## OBSERVATIONS ON OCEANIC BIRDS IN THE GULF OF PANAMA

## By C. RICHARD ROBINS

While studying marlin and other gamefishes in the Gulf of Panamá, I had an unusual opportunity to observe oceanic birds. Recent publications by Wetmore (1946, 1952, 1957) on the avifaunas of various islands in this region deal principally with land birds, and his brief mention of oceanic species suggests that additional notes on such forms are desirable. Further, the Gulf of Panamá is at the northern extreme of the area studied by Murphy (1936). Finally, Sturgis (1928) had only limited opportunity to observe oceanic birds and included but few notes on them.

I am indebted to Kenneth L. Middleton and Frank J. Violette of the Panamá Marlin Club and to Edward S. Corlett, III, and Charles Helmly, Jr., of the Miami Rod and Reel Club, for making the trip possible. Thanks are also due Oscar T. Owre of the Zoology Department of the University of Miami and Alexander Wetmore of the United States National Museum for encouragement and for advice concerning the manuscript. All of the observations were made from Mr. Middleton's boat, the *Soltura*. The few specimens taken have been deposited in the collections of the University of Miami.

The observations cover the period from July 15 to July 26, 1957. Balboa was the point of departure and return. Our efforts were concentrated in the Pearl Island Archipelago (see Murphy, 1936:320, for a map of this region) and in the waters off Piñas Bay (lat. 7° 32'N, long. 78° 12'W), an anchorage near the Colombian border. On July 22, we were 25 miles south-southwest of Piñas Bay and in view of Cabo Marzo and Punta Juárez, Colombia. This was the southernmost point reached during the trip. In the Pearl Islands our anchorage was inside of Cocos Point, Bahía Santelmo, at Rey Island. San José, Galera, Camote, all mentioned in the text, are islands in the Pearl Island Archipelago. Descriptions of them are rather fully presented in the appropriate Pilot and by Wetmore (1946). Morro de Piñas and Morro Centinela are at the entrance to Piñas Bay. In the southern region most observations were made between Piñas Bay, a deep reef some 10 miles to the northeast, and a drift line 20 to 25 miles southwest of the bay.

Trolled baits attracted many birds to the boat and considerably facilitated observation. Boobies, especially, tirelessly pursued the baits and not infrequently became fouled in the lines and had to be brought aboard to be released. An account of the species observed follows.

Pufinus griseus. Sooty Shearwater. These shearwaters were uncomon in the region. Several were very active during the height of a storm on July 19, the only day on which more than a solitary individual were seen. The other seven records of this species were scattered from near Taboga just off Balboa to the drift line about 28 miles south-southwest of Piñas Bay. This species never paid any attention to the boat, the bait, or even to the wake. On July 25, a shearwater was seen resting on the water within 50 feet of the rocky isle of Camote. This specimen, a male with testes which measured  $16 \times 10 \text{ mm}$ , was captured with a dip net without difficulty. There was little fat.

*Puffinus lherminieri*. Audubon's Shearwater. Large tide rips and drift lines were found almost over the 100 fathom curve some 20 to 25 miles southwest of Piñas Bay. Here about 15 Audubon's Shearwaters were seen at various times on July 21, one was seen on July 22, and three were seen on July 23. This species was quite easily distinguished and could be identified at a considerable distance. It would appear to be very scarce in the Gulf of Panamá at this season for none was seen elsewhere on the entire trip. Like the petrels, and unlike the boobies, pelicans, and frigate birds, this species generally ignored the boat and did not fish in the wake, although it would pass the boat at close range if such were its course.

Oceanodroma tethys. Galápagos Petrel. From the time we saw the first Galápagos Petrel about 18 miles southeast of Taboga on July 15 until we logged the last observation of the species some eight miles off the same island on July 26, this was one of the most frequently observed species on the trip. Never numerous, one or two could be located almost every hour off shore. As many as seven or eight were seen at one time along a drift line some 20 miles south-southwest of Piñas Bay, but they seemed to be a collection of individuals attracted to a fishing area rather than a flock. This species never followed the boat or its wake, although frequently individuals would fly by at close range, nor did it associate with the flocks of sea birds that followed the schools of tuna porpoises.

One petrel flew aboard shortly after dark, on July 24, while we were at anchor at Bahia Santelmo, Rey Island. The specimen, a female, was collected. The next night two more flew aboard at the same spot. The first petrel left for shore within a few minutes; the second flew out to sea shortly after dawn the next morning. Several were noticed on other boats on these nights. None of these individuals regurgitated or seemed to mind handling, and on another boat one could be seen perched quietly on a seaman's shoulder. None was noted within four or five miles of this anchorage during the day and there was no storm to account for their actions. The triangular shape of the white rump patch, obvious when the bird is held in the hand, is not evident on the bird in flight.

Loomelania melania. Black Petrel. This species was recorded only three times during our trip. On July 18 and 19, an individual was seen at the deep reef northwest of Piñas Bay, and two or three were seen on July 23 about 25 miles southwest of Piñas Bay in an assemblage of birds following a group of more than 300 porpoises. In each instance, the petrels shied away from the boat and were difficult to observe. Probably many of the unidentified petrels were of this species.

*Pelecanus occidentalis.* Brown Pelican. Brown Pelicans were numerous around the entrance to Balboa harbor, in the Pearl Islands, and along the mainland from Garachiné Point to Piñas Bay. We did not see them more than five miles from land. The largest concentrations were at Galera (200 birds) and at Piñas Bay (300-500 birds). At Piñas Bay, these flocks would gather on the two morros, or small, rocky islets, and roost high in the trees of the tropical forest that capped these islands. From the outer limbs of these trees the pelicans would dive directly into the water which, although at the edge of the shore, was 20 or 30 feet deep. At dusk, and to a lesser extent at dawn, the pelicans joined the concentrations of Blue-footed Boobies and soared high over the morros and Piñas Bay. Like the boobies, the pelicans gathered around the boat and tirelessly followed the baits. They eagerly fished in the wake and, with the boobies, a flock of pelicans diving offshore usually marked a school of bonito (*Euthynnus* sp.).

Sula dactylatra. Blue-faced Booby. On July 21, when some 20 miles at sea off Piñas Bay, one adult Blue-faced Booby came to the boat with a flock of ten Brown Boobies. The species was not seen again by us.

Sula nebouxii and Sula leucogaster. Blue-footed Booby and Brown Booby. These two species are best discussed together. They were the most numerous oceanic birds in the Gulf of Panamá during our visit. One or both species were in sight almost every minute from the time we left Balboa harbor until our return. Brown Boobies rarely failed to come by the boat where they pursued the baits and followed the wake. The Blue-footed Boobies also came to the boat, but they generally left after five or ten minutes to fly off elsewhere. Although both species would be around the boat at the same time, the lines of approaching birds were, with few exceptions, not of mixed species. However, Brown Pelicans would often tag along with either species. Both kinds were abundant in the Pearl Islands and many thousands of birds were represented. The Blue-footed Booby was especially abundant on the rocky isle of Camote and at Galera, and it was easily the most numerous species along the coast from Garachiné Point to Piñas Bay. Over the drift lines 20 to 25 miles southwest of Piñas Bay, the Brown Booby seemed more numerous. The numbers of both species diminished sharply from the Pearl Islands northward to Balboa, although neither could be considered scarce even there. About 30 Brown Boobies were diving among a school of porpoises for the 45 minutes that we followed it. Excluding the concentrations around islands and along the coast of the mainland near Piñas Bay, the boobies traveled in small flocks, usually in single file or in a staggered line. The Brown Booby, under these circumstances, most frequently occurred in groups of three to five, and less often in groups of five to 15. Single birds were very common. On the other hand, single Blue-footed Boobies were rarely recorded and their flocks were usually of 10 to 25 birds. Wetmore (1946:11) also records Brown Boobies (= Colombian Booby) in groups of three or four, and (Wetmore, 1957:14) singly and in pairs. In

connection with this account, it should be noted that Wetmore (1946:10) had but one record of the Blue-footed Booby from San José.

Phalacrocorax olivaceus. Olivaceous Cormorant. Wetmore (1946:11-12; 1952:9) recorded large bands of cormorants from San José Island of the Pearl Island group and near Taboga. The scarcity of this species in July is therefore of interest. We recorded it but once, a single bird at Morro de Piñas on July 18. On our return to the Pearl Islands I watched especially for this species but without success.

Fregata magnificens. Magnificent Frigate-bird. Frigate-birds were seen every day, not only around each island visited but also on our visits to the drift line two to 25 miles southwest of Piñas Bay. Large concentrations of about 100 soaring birds were seen at Galera, a known nesting station (Murphy, 1936:322), and 50 were counted soaring over Camote, a barren rocky promontory. Individuals would follow the boat occasionally picking up scraps of fish from the wake while flying just over the surface. They pursued Brown Boobies with some success, but the Blue-footed Booby, a swifter and more powerful flier, rather easily eluded them.

Casmerodius albus. Common Egret. Although not pertinent to a discussion of oceanic birds, the occurrence of a Common Egret 18 miles south of Taboga, apparently flying from San José Island to Taboga or to the mainland, deserves mention. This species, along with the Yellow-headed Caracara (Milvago chimachima), is common on the beaches of Rey Island.

Stercorarius pomarinus. Pomarine Jaeger. On July 26, as we passed the outer buoys some three miles from the entrance to Balboa, a Pomarine Jaeger flew rapidly to the boat and stayed at very close range for five minutes before it veered off. The Gulf of Panamá is well within the recorded wintering range of the species, but its occurrence here in July was unexpected. Perhaps, as in many species of gulls, shore birds, and ducks, an occasional individual does not migrate northward.

Creagrus furcatus. Swallow-tailed Gull. One was seen at the deep reef almost ten miles northwest of Piñas Bay on July 18. Eisenmann (1955:33) lists it as "casually to Panama (?)."

Sterna anaethetus. Bridled Tern. This offshore species avoided our boat to such an extent that observation was difficult. Individuals were never seen within four or five miles of land and they were much more numerous when we were 10 to 25 miles at sea. Four were seen on July 26 between San José and Taboga islands, and four were seen on July 16 at Troloppe Rock (lat.  $8^{\circ}$  7'N, long.  $78^{\circ}$  30'W). From Garachiné Point southward, especially over the deep reef northwest of Piñas Bay and in the drift area southwest of Piñas Bay, the species was, in contrast, quite common. Here, flocks of as many as 45 birds were seen every day, resting on rafts of drift and feeding among schools of porpoises and fishes.

Thalasseus sp. On July 18, two terns came to the boat just off Morro de Piñas and followed our wake for an hour. On July 23, a pair again followed the boat for more than an hour, 20 miles southwest of Piñas Bay. Of all the species reported herein, this is the only one about the identification of which the writer has some question. The birds were in winter plumage, but their light orange bills and white foreheads and lores would indicate that they were Elegant Terns (*T. elegans*). Compared to the Royal Tern (*T. maximus*), with which I am very familiar, they seemed decidedly smaller, but size estimates are difficult at sea when no comparable birds are near.

Eisenmann, E.

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The Marine Laboratory, University of Miami, Miami, Florida, December 15, 1957.