

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

DESCRIPTION OF A RACE OF THE SHEARWATER
PUFFINUS LHERMINIERI FROM PANAMA

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Shearwaters of this species have been noted as seen occasionally in the southern part of the Caribbean Sea, but there has been little reported concerning them. The only specimen on record for the area is one obtained by Enrico Festa in May 1895, when on board ship 300 miles from Colón. The typical race, *Puffinus lherminieri lherminieri* breeds on Bermuda, in the Bahama Islands, on Mona Island west of Puerto Rico, on Little Saba Island (near St. Thomas), Ginger Island (near Tortola), on numerous islets in the Lesser Antilles between St. Martin and Barbados, and on islets off Tobago. The race described herewith is from a hitherto unrecorded population that nests on an island off the coast of northwestern Panamá on the southern shore of the Caribbean, 1200 miles or more distant from any of its relatives.

Puffinus lherminieri loyemilleri subsp. nov.

Characters.—Similar to *Puffinus lherminieri lherminieri* Lesson¹ but smaller.

Description.—Type, U. S. Nat. Mus. No. 468691, Male, Tiger Rock, Tiger Cays, off Cabo Valiente, Valiente Peninsula, Bocas del Toro, Panamá, collected February 25, 1958, by A. Wetmore (original number 22182). Upper surface from crown to tail, except as indicated, between dark Quaker drab and sooty black; hind neck and wings dark Quaker drab; entire under surface white, except as indicated; posterior half of loreal area mixed white and dark Quaker drab; anterior half of lores, anterior two-thirds of upper eyelid, and lower eyelid white; posterior margin of eyelids deep Quaker drab; sides of neck deep mouse gray; flanks between deep and dark mouse gray; under tail coverts deep mouse gray, tipped lightly with white and white basally; edge of wing between dark Quaker drab and sooty black; under wing coverts white; axillars white, tipped lightly with dark mouse gray. Culmen black; sides of bill mouse gray; lower surface of mandible grayish olive; tarsus, middle and inner toes drab; line down ridge of back of tarsus, and outer toe sooty black. (From dried skin.)

Measurements.—Males (6 specimens), wing 185-193 (188), tail 80.7-

¹*Puffinus* (sic) *Lherminieri* Lesson, Rev. Zool., vol. 2, no. 3, Apr. (May) 1839, p. 102. (Straits of Florida).

87.7 (85.2), culmen from base 27.1-30.1 (29.3), tarsus 38.4-39.8 (39.3) mm.

Females (5 specimens), wing 185-195 (190), tail 82.8-88.5 (86.3), culmen from base 27.7-31.2 (29.2), tarsus 38.2-40.0 (39.0) mm.

Type, male, wing 186, tail 85.4, culmen from base 29.5, tarsus 39.8 mm.
Range.—Known only from the Tiger Cays, off the Valiente Peninsula, Bocas del Toro, Panamá.

Remarks.—The colony of shearwaters in the Tiger Cays was found by Dr. Loye Holmes Miller in 1936 during a brief visit to the Chiriquí Lagoon area, where he was located on a survey ship of the Hydrographic Office of the Navy. A seaman returning from placing a beacon on a rocky island told of seeing birds with single large eggs in holes in the ground. Dr. Miller visited the site on March 12, and found four occupied nesting holes of the Audubon's shearwater, with eggs that ranged from fresh to nearly ready to hatch. He prepared two skins, and a skeleton, and secured other bones from carcasses eaten by vultures. The specimens, placed in the collections at the University of California in Los Angeles, attracted no special attention since the normal breeding range of Audubon's Shearwater was not well known at that time, and it was not realized that this was an unusual extension in range. The skins came to attention recently through a list of birds from Panamá in the University collections sent to me through the interest of Dr. Thomas R. Howell. In recent correspondence Dr. Miller kindly furnished me with a description and a rough map of the locality, from which Mr. Thomas R. Dunn of the Chiriquí Land Company at Almirante, through his knowledge of the area gained in fishing excursions, identified the islet as what is known locally as "Tiger Rock" in the Tiger Cays off the end of the Valiente Peninsula. With this information, on February 25, 1958, during a day of favorable weather, I crossed from Almirante in a dugout canoe with an outboard motor, located the island, and found the shearwater colony. The Tiger Cays lie in line from 3000 meters north to 5000 meters northwest of Cabo Valiente at the end of the peninsula. The outermost, at the northwest, is a submerged rock that is awash. Next is a higher rock bearing a navigation beacon, which is designated as "Tiger Rock" in the chart and sailing directions for this region. Then comes a slightly larger islet, followed by a larger, longer one, of several separated sections which is known locally as Tiger Rock. At the western end this island is nearly divided by a cleft through which storm waves wash. The higher ground at either side of this depression has a stand of coconuts and guarumos (*Cecropia*), with undergrowth of coarse grass, caña blanca, and other plants. I stepped ashore at the cleft on a partly submerged rock, and, after a brief examination, climbed the bare rock to the top of the eastern sector. Immediately I noted feathers, fresh droppings, and the pungent odor of shearwaters, and on the steep landward slope, where there was protection from the northern and eastern winds found the openings of numerous burrows. In the hour and a half that I was able to remain I examined only a limited area in which I secured 9 birds and 5 eggs. It had not been possible to beach the cayuco because of the heavy swells, so that when the wind began to freshen I had to leave in order to gain the distant shelter of Crawl Cay channel before the sea became

too rough for our small craft. Another island in this group of cays, that is larger, lies to the eastward of the one I visited.

It should be noted that there is also a small island along the eastern shore of Isla Popa on the northern side of the Laguna de Chiriquí that locally is called Tiger Cay, that has no connection with the Tiger Cays described above.

The smaller size that appeared evident in examining the two specimens collected in 1936 is verified in the nine specimens that I obtained. The following measurements taken from specimens of *P. l. herminieri* in the U. S. National Museum, American Museum of Natural History, Museum of Comparative Zoology, and the British Museum (Natural History), will indicate the difference.

Males (31 specimens), wing 195-209 (201), tail 83.5-95.0 (88.2), culmen from base 28.1-31.8 (30.0), tarsus 37.8-42.5 (40.2) mm.

Females (29 specimens), wing 193-210 (200), tail 83.7-95.0 (88.9), culmen from base 25.7-31.0 (29.2), tarsus 38.0-41.8 (40.4) mm.

The birds from Bocas del Toro have the side of the head including the eyelid white, with only a very slight amount of gray in some individuals. While these markings vary in typical *P. l. herminieri*, the gray in most is of greater amount. The difference is slight and may not hold in larger series.

The eggs, pure white in color, with the shell slightly pitted, vary in form from subelliptical to long subelliptical and long oval. The measurements, in millimeters, are as follows: 48.3 × 35.3, 51.3 × 36.3, 52.2 × 34.7, 53.1 × 34.5, 53.9 × 35.3.

While these sizes come within the lower limits of measurement for eggs of *Puffinus l. herminieri*, the maximum found in this small series of *loyemilleri* is appreciably less, this being 57.3 mm. for length, and 40.8 mm. in breadth in the nominate form. The average for *loyemilleri* thus appears to be smaller.

The new form appears intermediate between the nominate race and the much smaller *P. l. boydi* Mathews of the Cape Verde Islands. It is named for Dr. Loye Miller in recognition of his many contributions to the science of ornithology.