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NOTES

Observation of the feeding of Black-throated Blue Warblers in Florida during migration.—During the spring and fall migrations in 1984 and 1985, I observed Black-throated Blue Warblers (*Dendroica caerulescens*) feeding in Ft. Pierce Inlet State Recreation Area on North Hutchinson Island in St. Lucie County, Florida. Three times they appeared to be plucking insects from spider webs, and three times they were eating the fruit of beautybush (*Callicarpa americana*). At Sebastian Inlet State Recreation Area, Indian River County, Florida a bird was eating the fruit of wild balsam apple (*Momordica charantia*).

On 20 April 1984, I observed a male bird that appeared to be feeding on insects from the web of a crablike spiny orb weaver (*Gasteracantha elipsoides*) about 2 m high in a redbay tree (*Persea borbonia*). He flew up to the web twice, each time appearing to remove something from the web as he hovered facing it. Each time he then flew to a nearby twig, perched, and appeared to swallow. About 1900 h of 9 May 1984 a male bird was observed in live oaks (*Quercus virginiana*) about 3 to 5 m from the ground. He sat on small branches near each of two webs of golden-silk spiders (*Nephila clavipes*) having spiders in the centers. He appeared to be picking insects from the outer portions of the webs. Similarly, on 9 September 1984, I observed a male bird in saw palmettos (*Serenoa repens*) flying from the ground and picking at the web of a golden-silk spider about 1 m from the ground.

On 30 September 1984 about 50 birds were seen, some feeding on beautybush fruits. The next day two birds were observed for 15 to 20 minutes at about 1000 h in a clump of beautybushes. A female flew to a cluster of fruit and impaled one on her bill. She then perched with her bill held up at a 45° angle and appeared to be working her lower mandible inside the fruit before swallowing. She discarded the remaining part of the fruit. This process took 8 to 12 seconds, and was repeated until ten fruits were eaten in succession. After a pause she ate five, paused, then ate four. A male was in the back of the shrubs and was seen only occasionally. He seemed to be using the same technique, but once he consumed the whole fruit except for about one-quarter of the skin. At the conclusion of the observation, I examined the remnants on the ground. The fruits had holes in one side and were collapsed, with the seeds and a small portion of the pulp remaining. In previous years these warblers have been observed feeding on the fruits of rouge plant (*Rivina humilis*), but on this occasion fruits of two nearby plants of that species were not used. On 9 September 1985 a male bird was observed for four minutes. He seemed to be foraging for insects in twigs and vines, but spent one minute eating five beautybush fruits in the manner described above.

At 1130 h of 14 October 1985 at Sebastian Inlet State Recreation Area, a male bird was observed in a thicket of Brazilian pepper (*Schinus terebinthifolius*) and cabbage palms (*Sabal palmetto*) entwined with wild balsam apple vines. Three times he plucked a seed with its fleshy red covering from the wild balsam apple and retired into the thicket, apparently to eat it.

The food of the Black-throated Blue Warbler is reported to be mostly insects with occasional seeds and berries (Griscom and Sprunt 1957, Bent 1953). Both of these sources quote a 1916 study of the stomach contents of these warblers in Puerto Rico by Alexander Wetmore as showing 75.7% animal and 24.5% vegetable matter. Forbush (1929) stated that these birds "catch many insects on the wing" and feed "largely on moths, caterpillars including the hairy tent caterpillar, flies, beetles, and plant lice." Terres (1980) included the preceding and added "aphids, also seeds and fruits". Imhof (1962) listed dragonflies, winged ants, locusts and "occasionally slugs and seeds".

These observations indicate that Black-throated Blue Warblers as they pass through Florida seem to use some of the fruits available in the state during the fall and have found an easy source of insect food in spider webs.

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Case of botulism in Laughing Gulls at a landfill in the Virgin Islands, Greater Antilles.—On 24 May 1984, I was called to the scene of 176 dead Laughing Gulls (*Larus atricilla*) at a landfill located at the western border of the Mangrove Lagoon, St. Thomas, U.S. Virgin Islands. Four of the dead gulls (2%) had been banded as chicks at colonies within 3 km of the site. The mean age of these gulls was 4.8 years (4, 4, 4, 7 yrs). It was not known whether these birds were breeding, but within two days three additional birds, apparently suffering from the same condition, were found at three colonies. None of the birds at the landfill or colony sites had been touched prior to my arrival, and virtually all were laying in the same position, as if they had fallen asleep resting on their breast. Feathers of the vent were matted and stained green, and the abdomen was filled with gas, as described by Austin and Austin (1931, Auk 48: 195-197).

Blood samples from five gulls from the landfill sent to the National Wildlife Health Laboratory, Madison, Wisconsin, were found positive to botulism type C (Dr. R. K. Stroud pers. comm.).

In the Virgin Islands, Laughing Gulls nest in early May, and hatching begins by late May and early June (pers. observ.). It appears that loss of a parent might affect survival of offspring in that chicks might suffer interrupted incubation, abandonment, or starvation because a single parent would have difficulty brooding and feeding two or three hatchlings. In that all the dead gulls were in definitive breeding plumage, it is possible that as many as 440 eggs or chicks (based on mean clutch size 2.5 in 179 nests in the colony, pers. observ.) may have been affected.

The St. Thomas landfill in May contained much organic refuse which was continuously turned over by bulldozing. Birds had been found dead at this site previously (E. Gibson, Public Works Dept., pers. comm.).

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