

## TOWER-KILLED SPECIMENS AND OBSERVATIONS OF MIGRANT BIRDS FROM GRAND BAHAMA ISLAND

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FROM 20 to 24 October 1966 the Florida Audubon Society held its annual leaders' conference near West End, Grand Bahama Island, located approximately 55 miles due east of West Palm Beach, Florida. During this period 137 species of birds were observed, several of which represent new records for the Bahamas and West Indies. On the night of 21-22 October weather conditions caused mortality of migrating birds at the 200-foot TV reception tower on the grounds of the Grand Bahamas Hotel and at the 400-foot U. S. Air Force Missile Tracking System towers located approximately three miles east of West End. The number of species seen in the area and found dead under the towers warrants a brief résumé of the weather patterns and some of our observations.

During 17-20 October a cold front extending from Cape Hatteras across Florida to the Yucatan peninsula gradually moved southeasterly. Prior to its arrival, winds had been light from the east and northeast while prefrontal winds accompanied by showers and thunderstorms ranged from SSE and SW at 10-20 knots. The front passed Grand Bahama at 07:00 on 20 October and was followed by clearing skies and winds from the NW and N at 15-20 knots extending from Hatteras to the Bahamas. Heavy rains fell on south Florida during passage of the front. By midnight on 20 October the front was stationary over Cuba. From midnight on the 20th through late afternoon on the 21st strong northeasterly winds at 15-20 knots blew from Hatteras to the Bahamas. Shortly after noon on 21 October the front began moving slowly northward accompanied by heavy rains. Winds north of the front continued from the northeast at 10-20 knots and gradually shifted westerly by midnight. Heavy rains began falling on Grand Bahama around 19:00 and continued throughout the night, ending shortly before dawn on 22 October. After northward passage of the front, winds were southerly, 5-10 knots, and remained so for the next few days, even though the front again moved southward over the Bahamas on 23 October.

During 20 and 21 October, many birds were observed on the hotel grounds and golf course. The most numerous species by far was the Palm Warbler (*Dendroica palmarum*). A Pigeon Hawk (*Falco columbarius*) was observed to capture and kill several without stopping to eat them. Cape May Warblers (*Dendroica tigrina*), American Redstarts (*Setophaga ruticilla*), and Mourning Doves (*Zenaidura macroura*) were also present in large numbers. While viewing one flock of doves we watched an immature Red-tailed Hawk (*Buteo jamaicensis*) capture one and fly to a utility pole where it plucked and ate it.

TABLE 1  
 BIRDS FOUND BENEATH TOWERS ON GRAND BAHAMA ISLAND, 22 OCTOBER 1966.  
 (See A.O.U. Check-list, 5th ed., 1957 for scientific names.)

Species	Numbers	
	TV Tower <sup>1</sup>	Tracking Tower <sup>2</sup>
Yellow-billed Cuckoo	1	1
Yellow-bellied Sapsucker	0	1
Eastern Wood Pewee <sup>3</sup>	1	0
Acadian Flycatcher <sup>3</sup>	1	0
Gray-cheeked Thrush <sup>4</sup>	12	27
Red-eyed Vireo	2	2
Black-and-White Warbler	1	4
Parula Warbler	7	7
Magnolia Warbler	0	1
Cape May Warbler	2	9
Black-throated Blue Warbler	1	6
Bay-breasted Warbler	1	0
Blackpoll Warbler <sup>4</sup>	3	18
Palm Warbler	0	1
Ovenbird	1	9
Northern Waterthrush	0	1
Common Yellowthroat	1	4
American Redstart	0	5
Scarlet Tanager <sup>4</sup>	0	1
Bobolink	0	1
Rose-breasted Grosbeak	1	0
Grasshopper Sparrow	0	1
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Totals: Number	37	99
Totals: Species	14 spp.	18 spp.

<sup>1</sup> 200-foot TV reception tower on grounds of Grand Bahama Hotel, West End.

<sup>2</sup> 400-foot USAF Missile Tracking System reflecting tower, 3 miles east of West End.

<sup>3</sup> Specimen deposited in American Museum of Natural History.

<sup>4</sup> One specimen kept by H. W. Kale.

During passage of the front on the night of 21–22 October numerous birds were heard calling in the vicinity of the hotel beginning around 22:00, and several warblers were seen fluttering in the glare of the street lamps. The three species of warblers mentioned above were identified visually in the darkness. Numerous birds were calling in the air above the nearby TV tower. Nonflashing red lights were located at the top and at the midway point of this tower. By midnight Kale picked up several exhausted and injured birds—Gray-cheeked Thrush (*Hylocichla minima*), Ovenbird (*Seiurus aurocapillus*), Black-and-White Warbler (*Mniotilta varia*) and Cape May Warbler.

The next morning I. Fritz, Tucker, and Kale searched in the undergrowth surrounding the tower and picked up the birds listed in column 1 of Table 1. Most of these fell on the southwest side of the tower where an extremely dense patch of vegetation probably prevented our finding all the casualties.

Even in the driving rain fire ants quickly found the birds that fell to the ground. By the next morning all dead birds were being eaten by ants and some were partially buried under sand as a result of this activity.

Permission was obtained from Mr. Richard Baden, director of the USAF Missile Tracking Station near West End, to search the grounds beneath the reflecting tower in the afternoon of 22 October. The 400-foot transmitting tower, located about 0.5 mile distant was not checked. The terrain under the reflecting tower is flat and well-mowed, hence dead or injured birds were readily seen. Many of these had already been fed upon by predatory birds. Only heads, wings, tails and legs remained of some birds. Mr. Baden stated that he often saw birds of prey feeding on the grounds after tower kills. Fire ants were numerous and active. Column 2 of Table 1 lists the 99 birds of 18 species we picked up, most of which were found southwest of the tower. Mr. Baden reported that he had seen much larger kills where the grounds were littered with hundreds of dead and injured birds. Predators and ants rapidly removed most of them. Although our search was by no means exhaustive, we found little evidence of any previous kills in the fall of 1966. One Mockingbird (*Mimus polyglottos*) skeleton and fragments of wingbones of two other unidentified passerines were found.

The most numerous species killed at the towers were the Gray-cheeked Thrush and the Blackpoll Warbler (*Dendroica striata*). During this same period Gray-cheeked Thrushes were observed migrating on the Florida mainland, but the Blackpoll which is a rare fall migrant in Florida was not reported anywhere along the southeastern coast from North Carolina to Florida (Audubon Field Notes, 21:19-25, 1967). The land departure point in the migration route of the Blackpoll Warbler has been the subject of some controversy (see Murray, 1966, Dennis, 1965, Baird and Wingate, 1965). Weather maps for 20 October show the cold front extending from the Canadian maritime provinces to Cuba on a line west of Bermuda, thus migrating birds might have left the mid-Atlantic Coast, or the New England Coast, on a flight that would carry them east of the Bahamas, and then been wind-drifted SW as the wind shifted NE during the night. By utilizing the strong tail winds they might still reach Grand Bahama without catabolizing much fat. Although no weights were taken, all of the tower-killed birds were in excellent condition with fat classes (according to the McCabe index, 0-5) estimated to range from 3 to 5. Most of the Blackpolls were in the upper

ranges (classes 4 and 5) and were picked up on the southwest quarter of the tower suggesting arrival from a northeast direction. Nevertheless, this does not rule out the possibility, as suggested by Murray, that these birds may have departed from the southeastern coast of the U. S.

On the morning of the 22nd, the grounding effect of the previous night's weather was evident by the large number of migrants observed feeding in the area. Numerous Eastern Wood Pewees (*Contopus virens*) and Catbirds (*Dumetella carolinensis*) had arrived the night before as none had been seen before this time. Several exhausted and weakened birds were found on the hotel grounds during the day—Gray-cheeked Thrush, Blackpoll Warbler, Ovenbird, Palm Warbler. Some of these expired and some were able to recover sufficiently to fly off.

The number of distinctly western species observed during this period (see annotated list below) suggests to us that these birds perhaps arrived on the night of 19–20 October with the front, or on NW winds on the 20th. By 23 and 24 October no new migrants were observed and many of the birds that had been present disappeared. This was made particularly noticeable with the disappearance of most of the Palm Warblers. Throughout the remainder of the week, according to L. S. Hubbard, who remained on Grand Bahama, few migratory birds were seen.

Missile Tracking System towers are located on all of the larger islands of the Bahamas downrange from Cape Kennedy. Undoubtedly nocturnal mortality occurs from time to time at all of them. They offer unique and so far untapped opportunities for studies on birds migrating over these islands.

#### NEW AND ADDITIONAL RECORDS FOR THE WEST INDIES

White-winged Dove (*Zenaida asiatica*). This species occurs in the southernmost Bahamas and southward according to Bond (1961, 1959–1966), thus a single individual observed feeding in a flock of Mourning Doves on 22 October 1966 is noteworthy. The only other record from Grand Bahama was an observation by Hundley on 14 November 1964.

Rufous Hummingbird (*Selasphorus rufus*). This species has not been recorded anywhere in the West Indies, even though it is of irregular occurrence in Florida as a rare migrant and/or winter visitor. An immature male with rufous color on sides, flanks and back was first sighted by Tucker near the TV tower shortly after dawn on 22 October. This same bird was observed for ten minutes by Kale while it was feeding on flowers in the same area around 08:00. It approached the observer within three or four feet while feeding. An hour later it was watched while feeding by Hundley. We realize that it is possible to confuse the immature of this species with the immature of Allen's Hummingbird (*S. sasin*), but the likelihood of this far western species being present, rather than *S. rufus* is so remote that we feel correct in listing the latter species as a first record for the West Indies.

Sprague's Pipit (*Anthus spragueii*). This species was observed at close range on the golf course by Tucker late in the afternoon of 20 October, and was sighted again the

next afternoon in the same area by Kale. Photographs taken by Myron Elliot were examined by James Bond. This is the first record for the species in the West Indies.

Wilson's Warbler (*Wilsonia pusilla*). An adult female or immature bird was observed for several minutes by Kale as it fed in Australian pines (*Casuarina* spp.) near the TV tower on 22 October. It was seen later in the morning in the same area by Kale, Tucker and Mrs. Doris Mager. Bond (op. cit.) lists four records (all in autumn) for the species, three in western Cuba, and one from New Providence.

Scarlet Tanager (*Piranga olivacea*). Bond (op. cit.) considers this species to be a rare transient in the West Indies. One immature male was picked up under the USAF Missile Tracking System tower near West End on 22 October 1966. It had been partially eaten by an avian predator, but the head, wings, tail, and ventral plumage were preserved by Kale. It represents the first record for Grand Bahama Is.

Brown-headed Cowbird (*Molothrus ater*). A single male feeding in a horse paddock was observed by Kale on 21 October 1966. One of the attendants reported that it had been present for several days and often entered the horse stalls. It was seen again on 22 October by Kale, Tucker, and W. Biggs in the same place. Bond (op. cit.) gives records from Cuba and one for New Providence. The present observation is the first record for Grand Bahama Is.

Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*). An immature male was seen feeding in a flock of Mourning Doves on the golf course by many observers on 22 October 1966. A photograph taken by L. S. Hubbard was examined by Bond. Bond (op. cit.) lists three autumn records for the species from Cuba and Barbados. A previous record for the Bahamas was a bird seen on Grand Bahama on 16 October 1965 by Hundley and other observers.

Clay-colored Sparrow (*Spizella pallida*). One individual was observed feeding on the lawn of the Grand Bahama Hotel in company with several Palm and Cape May warblers for over 20 minutes on 20 October 1966 by Tucker, Hundley, Kale and others. Bond (op. cit.) lists three specimen records for the West Indies, two from Cuba (26 January, 5 December 1960), and one from New Providence (11 December 1959).

Lincoln's Sparrow (*Melospiza lincolni*). Three individuals of this species were seen near the TV tower on 22 October 1966, first by Tucker and later by Hundley and Kale. Bond (op. cit.) gives several records for Jamaica, Puerto Rico and Cuba. Other Bahamas records are from Eleuthera by Hundley on 26 November 1964, Harbor Island in late November 1966 and 1967, and on Great Abaco in November 1967 (C. R. Mason, pers. comm.).

#### SUMMARY

The species composition of birds killed on the night of 21-22 October at towers on Grand Bahama Island is presented with a description of the weather patterns preceding and following frontal passage. Gray-checked Thrushes and Blackpoll Warblers comprised almost half of all the birds killed. During this period a large number of migrants passed through the Bahamas, including several western vagrants. An annotated list of new and additional records for the West Indies represented by tower-killed birds or observations made during 20-24 October 1966 is included.

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ANNOUNCEMENT

The Manomet Bird Observatory, situated on a Massachusetts sea cliff overlooking Cape Cod Bay, began fulltime operation in August, 1969 as the first permanent observatory on the Atlantic Coast of North America. The observatory will offer facilities where scientists and amateur naturalists can investigate environmental biological problems with emphasis upon banding and ornithological studies.

In addition to the research program, the MBO will serve as a training center for banders and will provide opportunities for young people to observe and participate in ornithological research.

The Manomet Bird Observatory begins operation with a valuable backlog of records on both passerines and migrant seafowl. Operating as an "Operation Recovery" station for the past three autumns, approximately 7800 birds of 101 species have already been netted and banded. All birds are weighed and measured in accordance with Operation Recovery procedures and ectoparasites are routinely collected. A regular "Seawatch" from Manomet Point has produced worthwhile information on autumnal seafowl flights and will be continued.

Facilities and living quarters at the observatory will be available to qualified researchers and volunteer helpers, upon prior arrangement with the Director. Those seeking more information about the program and about membership in the Manomet Bird Observatory should write to the Director, Manomet Bird Observatory, Manomet, Massachusetts 02345.