

# ANALYSIS OF OVENBIRDS KILLED IN CENTRAL FLORIDA

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Annual kills of nocturnal migrants at tall structures and airport ceilmeters provide large samples useful in studying various aspects of avian biology. These samples probably are as nearly random as it is possible to obtain (Tordoff and Mengel, 1956). Although thousands of nocturnal migrants have been killed, collected, and enumerated from disasters in the United States and Canada over at least the last two decades, little information based on large samples has appeared on relative abundance of each sex and age group, time of migration of each group, geographical patterns of migration, and other topics relative to migration of several species. The present paper presents data on age-sex ratios, weights, wing chord, and migration pattern of the Ovenbird (*Seiurus aurocapillus*). Particular attention is directed to the fall migration of this species in Florida.

## MATERIALS AND METHODS

Ovenbirds were obtained at the newly-erected (July 1969) WDBO-TV tower near Bithlo, Orange County, Florida. Since 11 September 1969, 740 Ovenbirds have been collected. Of 714 Ovenbirds killed in the fall (1969-1971), one was found in August, 474 in September, 237 in October, and two very old and desiccated birds in November. The remaining 26 specimens were collected in March, April, and May 1970 and 1971.

The Ovenbirds were weighed to the nearest 0.1 g. Sex was determined by dissection and age by skull ossification. Wing length was obtained by using a pair of dividers, and with few exceptions, the left wing was measured.

## RESULTS AND DISCUSSION

*Fall migration.* Few fall disasters at tall structures and airport ceilmeters in eastern North America have lacked Ovenbirds. Localities reporting large numbers of Ovenbirds killed, compared with the total number of parulids killed during fall migration, include Eau Claire, Wisconsin (Kemper *et al.*, 1964); Cadillac, Michigan (Caldwell and Cuthbert, 1963); New York City, New York (Bagg, 1971); Baltimore, Maryland (Bagg, 1971); Seymour, Illinois (Brewer and Ellis, 1958); Nashville, Tennessee (Ganier, 1966); Warner-Robins, Georgia (Johnston, 1955); Charleston, South Carolina (Adams, 1962); and Tallahassee (Stoddard and Norris, 1967) and Orlando, Florida (this study). Of 59,032 warblers representing 37 species reported killed in the last twenty years during autumn migration at tall structures and at ceilmeters in eastern Canada and the United States, 11,236 (19 per cent) were Ovenbirds. These data indicate that the Ovenbird migrates in the autumn in large numbers across a broad area of eastern North America.

The species is more abundant in peninsular Florida than in the panhandle region. In an eleven-year study at the WCTV tower near Tallahassee, Stoddard and Norris (1967) reported 414 Ovenbirds killed in the fall. This figure is less than the 714 individuals collected at the WDBO facility in central Florida during three years for the same autumn months. A similar relative difference in numbers between WCTV and WDBO is also exhibited by the Long-billed Marsh Wren (*Telmatodytes palustris*), Cape May Warbler (*Dendroica tigrina*), Black-throated Blue Warbler (*D. caerulescens*), and Yellowthroat (*Geothlypis trichas*). Of 711 Ovenbirds found in September and October at WDBO, 397 were collected between 24 September and 6 October. This period probably represents the peak of this species fall migration in Central Florida. Stoddard and Norris (1967) gave the peak migration for the Ovenbird in their area to be in early October. More than twice the number of Ovenbirds collected in September were found in October at WCTV; at WDBO 474 were found in September and 237 in October. Of two banded birds recovered at WDBO, one was a five-year old Ovenbird banded near Ft. Meade, Maryland by Chandler S. Robbins (Taylor and Anderson, 1971).

*Age ratios.* Both immature and adult Ovenbirds migrate together based on data obtained from single night kills. Data on 505 of 714 fall specimens collected at the WDBO facility clearly indicate the predominance of adults over immatures (Table 1). In late October, however, the smaller samples reveal a slightly higher proportion of immatures than in September. Brewer and Ellis (1958), working with 25 Ovenbirds killed at Illinois, and Eaton (1967), working with 43 specimens from New York, found that adults outnumbered immatures. Tordoff and Mengel (1956) in Kansas and Johnston and Haines (1957) in Georgia found the reverse situation in 30 and 35 Ovenbirds examined, respectively. Goodpasture (1963) found an almost equal age distribution from 50 Ovenbirds examined in Tennessee. These differences might be regional or simply reflect small samples.

TABLE 1. Seasonal casualty totals for 505 Ovenbirds collected at the WDBO-TV tower; fall 1969, 1970, and 1971

Dates	Adult Males	Immature Males	Adult Females	Immature Females	Totals
7 - 14 September	22	7	20	6	55
27 - 30 September	92	32	88	59	271
1 - 16 October	15	12	22	21	70
18 - 30 October	23	34	27	25	109
Totals	152	85	157	111	505

*Sex ratios.* Females outnumbered males in the 505 Ovenbirds aged and sexed (Table 1). In addition, 52 specimens not included in Table 1 were sexed but not aged; 34 were females and 18 were males. Goodpasture (1963) found twice as many females as males in a sample of 50 Ovenbirds killed in Tennessee.

TABLE 2. Weights (in grams) of Ovenbirds killed at the WDBO-TV tower; September and October 1969 and 1970

Age and Sex	Number	Mean $\pm$ standard deviation	Range
Adult males	91	22.5 $\pm$ 2.01	17.8-27.5
Immature males	37	23.5 $\pm$ 2.08	15.7-27.4
Adult females	91	21.7 $\pm$ 1.53	18.4-25.8
Immature females	60	22.5 $\pm$ 2.01	16.4-27.8

*Weights.* Most of the Ovenbirds were rated fat to very fat. Weights of 279 specimens are given in Table 2. Both males and immatures averaged about 1.0 g heavier than the females and adults. Johnston and Haines (1957) and Graber and Graber (1962) also found mean weights of immatures to be about 1.0 g heavier than adults. Mean weights of five adult males (17.1 g) and six adult females (16.4 g) killed at the WDBO facility during spring migration are much lower than those of fall birds. An overwater flight from the wintering grounds might be the reason for the lighter weights in the spring compared to those taken in the fall.

*Wing chord.* It has been known for some time that differences occur in wing length between the sexes of Ovenbirds (Wood, 1969). However, confusion exists and in most instances information is lacking if the wing measurements were taken on birds in the flesh as versus from study skins (George, 1971). Measurements taken on 127 Ovenbirds in the flesh are given in Table 3. These birds were collected on 29 and 30 September 1970. There is considerable overlap in wing length among the four age-sex classes. However, males of both age classes generally have longer mean wing lengths than do females, and adult males have the longest mean wing length.

TABLE 3. Wing chords (in mm.) of 127 Ovenbirds killed at the WDBO-TV tower on 29 and 30 September 1970

Age and Sex	Number	Mean $\pm$ Standard deviation	Range
Adult males	40	76.9 $\pm$ 1.72	73.4-80.1
Immature males	15	74.8 $\pm$ 1.83	71.2-77.0
Adult females	42	72.7 $\pm$ 1.71	69.5-76.5
Immature females	30	71.7 $\pm$ 1.41	69.0-74.1

## SUMMARY

During fall migration the Ovenbird is a common victim at many tall structures and ceilometers. The species evidently migrates in the fall in large numbers across a broad area of eastern North America. Data obtained from 740 fall migrating Ovenbirds collected at the WDBO-TV tower since 11 September 1969 are presented. Adults outnumbered immatures and females outnumbered males. Males averaged heavier than females and immatures averaged heavier than adults. Data on wing chords from 127 Ovenbirds indicate that males of both age classes have longer mean wing lengths than females, and adult males have the longest mean wing length.

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