

Crop contents of Rock Doves in Virginia.—Little information has been published concerning the ecology and food habits of the Rock Dove (*Columba livia*) in the United States. This study describes contents of Rock Dove crops obtained in December 1972 at Blacksburg, Virginia.

Rock Doves were collected by shooting at roosts (i.e. building roofs and other structures) on the campus of Virginia Polytechnic Institute and State University. The crop contents of 144 Rock Doves were analyzed by identifying food species and volume. The *Seed Identification Manual* by Martin and Barkley (1961, Univ. Calif. Press, Berkeley) was used to identify seeds. Food items were separated and then volume was determined by displacement in a graduated cylinder that contained a known amount of water.

Data presented in Table 1 show the food items used by Rock Doves and the relative importance (% frequency) of each. Rock Doves examined in this study were heavily dependent upon local agricultural activities. Much corn is planted each year on the University farms, and grain and chopped corn silos are located 1–2 km from campus. Corn was found in 141 (97.9%) of all crops and accounted for 91.7% of the total volume of the contents of all 144 crops examined.

Gompertz (1957, Bird Study 4:2–13) noted that Rock Doves in London frequented areas where 4 species of wild food plants, including knotweed, were consistently found,

TABLE 1
MATERIALS FOUND IN ROCK DOVE CROPS, COLLECTED AT BLACKSBURG, VIRGINIA
(N = 144)

Material	Number of crops	% occurrence	Volume	% of total volume
Corn, <i>Zea mays</i>	141	97.9	2439.0	91.7
Oat, <i>Avena</i> sp.	72	50.0	85.0	3.2
Knotweed, <i>Polygonum aviculare</i> ^a	38	26.4		
Cherry, <i>Prunus</i> spp.	33	22.9	97.0	3.7
Grit	27	18.7	2.5	0.1
Wheat, <i>Triticum</i> sp.	19	13.2	11.0	0.4
Barley, <i>Hordeum</i> sp.	18	12.5	14.3	0.5
Plant debris ^a	18	12.5		
Goosegrass, <i>Eleusine indica</i> ^a	12	8.3		
Pokeberry, <i>Phytolaca americana</i> ^a	6	4.2		
Crabgrass, <i>Digitaria ischaemum</i> ^a	6	4.2		
Millet (species undetermined) ^a	3	2.1		
Black locust, <i>Robinia pseudoacacia</i> ^a	2	1.4		
Sorghum, <i>Sorghum vulgare</i> ^a	2	1.4		
American elm, <i>Ulmus americana</i> ^a	2	1.4		
Poison ivy, <i>Rhus radicans</i> ^a	2	1.4		
Pigweed, <i>Amaranthus</i> sp. ^a	1	0.7		
Acorn, <i>Quercus</i> sp. ^a	1	0.7		
TOTAL			2648.8	99.6

^a These materials combined yield 10.5 cc volume and 0.4% of total volume.

but he did not study crop contents of the Rock Doves. While we found wild seeds in a substantial proportion of crops, they contributed little in terms of total volume of food consumed by the Rock Doves.

It is interesting to note that the doves studied apparently did not frequent bird feeders, for only 1 crop contained seed that apparently came from such a source. We report crop contents of Rock Doves in a semi-rural environment; it would be valuable to compare data from a truly urban population with ours. Goodwin (1970, Pigeons and Doves of the World, The British Museum, London) states that in both urban and rural areas Rock Doves depend directly or indirectly on man for food sources. Our observations tend to support this conclusion.—THOMAS A. PIERSON, ROBERT G. COBB, AND PATRICK F. SCANLON. *Dept. of Fisheries and Wildlife Sciences, Virginia Polytechnic Institute and State Univ., Blacksburg 24061. Accepted 19 Jan. 1976. Page costs paid.*

A probable Mourning × MacGillivray's Warbler hybrid.—Cox (Auk, 90:190–191, 1973) first reported and qualitatively described probable hybrid individuals between the Mourning Warbler, *Oporornis philadelphia*, and MacGillivray's Warbler, *O. tolmiei*. Cox's study was made in SW Alberta, Canada, in an area in which the species' breeding ranges contact each other at occasional points (Cox 1973). No measurements were presented.

On 22 May 1975, a male *Oporornis* was mist-netted in Johnson County, (eastern) Kansas. The bird was photographed (Fig. 1), carefully measured, banded, and released. Both the plumage characteristics and the measurements of this individual strongly suggest that the bird was a hybrid.

Phillips (Auk, 64:296–300, 1947) first stressed the importance of the wing minus tail ratio in MacGillivray's. Lanyon and Bull (Bird-Banding, 38:187–194, 1967) stressed this same characteristic in separating the Mourning from MacGillivray's.

In their study of *Oporornis*, Lanyon and Bull presented the following pertinent data (mm): For 65 male Mournings, the mean wing (flat) measurement was 62.3 ± 0.22 ; the mean tail measurement was 48.8 ± 0.19 . For 87 male MacGillivray's, the mean wing (flat) measurement was 60.8 ± 0.19 ; the mean tail measurement was 54.3 ± 0.30 . A wing minus tail ratio of 9 to 11 mm was considered to be within the "region of possible overlap" between the species (Lanyon and Bull 1967).

The individual which we netted had a wing (flat) measuring 62 mm and a tail measuring 52 mm, yielding a wing minus tail ratio of 10 mm. This measurement falls squarely between the species.

The adult spring male MacGillivray's is characterized by conspicuous white eyelid spots, blackened lores, and the absence of a black apron on the breast. Conversely, adult spring male Mourning lacks the white eyelid spots and blackened lores of MacGillivray's, and has a black apron on the upper breast (see generally Griscom and Sprunt, *The warblers of America*, Devin-Adair, New York, 1957).

The individual which we netted had only moderate, but quite noticeable, development of the white eyelid markings, heavily blackened lores, and less extensive black on the upper breast than in most typical spring male Mournings. Moreover, the black lores and the measurements show that this bird was not merely an unusual Mourning Warbler, a common migrant species in eastern Kansas (Allan R. Phillips, pers. comm.).