



Finch (*Carpodacus mexicanus*), for instance, are frequently discolored by berry juices and at times dried pulp accumulates on the bill.

On September 17, 1951, at Benicia, Solano County, California, one of the two Mockingbirds (*Mimus polyglottos*) in one of my banding traps appeared to have an abnormal growth on its forehead. This apparent abnormality, however, upon investigation proved to be an accumulation, approximately a cubic centimeter in size, of dried fig pulp firmly imbedded at the base of the upper mandible, and nearly closing the nostrils.

Most birds endeavor to maintain clean mandibles by scraping them on any available object. This incumbrance of dried fig, however, was so firmly attached that it was necessary to employ scissors to cut through the feathers at the base of the bill to remove the impediment.—EMERSON A. STONER, *Benicia, California, January 29, 1952.*

Winter mortality of Barn Owls in central Ohio.— In considering tolerance of the Barn Owl (*Tyto alba*) for rigorous winter weather, A. K. Fisher (1893. "Hawks and Owls of the United States," p. 138) wrote: "in all probability it sometimes perishes in the northern part of its range, when overtaken by severe weather, before being able to migrate." More recently the literature records at least two instances in which Barn Owls died as a result of severe winter weather in the northern United States. In February, 1930, following a period in which the temperature dropped to a low of -24° F., Errington (1931. *Wilson Bulletin*, 43:60) found two dead Barn Owls at their roosting place near Madison, Wisconsin. Errington mentioned the presence of at least some snow on the ground prior to the time the birds were found. The digestive tracts of the birds were

examined and found to be empty or nearly so, and he noted a progressive decline in size of pellets egested prior to the time of the birds' death. In January, 1940, following a period in which the temperature dropped to a minimum of -15° F., Speirs (1940. *Auk*, 57:571) found evidence of the death of four or five Barn Owls at their roosting place in Champaign, Illinois. The number of birds suggests that these might have been winter nestlings (Wallace, 1948. *Michigan State Col., Tech. Bull.* 208:17) which had not yet left their hatching place. Several other American authors have reported a marked decline in the local population of Barn Owls in connection with rigorous winter weather, but it is not clear whether the decrease was effected by migration or death of the birds. Schneider (1937. *Vogelzug*, 8:168) also reported winter killing of Barn Owls (*Tyto alba guttata*), in Germany, particularly during the severe winter of 1928-29. He also noted that the dead birds weighed significantly less than the minimum for well fed individuals of the species.

In central Ohio during November, 1950, two Barn Owls died apparently as a result of an abundant snowfall and near-zero temperatures. No sub-zero temperature was recorded, however. The following records of snowfall and temperature for the critical period were furnished by the Columbus, Ohio, station of the U. S. Weather Bureau:

Date	Lowest temp. F.	Inches of snowfall	Inches of snow on ground
Nov. 23	20°	1.1	—
Nov. 24	8°	1.2	2.0
Nov. 25	5°	7.5	10.0
Nov. 26	7°	1.9	11.0
Nov. 27	15°	1.1	13.0
Nov. 28	22°	.3	12.0

The first of these owls to come to my attention was found dead beneath a large bridge in Columbus, Ohio, by Roy Stimmel on November 28, but it was believed to have died at least as early as November 27. The dead bird came into my possession on December 1, and was turned over to the veterinary clinic of Ohio State University for examination on December 4. There was no indication of injury or disease, and the bird was seemingly a victim of adverse weather. Unfortunately, decomposition had progressed so far that it was not possible to determine the extent to which starvation and freezing figured as direct causes of death. The alimentary tract was devoid of food, and the bird seemed to be slightly emaciated. This bird weighed 457 grams (16 oz.)—somewhat below the minimum of 510 grams (18 oz.) given by E. H. Forbush (1927. "Birds of Massachusetts and Other New England States," 2:189). The second bird was reported to have been found dead on approximately the same date, but precise information was not available, nor was the bird accessible for necropsy.

Although the Barn Owl is the most nocturnal of the owls, Ralph Andrews reported seeing one eating a frozen Norway Rat (*Rattus norvegicus*) in full sunlight at 3:00 p.m. on November 26, 1950. This was at the dump on the Ohio State University grounds, and the rat seemingly had been dug from the snow by a dog. The owl departed upon Andrews' approach. It showed no signs of exhaustion.

More definite information is needed, but the observations given above suggest that the Barn Owl cannot survive if deprived of food during more than three or four days. A rapid rate of digestion for the species is suggested in a quotation by T. S. Roberts (1932. "Birds of Minnesota," 1:598): "A captive bird has been known to swallow 9

mice in quick succession and be ready for a second meal in 3 hours." The inaccessibility of food is probably the primary factor causing death of Barn Owls during periods of adverse winter weather in the northern part of the bird's range. A thick covering of snow on the ground accentuates the Barn Owl's difficulty in finding mice since the latter move about chiefly beneath the snow. The amount of snow covering is presumably the decisive factor in survival of Barn Owls. Low temperatures may be incidental in that they normally follow periods of heavy snowfall.—PAUL A. STEWART, *Dept. of Zoology and Entomology, Ohio State University, Columbus 10, Ohio, January 16, 1952.*

Hail damage to wildlife in southwest Oklahoma.—Late in the afternoon of October 5, 1951, an unusually severe hail storm accompanied by high winds and rain hit southwestern Oklahoma. The area of this storm extended from Wellington, Texas, eastward to Lone Wolf, Oklahoma, and varied in width from three to ten miles. The area of the most severe damage occurred between the towns of Reed and Granite in Greer County, Oklahoma. In this area of about 110 square miles, cotton was completely destroyed, windows of many homes were shattered, and shingles were beaten off roofs. Tree shelterbelts in full foliage were completely denuded, branches and twigs storm-pruned, and whole areas of bark stripped from the trunks of the trees. The hail stones measured between one inch and one and one-half inches in diameter. The hail fell for about ten minutes and covered the ground to a depth of two to three inches. It was followed by a downpour of rain which varied throughout the storm area from .8 to 2.5 inches. Total precipitation, including hail, was three to four inches.

On October 8th, three days after the storm, State Game Ranger Clem Patillo, of Mangum, accompanied by game technicians Richard De Arment and Walter Stidham, of Clinton, inspected wildlife habitat improvement plots for storm damage. In the course of this inspection they visited a farm two miles north and one mile west of Mangum, Oklahoma. This farm is on flat land—an old flood-plain of Elm Fork of the Red River—and is bordered on the south by a dense tree shelterbelt, 120 feet wide and one mile long. In this shelterbelt they found the following dead wildlife: 45 Swainson's Hawks (*Buteo swainsoni*); 1 immature Red-tailed Hawk (*Buteo jamaicensis*); 1 Cooper's Hawk (*Accipiter cooperii*); 30 Crows (*Corvus brachyrhynchos*); 3 Barn Owls (*Tyto alba*); 3 Mourning Doves (*Zenaidura macroura*); 4 Cottontail Rabbits (*Sylvilagus audubonii*); and 1 Wood Rat (*Neotoma floridana*). In addition, 4 living Swainson's Hawks were found with broken wings.

One-half mile north of the first shelterbelt is another, less dense than the first, which is 60 feet wide and one-half mile long. Fifteen Swainson's Hawks, but no other forms of dead wildlife, were found here.

A second farm, one mile west of the first, was visited. It comprises 160 acres and is west of the Red River. Along the weedy fencerows of cultivated land on this farm were three coveys of Bobwhite Quail (*Colinus virginianus*) which had been killed. These coveys were huddled in groups under clumps of sunflowers, ragweeds, Russian thistles, and such brushy cover as the fencerow afforded. One of the coveys contained 22 quail; one 11; and the third, 8. In addition, 9 dead jackrabbits (*Lepus californicus*) were found in various places in an 80-acre pasture.

I visited the first shelter-belt mentioned above two weeks after the storm, and found the damage as described by the men who visited it earlier. The four injured Swainson's Hawks were still there and appeared to be recovering slowly. Injuries appeared to