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OBSERVATIONS ON BIRDS OF THE SOUTH ATLANTIC.

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Plates XXXV-XXXIX.

DURING 1912-1913 the writer made a voyage in the New Bedford whaling brig *Daisy* for the purpose of conducting field work at the island of South Georgia. The birds collected on the expedition number upwards of five hundred specimens, which are the property of the Brooklyn Museum and the American Museum of Natural History. The task of working up this collection is one which will require considerable time owing to the present dearth of material for comparison, and pending reports on the taxonomy and life histories of the South Georgia birds it has been thought advisable to publish an account in narrative form of the species observed at sea between the Equator and the subantarctic island which was the objective point of the expedition.

The *Daisy* crossed the Line in longitude 28° W., on October 14, 1912. October 16 was spent ashore at the island of Fernando Noronha, which was the last land sighted until November 23, when we arrived at South Georgia in latitude 55° S.

October 17, lat. $5^{\circ} 21'$ S., long. $32^{\circ} 44'$ W. Strong southerly winds. A small flock of 'Mother Carey's Chickens' *Oceanites oceanicus* (also observed in the North Atlantic) followed us in a rather desultory fashion. They did not approach near to the stern of the brig. These birds seem to gain confidence with numbers, for when large flocks follow they usually fly very close.



BLACK-EYEBROWED ALBATROSS OR 'MOLLYMOKE'
Diomedea melanophrys.

October 18, lat. $7^{\circ} 07' S.$, long. $33^{\circ} 04' W.$ Many of *Oceanites oceanicus* and a single *Fregetta grallaria* followed all day.

October 20, lat. $10^{\circ} 21' S.$, long. $34^{\circ} 04' W.$ Many of *Oceanites oceanicus* followed, their numbers increasing up to the middle of the afternoon, when they dwindled off again. Three jaegers (*Stercorarius parasiticus*) were noted. A pair of them tagged after us, dropping repeatedly into the water and then rising again to pursue the brig, from nine o'clock in the morning until four in the afternoon.

October 21, lat. $12^{\circ} 15' S.$, long. $33^{\circ} 55' W.$ Wind veering to eastward, strong. With a rougher sea more of *Oceanites oceanicus* followed; also they flew closer to the ship.

October 24, lat. $17^{\circ} 54' S.$, long. $33^{\circ} 10' W.$ Wind northeast. A shearwater, probably *Puffinus puffinus*, flew in our wake for a few minutes about eight o'clock A. M. During the early forenoon we saw few petrels (*Oceanites oceanicus*), and these kept well away from our stern, but the numbers increased up to the middle of the afternoon. When flying rapidly, and suddenly perceiving food, they sometimes stopped their headway by flopping down as though wounded and striking their breasts upon the surface of the water. Often as they pattered along for some distance on set, slightly depressed wings, they resembled small scurrying quadrupeds more than anything else.

October 25, lat. $20^{\circ} 11' S.$, long. $33^{\circ} 35' W.$ We ran freely before a north-northeast wind, furling the fore-and-aft mainsail during the morning. The few petrels (*Oceanites*) seen did not follow in our wake.

October 26, lat. $21^{\circ} 40' S.$, long. $34^{\circ} 12' W.$ A dull morning after a stormy night; variable head winds during the day. The first skua (*Catharacta*) was seen shortly before noon. It circled the brig several times with swift, steady flight. At four o'clock another skua was seen. I shot it as it rested on the water, lowered the dory and secured it. I have identified it provisionally as the Falkland Island race of the Antarctic Skua *Catharacta antarctica falklandica* (Lönning).

October 27. Two more individuals of *Catharacta* were seen toward evening.

October 28, lat. $23^{\circ} S.$, long. $35^{\circ} 45' W.$ We encountered cooler weather and a heavy ground swell, indicative of storms to the

southward. At six o'clock in the morning the steward came to notify me that a 'Goney' (Wandering or Great Albatross, *Diomedea exulans*) was about. I hurried on deck. Nearly in the morning sunlight flew the long anticipated fowl of the Ancient Mariner, even more majestic, more supreme in his element than my imagination had pictured. He was mature — all white and black — and as he turned and turned, now flashing his bright under side, now showing the black that extended from wrist to tip on the upper surface of his wings, he seemed scarcely to quiver the narrow planes, but lying on the invisible currents of the breeze, followed his pinkish bill wheresoever it led him.

He remained with us only a few minutes, but at noon he came back again, covering tens of miles in the swift wide circles which he traversed astern. The lower wing often cut the water in his turns, and he used his great webbed feet perhaps more than his stubby tail in steering. Twice he dropped into the sea and allowed us to draw away a long distance before rising and overtaking us. It was a curious sight when he prepared to alight under our stern, and then, changing his purpose, ran heavily along the water for a hundred yards, before his stiffly set wings could raise his large body into the air.

During the afternoon he appeared irregularly, approaching inconspicuously just above the waves, and suddenly flashing up right alongside. We saw the last of him about five p. m.

October 29, lat. 24° 42' S., long. 37° 10' W. At half-past nine in the morning an albatross, apparently the bird of the previous day, appeared again, flying even more admirably in a higher wind. The first 'Cape Hens' or 'Night-hawks,' *Procellaria æquinoctialis*, were seen shortly after midday.

October 30, lat. 26° 20' S., long. 38° 04' W. Strong southeast winds. Two Wandering Albatrosses (*D. exulans*) were with us together, a black and white adult, and a young grayish bird smaller than its fellow. They performed together in the high breeze, alighting on the water gracefully enough, the strong wind buoying them until they actually struck the surface. Once they alighted together and fed in the midst of a flock of *Oceanites oceanicus*. At six o'clock p. m., a third albatross appeared.

October 31, lat. 27° 15' S., long. 39° 30' W. Southeasterly winds. Many of *Diomedea exulans*, both old and immature, were seen. The *Oceanites* petrels were few.

November 2, lat. 30° 54' S. Wind still southeast, moderating. Just at dusk a bird which I identified as the first 'Cape Pigeon' (*Petrella capensis*) flew across our stern. Albatrosses accompanied us until dark.

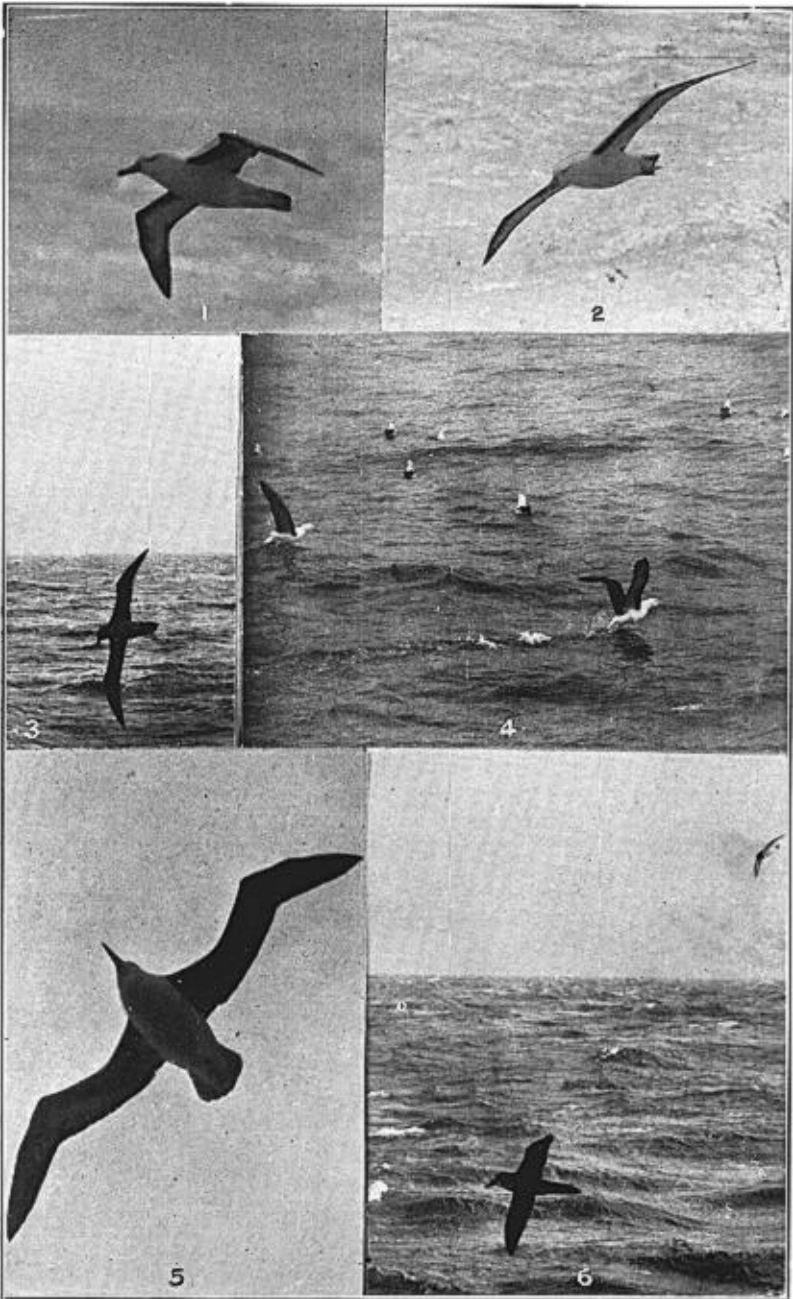
November 3, lat. 32° 09' S., long. 42° 15' W. Winds southwesterly, swinging by west toward the north and increasing in violence throughout the day. Another *Petrella* was seen at daybreak. In the strong wind I noticed that the petrels (*Oceanites oceanicus*) in our wake always *faced* the wind diagonally if not directly, with extended, motionless wings, whenever they pattered on the water. During the afternoon we were running before the wind, and the pursuing birds always wheeled and turned away from our stern before descending to "walk" and feed. While they were flying with the wind, on the other hand, they kept quite clear of the water.

November 4, lat. 33° 28' S., long. 45° 42' W. A strong nor'-wester blew throughout the night and morning, and we were obliged to luff into the wind after our lower fore-topsail had been blown away about two o'clock A. M. At daybreak a single individual of *Fregetta grallaria* was seen among the *Oceanites*. Albatrosses were within sight all day.

During the morning a flycatcher with a yellow belly, dark olive back, and broad white superciliary stripe (*Megarhynchus* sp.), flew aboard nearly exhausted, and perched in various parts of the rigging. At noon a species of Silver-billed Tanager alighted on the foresail yard, followed by a large moth, which like the two storm-beaten song birds flew off to leeward and its fate. We were approximately 340 miles from the South American mainland.

After noon the weather cleared somewhat, and moderated enough so that we hoisted the mainsail, reefed, and bent on a new fore-topsail in place of the one we had lost. The wind however soon shifted through west to south and commenced to blow a gale.

Early in the afternoon I began to trail fish hooks from the stern, and presently a Giant Petrel (*Macronectes giganteus*) took a bait and was captured. As the sea became rougher various Tubinares gathered astern, and we soon had our hands full "fishing for birds."



1, 2, 4 and 5. 'MOLLYMOKE,' *Diomedea melanophrys*.
3 and 6. SOOTY ALBATROSS, *Phaebetria palpebrata*, ALSO 'CAPE PIGEON,' *Petrella capensis*, AT TOP OF 6.

hauling the smaller species down from the air as animated kites after they had pounced upon the trailing baits and had started to fly off with them. Altogether the following thirteen species of Tubinares were about, and most of them might be seen at a single glance:— *Diomedea exulans*, *Diomedea melanophrys*, *Thalassogeron chlororhynchus*, *Phœbetria palpebrata*, *Macronectes giganteus*, *Puffinus puffinus*, *Æstrelata incerta*, *Puffinus cinereus*, *Petrella capensis*, *Halobæna cærulea*, *Procellaria æquinoctialis*, *Fregetta grallaria*, *Oceanites oceanicus*. In 'The Ibis,' April, 1914, p. 318, I have published a photograph which includes nine of these species. Specimens of *Diomedea exulans*, *Puffinus puffinus*, *Procellaria æquinoctialis*, and *Petrella capensis*, in addition to the *Macronectes* mentioned above, were captured. Next to the *Oceanites* the 'Mutton-birds' (*Æstrelata incerta*) were present in greatest numbers. The 'Cape Hens' (*P. æquinoctialis*) were very aggressive, driving off *Æstrelata*, *Puffinus*, *Petrella*, *Oceanites*, etc., and yielding to *Macronectes* and *Diomedea exulans* only after a struggle. Both *Procellaria æquinoctialis* and *Puffinus puffinus* dived well below the surface in pursuit of the baits. The former birds squealed loudly when caught, and defended themselves actively with their sharp, dangerous claws. I saw one aberrant example of this species with a white superciliary stripe and a white patch on the crown. At nightfall we saw large flocks of the 'Cape Hens' settling on the water.

A great many individuals of *Diomedea exulans* were seen at close range on this day, and I noticed that all were characterized by a pinkish stain on the feathers in the region of the ear. The Sooty Albatrosses (*Phœbetria palpebrata*) were unique among the species which followed us in that they seemed to pay no attention to the trailing fishlines.

The bait taken so eagerly by most of the birds was the fat and meat of a Loggerhead Turtle (*Thalassochelys*) which had been harpooned from the bow. The birds ignored pork fat as long as there was turtle meat. After seeing captives drawn on board the *Daisy* before their eyes, they were just as eager to bite as before. They seemed to learn nothing from experience. Even birds which had escaped from one hook, after having been hauled part way in, promptly snapped up another.

November 5, lat. 35° S., long. 46° 55' W. Continuation of the rough weather; southeast wind. Tubinares abundant, but the 'Cape Hens' were so extremely aggressive about the baits that we could catch members of no other species. *Petrella capensis* and *Phoebetria palpebrata* were with us in increased numbers, and a second species of 'Mutton-bird,' *Æstrelata mollis*, was represented by a single individual.

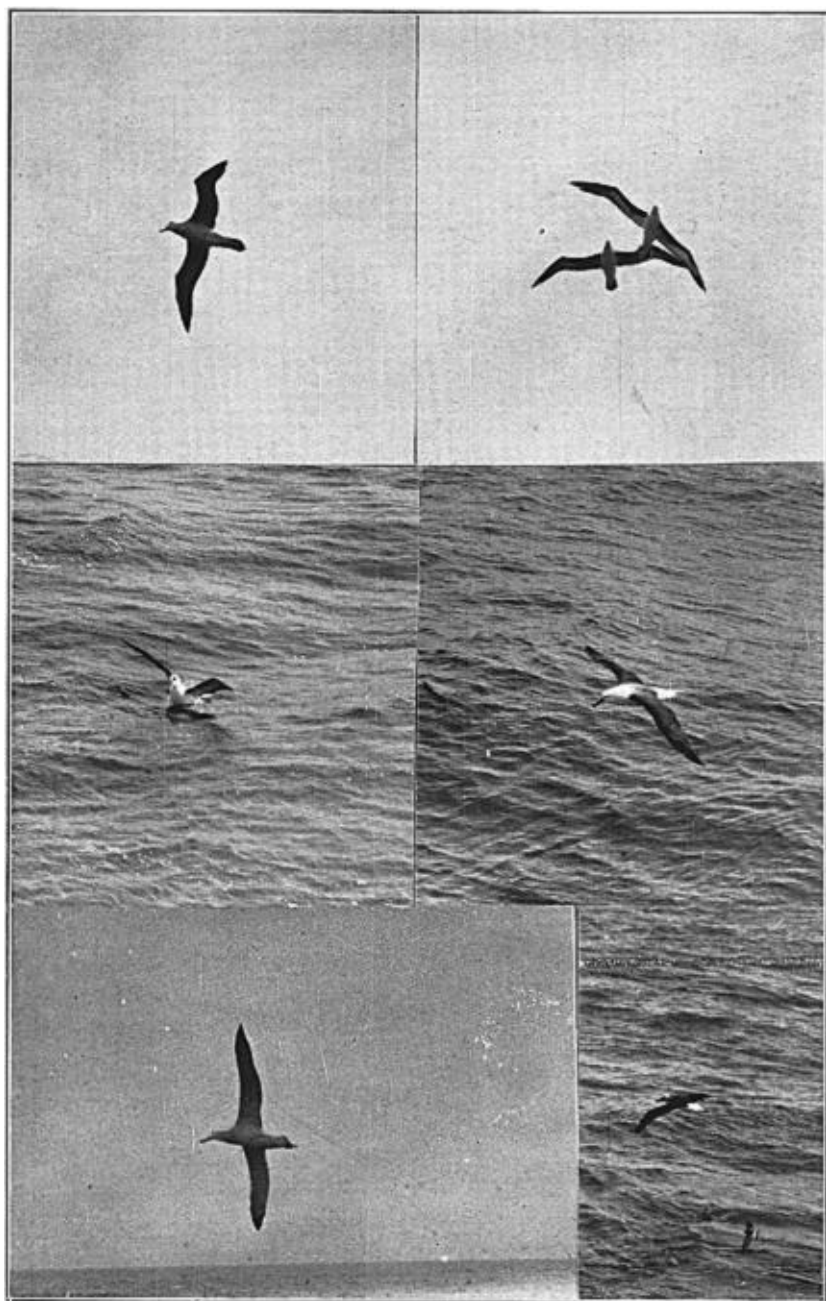
On November 6 there were heavy rains and driving mists all day, and we could see few birds from the vessel.

November 7, lat. 35° 40' S., long. 46° 35' W. Brisk westerly winds, clear. *Æstrelata mollis* fairly common. One individual of *Priofinus cinereus* followed us steadily all day. One of *Fregatta grallaria* was observed continually among the *Oceanites*.

November 8, lat. 36° 16' S., long. 46° 35' W. High northwesterly winds. One of *Fregatta grallaria* seen with *Oceanites* all day. 'Cape Pigeons' (*Petrella*) were abundant, and four or five of them repeatedly dropped to the water under our lee quarter, rising and overtaking us again after we had drawn away a few hundred yards. They ran like albatrosses, that is foot after foot along the surface when launching into flight. They followed a trailing bait by setting their wings as gliders, keeping the breast just an inch or so above the sea, and propelling themselves with rapid, alternating strokes of their feet. In this manner they sometimes covered long distances without an apparent beat of the wings. They were very noisy and quarrelsome while feeding. We caught two, which regurgitated quantities of lard-like fat.

The flocks of *Oceanites oceanicus* occasionally became much excited over the trailing bait, although they invariably disregarded it until after some other species had started the general scramble. On the evening of this day they (*Oceanites*) gathered in a cloud, to the number of a hundred or more, and tugged at the bits of pork fat until forced away by the larger birds. The Giant Petrels (*Macronectes*) were their worst enemies. These pot-bellied, vulturine creatures actually swam or flew out of their way in order to snap their bills at the smaller birds.

November 9, lat. 36° 46' S., long. 46° 29' W. It became calmer today. At five o'clock in the afternoon I lowered the dory, and during the next hour collected 36 birds. One was a tern (*Sterna*



FOUR UPPER VIEWS; 'MOLLYMOKE,' *Diomedea melanophrys*.

LOWER LEFT; WANDERING ALBATROSS, *D. exulans*.

LOWER RIGHT; GRAY-HEADED ALBATROSS, *Thalassogeron culminatus*, AND WILSON'S PETREL, *Oceanites oceanicus*.

paradisæa); all the others Tubinares. Very few of the birds showed any fear, or were disturbed by the roar of a gun. A 'Mollymoke' (*Diomedea melanophrys*) hovered over the dory at a distance of six or eight feet for many minutes. It seemed much interested in us and followed the little boat whichever way we turned. I found that a winged specimen of *Procellaria æquinoctialis* could swim about as fast as a lusty sailor could row. One *Fregetta grallaria* flew nearby as we came on board the brig at dusk.

November 11. Heavy fog; calm; no reckoning. Three 'Whalebirds' (*Prion* sp.) were observed. The 'Whale-bird' or 'Blue Petrel' breeding at South Georgia seems to be *Prion banksi*, and by this name I shall designate the species seen in the South Atlantic.

Late in the afternoon a long stick of lumber floated past us. It was covered with 'goose barnacles' and accompanied by the usual school of fish, and four skuas (*Catharacta* sp.) were standing upon it. One 'Mollymoke' (*Diomedea melanophrys*) followed us throughout the day.

November 12, lat. 39° 41' S. Brisk northerly winds varying toward the east. The first large mass of floating kelp (*Macrocystis*) was sighted. *Prion banksi* became abundant. *Phæbætria*, and a flock of *Sterna* (*paradisæa*?) were noted. One of three 'Cape Pigeons' (*Petrella*) which followed us for a time had a bright, rose-colored breast, doubtless due to some oily substance upon which it had been feeding. The ejecta of captive 'Cape Pigeons' were sometimes pinkish or orange.

November 14, lat. 42° 24' S., long. 42° 28' W. Moderate wind, cold. Early in the morning before any *Oceanites* petrels had picked up our track, four of *Diomedea melanophrys* were following us and flying forward again and again around the bow. Presently the first recorded example of *Thalassogeron culminatus* flew over the quarter deck almost within arm's reach. All five of these 'Mollymokes' remained with us during the day. They occasionally dropped to the water for food, and I saw one *D. melanophrys* dive quite out of sight in our wake and come up with its bill full of something. When I put out a baited hook one of them alighted and examined it, but flew off again without touching it. Thereafter the birds halted in the air for an instant whenever they spied the trailing pork fat, but after cocking their heads and eyeing it sharply,

they went on their way, refusing to be betrayed. They showed no hesitation in devouring bits of fat thrown overboard as a lure.

A few of *Procellaria equinoctialis* were seen, but the most abundant birds of the day were the flocks of *Prion banksi* and *Priofinus cinereus*. Many of the latter species followed us all day long, flying low over the water, gliding a good part of the time. When they beat their wings it was with a more rapid motion than the other petrels; the flight was, indeed, somewhat duck-like. Toward nightfall we passed great bands of *Priofinus* sitting on the water. Numbers of *Halobæna cærulea* could be seen among the flocks of *Prion* all day. Both of these species travel rapidly, with a twisting, erratic flight, not unlike that of a Whip-poor-will (*Antrostomus*). The *Oceanites* were few; several skuas (*Catharacta*) were seen in the distance; and one albatross (*D. exulans*) passed nearby at six P. M.

November 15, lat. 43° 18' S., long. 41° 10' W. Colder, with a long, heavy "Cape Horn swell," and a strong westerly breeze. One example of *Fregetta grallaria* accompanied us during most of the day. 'Cape Pigeons' (*Petrella*) in groups of four and five descended under our lee quarter over and over again. When they turn back their heads and preen their feathers on the water they look for all the world like true pigeons.

Of eight 'Mollymokes,' our constant companions, six were *Diomedea melanophrys*, and two *Thalassogeron culminatus*. As usual, when they saw bait on the hooks astern, they raised their heads comically, and often wiggled their feet with a running motion, halted in the air, and assumed extremely awkward attitudes while deciding whether to descend or to fly on. When alighting they stretched down the legs and turned the toes upward. Then the broad webs struck the water at an angle and the birds slid forward a few feet, and slowly settled down, the wings being held high all the while.

At sunset birds of a dozen species were about in tremendous numbers, rioting in the breeze, and poising frequently over the *Daisy's* quarter deck, obviously interested in the affairs on board. Just as the sun was sinking beyond the choppy horizon, we heard a curious, braying call from among the waves. Then, half a ship's length to windward, we saw the first penguin (*Pygoscelis papua*).

Only its sleek head and bristly tail projected above the surface. It brayed again, and dived, but during the twilight of the next hour shoals of these slippery, reptilian birds kept passing us, for we heard their cries from all directions. The lookout at the masthead had reported penguins several days previously, but these were the first I had seen.

November 16, lat. 44° 57' S., long. 39° 51' W. High southwesterly and westerly winds; cold, squally. A rainbow was observed just before sunset. A troop of *Diomedea melanophrys* and *Thalassogeron culminatus* made up our escort on this date. Competition for food was becoming keen with them, and they dropped like falling pillows from considerable heights, assuming the most ridiculous attitude on the way down, whenever food was thrown from the brig. At evening one of the *melanophrys* 'Mollymokes' flew across the cabin repeatedly, jerking up its head like a spirited steed, and showing curiosity in its every action.

Æstrelata incerta was represented by greater numbers than at any time since November 9. At six o'clock in the afternoon there was a short but furious southwest squall with rain, and it was a beautiful exhibition to see the 'Whale-birds,' 'Mutton-birds,' 'Mollymokes' and Giant Petrels (*Macronectes*) rise high in the air and fly in the teeth of the wind. The giant petrels held their wings more straightly and stiffly, that is more like the set planes of an airship, than any of the other tube-nosed birds.

November 17. Very cold, with a high wind from the southwest, and a tremendous sea. Many changes of weather; at one time the wind veered to the east. Sleet and hail fell occasionally. Birds were with us all day, *Procellaria æquinocialis* being conspicuous from its numbers.

November 18, lat. 48° 39' S., long. 36° 40' W. Barometer 29.2 inches at noon; rising at sunset. Temperature 40° F. High southwesterly gale all day, with several brief hailstorms. In the seething combers we lay to under fore-staysail and trisail. Dark weather alternated with bright sunshine. Spray broke over us continually, but we shipped no heavy seas.

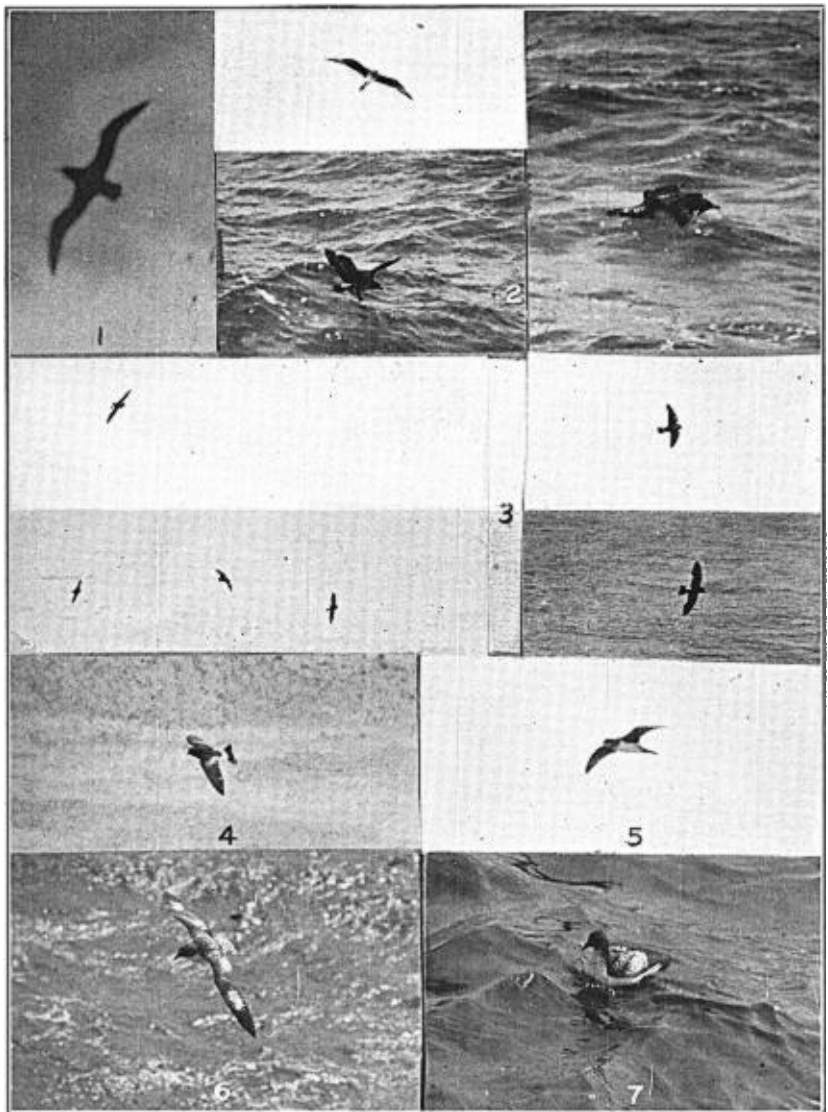
One individual of *Fregetta grallaria* was present all day with hundreds of *Oceanites oceanicus*. *Prion banksi* was the most abundant species. When these birds were flying high they turned

almost on their backs in the strong gale. They often skipped along the water in flocks, and, all springing up together, looked much like a school of gleaming flying fish. Four Sooty Albatrosses (*Phoebastria palpebrata*) joined us during the morning and remained nearby for several hours, flying with the preeminent grace of their kind. Their white-ringed eyes are conspicuous even at a long distance. The *melanophrys* 'Mollymokes' were on hand as usual. One or two of them took a hook but succeeded in shaking it out. While quarreling in the water over a bit of fat, several of them sidled amusingly round and round each other, croaking loudly all the while. In alighting during the gale they sometimes slid along the surface on their webs for ten or twelve feet, just as boys glide along an 'ice slide.'

Late in the afternoon the first example I had seen of the beautiful *Priocella glacialisoides* flew over the deck and poised for a moment within a few feet of me. Then it dropped astern and fed on a piece of refuse, along with other species. At the same time another petrel white below, brownish above, with a little gray or brown on its neck, passed about fifty feet away. I believe it was *Thalassæca antarctica*.

All of these wonderful fliers from "Mollymokes" down to 'Mother Carey's Chickens' (*Oceanites*), with the single exception of the Giant Petrels (*Macronectes*), kept their wings flexed to a much greater extent during the gale than they had done in calmer weather; and with each more than ordinarily forceful puff of wind they bent the manus at right angles to the forearm, thus "shortening sail" still more. The birds rarely, if ever, flew directly before the wind, but either took it "on the quarter" or else headed into it, raised the body axis, and allowed themselves to be carried backward like a kite. The last method was regularly adopted by *Petrella capensis*, flocks of these birds covering considerable distances tail-foremost. The pinions of the longer-winged species could be seen to be always a-quiver; the gentle, almost unnoticeable rocking and see-sawing of the wings with the bird's body as a fulcrum, the gauging of the angle of the wing-axis with the horizon according to the sharpness of a turn, all revealing to the observer the constant action of the mechanism of balance.

But the Wandering Albatross (*D. exulans*) was more inexplicable



1. 'CAPE HEN,' *Procellaria æquinoctialis*.
 2. PARASITIC JAEGER, *Stercorarius parasiticus* (3 photographs).
 3 and 4. WILSON'S PETREL, *Oceanites oceanicus* (4 photographs).
 5. SCHLEGEL'S PETREL, *Æstrelata incerta*.
 6 and 7. 'CAPE PIGEONS,' *Petrela capensis*.

than his smaller brethren. He seemed to have one style of flight suitable for all weathers except a calm. The quivering of continual, automatic balance-stress was evident, but the huge wings appeared to be set the same whether for hurricane or catspaw, and he flew as though all directions were downhill. Probably the weight of the body is a powerful factor in the albatross's control of his momentum.¹

November 19, lat. 49° 40' S., long. 35° 51' W. Continuation of the storm. *Fregatta grallaria* was observed in numbers for the first time, only single birds having been noted previously. *Halo-bæna cærulea* was common.

A few minutes before five p. m., a brief snow flurry came up with a violent southwest puff. In the midst of the storm three or four hundred 'Whale-birds' (*Prion banksi*) settled on the water near the stern of the *Daisy*, and for a quarter of an hour I had an opportunity of watching them feeding while many of the birds were within twenty feet of me. I soon understood the significance of the name 'scooper' which is applied by whalers to the members of the genus *Prion*. The birds progressed along the water with an odd crawling motion, resting the breast upon the surface but holding the wings about an inch above it, the feet furnishing the motive power. Then as they scurried along quite rapidly the heads were thrust under the water and the open lamellated bills 'scooped' for food. It was impossible to determine upon what organisms the birds were feeding. To me the flock recalled a human swimming race in which each contestant was using the 'crawl stroke,' for the bodies of the birds were stretched out upon the water in much the same way. Continuously, however, birds would slip below the surface out of sight, and emerge a foot or two, or perhaps a yard, ahead. They did not stay under more than a fraction of a second except when they shot through the crest of a smallish wave, as sometimes happened. In a definite field on the water birds were disappearing below and reappearing with such rapidity that the area fairly twinkled. About as many were below as above all the time. There was a very rugged sea, with wide troughs between the waves, and whenever one of the great rollers with a white and

¹ cf. Nichols, *Auk*, XXX, 1913, p. 509.

broken crest came along, the birds did not attempt to dive through it, but arose from the water at the last moment, flew through the spume of the comber, and alighted on the downward slope beyond.

November 20, lat. $50^{\circ} 12' S.$, long. $34^{\circ} 47' W.$ Wind still south-westerly but moderating. The first Diving Petrels or 'Divers' (*Pelecanoides urinatrix*) were recorded, two passing us during the afternoon.

At evening four examples of *Phaebetria palpebrata*, two of *Diomedea melanophrys*, and four of *Thalassogeron culminatus* flew round about us, and contended more or less for a trailing bait, but we could hook none of them securely. Nine times out of ten the ubiquitous 'Cape Pigeons' succeeded in stealing the baits from the lines before the 'Mollymokes' could disperse them. One 'Cape Pigeon' alighted in the stern whale boat where it squatted on the whole length of its metatarsus, and was unable to rise into flight. I caught it in my hands. The bill in this species is comparatively soft but the captive nevertheless drew my blood with the sharp nail of its maxilla. It also scratched with its feet, but not so severely as *Procellaria æquinoctialis*. One of the latter tore a shred of skin from a sailor's arm with its powerful claws.

The Sooty Albatrosses (*Phaebetria*) were the wariest of the large birds. They quarreled among themselves when on the water, and uttered weird, trumpet-like calls. They would not dive for food, but they seized floating oakum, bits of paper, etc., and shook them in the water so that the foam flew. Three of these birds alighted successively astern, and solemnly picked up a chip of wood, possibly in order to determine whether it were something edible. The 'Sooty's' broken, white, orbital ring gives it a wide-eyed, perpetually astonished expression.

The four *culminatus* 'Mollymokes' dived so deeply for bait that only their tails and the tips of their wings projected above the surface.

During the early evening the quartet of Sooty Albatrosses flew across our deck amidships several times, and watching my opportunity I shot one so that it fell into the arms of a sailor.

November 21, lat. $51^{\circ} 37' S.$, long. $34^{\circ} 56' W.$ Southwesterly winds. After noon three Sooty Albatrosses (*Phaebetria*) overtook

us again, doubtless the same group which had accompanied us for several days, and of which I had shot the fourth member.

Three or four Wandering Albatrosses (*D. exulans*) were seen, more than we had counted for many days. They were in the distance, but there is no mistaking their wing-spread, and broad white backs, after they have been well noted once. A tern, probably *Sterna paradisæa*, and one example of *Priocella glacialoides*, were identified, and a *Prion* was observed to scratch its head with its foot while flying, a rather 'Sternine' trick.

November 22, lat. 53° S., long. 35° 25' W. Quiet sea, heavy fogs during part of the day; icebergs and floe ice. On this date the birds were feeding in all directions about us, but they did not follow in our wake, probably because of the very light wind. The trio of Sooty Albatrosses (*Phæbetria*) appeared during the afternoon as usual. Increased numbers of *Thalassogeron culminatus* were seen.

A storm blew up from the southeast during the night and we made little progress.

November 23. It was rough all morning with considerable rain and wet snow. 'Lifts' alternated with bad weather all day. During the forenoon two Snow Petrels (*Pagodroma nivea*) flew close alongside and remained nearby for some time. Later we saw others flying hither and thither well above the water. A couple of them brushed the rigging with their wings.

A little after three o'clock the cry "Land-ho!" came from the bow. The mist lifted somewhat, and we made out the snow-covered highlands of South Georgia. As we drew shoreward our three Sooty Albatrosses (*Phæbetria palpebrata*) circled us continually, poising sometimes on the mastheads and the tip of the bowsprit. We saw more Wandering Albatrosses and 'Cape Pigeons' than ever before. Some of the latter wiggled their feet with a running motion as they flew, a trait which I had previously observed in *Prion banksi*, *Æstrelata incerta*, and *Diomedea melanophrys*. At evening a pure white example of *Macronectes giganteus* flew by within a couple of hundred feet.

November 24. A clear and beautiful day. There was some fog along the coast during the early morning, but it lifted early, showing the abrupt, white-robed mountains under the brightest of skies. Innumerable birds flew over the water on every side, and for the

first time we saw many Tubinarine species flying high — far up under the light feathery clouds, so that at times the birds were indistinguishable specks. *Macronectes giganteus*, *Phaethria palpebrata*, *Diomedea exulans*, *Thalassogeron culminatus*, *Procellaria aequinoctialis*, and even *Prion banksi* and *Petrella capensis* were among those seen soaring like birds of prey under the blue vault.

The ornithological notes of a four months' stay in the cold fjords of South Georgia do not properly belong within the scope of this paper, so I shall pass to the end of the Antarctic summer when on March 15, 1914, we pointed the good brig *Daisy's* prow toward the open sea and began the homeward voyage. The afternoon was calm, and over the sea near shore were myriads of the smaller Tubinares — *Petrella capensis*, *Pelecanoides urinatrix*, *Oceanites oceanicus*, and *Fregatta gallaria*.

March 16. Rough and squally; the mountains of South Georgia still visible. One individual of *Thalassæca antarctica* seen.

March 17. Brisk southerly winds after a night of "tumbling calm." One skua (*Catharacta*) passed us flying northward. Four Sooty Albatrosses were about, of which one was the typical *Phaethria palpebrata*, the familiar South Georgia breeding species with a canescent back. The other three were dark colored on the back and belly, and contrasted markedly with the first bird. Moreover, when one of the dark albatrosses flew close to the brig, I saw distinctly that the sulcus of its mandible was yellow instead of blue, showing that the three unfamiliar birds were referable to the species *Phaethria fusca*, not before identified on the expedition.

Two examples of *Thalassæca antarctica* were recorded, and *Priofinus cinereus* became common during the day, the first bird being seen when we were still within a hundred miles of South Georgia.

March 18, lat. 49°+ S. Wind west by north. A large number of *Diomedea exulans* were noted, many of which were immature and in the speckled, chocolate plumage. One example of *Phaethria fusca* and several of *palpebrata* were seen. The numbers of *Priofinus cinereus* had increased, many flying across the cabin roof in Indian file during the afternoon. In the strong wind they glided on set wings. Two skuas (*Catharacta*) passed, flying rapidly and well above the water, as if upon a definite migration.

March 19, lat. $48^{\circ} 30'$ S. Strong northwesterly winds; cloudy. A *Thalassogeron* with a light gray head and an all black bill followed us. It was perhaps an immature example of *T. culminatus*. *Æstrelata mollis* became abundant; two of *Priofinus cinereus* and one of *Priocella glacialisoides* were noted. Late in the day we were accompanied for a while by no less than twenty 'Mollymokes' (*Diomedea melanophrys*).

March 20, lat. $47^{\circ} 20'$ S., long. $34^{\circ} 25'$ W. Light west winds, brisker during frequent mild rainstorms. A rainbow was observed late in the afternoon. *Diomedea exulans* was common. I saw several Sooty Albatrosses (*Phæbtria*) of both species, and one skua (*Catharacta*).

March 21, lat. $45^{\circ} 50'$ S., long. $33^{\circ} 52'$ W. Strong westerly winds and a rough sea which frequently slopped over the deck during lee lurches. *Æstrelata incerta* appeared for the first time on the northward voyage and I saw three or four birds of this species in our wake throughout the day. A single example of *Puffinus gravis* also tracked us during the morning. *Oceanites oceanicus* and *Fregatta grallaria* were noted sparingly. All the Sooty Albatrosses seen were *Phæbtria fusca*, and when the graceful birds crossed slowly over our stern, with wings flexed in the high wind, I could see the orange or yellow sulcus of the mandible quite distinctly. One of these birds tucked down its head and preened the feathers of its belly while it flew.

March 22, lat. $43^{\circ} 20'$ S., long. 33° W. A bright, mild day with a gentle southwesterly breeze. Two yearling albatrosses (*Diomedea exulans*), all blackish except for their white faces and under wing surfaces, flew about in company. At sunset a skua (*Catharacta*) circled our main topmast and then flew off toward the east. After nightfall a few examples of *Æstrelata mollis* were still seen following us in the bright moonlight.

March 23, lat. $42^{\circ} 20'$ S., long. $31^{\circ} 45'$ W. Northerly storm with a very rough sea all day. We were obliged to run east, and even south of east. Enormous numbers of *Prion banksi* were about, more than I had seen at any time since leaving the South Georgia banks. Many typical examples of *Phæbtria fusca* were seen, one of which, probably a young bird, had a buffish collar.

March 24, lat. 43° S., (dead reckoning). Strong northerly winds.

Oceanites oceanicus and *Fregatta grallaria* were abundant. We caught twelve Wandering Albatrosses (*Diomedea exulans*) on fish-hooks. One of these was a nearly fully mature male; three were adult females; the remainder were younger birds including several blackish yearlings. When one of the albatrosses was held up by its feet a squid with a body a foot long dropped out of its gullet.

An example of *Æstrelata macroptera* was recorded for the first time.

March 25. A severe southerly gale, commencing at 9 P. M. of March 24, continued until early morning of March 26. The sea was very rough, and running before the wind under short canvas we frequently shipped water over either rail when we rolled. Now and then seas broke over our stern. We were able to bend on more sail about midnight.

Diomedea exulans and *Phæbetria fusca* were about in large numbers, the Sooty Albatross with the buff collar being among the others. *Æstrelata incerta* was the petrel seen in greatest abundance. A few of *Puffinus gravis*, *Oceanites oceanicus* and *Fregatta grallaria* were seen.

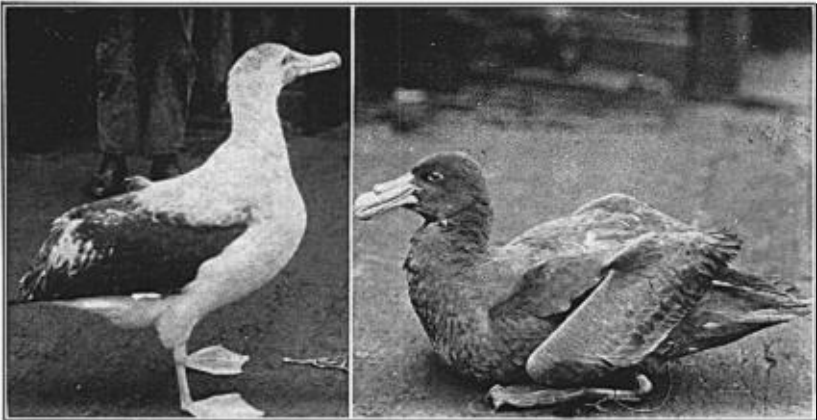
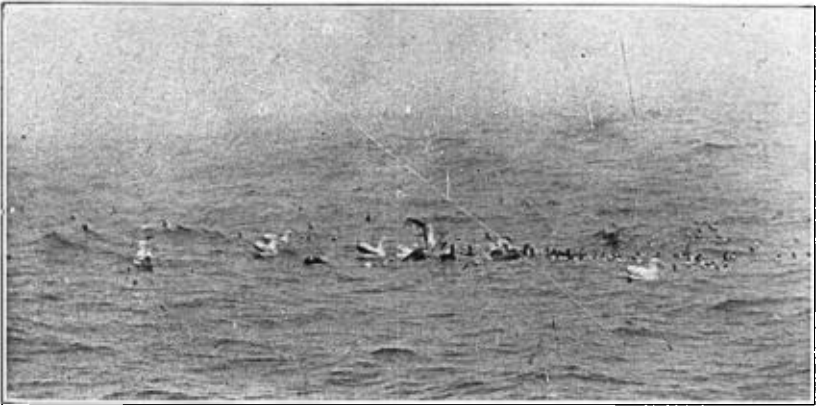
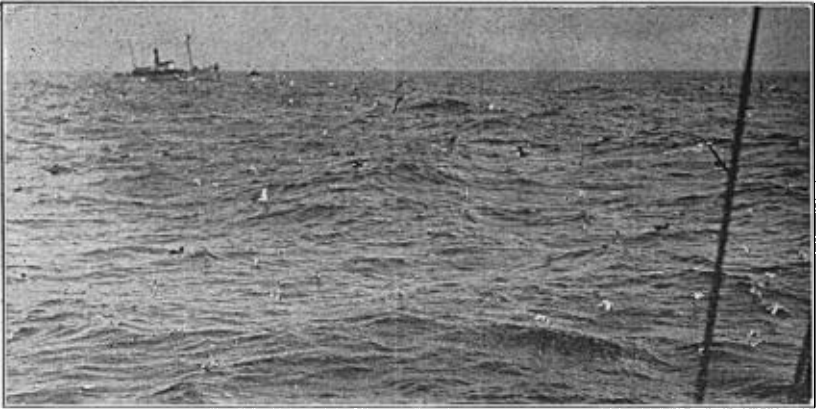
March 26, lat. $38^{\circ} 50' S.$, long. $31^{\circ} 30' W.$ Light winds; overcast sky. The buff-collared example of *Phæbetria fusca* was seen among many others; *Diomedea exulans* was numbered by scores. Young birds of the latter species were "gamming" everywhere on the water — that is meeting in groups, raising their wings and bills, and squealing, just as I had often seen them do on the South Georgia whaling banks. A skua (*Catharacta*) flew around the ship in a characteristic way.

At evening, there being scarcely any breeze although the ground swell was heavy, I lowered the dory and remained down until after dark. I shot three specimens of *Phæbetria fusca*, and also one or more of *Æstrelata incerta*, *Æstrelata mollis*, and *Puffinus gravis*.

Long after nightfall hosts of Tubinares could still be seen and heard flying everywhere over the sea.

March 27, lat. $37^{\circ} 40' S.$, long. $30^{\circ} 58' W.$ Strong west wind, with several rain squalls, heavy sea. The buff-collared *Phæbetria* was noted throughout the day.

March 28, lat. $35^{\circ} 20' S.$, long. $30^{\circ} 50' W.$ Westerly winds; frequent squalls. *Diomedea exulans* was the commonest species. One



1. Tubinares on the Whaling Banks north of South Georgia Island. 'Whale-birds,' *Prion banksi*; 'Cape-Hens,' *Procellaria æquinoctialis*; and 'Mollymokes,' *Diomedea melanophrys*.

2. Tubinares on the Water: chiefly Wandering Albatrosses, *Diomedea exulans*; Giant Petrels, *Macronectes giganteus*; and 'Cape Pigeons,' *Petrelia capensis*.

3. Captive Female Wandering Albatross (on left), and Giant Petrel (on right).

or more of *Puffinus gravis*, *Æstrelata macroptera*, and *Fregatta grallaria* were seen.

March 30 and 31, April 1. The first summery days, with quiet weather, fair skies, and brilliant sunsets. On these three days I saw no birds save a few 'Mutton-birds' (*Æstrelata incerta* and *mollis*).

April 2, lat. 27° 17' S., long. 31° 53' W. The wind had veered to northeast on the evening of the first, and it blew half a gale during the morning of the second, bringing frequent rains. Half a dozen 'Mutton-birds' (*Æstrelata incerta*) followed us. At night we had heavy rains with lightning and thunder.

April 4, lat. 25° S., long. 30° 40' W. Three examples of the Trinidad Islet Petrel, *Æstrelata arminjoniana* were identified. It rained heavily throughout the night.

April 5 and 6. Light southerly breezes; more or less rain. The only birds seen were *Oceanites oceanicus*, *Æstrelata arminjoniana*, and a few terns and boobies (*Sula*) in the distance.

April 7, lat. 21° 30' S., long. 30° 04' W. Calm and hot, with a light south wind arising late in the afternoon. A few terns and boobies, *Oceanites* petrels and scattered examples of *Æstrelata arminjoniana* were seen. Shortly before nightfall we sighted Trinidad Islet, bearing north by west and about 45 miles distant.

April eighth was spent in the waters about the remarkable, uninhabited, volcanic islet of Trinidad, and the ornithological observations of the day may well be reserved for a special paper.

The *Daisy* resumed the northward journey on April ninth, but bird life was not conspicuous between Trinidad and the Equator which we crossed on the afternoon of April twenty-fifth. The little 'Mother Carey's Chickens' (*Oceanites oceanicus*), our constant companions during nearly the whole voyage, were seen almost daily, not only as far as the Line but northward to the West Indies and then to New York. Boobies and terns were frequently noted in the southern tropic belt, although very rarely were they seen so closely that I could identify the species. The few other south Atlantic entries in my notebook refer chiefly to sea birds which belong typically to the fauna of the north Atlantic; and these may best be recorded elsewhere.

