

GENERAL NOTES

Red-tailed Hawk attacks Long-eared Owl.—On 8 November 1960, I found four Long-eared Owls (*Asio otus*) roosting in brushy second growth, mainly *Crataegus*, four miles south and one mile west of Ann Arbor, Washtenaw County, Michigan. This brushy area is bordered by a mature woodlot on the north and cultivated fields on the other sides. On 12 November the owls were observed roosting as before in two adjacent *Crataegus* trees. As I approached, one owl flushed and flew northward over an open area, where the owl was attacked by a Red-tailed Hawk (*Buteo jamaicensis*). Although I could see that the hawk dived at the owl, intervening brush prevented me from seeing the actual contact. I went to the point of attack and flushed the hawk from the ground in a loose clump of *Crataegus*. The owl was on the ground about ten feet away in the same clump of trees, dazed and helpless. The hawk first landed in a large tree some 120 yards away and flew away when I approached it. The owl, an adult female, soon recovered from its dazed condition and was kept in captivity for several weeks following the incident. Apparent damage resulting from the attack consisted of a slash in the skin of the upper surface of the left wing and a puncture injury to the left eye resulting in blindness in that eye. The Red-tailed Hawk has been recorded as a predator of Screech Owls (*Otus asio*) but I find no previous record of its attacking a Long-eared Owl.—CHARLES T. COLLINS, *The University of Michigan Museum of Zoology, Ann Arbor, Michigan, 30 December 1960.*

Red-winged Blackbird killing a Sharp-tailed Sparrow.—In late May 1958, several foraging groups of Sharp-tailed Sparrows (*Ammodramus caudacuta caudacuta* and *A. c. nelsoni*) were feeding on the mud flats and along the dikes of impoundments of the Parker River National Wildlife Refuge on Plum Island, a barrier island off the north shore of Massachusetts near the towns of Newburyport, Newbury, and Rowley. Mr. Murray Gardler and I were banding in the "Hellcat Swamp" area of the refuge during this period. On 1 June, we erected two Japanese mist-nets on a dike to capture several of these sparrows.

These nets were checked at 1000. Two *A. c. caudacuta* were removed and banded (an *A. c. nelsoni* had been captured earlier on the mud flats). Upon approaching the nets at 1100, we noted several captured birds: one Song Sparrow (*Melospiza melodia*) and three *A. c. caudacuta*. A male Red-winged Blackbird (*Agelaius phoeniceus*) appeared to be caught in the net near one of the Sharp-tailed Sparrows. However, the blackbird flew off at our approach, dropping an object about one meter from the net. This object subsequently proved to be the head of a Sharp-tailed Sparrow. The body of the dead sparrow was in the third bag, about eight-tenths of a meter from the ground. There was no evidence to indicate that any portion of the dead sparrow had been eaten.

It seemed possible, at first, that the blackbird might have been poorly bagged on the outside of the net near the sparrow, turning upon it aggressively, killing it, and then escaping upon our approach. However, in my experience with such closely bagged birds, attacks have taken the form of random pecks, rather than the purposeful and somewhat laborious effort required to completely sever the neck of a nearby bird. The body of the sparrow showed no signs of other pecks, and the head was not badly damaged. Red-winged Blackbirds have powerful jaw musculature, sharp mandibles, and a willingness to bite when captured. However, the badly torn skin and muscles of the neck of the sparrow indicated that repeated biting and tearing movements had been necessary to

effect decapitation. This suggests that the sparrow was not killed as a result of simple aggression.

It appears, therefore, that the blackbird might have been outside the bag, uncaught, and had killed the Sharp-tailed Sparrow as an item of food, deserting his prey upon our intervention. That the sparrow was not merely killed, but also decapitated, strengthens this contention, as this seems to be a common starting point among avian predators on prey of only slightly smaller size.

A cursory survey of the literature on the Red-winged Blackbird suggests that the species eats nearly all invertebrate prey likely to be encountered by it. Only Bendire (*Life Histories of North American Birds*. 1895. Smithsonian Inst., U.S. Nat. Mus. Spec. Bull. No. 3:1-518) lists vertebrate food, namely, newts. It seems probable from this observation, that other vertebrates, including small birds, may be taken when available.

I am grateful to Mr. Gordon T. Nightingale, Director, Parker River N. W. Refuge, for permission to band on Plum Island, and to Mr. Murray Gardler for his help in the field. This work was supported by National Science Foundation Grant G 4811.—CARL W. HELMS, *Department of Biology, Bucknell University, Lewisburg, Pennsylvania, 18 August 1961*

Breeding of Red-winged Blackbird in captivity.—A pair of Red-winged Blackbirds (*Agelaius phoeniceus*) that had been caught as adults and kept together in captivity for a year was introduced into a screened pen 40 feet long, 20 feet wide, and 6 feet high on the campus of the University of Massachusetts during the winter of 1959-60. These birds nested, laid eggs, and presumably hatched young. The birds were fed, in addition to water, a high energy ration of the following ingredients in pounds per hundred weight (or grams): ground yellow corn, 79; soybean oil meal (95 per cent protein), 7; menhaden fish meal (60 per cent protein), 6.7; alfalfa leaf meal (20 per cent protein), 5; iodized salt 1; manganese sulfate (70 per cent), 0.025; dicalcium phosphate, 1; ground limestone, 0.25; dry vitamin A (10,000 IU/g), 45 grams; and dry vitamin D₃ (3,000 IU/g), 0.07 grams.

The field pen was planted to clover and grasses. Hussocks of marsh grasses were potted in the otherwise dry ground. Nesting materials, consisting of broken-apart fresh nests of other Red-winged Blackbirds available from a concurrent study, were scattered through the pen. During June the female constructed a nest on one of the purlins of the pen. It is not known how far nesting activity progressed as hatched shells were not discovered until long after the death of the female in late June. In early July a replacement female was introduced. This second bird was taken directly from a wild population that had been intensively studied. She was taken on a nest in the wild containing three slightly incubated eggs—her first clutch of the season (at least in that colony). Within a month after capture this female also built on a purlin instead of in the vegetation provided, laid eggs, and succeeded in hatching at least two young. The young died very soon after hatching presumably because insufficient protein and live food were available in the screened pen. To my knowledge this is the first record of Red-winged Blackbirds breeding in captivity. The possibility of controlled experimental work on reproductive physiology and reproductive behavior of this economically important species is suggested. I acknowledge the aid of Allyn Coombs in this study. The birds were contributed by the Section of Upland Ecology, Patuxent Wildlife Research Center; the diet was formulated and contributed by Dr. D. L. Anderson, Department of Poultry Science, University of Massachusetts.—DAVID KENNETH WETHERBEE, *Massachusetts Cooperative Wildlife Research Unit: University of Massachusetts, Amherst, Massachusetts, 16 November 1960.*