

blue, not the bright blue seen in male ASY coverts. Consequently, color differences between SY and ASY female coverts are less obvious than in males. Table 1 summarizes differences between age classes of both sexes.

The Bird Banding Laboratory requires an accuracy of 95+% for recommended aging techniques (U.S. Fish and Wildlife Service and the Canadian Wildlife Service, Bird Banding Manual, Vol. II, Bird Banding Techniques, Population and Survey Division of the Canadian Wildlife Service, 1977). Eleven known-age adults whose coverts were not used in construction of the keys were all correctly aged with the keys. Normally, however, the technique described here will not readily determine the age of all adult bluebirds. For example, 3 of 88 (3.4%) unknown-age bluebirds trapped during the 1983 and 1984 nesting seasons could not be definitely assigned to either the SY or ASY age class; such birds are aged as after-hatching-year (AHY).—T. DAVID PITTS, *Biology Department, University of Tennessee at Martin, Martin, Tennessee 38238*. Received 17 Sept. 1984; accepted 20 Sept. 1985.

First Central American Recovery of Blue-winged Warbler.—Through 1983 only 7 Blue-winged Warbler (*Vermivora pinus*) recoveries (outside the 10' block of banding) had been reported to the U.S. Fish and Wildlife Service Bird Banding Laboratory. All were banded and recovered in the northeastern U.S. between coastal Virginia and Massachusetts.

In the course of fieldwork in southern Belize, Central America, one of us (DSW) collected a banded Blue-winged Warbler, the first recovery for this species outside the U.S. This specimen, an adult female, is now in the collections of Carnegie Museum of Natural History (CM-P-162520). The bird was collected on 6 April 1984 at the foot of the first hills of the Maya Mountains at the point where the Bladen Branch of the Monkey River exits the hills (approximately 12 km north of Medina Bank). The specific habitat was an area of low (3 m high) dense vegetation adjacent to second-growth forest on the nearby hills.

This individual (band number 1610-19412) was banded as a hatching year bird of unknown sex at the Kalamazoo Nature Center on 9 August 1982 (by RJA). We are not certain of the wintering area for this bird because the collecting date is during the early migration season. However, we think southern Belize to be the likely area because the bird did not appear ready to migrate (little fat, weight of 6.4 g) at the time it was collected.

Despite the common occurrence of Blue-winged Warblers as breeding birds throughout much of the northeastern United States, relatively few are banded each year. According to the annual banding summaries distributed by the Banding Office, between 1968 and 1982 only 5835 of these birds were banded (a yearly average of only 389). In contrast, yearly banding totals for many warbler species exceed 2000. During the same period (1968-1982) only 5 recoveries were reported for the Blue-winged Warbler, a recovery rate of slightly less than 0.1%. Such a low level is not unusual: data on *all* warblers banded at Powdermill Nature Reserve over the 20-year period 1962-1981 (25 recoveries, 39,570 original bandings) show a recovery rate of only 0.06% (Leberman and Wood, 1983, Powdermill Nature Reserve Res. Rept. 42).

The winter range of the Blue-winged Warbler extends from southern Mexico to central Panama. The majority of the birds seem to migrate through much of the southeastern U.S. (except the very southeast) and across the Gulf of Mexico to Central America, although small numbers probably migrate through the Caribbean (American Ornithologists' Union, 1983, Check-list of North American Birds, sixth edition). In Belize it is not a common wintering species, but has been recorded on all but two of the 21 Audubon Christmas Counts there (Young 1973-1984, *Am. Birds* 27-38). During our fieldwork (March-April 1984) we encountered Blue-winged Warblers at every locality we visited, but in low numbers (1 to 4 per locality).

We thank the Bird Banding Laboratory of the U.S. Fish and Wildlife Service for providing data on recoveries of Blue-winged Warblers. We are greatly indebted to the Ministry of Natural Resources, Government of Belize, for permission to conduct fieldwork

and to collect bird specimens within Belize. K. C. Parkes and H. L. Batts commented on an earlier draft of this report.—D. SCOTT WOOD, *Section of Birds, Carnegie Museum of Natural History, Pittsburgh, Pennsylvania 15213*, and RAYMOND J. ADAMS, JR., *Kalamazoo Nature Center, Kalamazoo, Michigan 49007*. Received 10 June 1985; accepted 15 July 1985.

Sustained Robbing of American Crows by Common Ravens at a Feeding Station.—Other than descriptions by Conner et al. (1975) of Common Ravens (*Corvus corax*) relying on American Crows (*C. brachyrhynchos*) as sentinels and by Erskine (1968) of a raven supplanting a crow at a carcass, there exist few descriptions of interspecific interactions outside of the breeding season. I report the robbing of crows by ravens in October 1984 on a dairy and sheep farm in Lyme, New Hampshire. Observations were made from farm buildings that looked out over fields backed by woods. On 7 October 1984 I started putting out suet, chopped into pieces 2–4 cm in length, at the edge of woods, 160 m from the farm buildings. Five to seven crows and a pair of ravens, marked by one of them having a missing wing feather, came to the feeding site each morning until 28 October, when the ravens ceased coming to the feeding site.

Behavior of the two species varied according to whether they came to the suet alone or together. When crows alone were present ($n = 7$), they fed and flew 30–150 m to store food in clumps of grass. They also flew into nearby woods with suet visible in their bills. When one or both ravens came alone to the suet ($n = 4$), they poked the food first with their bills, then jumped back or up with wings out, repeating this 3–5 times before seizing a piece and flying off.

When the ravens and crows both came to the feeding place ($n = 14$), one raven perched in a tree along the edge of the woods where it could observe the crows on the ground. When one or several crows started carrying suet into the woods, the raven flew among them, causing the remaining crows to mob it. On several occasions I observed a raven flying off with suet in its bill. On 4 November I watched a crow with suet in its bill flying over woods beyond with a raven in pursuit. When the crow dropped its suet, the raven retrieved it.

Discussion.—A question throughout observations was why the ravens, that can supplant crows (Erskine 1968), preferred to rob them in the air rather than going to the ground to feed directly. It is my impression that the ravens were wary of something on the ground. This fear, manifested by jumping back repeatedly from food that I set out, could have been fear of encountering a trap. Traps were set on the farm for coyotes (*Canis latrans*) every year. On 16 December I discovered an old, crushed trap and chain in the open only 5 m from the feeding station where it could have been easily seen by a raven perched on a tree above. On 19 December 1984 coyotes killed a sheep half way between the crow feeding station and the barn. A trapper was called in to set traps by the carcass. At sunrise on the next day I found a raven caught in two traps, with a second raven circling overhead calling. One leg of the raven was severely crushed and the bird died within a few hours. The trapper, who had caught ravens in coyote traps before, thought that they were more likely to get caught near a sizable carcass than by small bait. Hewson (1981) noted a similar attraction of ravens to sheep carcasses in Scotland.

An additional question is whether ravens are more fearful of steel traps than are crows. Ravens range widely over woodlands when trees are bare of leaves in New Hampshire and come down to feed on carrion and other food located from the air, as I have noted from tracks in the snow. This habit exposes them to the activities of trappers more than crows which are birds of the open and more apt to forage in fields where professional trappers are generally less active.

Some aspects of the behavior of ravens appear to be conditioned by human activities. Knight (1984) demonstrated conditioning of ravens to human intruders approaching nests in nesting areas having high, as compared to low, human densities and concurrent levels of persecution. It is conceivable that the presence of trappers in an area may affect the reaction of ravens to food scraps put out by man. I believe this is why ravens stole food from crows, rather than taking the risk of coming to the ground themselves.