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DIET OF NESTLING GUADELOUPE WOODPECKERS

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Abstract.—Neck-collars were used on nestling Guadeloupe Woodpeckers (*Melanerpes herminieri*) to quantify their diet. Of 248 prey items collected, Orthoptera accounted for 44% and tree frogs (*Eleutherodactylus martinicensis*) for 11%. Animal prey averaged 22 mm in length. These results are consistent with diets reported for other *Melanerpes* in the Greater Antilles.

DIETA DE LOS PICHONES DE *MELANERPES HERMINIERI* EN GUADALUPE

Sinopsis.—Se utilizó el método de collares para determinar la composición de la dieta de los pichones de *Melanerpes herminieri* en Guadalupe. De un total de 248 muestras obtenidas, los ortópteros constituyeron un 44% de las presas y la rana arbórea *Eleutherodactylus martinicensis* un 11%. Las presas promediaron 22 mm de largo. Estos resultados confirman la dieta encontrada en otros *Melanerpes* de las Antillas Mayores.

In the Greater Antilles, endemic species of *Melanerpes* inhabit Cuba, Jamaica, Hispaniola, and Puerto Rico. In the Lesser Antilles, the Guadeloupe Woodpecker (*M. herminieri*) of Guadeloupe Island is the only resident woodpecker (Bond 1979). Diet of these *Melanerpes* has been assessed mainly by collecting individuals for stomach analysis: 14 West Indian Woodpeckers (*M. superciliaris*) from Grand Cayman Island (Cruz and Johnson 1984), and 29 Jamaican Woodpeckers (*M. radiolatus*) (Cruz 1977) and 84 Hispaniolan Woodpeckers (*M. striatus*) from Dominican Republic (Albaine Pons and Grullón Peña 1981). For the Guadeloupe Woodpecker, a species classified as "near threatened" (Collar et al. 1994), some qualitative dietary information exists from stomach analysis (Danforth 1939, Pinchon 1976).

Nestling diets are even more poorly documented. Only Cruz (1977) presented data for nestlings of the Jamaican Woodpecker based on visual observations of provisioning at the nest. The Guadeloupe Woodpecker forages mainly in the canopy. Most of the time it is difficult to assess the type of prey eaten. Studying the food brought by parents to their nestlings provides the opportunity to observe and characterize the type of prey collected by this species. The purpose of this paper is to describe the first quantitative data on diets of nestling Guadeloupe Woodpeckers.

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METHODS

From 14 May to 24 Aug. 1993, the neck-collar method (Török 1981) was used to collect food from 24 nestlings (2–4-wk old) in 12 nests. A pipe cleaner was tightened at the base of the neck to prevent the young from swallowing food. After 1 h, the prey in the bill and throat were removed and so was the neck-collar. The nestlings were then force fed with an amount of boiled egg (yolk and white) equal to the prey removed for analysis. Nestlings were allowed to swallow the prey supplied by the parents for the next hour, then the collar was replaced. Up to 4 h of neck-collar collections were performed on the same clutch (with one or two young) per day. For nests having three young, one was removed during neck-collaring (and held in a tissue bag), for one hour, then switched with a nest-collared chick for the second hour, and so on. On average, every nest was sampled during 3 days. Food found in the bottom of the nest cavity was collected as well. The maximum length of animal prey and seed items was measured with calipers to the nearest mm. For animal items, length corresponds to total combined length of the head, trunk, and abdomen. Because prey items were not collected independently, no statistical comparisons were done.

RESULTS

Observations suggested that the neck-collar technique did not alter provisioning rates of adults. During 36.75 h of observation with collars in place, 186 feedings took place (one every 12 min); during 23.40 h without collars, 112 feedings took place (one every 12.5 min). The Guadeloupe Woodpecker's nestlings were fed a broad spectrum of animal and plant items. A total of 248 animal prey items were collected, with 202 collected during the neck-collar use (57.17 h) and 46 found in the bottom of the nest. Included in this sample were Orthoptera (44.3%; Tettigoniidae = *Tapalisca* sp., Blattidae = *Pelmatosilpha purpurascens*), insect larvae (20.2%; Scarabaeidae, Buprestidae, Diptera), Anura (11%; *Eleutherodactylus martinicensis*), Coleoptera (10.5%; Curculionidae = *Diaprepes famelicus,* Cerambycidae = *Derancistrus sulcicollis,* Scarabaeidae = *Phileurus antillarum*), Lepidoptera (6.4%; caterpillars), Gastropoda (3.2%), insect pupae (2%; Coleoptera and Diptera), Myriapoda (1.6%; Diplopoda), and one unidentified insect and one spider (0.8%).

The range and median size of 172 intact individual prey items are shown in Fig. 1. Although adults were observed eating ants and termites, we did not find any evidence that these prey were brought to the nestlings. Even during early stages of feeding nestlings, the adults brought large prey. Often adults took prey such as a big grasshopper or tree frog to a regular perch. There the adult manipulated the prey with its bill to compact it or cut it into smaller pieces. Some adults did this 2–3 times with the same prey if the young still did not swallow it.

A total of 169 seeds was collected: 116 *Clusia* sp. (mean length = 7.2 mm ± 0.1 SD), 27 *Eugenia* sp. or *Myrcia* sp. (8.7 mm ± 0.4) and seeds

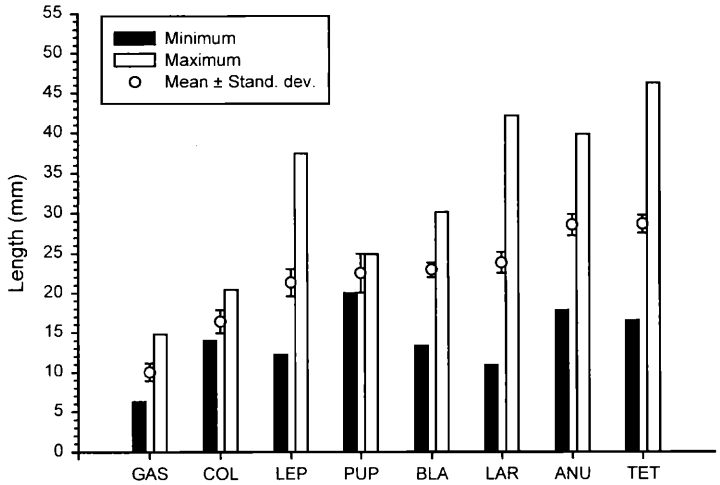

FIGURE 1. Range of lengths and mean length (±SD) for representative animal prey items. Number of intact individuals measured is given in parentheses. GAS = Gastropoda (7), COL = Coleoptera (4), LEP = Lepidoptera (15 caterpillars), PUP = pupae (1 Coleoptera and 1 Diptera), BLA = Blattidae (30), LAR = larvae (48), ANU = Anura (19), TET = Tettigoniidae (47).

from three unknown species (5: 12.5 mm ± 0.5, 12: 7.4 mm ± 0.1, 9: 6.8 mm ± 0.2). Besides seeds, two epicarps of *Tetrazygia discolor* were found. We have also seen adults bringing pieces of mango (*Mangifera indica*) fruit to the nestlings.

DISCUSSION

Guadeloupe Woodpeckers fed nestling about five times per hour, compared to 10.3 for the Jamaican Woodpecker (Cruz 1977). Orthoptera are also the main insect prey for the Jamaican Woodpecker (Cruz 1977) and the West Indian Woodpecker (Cruz and Johnson 1984). Tree frogs have previously been reported as prey of other *Melanerpes* species endemic to the Greater Antilles (West Indian Woodpeckers, Cruz and Johnson 1984; Jamaican and Puerto Rican Woodpeckers, *M. portoricensis,* Winkler et al. 1995).

The Jamaican Woodpecker eats prey in the size range 1–10 mm (72% of the diet, Cruz 1977) compared with the prey size of 21–40 mm (73%) for the Guadeloupe Woodpecker. Use of different size prey by the two woodpecker species is not related to bill size. The Jamaican Woodpecker's bill is in the same size range as the Guadeloupe Woodpecker (Winkler et al. 1995). For the Jamaican Woodpecker, the diet data were derived from stomach analyses collected in spring and summer. During the breeding season, the Guadeloupe Woodpecker may prefer to catch larger prey to feed the young because they don't regurgitate but carry the nestling food in the bill.

As noted for other *Melanerpes* (Winkler et al. 1995), plant materials (Fournet 1978) are an important part of the diet. Seeds were already mentioned for the Guadeloupe Woodpecker by Danforth (1939) and Pinchon (1976). Breeding occurs during the fruiting season and adult Guadeloupe Woodpeckers use this temporary resource to feed themselves as well as their nestlings.

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