

NOTES ON SEA-BIRDS OBSERVED BETWEEN ENGLAND
AND NEW ZEALAND VIA PANAMA

WITH ONE SET OF DIAGRAMS

By J. G. MYERS AND R. A. FALLA -

THE FOLLOWING notes have been selected from a diary of observations kept by the former of the writers during a voyage per S. S. "Rimutaka" from Plymouth to Wellington in April and May, 1919. Their apology for publishing a paper in which much of the information must remain indefinite is that it may serve as a basis for future investigation of the distribution of many of the birds mentioned. Similar records have frequently been made on the older established steamship routes, but so far little has been done on the long sea-track lying obliquely across the globe and traversing the Atlantic and Pacific oceans from northeast to southwest. This gradual progress south has also made it possible to note more accurately the limits of the northern range of many Southern Ocean species during May.

The consecutive records and descriptions as noted from day to day are here given first, followed by some general remarks dealing with particular species.

April 5: The S. S. "Rimutaka" left Plymouth at 3:30 P. M. The only species of gull congregating in the harbor was the Common Gull. Individuals followed the ship till sunset when they were replaced by Lesser Black-backed Gulls (*Larus fuscus*), which were still present at dusk. Guillemots (*Uria troille*) could be seen flying low over the water in small parties and singly.

April 6: A few Kittiwakes (*Rissa tridactyla*), the most pelagic of gulls, were in attendance. Gannets (*Sula bassana*) in small parties were frequently seen.

April 7: A few kittiwakes followed the vessel all day.

April 10: (Lat. 47° N, Long. 30° W.) For several hours in the afternoon the ship was attended by several gulls, white in color, with gray mantles. A couple of black spots about the head and neck, and a wavy line of darker color along the front of the expanded wings, seem to indicate that they were immature Kittiwakes.

April 13: (Lat. 41° N, Long. 46° W.) Examples of some pelagic species appeared daily at this time, but did not approach closely enough for identification. Most of them appeared to be dark above and white below.

April 18: (About a day's sail from the coast of Virginia.) A few Wilson Storm Petrels (*Oceanites oceanicus*) followed the ship today. A skua also followed the ship for a time. This bird was about the size of a Common Gull. The head, dorsal surface, band on the throat and wings above and below, were dark brown or black. The ventral surface was white, the beak short, wings ample, and tail conspicuously long; almost certainly the Arctic Skua (*Stercorarius parasiticus*). A few Herring Gulls (*Larus argentatus*) appeared, some in the brown plumage of immaturity.

April 19: (Approaching Chesapeake Bay and Newport News.) Gannets were observed fishing at some distance from land. In appearance they were very similar to the British species and were probably *Sula bassana*. Often one saw the little fountain of spray thrown up by the plummet-like dive of this bird, when the distance made the bird itself unnoticeable. Several young birds in brown plumage were present. Herring Gulls and Arctic Skuas were also in attendance, but the latter were not seen within the bay.

April 21: (Harbor of Newport News.) Herring Gulls, nearly all immature, were common, and also the large black-headed Laughing Gull (*Larus atricilla*).

April 26: Voyage continued. (Noon, Lat. 28° 50' N, Long. 74° 25' W.) Swarms of Wilson Storm Petrels were now following the ship, also an occasional skua. Nothing escapes the minute scrutiny of the storm petrels. An empty tin floats astern and every bird must individually circle round it, and above it, in turn, before a verdict of inedibility is passed. One may watch for hours and never see one alight after the manner of most birds, which swim up to food. While picking up something to their taste these little birds tread the water—walk on the surface with the help of their wings raised above their heads.

April 28: (Off the eastern end of Cuba at noon.) A few Wilson Storm Petrels still continued to follow the ship.

May 1: (Passage of the Panama Canal.) The following birds were noted: A black-headed bird in Limon Bay with the size, appearance and habits of a gannet; a small black swift; a large gray heron; a small white heron with faint dark markings on the outspread wings; a small blue heron; a kingfisher of the Halcyon type, blue-gray above and red below, with a white collar; a large black soaring raptorial bird, either Turkey Buzzard or vulture; a flock of 35 black cormorants on Gatun Lake; a small gray and white wader; numbers of Brown Pelicans (*Pelecanus occidentalis californicus*) in the Bay of Panama. No attempt has been made to identify the above birds on such brief acquaintance.

May 2: (Bay of Panama.) Farther out to sea the pelicans were replaced by gannets similar in appearance to those seen off Newport News, but probably not the same species.

May 5: (Near Galapagos Islands.) The same species of gannet as seen yesterday were still fishing in considerable numbers. They may have been the Blue-faced Booby (*Sula dactylatra*). A few solitary storm petrels were often seen quartering the waves after their usual manner; but never once did they approach the ship or manifest any interest in its wake; neither did they collect in companies. In both these particulars they differed from the Wilson Petrels seen in the Atlantic. Two Frigate Birds were observed for the first time at some distance from the ship. On June 29, 1918, these birds were seen as far in-shore as the anchorage off Panama. They were the common Central American species (*Fregata magnificens rothschildi* Mathews) which breeds on the Galapagos and elsewhere. The majestic soaring flight of the Frigate Bird is a never-ending source of pleasure to the traveler. On this afternoon a splendid specimen reconnoitered the ship for about ten minutes, soaring just above the masts with incomparable ease and grace, scarcely moving its wings, yet keeping pace with, and even circling around, the vessel. The shining, angular wings looked more like the elastic ligaments of a bat than feathered pinions, and the underparts showed as a distinct white oval against the jet black of the rest of the plumage. The bird's head, with the beak pointing forwards, was sunk between the shoulders except when it looked down on deck, while the long, black, forked tail spread and shut at will, like a pair of scissors.

May 12: (18°41'S, 118°07'W at noon.) The whole morning, Tropic Birds in two's and three's were flying about the ship. In color they were pure white, with a long, yellow, spear-like shaft of a tail, contrasting black feet, and a bright yellow bill. The yellow bill would seem to indicate that they were *Phaethon lepturus*, although possibly immature examples of *Phaethon aethereus*. They showed considerable interest in the ship and frequently gave voice to a sharp cry, like "kek". At times they could be seen resting quietly on the water. A white bird in the distance, almost certainly a Tropic Bird, was seen to dart down like a bolt from the blue and seize a flying fish in the air.

During the northern voyage in June, 1918, the Brown Petrel (*Puffinus cinereus*) was ubiquitous between New Zealand and Panama. On the present voyage a few had been seen in the distance almost every day since leaving the canal, and on May 12 they appeared in greater numbers and came close enough for identification. Records of this bird in more southern latitudes in the Indian Ocean mention that it sometimes follows ships, but these birds in the central Pacific manifested no interest except to shear off when the vessel came too close. In flight the bird shows a uniformly brown upper surface, and white underparts except for a broad dark edging on the underside of the wings. It quartered the ocean surface with ceaseless diligence. A solitary gannet with conspicuously black feet was in attendance until sunset.

May 13: (20°48'S, 122°28'W.) A pair of Tropic Birds (*Phaethon aethereus*) with bright orange bills and rectrices appeared.

May 14: (23°S, 126°20'W.) The Tropic Birds seen on the previous day were still about. Three splendid Frigate Birds appeared, one a male in full plumage, which is a uniform glossy black.

May 15: (Abreast of Pitcairn Island in the afternoon.) The weather was squally and the sky overcast, and no birds were seen except Brown Petrels engaged in their solitary hunting. Among the curios brought out by the islanders were the red rectrices of the Red-tailed Tropic Bird (*Phaethon rubricaudus*), each set in a white circlet of the body-feathers. They are known on Pitcairn as "Bosuns' tails."

May 19: (31°53'S, 148°10'W.) On this date the first albatross, either *Diomedea exulans* or *D. regia*, appeared about midday. A typical *Pterodroma* of some sort was also seen, of thick-set, stocky build with narrow-pointed wings. Above, it was uniform brownish gray. The head, chin and throat were gray, shading into white on the underparts.

May 20: (33°32'S, 153°04'W.) The *Pterodroma* seen on the 19th, or one exactly similar, appeared again, accompanied by several of the same size and habits, but uniformly brownish black in color. They may have been phases of a variable species like *Pterodroma neglecta*, or the dark bird may have been *P. macroptera*. One Black-browed Mollymauk (*Diomedea melanophrys*), distinguished by its bright yellow bill and dark mark through the eye, appeared; but no larger albatrosses were present.

May 21: (34°56'S, 158°15'W.) The black petrels mentioned earlier were numerous to the extent of some thirty following the ship. Two albatrosses (*Diomedea exulans*) in the brown plumage of immaturity were present in company with several *D. melanophrys*. A solitary *Pterodroma*, marked like a miniature mollymauk, was seen. This was probably *P. lessoni*.

May 22: (36°33'S, 163°30'W.) Wandering Albatrosses (*D. exulans*) were the commonest birds in sight. Immature birds with varying amounts of brown plumage were, on the whole, more abundant than the adults. Albatrosses will approach closer to a vessel than almost any other of the oceanic birds. Next to the ludicrous aspect of a meditative pelican, one of the most ridiculous sights of bird-life is afforded by an albatross in the act of settling on the water. One moment the bird is sailing along as only an albatross can, the next the narrow wings are bent and half folded at a gawky angle, and the huge feet are extended, like an old lady lifting her dress and carefully placing her feet in a muddy pathway.

No mollymauks appeared on this date, although the Brown Petrels and the undetermined species of *Pterodroma* already described on May 20, were frequent.

May 23: (37°33'S, 168°32'W.) An innumerable concourse of birds were in attendance all day. *Prionus cinereus* was again very common. When taking food from the water it seldom settles as do the albatrosses and mollymauks, but scoops up the desired morsel with outstretched bill and neck, meanwhile treading water and flapping its wings energetically. The mollymauks in sight were all *Diomedea melanophrys*. One of these birds plunged completely below the surface for a submerged titbit, reappearing a yard away. Wandering Albatrosses (*D. exulans*) were present

in numbers, showing a considerable range of plumage. In the fully adult birds the reddish yellow patch just behind the ear coverts is quite distinct, and appears on almost the exact spot where we see the last vestige of brown in the immature plumage. Several individuals were almost wholly white except for less than half the upper surface of each wing (see fig. 17b). In these the black tips to the under surface of each wing were reduced to mere edgings; but in the reddish patch on the neck and in other respects, they resembled the common form of *D. exulans* (fig. 17a).

The black petrel seen previously was still in company, and dove petrels (*Prion*, sp.?) appeared in two's and three's at some distance from the ship.

May 25: (Day missed owing to crossing of meridian 180°.) The sea was much calmer than it had been for some days, and Brown Petrels were frequently seen alight-

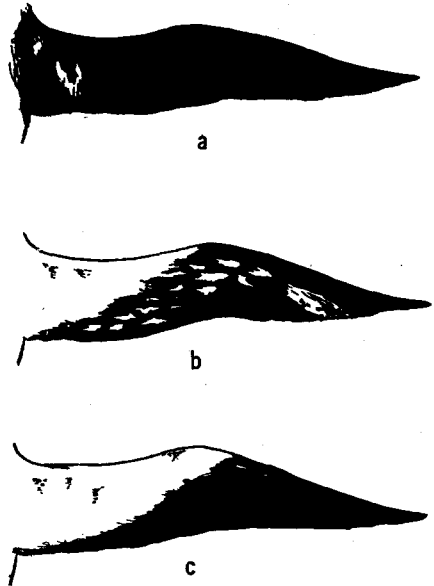


FIG. 17. DIAGRAMS OF COLORATION AS SHOWN ON THE UPPER SURFACES OF THE WINGS OF ALBATROSSES SEEN IN THE SOUTHERN OCEAN; a, THE COMMON FORM OF WANDERING ALBATROSS; b, POSSIBLY THE ROYAL ALBATROSS; c, SNOWY FORM OF WANDERING ALBATROSS, POSSIBLY *Diomedea chionoptera*.

ing on the surface. Two Sooty Albatrosses appeared in the distance, probably *Phoebetria palpebrata*, as the mantle in each was conspicuously light. The albatrosses already noted, the black petrels, and dove petrels were plentiful.

May 26: The number of birds in sight was much the same as on the previous day except that the Sooty Albatrosses had disappeared. Black-browed Mollymauks (*D. melanophrys*) were by far the commonest, including one young bird in which the bill was iron gray, and the neck suffused with gray.

June 2: (Off Cape Palliser, and along the coast to Wellington Heads.) Birds were very plentiful. *Pterodroma cinereus* and the unidentified black petrel were still present, accompanied by mollymauks (*Diomedea melanophrys*), Sooty Albatrosses (*Phoebetria palpebrata*), Cape Pigeons (*Daption capensis*), Giant Petrels (*Ossifraga gigantea*) and Black-backed Gulls (*Larus dominicanus*) which appeared insignificant in size and labored in flight in comparison with the familiar oceanic birds which were still in company. Two fine albatrosses differently marked from any seen previously, were also observed. In these birds the white on the upper surface of the wings extended just to the humeral flexure (fig. 17b) and there appeared no vestige of the yellow neck patch which was a fairly constant feature of adult birds of the common form of *Diomedea exulans* and of the still more snowy form (fig. 17c). Possibly these two birds were examples of the Royal Albatross (*Diomedea epomophora* Lesson, *Diomedea regia* Buller). Our scanty knowledge of the breeding habits of this bird on Campbell Island and a section of the Antipodes shows it to be a comparatively fixed form, not passing through any brown phase of plumage at all. The first plumage of the immature bird also differs only very slightly from that of the adult; consequently no great range of variation is likely to be met with in this species. *D. exulans* apparently goes through the various brown stages until it attains the plumage usually considered adult, namely, white, with wings almost wholly blackish except for the white olecranal patch. The variable white form, however, in which the white on the wings extends far past the humeral flexure (fig. 17c) presents more difficulty in placing. Possibly the range of plumage variation in *D. exulans* extends through a stage at which it closely resembles *D. regia* and finally approximates to the form known as *D. chionoptera*, inhabiting the Indian Ocean. On the other hand, the white birds seen may have been examples of the Indian Ocean form at the eastern limit of its range.

Such a paper as the present, however, cannot hope to do more than offer suggestions in a matter which requires so much further investigation.

Devonport, Auckland, New Zealand, December 23, 1924.

AQUATIC VISITORS TO LAKE MERRITT, OAKLAND, CALIFORNIA

WITH ONE SET OF GRAPHS AND INSERTED TABLE

By A. S. KIBBE

WHILE the general situation at Lake Merritt is a matter of common knowledge, it will not be amiss at this time to state that the lake is located in the heart of a residential district, less than one mile from the city hall of Oakland, California. It is composed of sea water, admitted from the estuary through tidal gates, and is freshened by rain and the discharge from two small streams. Its periphery is about three miles in length and its area approximates 150 acres. About one-third the area is closed off during the fall and winter by a boom which prevents encroachment by boats, leaving an expanse about 2,100 feet long and 1,000 or 1,100 feet wide, dedicated to the use of aquatic visitors. Certain of the species habitually visit the shore to graze over the lawns bordering the lake or to participate in eating the grain which is spread twice daily over an enclosure which also offers a fresh-water swimming pool and sprinkling, rain-like fountains. The bulk of this class is made up of pintails,