NOTES ON THE NESTING OF THE SHORT-TAILED PIGMY-TYRANT (*MYIORNIS ECAUDATUS*) IN NORTHEASTERN VENEZUELA

RAYMOND McNEIL and AIDA MARTINEZ
Departamento de Biologia
Universidad de Oriente
Cumaná, Sucre, Venezuela

A nest of the Short-tailed Pigmy-Tyrant (*Myiornis ecaudatus*) was found on 19 August 1966 near Los Guaraunos, State of Sucre, northeastern Venezuela. The nest was located in an abandoned cocoa plantation that was overshadowed by tropical rain forest. The nest, both adult birds, and two nestlings were collected.

The finding of this nest is of special interest for two reasons. First, it fills a gap in the known range of the species, and second, according to Herklots (1961:207) and Phelps (1955:56), nothing is known of the breeding habits of the species.

One adult, one nestling, and the nest will be deposited in the Colección Ornitológica Phelps, in Caracas, Venezuela.

The known range of *M. e. miserabilis* extends from eastern Colombia to Guayana and Trinidad. Phelps and Phelps (1963: 220) reported this species in western Venezuela from the states of Barinas, Tachira, Merida, and Carabobo, and only in the states of Bolivar and Amazonas in the eastern part of the country. The specimens herein reported constitute the first published record of the Short-tailed Pigmy-Tyrant in eastern Venezuela north of the Orinoco River.

The Short-tailed Pigmy-Tyrant is the smallest member of the family Tyrannidae. The two adult specimens correspond very well to the description of *M. e. miserabilis* (Chubb) given by Herklots (1961:207) and Meyer de Schauensee (1964:289). These two specimens may be characterized as follows: tail very short; crown and sides of head gray (according to Meyer de Schauensee, this subspecies differs from *M. e. atricapillus* in having the crown gray instead of black); eye-ring and lores white; back yellowish olive green; throat and breast white; sides of body, under tail coverts, and leg feathers yellowish; wings and tail brown, feathers edged with greenish yellow. The sexes are similar and have black bills.

Measurements of the female (male) are as follows: length, 74 (75) mm; wing, 34 (33) mm; tail, 12 (14) mm; weight, 4.5 (4.8) g. Both breeding birds had incompletely ossified skulls (McNeil and Martinez 1967).

When the nest was found, the two nestlings were almost ready to fly. They are very similar to the adults, differing only in having the back dull olive instead of bright yellowish olive, the crown dull olive instead of gray, and the lower mandible dark. The two young birds weighed about the same as the two adults. We were not able to sex them.

The nest was suspended six feet above the ground from the end of a slender, leafy branch of a cocoa tree (*Theodroma cacao*) located near a road. In form (fig. 1), it is very similar to the nests of the Spotted Tody-Flycatcher (*Todirostrum maculatum*) illustrated by Haverschmidt (1955: plate 15), Common (= Black-fronted) Tody-Flycatcher (*Todirostrum cinereum*) illustrated and described by Skutch (1930: plate XI; 1960: 478), and the Southern Bentbill (*Oncostoma olivaceum*) also described by Skutch (1960: 559). This pensile, pouchlike, ovoid structure with a roofed side entrance was constructed almost entirely of green mosses and fragments of disintegrating weeds and fine grass blades. Some longer fragments mixed with tufts of green mosses formed a tail-like structure hanging from the rounded bottom, in such a way as to make the nest asymmetrical. This nest seems to differ from that of the Common Tody-Flycatcher, illustrated by Skutch (1930: plate XI; 1960:478) in having a shorter tail-like projection.

FIGURE 1. Nest of Short-tailed Pigmy-Tyrant in a cocoa tree (*Theodroma cacao*) near Los Guaraunos, Sucre, Venezuela, 19 August 1966.

The chamber floor of the nest was lined with fine, soft vegetable fibers mixed with bits of grass and disintegrated plant fragments. These materials were covered with buff-colored and white pappi or seed plumes of some composites, so that the bottom of the chamber was very soft.

The nest had the following dimensions: total length, including the tail-like projection, 25 cm; tail-like projection, 11 cm; diameter, 9–11 cm; entrance, 2.5 × 4.0 cm.

While we (four persons) observed and photographed the nest from a distance of about two feet, the adult birds continued to bring food to the young without showing any signs of nervousness; they appeared completely indifferent to our presence. Both birds fed the nestlings approximately every six to seven minutes. The parent arrived carrying food in its beak, but did not enter the chamber. The young

were then fed from the outside while the adult clung to the entrance. Sometimes, the adults would rest a few moments on a nearby branch. However, at other times, they flew back into the forest in search of food, making a curious bumblebeelike sound with their rounded wings. Feces were cleaned out of the nest by the adult birds.

At this time of the rearing, it seems that the parents do not have time to eat frequently. The stomachs of both adult birds were empty. An examination of the stomach contents of the nestlings showed fragments of plant-hoppers (Homoptera), cockroaches (Blatidae, Orthoptera), and larvae of Coleoptera.

The adults were collected by hand while they were feeding the nestlings. While skinning them, we noted that only the female had an incubation patch, thus suggesting that only the female bird takes part in the incubation.

We thank James Dale Smith for helping in the preparation of the manuscript, and the Shell Foundation of Venezuela for a vehicle used in field work. This study is a byproduct of ecological research conducted while the first author was a doctoral student of the Department of Zoology of the University of Montreal. Financial support was given by the University of Oriente in Venezuela and the National Research Council of Canada.

(Present address of McNeil: Département des Sciences Biologiques, Université de Montréal, Montréal, Canada.)

LITERATURE CITED

HAVERSCHMIDT, F. 1955. Notes on the life history of *Todirostrum maculatum* in Surinam. Auk 72:325–331.

HERKLOTS, G. A. C. 1961. The birds of Trinidad and Tobago. Collins Publ., London.

MEYER DE SCHAUENSEE, R. 1964. The birds of Colombia. Acad. Nat. Sci. Philadelphia.

McNEIL, R., and A. MARTINEZ. 1967. Retarded or arrested cranial development in *Myiornis ecaudatus*. Wilson Bull. 79:343–344.

PHELPS, K. D. DE. 1955. Aves venezolanas. Cien de las mas cononocidas. Creole Petroleum Corporation, Caracas.

PHELPS, W. H., and W. H. PHELPS, JR. 1963. Lista de las aves de Venezuela con su distribución. Tomo I, Parte II, Passeriformes. Secunda edición. Bol. Soc. Venez. Cienc. Nat. 24 (nos. 104 and 105).

SKUTCH, A. F. 1930. The habits and nesting of the Northern Tody Flycatcher in Panama. Auk 47:313–322.

SKUTCH, A. F. 1960. Life histories of Central American birds. II. Pacific Coast Avifauna 34:1–593.

Accepted for publication 18 April 1967.

SYNCHRONOUS WING AND TAIL MOLT IN DIVING PETRELS

GEORGE E. WATSON

Museum of Natural History
Smithsonian Institution
Washington, D.C. 20560

There is little published evidence concerning the mode of wing and tail molt in diving petrels of the family Pelecanoididae because so few specimens have been collected during this pelagic phase of their life history. Murphy (Oceanic Birds of South America, 1936, p. 777) and the Stresemanns (J. Ornithol. 107:295, 1966) have suggested that they molt all the remiges synchronously. Murphy does not specify whether he examined molting museum specimens or merely made at-sea observations on live flightless Potoyuncos, *Pelecanoides garnotii*. The Stresemanns personally examined no diving petrel specimens in wing molt but cite a letter from Falla describing two *P. urinatrix* with primaries in synchronous molt found dead on New Zealand beaches. They infer that diving petrels molt all the primaries together as do the larger northern-hemisphere alcids, including the murrelets, *Endomychura*, and the Dovekie or Little Auk, *Plautus alle*, which is the morphological and ecological counterpart of the southern-hemisphere diving petrels. They present no data on the mode of tail molt in either diving petrels or alcids but found near-synchronous tail molt in the short-tailed fulmarine petrels of the genera *Daption*, *Thalassoica*, and *Pagodroma*.

Braulio Araya has sent me a single female *P. garnotii* in full wing and tail molt that he collected at sea, 1.5 nautical miles west of the Estación de Biologia Marina, Montemar (Valparaiso), Chile, 24 November 1964 (USNM 487565). All of the primaries and secondaries are just emerging from sheath and are still shorter than the new coverts on both upper and under surfaces of the wings. The rectrices are in near-synchronous molt; only one old feather remains (probably the 3rd from the outside on the left side) and most of the rest have just broken sheath. Both upper and under tail coverts are fresh and fully grown. No data on gonad size were recorded at the time of preparation, but Murphy (*op. cit.* p. 776–777) states that the species breeds throughout the year off Perú where he indicates that a complete molt takes place in the population from August through October. Presumably, however, molting birds such as the female from Chile could not have any nesting duties during the flightless period.

Storer (Proc. XII Intern. Ornithol. Congr. 1960, p. 696), in discussing diving birds in general and alcids in particular, maintains that the wings of flying birds that also use their wings in underwater propulsion "represent a 'compromise' adaptation, . . . selection favoring large wings for aerial flight and . . . small wings for underwater use." Because wing loading increases allometrically owing to the 2:3 exponential relationship between area and volume, larger birds must either fly faster or have proportionately larger wings than small birds. This probably imposes an evolutionary upper size limit on flying alcids that must also use the wing as an underwater paddle. As diving birds become smaller in the evolutionary sense, the relative difference between optimal wing area for flight and diving becomes less, and in small alcids the partly folded wing is more nearly optimal for underwater use. Although during simultaneous molt of the remiges "large alcids still use their wings