀	Feb. 9	Largest ovum approximately 1.5 mm. diameter.
<i>Loxia leucoptera leucoptera:</i>			
7B	♂	Jan. 29	Testes approximately 3 mm. greatest diameter.
8B	♀	Jan. 29	Largest ovum 20.5 x 14.5 mm., about ready for shell to form.
23B	♂	Feb. 3	Testes approximately 2.5 mm. greatest diameter.
24B	♀	Feb. 3	Largest ovum approximately 2 mm. diameter.
34B	♂	Feb. 9	Testes approximately 3 mm. greatest diameter.
35B	♂	Feb. 9	Testes 4 x 2.5 mm.
36B	♀	Feb. 10	Largest ovum approximately 2.5 mm. diameter.

The vagrant and erratic habits of the crossbills have been pointed out by Griscom (*loc. cit.*). In the Huron Mountains they have occurred irregularly for many years. S. S. Gregory, Jr. ("The Book of Huron Mountain," 1929: 181) says of the Red Crossbill: "Generally present in varying numbers from February to November. Sometimes abundant. Young scarcely able to fly were being fed by adults on May 7, 1921." One of these young was collected. Gregory writes further of the White-winged Crossbill: "Rare. This species was observed once on July 31 at the mouth of Elm Creek, and one other time on Sept. 9, on the Sand Plains about ten miles inland. A pair was collected near the upper end of Mountain Lake on Sept. 6, 1922." Bayard H. Christy (*Wilson Bull.*, 37, 1925: 213) says of the Red Crossbill: "A few wandering bands were seen in conifers, usually in spruces" between May 24 and June 17, 1925. Josselyn Van Tyne collected two red males (apparently *pusilla*) on June 24, 1936, from a flock of eight in a jack pine clearing ten miles inland. In the past two years I have observed the Red Crossbill in the Huron Mountains in all months except April, August, September, October, and December; the White-winged Crossbill I have seen only in July and September.

There are very few authentic breeding records for crossbills in the state of Michigan. Barrows (*loc. cit.*, p. 471) reports a nest of the "Red Crossbill" with two eggs found at Hillsdale in February of 1893 or 1894, by G. E. Douglas. Henry Nehrling ("Our Native Birds of Song and Beauty," 1896, vol. 2: 44) reports a nest of the White-winged Crossbill with two eggs found ten miles west of Escanaba on April 27, 1891, by A. J. Schoenebeck. The few other reports are all subject to doubt.—RICHARD H. MANVILLE, *Museum of Zoology, University of Michigan, Ann Arbor, Michigan.*