

todies brought the *Clusia* fruits to the nest on at least one visit during every observation period over the span of 7.5 h.

I identified the parent by color bands in 150 of the 163 feedings observed. The female P162 fed the nestlings significantly more frequently than the male R158 ($\chi^2 = 5.23$, $df = 1$, $P = 0.02$); however, the male brought fruit to the nestlings significantly more frequently than did the female ($\chi^2 = 4.17$, $df = 1$, $P = 0.04$). Overall, the todies averaged 21.7 feeding visits per hour, greater than the 10.8 visits per hour average reported by Kepler (1972). Kepler reports a significant increase in the frequency of feeding as the chicks approach fledging; it may be that the nestling todies at this nest were close to fledging, but I was unable to determine whether this was the case.

Acknowledgments.—I thank the Puerto Rico Dept. of Natural Resources, for allowing me to conduct research in their system of State Forest Reserves, and particularly the staff of the Maricao Forest Reserve for their kind assistance. This work was supported in part by a field research grant from the Univ. of New Mexico Latin American Institute, a grant from the Graduate Research Allocations Committee, Dept. of Biology, Univ. of New Mexico, and a grant from the Student Research Allocations Committee of the Graduate Student Association of the Univ. of New Mexico. J. D. Ligon and P. W. Zwartjes provided helpful comments on the manuscript.

LITERATURE CITED

- KEPLER, A. K. 1972. A comparative study of todies (Aves, Todidae), with emphasis on the Puerto Rican Tody *Todus mexicanus*. Ph.D. diss., Cornell Univ., Ithaca, New York.
- LACK, D. 1968. Ecological adaptations for breeding in birds. Methuen, London, England.
- LIGON, J. D. 1970. Behavior and breeding biology of the Red-cockaded Woodpecker. *Auk* 87:255–278.
- MORTON, E. S. 1973. On the evolutionary advantages and disadvantages of fruit eating in tropical birds. *Am. Nat.* 107:8–22.
- REINECKE, K. J. 1979. Feeding ecology and development of juvenile Black Ducks in Maine. *Auk* 96:737–745.
- RICKLEFS, R. E. 1976. Growth rates of birds in the humid New World tropics. *Ibis* 118: 179–207.
- SKUTCH, A. 1944. Life history of the Quetzal. *Condor* 46:213–235.
- . 1969. Life histories of Central American birds. *Pacific Coast Avifauna* 35:1–580.
- SNOW, B. K. 1970. A field study of the Bearded Bellbird in Trinidad. *Ibis* 112:299–329.
- SNOW, D. W. 1962. The natural history of the Oil-bird *Steatornis caripensis*. *Zoologica* 47: 199–221.

MICHELE MEROLA, *Dept. of Biology, Univ. of New Mexico, Albuquerque, New Mexico 87131.*
Received 28 July 1994, accepted 27 Sept. 1994.

Wilson Bull., 107(1), 1995, pp. 182–184

Notes on the nesting behavior of the White-bellied Woodpecker.—This note provides new information on the nesting behavior of the White-bellied Woodpecker (*Dryocopus javensis*) on the island of Mindanao in the Philippines. A team of biologists from the Field Museum of Natural History and several institutions in the Philippines studied the vertebrates

of Mt. Kitanglad, Bukidnon Province, Mindanao, Philippines, between 700 and 1850 m above sea level from 16 April to 22 May 1992. Camps were established at 1100 m in primary lowland rain forest and at 1600 m in primary montane rain forest. White-bellied Woodpeckers were sighted on 12 of the 16 (75%) days of observation at the 1100 m camp in primary lowland rain forest and on three of the 24 days (12.5%) spent at the 1600 m camp in primary montane rain forest but were not detected in transitional montane/mossy forest on higher ridges. Other species of woodpeckers known from the mountain are the Greater Golden-backed Woodpecker (*Chrysocolaptes lucidus*) and the Philippine Pygmy Woodpecker (*Picoides maculatus*), both of which were seen occasionally at both camps.

On 27 April 1992, an active White-bellied Woodpecker nest was discovered in a dead tree trunk on one side of the ridge on which the 1100 m camp was located. The nest was in a 25 m tall dead trunk of about 80 cm dbh, with the nest hole 1 m below the tip of the trunk about 4 m above the level of the ridgetop. The ridge was oriented more or less in a north-south direction, and the nest hole faced approximately northwest. The hole had been checked on several occasions prior to 27 April, suggesting that either the two nestlings were not reaching the nest entrance, or were doing so less frequently. We established a blind on the ridgetop about 30 m from the nest hole and accumulated 15.25 h of daylight observations between 0500 and 1800 h on 28–30 April.

The two nestlings spent much of the day with their heads and necks extended out of the nest hole. Because their bodies clearly filled much of the upper nest cavity, access to the outside was accompanied by considerable pushing and shoving. An adult woodpecker was seen to visit the nest at least eight times during observation periods on those three days, usually arriving out of sight lower on the nest trunk, hitching up to the nest hole and always accompanied by active begging by the nestlings. On three of these visits, the adult fed the nestlings, with the nestling placing its bill inside the adult's throat to receive the regurgitated food. At least one of the feedings involved multiple deliveries of food—six times to one nestling and once to the other. Surprisingly, adults were not seen to carry away any fecal matter. The degree to which the presence of our blind influenced the frequency of nest visits or whether or not young were fed is unclear. Although two adults were frequently heard calling in the vicinity of the nest, only one individual was ever seen on the nest trunk at one time, and in all cases, this individual was a female by plumage. Observations terminated on 1 May with our departure; however, the nest cavity was apparently unoccupied during brief checks on 5 and 21 May, suggesting that our observations were of nestlings almost ready to fledge.

The information accumulated on White-bellied Woodpeckers during our observations on Mt. Kitanglad fits well with that summarized by Short (*Woodpeckers of the world*, Delaware Museum of Natural History, 1982), especially in the timing of nesting and the characteristics of nests. Although males apparently do much of the excavation of nest cavities, and both adults seem to participate in incubation of eggs, no information has been available regarding adult behavior during the nestling and fledgling stages in this species. Our observations indicate that the female may do the bulk of the feeding of nestlings, suggesting an interesting mix of collaboration and division of labor between the sexes in White-bellied Woodpeckers.

Acknowledgments.—We thank our field companions for their interest, patience, and support during this brief study, most especially L. R. Heaney who organized and directed the expedition. Peterson thanks R. M. Salazar S. for her friendship and support throughout. Permits for this research were provided by the Protected Areas and Wildlife Bureau of the Dept. of Environment and Natural Resources, Philippines. Funding was supplied to L. R. Heaney by the MacArthur Foundation.

A. TOWNSEND PETERSON, *Division of Birds, Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, Chicago, Illinois 60605-2496* (Present address: *Natural History Museum, The Univ. of Kansas, Lawrence, Kansas 66045*); NINA INGLE, *Environmental Research Division, Manila Observatory, P.O. Box 1231, 1099 Manila, Philippines*; AND RENATO FERNANDEZ, *Philippine National Museum, Old Congress Building, Rizal Park, Manila, Philippines*. Received 19 Oct. 1993, accepted 17 Aug. 1994.