BIRDS. *By R. Bowdler Sharpe, F.L.S., F.Z.S., &c., Senior Assistant in the Zoological Department, British Museum.*

(Plates VI.–VIII.)

I PROPOSE on the present occasion to give a complete account of the Avifauna of Kerguelen Island, founded on the collections in the British Museum (partly made by the Rev. Mr. Eaton, partly by the naturalists of the Antarctic expedition) and on the reports of the German and American expeditions, which have been recently published.* The American expedition obtained twenty-one species, the German naturalists recording twenty-three.†

With regard to the Antarctic Expedition, Sir Wyville Thomson thus writes:—"This expedition had the extraordinary advantage of having Dr. Hooker attached "to it as one of the assistant-surgeons, and the surgeons to the *Erebus* and "*Terror*, Dr. M'Cormick and Mr. Robertson, and the assistant-surgeon of the "*Terror*, Dr. Lyall, were all zealous naturalists, and co-operated heartily with "Dr. Hooker in his work, so that every possible advantage was taken of the "sixty-eight days of their stay in Christmas Harbour. Their visit was, however, "in the depth of winter, and although the actual difference between the winter "and summer temperature is not so great as might have been anticipated, the "winter weather is so boisterous and unsettled, that on forty-five of the sixty-eight "days it blew a gale, and on three days only neither snow nor rain fell." Under these circumstances, therefore, it is not a little creditable to the officers of this expedition that they managed to collect a series of *nearly* every species obtained by the more recent visitors to the island, while they procured several species which none of the latter have met with.

Before proceeding to a detailed account of the species, it may not be uninteresting to give a list of the birds noticed in Christmas Harbour by Captain Cook, when he visited the island one hundred years ago. We are able to give a tolerably correct idea of these from the paintings by Ellis preserved in the British Museum. Ellis was a draughtsman employed by Sir Joseph Banks, whom he accompanied on Cook's voyage. All these paintings are well executed, and the species are recognisable; each one has written on the back the locality, and there can be little

* Contributions to the Natural History of Kerguelen Island, made in connection with the American Transit of Venus Expedition, 1874–75; by J. H. Kidder, M.D. I. Ornithology. Edited by D. Elliott Coues, Washington, 1875. 8vo. pp. i–ix, 1–51. (Bulletin of the United States National Museum, No. 2.) The same. By J. H. Kidder, M.D. Part II. pp. 1–122 (Bull. U. S. Nat. Mus., part 3).

Uebersicht der auf der Expedition Sr. Maj. Schiff "Gazelle" gesammelten Vögel. Zusammengestellt von J. Cabanis und A. Reichenow, J. f. O., 1876, pp. 319–330.

† One species of *Prion* is deducted, as I consider that *P. ariel*, recorded by them, is nothing but the young of *P. turtur*. (Vide infrà.)

doubt but that either these drawings themselves or the actual specimens from which they were taken, formed the types of some of Latham's species. The following species are figured from the "Island of Desolation," as Cook called Kerguelen Island.

No. 39. Ossifraga gigantea.
No. 43. Prion desolatus.
No. 45. Eudyptes saltator * (fig. mala).
No. 46. Aptenodytes longirostris.
No. 54. Sterna vittata.
No. 59. Chionis minor.

In the Narrative of the "Wreck of the Favorite" † is given a very good list of the birds of Kerguelen Island, with figures of many of the species (pp. 173–199). Who was the author of this list I have not been able to discover, but that assistance was rendered by some one who had access to the collections of the Antarctic Expedition I have very little doubt, as nearly every bird procured by the latter is mentioned. Sir J. Hooker, to whose kindness I owe the loan of the work, does not remember the name of the compiler, but he informs me that the late Professor Henslow took a great interest in it.

Lastly, Sir J. Hooker has allowed me to incorporate in this paper certain notes extracted from his "Journal," an act of courtesy that I gratefully acknowledge; so that by references and quotations I hope to be able to present to ornithologists a tolerably correct idea of the Avifauna of Kerguelen Island, as at present determined.

The notes on the habits of the birds are contributed by the Rev. A. E. Eaton, whose initials are in each case appended. Many of the soft parts of the birds described are taken from the careful notes made by Dr. Kidder in his "Report," some few from Gould's works.

CHIONIDÆ.

Chionis minor.

Chionis minor, *Hartl. Rev. Zool.* 1841, *p.* 5; *id. op. cit.* 1842, *pl.* 2, *figs.* 2, 2*a*, 2 *b*; *Lafr. t. c. p.* 402; *Gray, List Anseres, &c. B. M. p.* 52 (1844); *Gray & Mitch. Gen. B. iii., p.* 522, *pl.* 133 (1845); *Schl. Handl. Dierk. p.* 400, *pl. viii, fig.* 98 (1857); *id. de Dier. fig. to p.* 232; *Gray, Handl. B. iii., p.* 21, *No.* 10,056 (1871); *Kidder, Bull. U. S. Nat. Mus. No. ii., pp.* 1–4 (1875); *id. & Coues, op. cit. iii., p.* 7; *Reichen. J. f. O.* 1876, *p.* 89; *Cab. & Reichen. t. c. p.* 327, *pl.* 1, *fig* 2.

Chionarchus minor, *Kidder and Coues, Bull. U. S. Nat. Mus. iii., pp.* 85–116.

* This figure is not so good as most of them, and apparently represents two immature Penguins, which may be the young of *E. saltator.*

† Narrative of the wreck of the "Favorite" on the Island of Desolation; detailing the adventures, sufferings, and privations of John Nunn; an historical account of the Island, and its whale and seal fisheries. Edited by W. B. Clarke, M.D. 8vo. pp. i–xx, 1–236. London, 1850.

Ad. pure albus, primariorum recticumque scapis flavicanti-albis; rostro nigro; regione palpebrali et oculari pallide coccinea; caruncula lorali nigra; iride purpurascenti-nigra; tarso pedibusque sordide albis, carneo tinctis. Long. tot. 17·5, culmen 1·35, alæ 9·4, caudæ 5·4, tarsi 1·7. ♀ mari similis, sed caruncula lorali paullo minore. Long. tot. 16·0, alæ 8·9, caudæ 4·9, tarsi 1·6. *Juv.* similis adultis, sed rostro multo minore et remigibus pallide roseo apicatis.

In the American account of their Kerguelen collections, it is stated by Dr. Kidder (Bull. U. S. Nat. Mus. iii., p. 89) that he has only succeeded in finding a record of four specimens of this species in European collections. The writer has omitted to notice that in the British Museum "List of Anseres," &c. (p. 52), published by the late Mr. G. R. Gray in 1844, no less than seven specimens are mentioned, and I now give a complete list of the birds at present in the national collection. I would call attention to the fact that the bird from the Crozettes seems to have darker legs than the Kerguelen bird: whether this occurs only in the dried skin, or is to be found in the living Sheathbill, must be left for future visitors to these islands to determine.

a. b. ad. *c.* juv. st. Kerguelen Island. Lieut. Alexr. Smith.

d. ♀ ad. sk. Kerguelen Island. Antarctic Expedition.

f. g. ad. sk. Christmas Harbour, May 30, 1840. Antarctic Expedition.

h. ad. sk. Crozette Islands. Captain Armson.

Sir J. Hooker's journal contains the following note:—"The young birds have pink tips to their wings. When hard pressed it takes to the water (but this very seldom), and swims slowly."

[Where the coast is rocky and sheltered, Sheathbills are common. In some of the most favourable situations they were in flocks of a dozen, thirty, or more; but the birds which are breeding live in separate pairs. They frequent the shore to feed between the tide marks upon mussels (whose shells they break by pecking at them), isopod crustacea, *Enteromorpha*, and *Ulva*. Other kinds of seaweeds do not seem to be relished by them; one was observed to peck at a piece of *Delesseria*, but it did not eat it. They are also very assiduous in their attendance upon colonies of Shags and Crested Penguins, whose eggs they greedily devour. The sitting birds stretch out their necks and croak at the Sheathbills sauntering past their nests; but the marauders, keeping just out of reach of their bills, pay little regard to them, and proceed in a business-like manner to eat up the first eggs they may chance to find unguarded. It occasionally happens that while an old Shag is gesticulating violently at a *chionis* in front of her, his friend pecks from behind at the eggs which in the excitement of the moment are not covered completely by her. When she finds out what is taking place, she drives him away with a croak, and true to her sex affects to have won her point in the affray. Reseating herself upon the

nest with great dignity of deportment, and gently replacing with her bill the broken eggs under her feathers, she resigns herself to the task of trying to hatch them. The Sheathbills withdraw. Some time after they have gone away, the broken eggs are inspected, and if there is only a small hole pecked in each of them, they are kept in the nest.

Their appearance and manner of caressing one another led the blue jackets to call Sheathbills "white pigeons." In their gait and flight they closely resemble Ptarmigan; and like these they utter their cry when starting on the wing, as well as during flight. After they have attained a fair amount of speed they sail along from time to time with outstretched wings. On alighting at their destination they often greet one another with a gentle chuckle while they nod their heads.

Shortly before they began to build it became evident that they were about to do so. Scarcely a hen could fly anywhere without being attended by two males. The holes that seemed available for nests underwent frequent and searching examination by them, and in a short while the nests began to be built. Each male then became extremely jealous of his mate; and if a neighbour happened to approach too near the nest, he was at once warned off by the legitimate owner. Mr. Midshipman Stuart of H.M.S. Volage saw some fighting, springing up into the air like partridges.

The nest is usually built in a hole between or behind rocks which constitute the extreme limit of the shore where the land plants meet it. Its position can generally be ascertained approximately at a glance by looking for the most conspicuous boulder on the beach frequented by the pair of birds; for Sheathbills usually alight upon a rock of that description just before they enter their hole. Another easy method of finding the nest, is to startle the cock bird whilst he is feeding along the shore alone, for he is apt to fly to his mate when alarmed. The holes selected for nests are generally rather spacious within; and pieces of building materials are frequently dropped by the birds outside the entrances. The nest is of very simple construction without a lining; it consists of a heap of dried seed-stalks of *Pringlea antiscorbutica*, or tufts of *Festuca erecta*, slightly hollowed out on the top. Occasionally old burrows of *Prion* and *Halobæna* are occupied by sheathbills: when this is done the nest is constructed, not in the terminal chamber of the Petrel's burrow, but a foot or two feet within the entrance of the tunnel, which is thus far enlarged for the purpose by the *Chionis*. One nest was in a burrow of this kind at the base of a large stone standing on a slope amongst *Acœna*, upwards of 10 yards from the shore.

The usual number of eggs in a nest is two or one; three is exceptional. Those in the same nest are not always alike in colour, nor in the style of their marking. The first eggs were found on the 23rd of December; the first brood of nestlings

about the middle of January. The young are clothed with unicolorous slate grey down.

The "sheath" of the bill is immovable. In the chick it is concrete with the horny substance of the bill, and is only indicated by a faint line of demarcation. In the course of growth it becomes developed into a distinct lamina, embracing the base of the upper mandible.

The bird-louse parasitic on this species was not observed by us. The Patagonian chionis (*C. alba*), according to Giebel, is infested with an undescribed *Liotheum*. (*See* Zeitschr. f. d. gesammt. Naturwiss. Berlin, 1861, Heft. 8, 9, p. 311.)—A. E. E.]

ANATIDÆ.

Querquedula eatoni. (Plate VI.)

Querquedula *sp.*, *Gray*, *List Anseres*, *&c.*, *Brit. Mus.*, p. 138 (1844).

Querquedula Kerguelensis, of the "Wreck of the 'Favorite,'" *p.* 186 (1850, *descr. nullâ*).

Querquedula eatoni, *Sharpe*, *Ibis*, 1875, *p.* 828; *Coues and Kidder*, *Bull. U. S., Nat. Mus.*, ii. *p.* 4; *iid.*, *op. cit.* iii. *p.* 7; *Cab. and Reichen. J. f. O.* 1876, *p.* 329.

♂. supra brunneus, plumis plurimis griseo marginatis, rufescenti-fulvo maculatis aut fasciatis; scapularibus nigricantioribus; pileo paullo rufescentiore, plumis nigro medialiter striatis; facie laterali et gutture albicantibus, minute nigro striolatis, mento fulvescenti-albo; corpore reliquo subtus albicante, brunneo marmorato, plumis plerisque pectoralibus versus basin griseo brunneis aut medialiter brunneo striatis; hypochondriis brunneis, albido terminatis et rufescenti-fulvo transfasciatis; subcaudalibus rufescenti-fulvis, nigro adumbratis, longioribus nigricantibus fulvo terminatis; tectricibus alarum superioribus cinerascenti-brunneis, majoribus pallide badio terminatis, fasciam alarem formantibus; remigibus cinerascenti-brunneis, secundariis extus purpureo æreis albido terminatis, speculum alare æreum vix sub certa luce olivascente nitens exhibentibus; secundario proximo nigricante vel aspectu externo viridi nitente, medialiter cinerascente strigato, albo apicato; secundariis interioribus nigricantibus extus pallide brunnescentibus albo limbatis; rectricibus mediis nigricantibus, reliquis brunneis albo marginatis, nonnullis rufescenti-fulvo notatis; tectricibus subalaribus brunneis, inferioribus intimis et axillaribus albis brunneo maculatis, tectricibus majoribus cinerascentibus alæ inferiori concoloribus; rostro virescenti-plumbeo, culmine nigro; pedibus ochrascentibus vel sordide viridescentibus; iride purpurescenti-nigra. Long. tot. 15·5, alæ 8·5, caudæ 4·8, tarsi 1·2.

The above is a copy of the description published by me in the "Ibis;" and I then described the female as being similar to the male, but distinguished by the want of

the alar speculum. According to Dr. Coues' observations, however, the female differs only in having the green speculum duller and tinged with brown: this was seen in specimens determined by dissection by Dr. Kidder. It is probably a young female that I diagnosed in the original article as follows :—

♀ mari similis sed speculo alari absente, secundariis albo terminatis; caudâ brunneâ, rufescenti-fulvo fasciatim marmoratâ.

This plain-coloured Teal is allied to *Q. gibberifrons* and *Q. creccoides*. From the former it is at once to be distinguished by the fawn-coloured bar on the wing and the bronzy speculum, the wing-bar being broadly white, and the speculum black in *Q. gibberifrons*.

Q. creccoides resembles *Q. eatoni* in having the fawn-coloured wing-bar; but then the speculum is black, and the greater part of the bill is yellow. *Q. eatoni* also has the axillaries whitish barred with brown, whereas they are quite white in the allied species; and, moreover, it has remains of rufous-buff bars on most of the feathers of the upper surface, the back being uniform in the other species.

a. ♀ ad. sk. Kerguelen Island. Rev. A. E. Eaton.

b. ad. *c. d*. ad. sk. Kerguelen Island. Antarctic Expedition.

[We found this bird very tame, and only after the officers from the ships had bagged upwards of 2,000 head within a radius of eight miles of the observatory did the survivors acquire habits of caution, and learn to restrain their curiosity. On the bogs they are conspicuous objects.

Until they commence to breed these Teal associate in small "springs," and not like mallards in "bunches." Every day when the tide is out they leave the bogs and hills to congregate upon the rocks and the mud of the estuaries left bare by the ebb. The scene presented at their favourite resorts at these times is an animated one. Hundreds of Gulls flocking from their resting places in the neighbouring cliffs are filling the air with their clamour, and leisurely walking about where the mussels lie thickest upon the mud-bank. The Teal in small parties are busily dabbling along the water's edge and round the stones in tide pools for the abundant isopod *Sphæroma gigas*. Here and there a Sheathbill rambles apart over the sea-weed covered rocks. Elegant in form and graceful in their flight the Terns flit lightly to and fro, hovering now and again and plunging into the kelp, or playfully engaged in clamorous pursuit of their successful companions, presently alight upon a boulder side by side twittering amicably. Here comes a bustling Cormorant hurrying past, turning his head from side to side occasionally as he looks about him in his flight, a contrast to the sooty Albatross which is sailing so silently across the sky.

On the return of the tide the Teal withdraw from the shore, some of them to the cliffs, others to the hill sides and to marshes bordering streams and lakes, where

they strip blossom and seed from the Kerguelen cabbage (*Pringlea*), and sift the soft ground for food.

Their nests are built in the large majority of instances in crowded patches of *Pringlea* near the sea. Very few were found under solitary plants, and when they were the plant was sure to be growing close beside a lump of *Azorella*. Scarcely ever was a nest placed amidst *Acæna* only. All of them were thoroughly protected from the weather by the leaves, and well concealed. They were all neatly lined with a thick layer of down. The teal build apart from one another, and not in company, consequently I never found more than thirty nests in one day. There appears to be much irregularity in their time of breeding. The greater number of them had eggs in December, but whilst some had even hatched theirs so early as the day of the Transit (*i.e.* December 9), others had not begun to lay before the first week in February. The eggs are few in number. Whether this is due to the effects of inbreeding attendant upon the isolation of the species is open to conjecture. It may be occasioned by the coldness of the climate, as in the case of Arctic ducks. Usually there are only three, but occasionally there are four or five eggs in a nest. This last is the largest number of eggs observed together, and of ducklings in any one brood.

The louse of this Teal was not found. The British *Q. crecca* has a *Menopon*, a *Nirmus* and a *Lipeurus*.

In the South African Museum at Cape Town there are two undetermined specimens of *Q. eatoni* from the Crozettes.—*A. E. E.*]

LARIDÆ.

Larus dominicanus.

Gaviota Mayor, *Azara, Apunt.* ii., *p.* 338, *No.* 409.

Larus marinus, *pt. Vieill. N. Dict. d'Hist. Nat.* xxi., *p.* 507.

Larus dominicanus, *Licht. Verz. Doubl. p.* 82; *Neuwied. Beitr. Naturg. Brasil.* iv., *pt.* 2, *p.* 850; *Gray, List Anseres, &c., Brit. Mus. p.* 169; *id. Voy. Ereb. and Terror, Birds, p.* 18; *id. and Mitch. Gen. B. p.* 654, *pl.* 180; *Reichenb. Handb. Longipennes, pl.* xxvi., *fig.* 883; *Schl. Mus. P. B. Lari, p.* 12; *Blasius, J. f. O.* 1865, *p.* 378; *Layard, B. S. Afr. p.* 367; *Gray, Handl. B.* iii., *p.* 112; *Finsch, J. f. O.* 1872, *p.* 241; *Scl. and Salv. P. Z. S.* 1871, *p.* 576; *Gurney in Anderss. B. Dam. Ld. p.* 357; *Buller, B. N. Zeal. p.* 270, *pl.* 28, *fig.* 2; *Scl. and Salv. Nomencl. Av. Neotr. p.* 149; *Finsch, J. f. O.* 1874, p. 203; *Sharpe, Voy. Ereb. and Terror, App. p.* 32; *Coues and Kidder, Bull. U. S. Nat. Mus. no.* ii., *p.* 13; *iid. op. cit. no.* 3; *Cab. & Reichen. J. f. O.* 1876, *p.* 328.

Larus littoreus, *Forster, Descr. Anim. p.* 56.

Larus antipodus, *Gray, List Anseres, &c. p.* 169; *id. Ibis*, 1862, p. 245.

Dominicanus vociferus, *Bruch, J. f. O.* 1853, p. 100, 1855, p. 281.

Dominicanus pelagicus, *Bruch, J. f. O.* 1853, *p.* 100, *pl.* 2, *fig.* 3, 1855, p. 280; *Bp. Consp.* ii., *p.* 214; *id. C. R.* xlii., *p.* 770.

Dominicanus vetula, *Bruch, ll. cc. pl.* 2, *fig.* 4; *Bp. Consp.* ii. *p.* 214.

Dominicanus antipodus, *Bruch, ll. cc. pl.* 2, *fig.* 8; *Bp. Consp.* ii., *p.* 214.

Larus verreauxi, *Bp. Rev. Zool.* 1854, *p.* 7; *id. Naum.* 1854, *p.* 211; *Gray, Handl. B.* iii., *p.* 112.

Dominicanus fritzei, *Bruch, J. f. O.* 1855, *p.* 280; *Bp. Consp.* ii., *p.* 214; *id. C. R.* xcii., *p.* 770.

Dominicanus verreauxi, *Bruch, J. f. O.* 1855, p. 281.

Dominicanus azaræ, *Bp. Consp.* ii., p. 214.

Clupeilarus verreauxi, *Bp. Consp.* ii., *p.* 221, *id. C. R.* xlii., *p.* 770.

Clupeilarus antipodum, *Bp. C. R.* xlii., *p.* 770.

Larus vociferus, *Burm. Th. Bras.* iii., p. 448.

Larus antarcticus, *Ellman, Zool.* 1861, p. 7472.

Larus fuscus, *Ellman, Zool.* 1861, *p.* 7472; *Chapm. Trav. S. Afr. App. p.* 425.

Larus azaræ, *Pelz. Reis. Novara, Vög. p.* 151.

Larus vetula, antipodum, fritzei, pelagicus, *Gray, Handl. B.* iii., *p.* 112.

Ad. dorso toto et scapularibus schistaceo-nigris, his late albo terminatis; tectricibus alarum dorso concoloribus; remigibus nigris, albo terminatis, primariis quibusdam plus minusve subterminaliter albis; secundariis schistaceo-nigris, late albo terminatis; uropygio, supracaudalibus caudaque pure albis, pileo et collo undique cum corpore subtus toto, subcaudalibus, subalaribus et axillaribus pure albis; rostro flavo, mandibulæ gonydis angulo rubro; pedibus flavis, antice viridibus, iride flava. Long. tot. 23, culm 1·85, alæ 16·5, caudæ 7·5, tarsi 20.

Young birds are brown, just as in the case of its northern ally *L. marinus*. I can see no difference at all between adult specimens of this gull from all the localities mentioned below, whence the British Museum possesses examples. The description is taken from an adult bird from Kerguelen Island, presented by Lieut. J. B. Smith.

Besides specimens from the Falkland Islands (*Antarctic Expedition*), Straits of Magellan, East Patagonia (*Admiral Fitzroy*), Valparaiso (*Captain W. S. Brett*), Cape of Good Hope (*Sir A. Smith; E. L. Layard*), and New Zealand (*Sir G. Gray; Capt. Stokes*), the British Museum contains the following from Kerguelen Island:—

a. b. c. ad., *d. e.* juv. Kerguelen Island. Antarctic Expedition.

f. ad. Royal Sound. Lieut. J. B. Smith.

N.B.—In the list of birds appended to Nunn's narrative *Larus pacificus* is also included as an inhabitant of Kerguelen Island, as well as *L. dominicanus*. Not having seen an actual specimen from thence I have not included the latter species, though the description of the bird leaves little doubt of its identity.

[This Gull does not build in cliffs, but amongst the land plants or rocks which are immediately bordering upon the shore. On low promontories the nests are often placed within a few yards of each other in hollows amongst *Azorella*; but where the coast-line is tolerably even they are usually a considerable distance apart, and frequently adjacent to some rock or hump of *Azorella* to which the respective pairs of Gulls have been accustomed to resort. In the breeding season the sites of these solitary nests are roughly indicated by lonely birds sauntering between tide marks in their neighbourhood. As the females do not sit close when approached, but steal away unobtrusively whilst out of gunshot, this clue to the positions of their nests afforded by their mates is worth observing. The principal materials employed in the construction of the nest are dead seedstalks of *Pringlea* disposed like rushes in a Moorhen's nest, which serve as the basis, and dried tufts of *Festuca erecta*, which constitute the lining. The eggs are usually two or three in number, and there are two principal varieties in their coloration, the one paler than the other. The dark variety appears to be the commonest, as among upwards of 30 nests examined by me on the 8th of December, only three or four contained light-coloured eggs. In the same nest both varieties are sometimes met with. The young wander from the nest soon after they are hatched, and hide amongst the neighbouring plants when alarmed. Sometimes whilst down-clad they venture to swim into the kelp amidst the outcries of all the Gulls in the neighbourhood, who attend them in their progress, swooping down at them from time to time as if to seize them; but they are then liable to be blown out to sea by the prevailing wind, and to be killed by cramp. The nestlings' food call is very peculiar, and can be heard a long way off; it has some resemblance to the squeak of a hungry Long-eared Owl.

The Gulls which frequented Observatory Bay, bred for the most part upon islands in the Sound; there were no nests on the shores of the bay itself, and scarcely half-a-dozen on the mainland within several miles of it. But although they were widely dispersed, every day as soon as eight bells (noon) was struck on board the ships, they might be seen hurrying towards them from various directions until a large flock had assembled to await the emptying of the wash buckets after dinner, although not a bird might have been in sight a minute or two before.

The South African museum contains only Cape examples of this Gull.

The louse was not observed. *Larus* is frequented by species of *Docophorus*, *Nirmus*, *Colpocephalus*, *Menopon*, and *Trinoton*.—*A. E. E.*]

Stercorarius antarcticus. (Plate VII., figs. 1, 2.)

Lestris cataracctes (*nec L.*), *Quoy et Gaim. Voy. de l'Uranie*, *p.* 137, *pl.* 38; *Gould*, *B. Austr. pl.* 21; *Hutton*, *Ibis*, 1867, *p.* 185, 1872, p. 248; *Finsch*, *J. f. O.* 1872, *p.* 240, 1874, *p.* 203.

Lestris antarcticus, *Lesson, Traité, p.* 616; *Scl. P. Z. S.* 1860, *p.* 390; *Abbott, Ibis,* 1861, *p.* 165; *Scl. & Salv., P. Z. S.,* 1871, p. 579 (*pt.*); *iid. Nomencl. Av. Neotr.* p. 148; *Cab. & Reichen., J. f. O.* 1876, *p.* 328.

Stercorarius antarcticus, *Gray, List Anseres, Brit. Mus. p.* 167; *Bp. Consp.* ii. *p.* 207; *Pelz. Reis. Novara, Vög. p.* 150; *Giglioli, Faun. Vertebr. Oceano, p.* 61; *Buller, B. N. Zeal. p.* 267; *Saunders, P. Z. S.* 1876, *p.* 321.

Megalestris antarctica, *Gould, P. Z. S.* 1859, *p.* 98.

Lestris fuscus, *Ellman, Zool.* 1861, p. 7472.

Buphagus antarcticus, *Coues, Pr. Phil. Ac.* 1863, p. 127; *id. B. N. West,* p. 604.

Stercorarius catarractes (*nec L.*); *Schl. Mus. P. B. Lari, p.* 45; *Gould, Handb. B. Austr.* ii., *p.* 389; *Layard, B. S. Afr. p.* 366; *Sharpe, Voy. Ereb. & Terror, App. p.* 32.

Buphagus skua antarcticus, *Coues & Kidder, Bull. U. S. Nat. Mus. No.* 2, *p.* 9; *iid. op. cit., No.* 3, *p.* 9.

Ad. fuliginoso-brunneus, plumis dorsalibus et scapularibus albido terminaliter lavatis, colli postici plumis et quibusdam dorsalibus medialiter fulvo striatis; alis saturatius brunneis, anguste cineraceo marginatis; remigibus cinerascenti-brunneis, scapis albidis, primariis versus basin conspicue albis; dorso postico et uropygio cinerascenti-brunneis, supracaudalibus magis chocolatinis; cauda cinerascenti-brunnea, versus apicem nigricante, scapis albis: corpore subtus toto fuliginoso, plumis paucis sordide ferrugineo lavatis, hypochondriis quibusdam obscure albicante lavatis; subalaribus saturate brunneis, majoribus et remigibus subtus cinerascenti-brunneis, primariis intus ad basin conspicue albis; rostro nigro; pedibus ex virescente schistaceo-nigris; inde intense chalybeo. Long. tot. 23, culm, 2·8, alæ 16·3, caudæ 6·0, tarsi, 2·8.

The above description is taken from the only skin brought by Mr. Eaton, and is in nearly uniform brown plumage. Two other skins are in the Museum, from Christmas Harbour, where they were procured by the Antarctic Expedition. These two show more clearly the buff streakings on the neck, and have the feathers of the mantle mottled with yellowish buff or whitish centres. Mr. Howard Saunders, who has examined our series, has called attention to the remarkable colouring of the skins obtained by the Antarctic Expedition in the Southern Seas among the ice. They are very light coloured, and have quite a fringe of yellow round the neck, while the peculiar pale ashy brown colour of the under parts is very conspicuous. I agree with Mr. Saunders that it would not be wise to separate these Antarctic birds from the ordinary *S. antarcticus* without further information regarding them, for the Kerguelen birds show a certain approach to the golden neck-feathers; and moreover, I find on referring to the registers that one is said to be from the Auckland Islands. It may have been sent home in the same box as the Auckland collection, and registered by mistake with them. It still preserves its original ticket,

"Antarctic Gull, Male," but no locality is attached, and its companion bird, a female, is also without locality. These are the two birds catalogued by Mr. Gray in his List of Anseres (p. 168) as from the Antarctic Seas.

I further agree with Mr. Saunders that no one comparing the two species of Skuas would unite *S. antarcticus* with *S. catarractes*, the bills being so different, as will be seen in the figures in the plate.

Besides the undermentioned specimens from Kerguelen Island, the British Museum contains examples from South Africa (*Sir A. Smith*), Campbell Island (*Lieut. A. Smith*), Antarctic Seas, and the Pack Ice, Antarctic Ocean (*Antarctic Expedition*), New Zealand (*Sir G. Grey*), Norfolk Island (*F. M. Rayner*), and from Lat. 36° 8′ S., Long. 88° 55′ E. (*Sir G. Grey*).

a. ad. Royal Sound, Kerguelen Island; Rev. A. E. Eaton.

b. c. ad. Christmas Harbour, Kerguelen Island; Antarctic Expedition.

[Every marsh near Royal Sound used to have its pair of Skuas. Many were destroyed within a radius of four miles from the ships; and before the expedition sailed from the island it was impossible to walk far without coming across dead bodies of the poor creatures. The cause of this useless slaughter was the menacing aspect of the birds, who swooped with fierce impetuosity directly towards the face of any one approaching their domain, rising only just in time to clear his head, and uttering short despairing cries. They did not feign to be crippled quite so much as the Skuas in Spitzbergen, but preferred intimidation as a means of averting danger from their nest. When they thought they had succeeded in making the enemy retreat, they celebrated their triumph standing face to face upon the ground, with their wings extended vertically so as almost to meet above their back, whilst one or both loudly chaunted a pæan, consisting of a dozen notes or so delivered in the tones of a carrion crow. In October they also used to croak now and then during their flight; and this croak, which was discontinued in the breeding season, was very like the lower croak of a raven. Indeed, it was at first difficult to reassure oneself that they were not a species of *Corvus* as they circled in the air far off, and the Blue Jackets used to call them "Black Crows" for some time, but before long the designation "Molly-hawks" came to be applied to them. This change of name took place at the commencent of petrel digging. If Blue Petrels were turned loose in the daytime, they were almost invariably chased by Skuas, and killed on the wing before they had flown half a mile. Petrels of one sort or another seem to constitute the staple diet of these Skuas. They hunt for them in the evening when it is becoming dusk, flying rapidly along the hillsides close to the ground, like hawks, ready to pounce upon any that they may see emerging from the mouth of their burrows. Again in the early morning they are upon the wing to waylay Petrels returning late from the sea. Nor are they idle during the rest of the day. I have mentioned their fondness for eggs in my paper in the 'Proceedings.'

The nest is built amongst *Azorella*, where the ground is dry and slightly raised. It consists of a hollow scraped in the soil lined with dead tufts of *Festuca erecta*. The eggs are two in number, and do not vary much in colour. The statements in Capt. Hutton's paper on Birds inhabiting the Southern Ocean [Quart. Journ. Sc. (1866), vi. 77], that the Kerguelen Skua breeds on flats among grass two feet high, and lays three eggs, and that the young are dark brown spotted with white, do not accord with our observations. They young are dark brown, without any pale *spots* whatever. The ordinary food-call of the nestlings is rather plaintive and tremulous; they also quack like Mallards.

The old Skuas were much puzzled when they saw rabbits come out of Petrels' holes. They hovered for a long time over their heads, and at length used to stand beside the mouths of the burrows waiting for the young ones to creep forth, just as if they were watching for Petrels. It is doubtful whether they will succeed in ridding the island of these mischievous vermin, although the young birds reared by me readily fed upon rabbits procured with the sling.

Twenty or thirty adult Skuas used to assemble every afternoon upon a small sheltered lake near Swain's Harbour, where they washed and basked.

Under the name of *S. catarrhactes*, two examples of this Skua from the Crozettes are exhibited in the South African Museum.

Louse not found. *Stercorarius* serves as host to species of *Docophorus*, *Nirmus*, *Lipeurus*, and *Colpocephalus* (Giebel).—*A. E. E.*]

Sterna virgata.

Sterna arctica, (pt.) *Gray, List Anseres Brit. Mus. p.* 178 (1844).

Sterna virgata, *Cab. J. f. O.* 1875, *p.* 449; *Saunders, P. Z. S.* 1876, *p.* 646; *Cab. & Reichen. J. f. O.* 1876, *p.* 328.

Sterna vittata, *Coues, in Kidder's Report, Bull. U. S. Nat. Mus.* ii. *p.* 17 (1875, *nec. Gm.*); *Coues & Kidder, op. cit.* iii, *p.* 11 (1876).

Ad. supra fumoso-cinereus, tectricibus alarum dorso concoloribus; remigibus fumoso-cinereis intus albicanti-cinereis, scapis pallidissime brunneis, primario primo extus nigricante, scapa pure alba, secundariis albo terminatis; uropygio et supracaudalibus albis vix cinereo lavatis; rectricibus cinereis, intus albis; pileo summo nuchaque nigris; facie laterali pallide cinerea; striga lata superciliari a basi narium ducta, alba; corpore reliquo subtus fumoso-cinereo, subalaribus et subcaudalibus concoloribus, iis imis vix albicantibus; rostro et pedibus corallinis; iride indigotico-nigra. Long. tot. 12, culm. 1·1, alee 10·3, caudæ 3·1, rectrice extima 5·4, tarsi 0·65.

Juv. supra nigricans, plumis ad basin cinereis, subterminaliter nigris, ochrascenti-brunneo marginatis et transfasciatis; uropygio et supracaudalibus albicanti-cinereis, ochrascenti-brunneo lavatis; remigibus secundariis et rectricibus eodem modo quam dorsum terminaliter marmoratis; regione parotica cinerea postia nigra; corpore

subtus ubrascenti-brunneo, nigricanti-brunneo transversim marmorato, plumis ad basin albis, subalaribus purè albis.

This seems to be quite a distinct species. It is closely allied to *Sterna antarctica* of New Zealand, and in coloration is almost exactly similar. The latter bird, however, according to Dr. Buller (B. N. Zeal. p. 238), has the bill and feet "bright yellow," whereas these parts in *S. vittata* are coral-red.

a. imm. sk. Kerguelen Island. Antarctic Expedition.

b. ad., *c*. juv. Royal Sound, Kerguelen Island. Rev. A. E. Eaton.

[Crustacea and the young of *Notothenia* inhabiting the kelp afford subsistence to the Terns in Kerguelen Island. Skimming along the shore in pairs and threes, and over the belt of *Macrocystis*, these with their graceful flight and elegant form enliven the prevailing desolation of the coast scenery. In general their eggs are laid on barren stony ground one or two hundred yards from the beach, and the brows of terraces of the seaside hills are more frequently selected for the nesting places than any other situations. There is rarely (if ever) more than one egg in a nest, and this is deposited in a slight hollow amongst the stones, and generally upon the bare soil. The birds breed irregularly throughout the early summer months. Fresh eggs were taken by the officers of the "Volage" about the third week in November; a nestling recently hatched was found on the 8th of December, and on the 23rd of the same month a young Tern fully fledged was shot while on the wing. Its beak and feet were black. Another young one able to fly was kept for some time on board the "Supply." It became quite tame, and ate boiled rice and soaked bread readily. After we had been a few days at sea it died, probably through want of water. The adult examples in the collection were secured in the absence of a gun by a couple of stones thrown at them consecutively from a sling while they were passing overhead. A third specimen was caught by hand during our last ten minutes on the island. It was sitting upon a rock near the pier with the eye on my side of its head blinded, so I crept up quietly and laid hold of it.

The two specimens marked as *Sterna meridionalis* from the Crozettes in the South African Museum are identical with the Kerguelen Tern.

The louse of this species was not obtained. *Sterna* is infested with species of *Nirmus*, *Docophorus*, *Colpocephalus*, and *Analges*, according to Giebel. *A. E. E.*]

Sterna vittata.

Wreathed Tern, *Lath. Gen. Syn.* iii., *pt.* 2, *p.* 359.

Sterna vittata, *Gm. S. N.* i., *p.* 609 (*ex Lath.*); *Lath. Ind. Orn.* ii., *p.* 807; *Pelz. Reis. Novara, vög. p.* 152; *Saunders, P. Z. S.*, 1876, *p.* 647.

Ad. pileo nuchaque nigerrimis; corpore reliquo suprà clarè cinereo; tectricibus alarum dorso concoloribus; remigibus cinereis, intùs albis, primariis extùs nigricanti-cinereis, rachidibus albis; secundariis et scapularibus conspicuè albo terminatis; uropygio et supracaudalibus purè albis; caudâ maximè furcatâ, purè albâ; facie

laterali cinereâ, fasciâ distinctâ a narium basi, infrà oculos usque ad nucham lateralem ductâ, et maculâ infraoculari, albis; corpore reliquo subtùs saturatè cinereo, gulâ magis albicante; tibiis, crisso, subalaribus et subcaudalibus, purè albis. Long. tot. 15·3, culm. 1·4, alæ 10·0, caudæ 3·0, rectric. ext. 7·0, tarsi 0·7.

Juv. similis avi juveni *S. virgatæ*, et eodem modo nigro et ochrascenti-brunneo varius.

The view of Herr Von Pelzeln, and Mr. Howard Saunders, who refer this Tern to the *Sterna vittata* of Gmelin, is doubtless correct. The latter gentleman observes: — "Gmelin's description, founded on Latham, fairly suits this species, "although I am inclined to doubt the correctness of the locality assigned, viz., "Christmas Island, especially as there is no mention in Cook's Voyages of any Tern "being found there, except the Sooty Tern, of which there is a full description." Many of the birds described by Latham were taken from specimens or drawings in the collection of Sir J. Banks. A list of the few birds of Kerguelen Island as noticed on Cook's voyage has been drawn up at the commencement of the present paper, and I believe that No. 54, representing the Tern from the "Island of Desolution," formed the type of *Sterna vittata*, and that the locality Christmas *Island* is a mistake for Christmas *Harbour*, which was the place where Cook's expedition landed on Kerguelen Island. The picture represents *S. vittata*, and not *S. virgata*, and that the species occurs there is proved by the under-mentioned specimen collected in the island by the Antarctic Expedition.

a. ♂ ad., *b*. juv. S. Paul's Island, Jan. 1853 (*J. Macgillivray*). Capt. Stanley.

c. ad. Kerguelen Island. Antarctic Expedition.

PROCELLARIIDÆ.

Pelecanoides urinatrix.

Tee-tee, *Forster, Icon. Ined. No.* 88.

Diving Petrel, *Forster, Voyage* i. *p.* 189; *Lath. Gen. Syn.* iii. *pt.* 2, *p.* 413; *id. Gen. Hist.* x. *p.* 194.

Procellaria urinatrix, *Gm. S. N.* i. *S.* 560 (*ex Lath.*).

Pelecanoides urinatrix, *Lacép. Mem. de l'Inst.* 1800, *p.* 517; *Gray, List Anseres Brit. Mus. p.* 158; *id. Gen. B.* iii., *p.* 646; *id. Voy. Ereb. & Terror, Birds, p.* 17; *id. Ibis*, 1862, *p.* 243; *Coues, Pr. Philad. Acad.* 1866, *p.* 190; *Gray, Handl. B.* iii., *p.* 102, *No.* 10825; *Sharpe, Voy. Ereb. & Terror, App. p.* 33; *Buller, B. N. Zeal. p.* 313; *Coues & Kidder, Bull. N. S. Nat. Mus.* ii., *p.* 36; *iid. op. cit.* iii., *p.* 17.

Halodroma urinatrix, *Illiger, Prodr. Syst. Mamm. &c. p.* 274; *Reichenb. Handb. Longipennes, pl.* ix., *figs.* 762, 763; *Bp. Consp.* ii., *p.* 206; *Schl. Mus. P. B. Procell. p.* 37; *Gould, Handb. B. Austr.* ii., *p.* 483; *Finsch. J. f. O.* 1872, *p.* 256, 1874, *p.* 210; *Cab. & Reichen. J. f. O.*, 1876, *p.* 328.

Procellaria tridactyla, *Forster, Descr. Anim. p.* 149; *Ellman, Zool.* 1861, *p.* 7473.

Puffinuria urinatrix, *Gould, B. Austr.* vii., *pl.* 60.

Pelecanoides berardi, *Quoy et Gaim. Voy. Uranie, p.* 135, *pl.* 37; *Temm. Pl. Col.* 517; *Gray, List Anseres Brit. Mus. p.* 158; *id. Gen. B.* iii., *p.* 646; *Gould, P. Z. S.* 1859, *p.* 98; *Scl. P. Z. S.* 1860, *p.* 390; *Coues, Pr. Philad. Acad.* 1866, *p.* 190; *Gray, Handl. B.* iii., *p.* 102, *No.* 10827; *Buller, B. N. Zeal. p.* 314.

Halodroma berardi, *Reichenb. Handb. Longipennes, pl.* ix., *fig.* 764; *Bp. Consp.* ii., *p.* 206; *Schl. Mus. P. B. Procell., p.* 38; *Finsch., J. f. O.* 1874, *p.* 210; *Scl. & Salv. Nomencl. Av. Neotr. p.* 149.

♀ *Ad.* suprà niger, plumis basaliter cineraceis; scapularibus magis cinereis albo terminatis; alis dorso concoloribus, primariis intùs brunnescentibus, secundariis magis cineraceis angustè albo terminatis; rectricibus nigricantibus, intùs cineraceis angustè albido terminatis; loris et regione oculari nigricantibus; regione paroticâ obscurè cinereâ, plumis vix albo terminaliter marginatis; genis et corpore subtus toto albis, genis, gutture imo, colli et pectoris lateribus cineraceis albo terminatis; hypochondriis cineraceo lavatis; subalaribus albis, majoribus cineraceo lavatis; remigibus infrà cinerascenti-brunneis; rostro nigro, ad basin mandibulæ cœruleo; iride cinerascente; pedibus cœruleis.

The specimen described above is one of Mr. Eaton's. Considerable variation exists with regard to the amount of grey mottling on the throat and sides of the body and neck, but I cannot determine whether this arises from difference of sex or age. Mr. Gould has figured the adult bird with a pure white breast, and the young one with the under parts shaded with grey, but neither of them have the banded appearance which is apparent in most of the specimens in the British Museum. The young birds in the collection, some of which have remains of down still adhering to them, are quite as pure white on the breast as the adults.

The principal differences between *Pelecanoides urinatrix* and its allies *P. berardi* and *P. garnoti*, have been stated by authors to consist in size and the colour of the feet. Thus Professor Schlegel (*l. c.*), who is followed by Dr. Coues in his well-known paper (Pr. Philad. Acad. 1866, p. 190), separates them on characters which may be tabulated as follows:—

a. feet blackish; bill longer and more slender; size larger . . . *garnoti.*
b. feet bluish: bill robust; size smaller . . . . . *urinatrix.*
c. feet pale with black membranes; size small . . . *berardi.*

The colour of the feet, therefore, plays an important part in the differentiation of the species, so that it will be of interest to note the colouring of these organs, as given in various works. Thus for *P. urinatrix* Dr. Kidder gives the "tarsus and foot lavender blue," while Mr. Gould writes:—"Tarsi and toes beautiful light blue; webs transparent bluish white, tinged with brown." Forster gives the "feet blue, the soles and webs black," while Dr. Buller has them as follows:—"Legs and feet cobalt, tinged with green, the webs bluish white." According to the last-named observer, in *P. berardi* the legs and feet are "yellowish with dark webs."

It is, therefore, no wonder, with the discrepancy in colour mentioned in the works of the above-named authors, that Dr. Coues, after studying the series brought home by Dr. Kidder from Kerguelen Land, should observe as follows:—"As very "strongly intimated in my paper, satisfactory diagnoses of the three currently "reported species of the genus are wanting. Nor is my faith in their distinctness "increased on finding that these specimens, which from the locality undoubtedly "represent the original *P. urinatrix*, are fully up to the dimensions of the supposed "larger *P. garnoti* from the west coast of South America. Observed variation in "the colour of the feet, which is one point that has been relied upon, lessens the "probability of distinctness, especially as the ascribed coloration does not coincide "in every case with the dimensions. The size and proportions of the examples "examined, as carefully measured in the flesh by Dr. Kidder, warrant me in "adducing the *P. garnoti* of Lesson as a synonym of *P. urinatrix*, to which I "still refrain, however, from adding the *P. berardi* of Quoy and Gaimard." (Report; Bull. N. S. Mus. N. H. *l. c.*)

Although my measurements of skins do not agree exactly with those of Dr. Kidder made from the recently-killed bird, I add the dimensions of the series in the British Museum, arranged according to the size of the bill, irrespective of locality.

	Total Length.	Culmen.	Wing.	Tail.	Tarsus.
a. Auckland Isles (*Antarctic Exp.*)	7·4	0·55	4·15	1·6	0·6
b. Kerguelen Island (*A. E. Eaton*)	7·9	0·6	4·7	1·75	1·0
c. Straits of Magellan	7·5	0·6	4·45	1·65	0·95
d. ♀ Kerguelen Island (*A. E. Eaton*)	7·6	0·65	4·55	1·75	0·95
e. Christmas Harbour (*Antarctic Exp.*)	9·3	0·65	4·95	1·65	1·0
f. Auckland Islands (*Smith*)	7·6	0·65	4·85	1·8	1·05
g. " " "	8·0	0·65	4·7	1·7	1·05
h. Straits of Magellan	7·5	0·65	4·7	1·7	1·05
i. New Zealand (*Hector*)	9·0	0·7	5·1	1·75	1·05
k. Kerguelen Island (*Antarctic Exp.*)	8·0	0·7	4·55	1·6	1·05
l. " " "	8·0	0·7	4·75	1·65	0·95
m. New Zealand (*Sir George Grey*)	7·8	0·7	4·6	1·65	0·95
n. Chili (*Brydges*)	8·0	0·8	5·2	1·7	1·25
o. " "	7·7	0·8	5·4	1·8	1·25
p. Valparaiso (*Brett*)	—	0·85	5·45	1·7	1·3

Although the general length of the skin in these birds goes for very little, the bill is a reliable character, and from the above table of measurements it will be seen that even in the same localities the size of the bill and feet is not constant. My conclusions differ from those of Dr. Coues, insomuch that I consider that *P. berardi* is nothing but the young bird of *P. urinatrix*, and that *P. garnoti* on the contrary must be held to be distinct on account of its very much larger size; at all events the examples from Western South America indicate a distinct race.

The British Museum possesses specimens from the Auckland Islands (*Lieut. A. Smith, Antarctic Expedition*), from New Zealand (*Dr. Hector, Sir G. Grey*), and from the Straits of Magellan, as well as the following from Kerguelen Island.

a. b. ♂. ♀. ad. Observatory Bay, Kerguelen Island. Rev. A. E. Eaton.
c. ad. Christmas Harbour, July 20, 1840. Antarctic Expedition.
d. ad. Kerguelen Island. Antarctic Expedition.

[This bird, as Prof. Wyville Thomson well observes, has a close general likeness to *Mergulus alle*. Both of them have a hurried flight; both of them, while flying, dive into the sea without any interruption in the action of their wings, and also emerge from beneath the surface flying, and they both of them swim with the tail rather deep in the water. But this resemblance does not extend to other particulars of their habits. The Rotche, when breeding, usually flies and fishes in small flocks of six or a dozen birds, and builds in communities of considerable size, which are excessively noisy. Diving Petrels, on the other hand, are more domestic in their mode of living, fishing and flying for the most part in pairs or alone, and building sporadically.

They had begun to pair when we reached Kerguelen Island. The first egg was found on the 31st of October. Their burrows are about as small in diameter as the holes of Bank Martins (*Cotyle riparia*) or Kingfishers (*Alcedo ispida*). They are made in dry banks and slopes where the ground is easily penetrable, and terminate in an enlarged chamber on whose floor the egg is deposited. There is no specially constructed nest. Some of the burrows are branched, but the branches are without terminal enlargements, and do not appear to be put to any use by the birds. Before the egg is laid, both of the parents may be found in the nest-chamber, and may often be heard moaning in the daytime: but when the females begin to sit, their call is seldom heard, excepting at night, when the male in his flight to and from the hole, and his mate on her nest, make a considerable noise. There seems to be a difference of a semi-tone between the moans of the two sexes. The call resembles the syllable "oo" pronounced with the mouth closed while a slurred chromatic ascent is being made from E. to C. in the tenor. This kind of Petrel has much difficulty in taking flight from ground which is comparatively level; it it only by running against the wind, or by starting from a lump of *Azorella*, that the birds are able to rise upon the wing if they happen to alight upon a flat. During my walks on calm nights I used frequently to hear them fluttering along the ground in the dark, and (if I had a lantern) easily caught them by uncovering the light and turning it on to them. They sometimes lay still in my hand without trying to escape; but when they flew off from it, they did so in a manner which showed that they were not at all crippled. They flew to light on board H.M.S. "Supply" on dark nights in October, when there was snow upon the deck.

There is a pair of *P. urinatrix* from the Crozettes in the S. African Museum.

One of the birds dug out near Observatory Bay was inconveniently crowded with a species of *Pulex* and *Nirmus setonis*, sp. n. *A. E. E.*]

Daption capensis.

White and black-spotted Petrel, *Edwards, N. H. Birds, pl.* 90.

Le Petrel tacheté vulgairement Damier, *Briss. Orn.* vi., *p.* 146.

Procellaria capensis, *Linn. S. N.* i., *p.* 213; *Hahn & Kuster, Vög. Asien, Lief.* xix., *taf.* 6; *Gray, List Anseres, &c., Brit. Mus. p.* 164; *Schl. Mus. P. B. Procell. p.* 14; *Pelz. Reis. Novara, Vög. p.* 146; *Layard, B. S. Afr. p.* 361.

Daption capensis, *Steph. Gen. Zool.* xiii., *p.* 241; *Gould, B. Austr.* vii., *pl.* 53; *Bp. Consp.* ii., *p.* 188; *Reichenb. Handb. Longipennes, taf.* xii., *figs.* 337, 338; *Lawr. N. Am. B. p.* 828; *Gould, Handb. B. Austr.* ii., *p.* 469; *Coues, Pr. Philad. Acad.* 1866, *p.* 162; *Degl. and Gerbe, Orn. Eur.* ii., *p.* 469; *Giglioli, Faun. Vertebr. nell' Oceano, p.* 46; *Cab. Von der Decken Reis.* iii., *p.* 62; *Finsch & Hartl. Vög. Ostafr. p.* 816; *Finsch, J. f. O.* 1872, *p.* 256, 1874, *p.* 208; *Buller, B. N. Zeal. p.* 299; *Scl. and Salv. Nomencl. Av. Neotr, p.* 149; *Sharpe, Voy. Erebus and Terror, Birds, App. p.* 33; *Kidder, Bull. U. S. Nat. Mus. p.* 39, *note; Cab. & Reichen. J. f. O.* 1876, *p.* 329.

Procellaria punctata, *Ellman, Zool.* 1861, *p.* 7473.

Fulmarus capensis, *Gray, Handl. B.* iii., *p.* 107.

Calopetes capensis, *Sundev. Av. Meth. Tent. p.* 142.

Ad. Schistaceo-niger, albo variegatus, plumis ad basin cineraceis subterminaliter albis, dorsi plumis ad apicem triangulariter schistaceo-nigris; scapularibus dorso concoloribus et eodem modo notatis; tectricibus alarum minimis nigricanti-brunneis; reliquis brunneis ad basin albis et angustè albo extùs limbatis, majoribus intimis purè albis, quibusdam brunneo terminatis; tectricibus primariorum et remigibus brunneis, intùs albis brunneo terminatis; caudâ albâ latè brunneo terminatâ; facie laterali pileo concolori; fasciâ parvâ suboculari albâ; gulâ summâ brunneâ, plumis ad basin celatè albis; gutture et colli lateribus albis, plumis brunneo terminatis; corpore reliquo subtùs purè albo, axillaribus, tectricibus subalaribus majoribus et subcaudalibus albis brunneo terminatis; subalaribus omnibus marginem alarum formantibus nigricanti-brunneis; rostro nigricanti-brunneo; pedibus saturatè brunneis. Long. tot. 15·5, culm. 1·35, alæ 10·5, caudæ 4·0, tarsi 1·7.

There seems to be very little variation in the plumage of these birds, but the throat is more uniform dusky in some individuals, while in others it is mottled with white; the amount of white mottling on the mantle also varies somewhat, the more uniformly coloured birds being apparently the younger ones.

Mr. Eaton did not bring home a specimen of the Cape Petrel from Kerguelen Island, but he noticed it in the vicinity, as did also Dr. Kidder (l. c.) It is included

in the list of Drs. Cabanis and Reichenow, as having been obtained at Kerguelen, and John Nunn's narrative speaks of it as occurring there, being called by him and his companions the "Spotted Eaglet," or "Spotted Night-hawk." He says it was extremely abundant near the island. As will be seen below, the British Museum possesses two specimens captured in the vicinity by the Antarctic Expedition.

That the Cape Pigeon breeds on Kerguelen Island is proved by the following note in Sir J. Hooker's Journal: "It builds in sheltered ledges of cliffs about 50 or 100 "feet above the level of the sea. I found two on a nest, but quite mature. Its "note is a short hoarse croak."

In the British Museum are specimens from the Cape Seas (*Capt. Harry, E. M. Langworthy*), Lat. 34° 37′ S., Long. 22° 29′ (*D. Blewitt*), Western Australia (*Sir G. Grey*), New Zealand (*Dr. Hector*), off Valparaiso (*Capt. W. S. Brett*), as well as the following.

a. b. ad. Off Kerguelen Island. Antarctic Expedition.

[Cape Pigeons were plentiful on 9th of October near Bligh's Cap, and on the following day there were many of them off the coast in the neighbourhood of Mt. Campbell. A few followed the ships into Observatory Bay, but they did not stay there. I do not know whether they ever breed in the island. In December and the first week in January there were many of them still about the entrance of Royal Sound and Swain's Bay; but when we passed by at the end of the latter month none were visible in either of these places, nor did we see any in March between Kerguelen Island and the cape. It is possible that their nests might be found in the cliffs of the Prince of Wales Foreland and the islands in the mouth of Swain's Bay, or in those of the more exposed parts of the coast farther west; but there is no evidence of their breeding there. *A. E. E.*]

Majaquens Æquinoctialis.

The Great Black Petrel, *Edwards, Nat. Hist. B.* ii., *pl.* 89.

Le Puffin du Cap de Bonne Espérance, *Briss. Orn.* vi., *p.* 137.

Procellaria æquinoctialis, *Linn. S. N.* i., *p.* 213; *Burm. Th. Bras.* iii., *p.* 345; *Schl. Mus. P. B. Procell. p.* 19; *Layard, B. S. Afr. p.* 360; *Finsch & Hartl. Vög. Ostafr. p.* 817; *Cab. & Reichen. J. f. O.* 1876, *p.* 329.

Procellaria æquinoxialis, *Vieill. N. Dict. d'Hist. Nat.* xxv., *p.* 422.

Puffinus æquinoctialis, *Steph. Gen. Zool.* xiii., *pt.* 1, *p.* 229; *Gray, List Anseres, &c., Brit. Mus. p.* 160; *id. Gen. B.* iii., *p.* 647; *Reichenb. Handb. Longipennes, pl.* xii., *figs.* 340, 341; *Pelz. Reis. Novara, p.* 142.

Procellaria nigra, *Forster, Descr. Anim. p.* 26.

Priofinus æquinoctialis, *Jacq. & Pucher. Voy. Pole Sud.* iii., *p.* 146.

Majaquens æquinoctialis, *Reichenb. Handb. Longipennes, pl.* xii., *figs.* 340, 341; *Bp. Consp.* ii., *p.* 200; *id. C. R.* xlii., *p.* 768; *Coues, Pr. Philad. Acad.* 1864, *p.* 118; *Giglioli, Faun. Vertebr. Oceano, p.* 35; *Scl. & Salv. Nomencl. Av.*

Neotr. p. 149; *Coues and Kidder, Bull. U. S. Nat. Mus.* ii., *p.* 25; *iid. op. cit.* iii., *p.* 13.

Fulmarus æquinoctialis, *Gray, Handl. B.* iii., *p.* 108, *no.* 10915.

♀ *Ad.* suprà fuliginoso-niger, plumis dorsalibus vix brunnescente marginaliter lavatis; alis nigricanti-brunneis, tectricibus alarum brunneo lavatis; remigibus nigricanti-brunneis, intùs chocolatinis, scapis primariorum pallidè et conspicuè brunneis; uropygio et supracaudalibus cinereo-nigricantibus; caudâ cinereo-nigrâ, rectricibus medianis nigricanti-brunneis; facie et collo lateralibus fuliginoso-nigris, fasciâ latâ e genis medianis per mentum ductâ, albâ; corpore reliquo subtus fuliginoso-nigro, plumis omnibus brunneo lavatis; subalaribus brunneis, cinerascente lavatis; rostro virescenti-albo, suturibus nigris; iride nigra. Long. tot. 19·5, culmen 2·55, alæ 15·0, caudæ 5·5, tarsi 2·4.

The above description is taken from the only skin brought back by Mr. Eaton. The white mark is well developed on the chin and the fore part of the cheeks, occupying all the latter, excepting a brown patch at the base of the lower mandible. The way in which the white facial markings vary is shown in the following examples:—

1. ? Pacific Ocean. Sir Joseph Banks (spec. *a* of Gray's List of Anseres, 1844, p. 160). The white mark is confined to a small spot on the chin. The locality is doubtless erroneous.

2. ♂ Simon's Bay, Cape of Good Hope. The white mark occupies the entire chin and upper throat, and encroaches slightly on the centre of the cheeks.

3. Cape of Good Hope. The white marking is developed on the chin as in the preceding bird, occupying on one side the anterior portion of the cheeks, but totally absent on the other cheek, which is sooty brown. This is spec. *e* of Gray's list, considered by him to be a variety or a young bird.

Considering that the Australian *M. conspicillatus* only differs in the extent of the white markings on the head, it might be supposed that it was not really distinct from *M. æquinoctialis*, in which these white markings form such a varying peculiarity, the extent of white being, as shown above, sometimes not the same on both sides of the face. The Australian bird, however, has a white band across the crown, and a second one extending from the cheeks round the side of the head below the ear-coverts, as well as a white patch on the chin; and in addition to this the nostrils and sides of the mandibles are yellowish horn-colour, according to Mr. Gould. In *M. æquinoctialis* none of this yellow colouring in the bill is seen.

Mr. Layard, who has had opportunities of observing both species alive, considers them distinct, as does also Dr. Coues, who has devoted great time and attention to the Petrels. The following specimens are in the British Museum:—

a. ad. Royal Sound, Kerguelen Island. Rev. A. E. Eaton.

b. ad. Pacific Ocean? Sir Joseph Banks.

c. ad. st. Cape of Good Hope. M. Verreaux.

[In Kerguelen Island a hole similar to a deserted rabbit's earth, excavated in wet ground, with water standing (in early summer) an inch or two inches deep within the entrance, especially if it is in a slope near the sea, may be regarded as the burrow most likely to be that of a White-chinned Petrel. If it is occupied by the birds there will probably be some green shoots of *Acæna* clipped off from plants near its mouth dropped by them in the water. During the season while the birds are pairing before their egg is laid they make an extraordinary cackle in the nest-chamber; the sound of approaching footsteps, or a thump upon the ground some distance away from the nest, and even a shout at the mouth of the burrow, will cause them to commence it in the day time. During the night this call is uttered by the female sitting on her nest or in the entrance of the tunnel; and she can be heard at the distance of a quarter of a mile when there is a calm. Much trouble may be saved in digging out the nest by sounding with the spade along the course of the burrow until the situation of the nest-chamber is ascertained. This is spherical and tolerably large. Being in most instances near the surface of the ground, care must be taken in the removal of its roof, or the bird's back may be broken by the spade while she is sitting upon her egg. As soon as the chamber is laid open it is well to catch the hen by her beak and drag her out of the hole while she is still dazzled by the light, giving her no time to use her claws. On being released she usually makes no attempt to fly, unless she is purposely chased down the hill; but after waddling away a few yards she returns to her burrow (or to where its entrance used to be before it was dug into and choked with clods), and begins at once to dig her way into the tunnel through the obstructions with which it has been blocked up. She takes little notice of bystanders so long as they remain still, passing leisurely by them or even over their feet if they happen to be in her way. The nest is built of mud and pieces of plants arranged in the form of an inverted saucer three or four inches high, slightly hollowed out at the top. A space is left between its base and the sides of the nest-chamber. Some of the birds had no white patch under their chin; when it was present it varied in extent in different examples. In most instances it formed a small triangular blotch occupying the apical portion of the angle enclosed by the lower mandible; but in a few cases the white was limited to one or two feathers only. In none of the Kerguelen specimens did the patch extend to the forehead, as it does in the birds from Australia.

The S. African Museum contains the following examples of this species:—1 (young, in down) from the Crozettes; 2 from Table Bay with the white chin patch very large; and 1 from Australia with the white on each side of the face below the eyes, and a white band across the forehead, in addition to the chin patch.—*A. E. E.*]

Puffinus kuhli.

Le Puffin, *Buff. Pl. Enl.* x., *pl.* 962.

Procellaria puffinus, *Temm. Man. d'Orn.* ii., *p.* 805.

Nectris cinerea, *Kuhl, Beitr. Zool. p.* 148, *pl.* 11, *fig.* 12 (*nec Gm.*); *Linderm. Vög. Griechenl. p.* 170.

Puffinus cinereus, *Cuv. Règne Anim.* 1829; *Less. Traité, p.* 613; *Savi, Orn. Tosc.* iii., *p.* 38; *Schl. Rev. Crit. p.* cxxxii.; *Webb & Berth. Orn. Canar. p.* 43; *Bolle, J. f. O.* 1855, *p.* 177, 1857, *p.* 344; *Vernon Harcourt, Ann. N. H.* (2) xv., *p.* 438; *Loche, Expl. Sci. Alger. Ois.* ii., *p.* 174; *Degl. et Gerbe, Orn. Eur.* ii., *p.* 376; *Elwes & Buckley, Ibis,* 1870, *p.* 336; *Gigl. Faun. Vertebr. nell' Oceano, p.* 47; *Doderl. Avif. Sicil. p.* 228; *Fritsch, Vög. Eur. tab.* 58, *fig.* 1; *Godman, Ibis,* 1872, *p.* 223; *Bree, B. Eur.* v., *p.* 86 (1876).

Puffinus kuhli, *Boie, Isis,* 1836, *p.* 258; *Bp. Consp.* ii., *p.* 202; *Pelz. Reis. Novara, Vög. p.* 142; *Gray, Handl. B.* iii., *p.* 102; *Salvad. Ucc. Ital. p.* 298; *Shelley, B. Egypt, p.* 357; *Heugl. Orn. N. O. Afr.* iv., *p.* 1367; *Scl. & Salv. Nomencl. Av. Neotr. p.* 149; *Irby, B. Gibr. p.* 217.

Nectris macrorhyncha, *Heugl. Syst. Uebers. p.* 68, *no.* 711.

Nectris gama, *Hartl. Orn. Madag. p.* 84 (*nec Bp.*).

Procellaria cinerea, *Schl. Mus. P. B. Procell. p.* 24.

Ad. suprà brunneus, pileo concolori, plumis dorsalibus et scapularibus cinerascenti-brunneo marginatis; scapularibus longioribus nigricantibus brunneo marginatis; tectricibus alarum nigricanti-brunneis, majoribus pallidioribus brunneis vix cineraceo lavatis et angustissimè albido limbatis; remigibus nigricanti-brunneis, intùs chocolatinis; supracaudalibus cineraceo-brunneis, ad apicem albicantibus brunneo vermiculatis; rectricibus centralibus saturatè brunneis, reliquis cinerascenti-brunneis versùs apicem saturatiùs brunneis; facie laterali pileo concolori, vix saturatiore; genis et colli lateribus brunneis obscurè albido irroratis; corpore reliquo subtùs albo, pectoris lateribus obscurè cineraceo lavatis; subalaribus et axillaribus albis, margine alari saturatè brunneo; tectricibus majoribus externis versùs apicem brunneo lavatis; rostro flavo, versùs apicem nigro; pedibus flavis; iride nigricante. Long. tot. 20·5, culm. 2·15, alæ 13·4, caudæ 6·6, tarsi, 2·05.

♀ mari similis.

Juv. similis adultis sed sordidior, subtùs sordidiùs albus; rostro nigricante; pedibus cœrulescentibus.

On comparing the two specimens from Kerguelen Island, collected by the Antarctic Expedition, with Mediterranean examples of *P. kuhli* in the British Museum, I am unable to find any real specific distinctions between them, the Northern birds being perhaps a shade larger, and having rather a stouter bill.

a, *b*. ad. Kerguelen Island. Antarctic Expedition.

It is probably the foregoing species which is alluded to in Nunn's "Narrative" under the name of *Puffinus major*. In the above-mentioned work occurs the following sentence: "As there appears to be some doubts whether this species is "an inhabitant of Desolation, some elucidation is required; it is considered to have "an extremely wide range." The description given agrees best with *P. major*, which is found in the Cape Seas. *Adamastor cinereus* is stated by Captain Hutton to go to Kerguelen Island (Ibis, 1865, p. 286) to breed. No specimens have been obtained by the recent expeditions, but so good an observer as Captain Hutton would not include the species without good reason; it may, therefore, be looked for.

Thalassoica tenuirostris.

Procellaria glacialis, *Forster, Descr. Anim. p.* 25. (*nec L.*)

Procellaria tenuirostris, *Audub. Orn. Biogr.* v., *p.* 333; *id. B. N. Amer.* vii., *p.* 210; *Cass. U. S. Expl. Exp. p.* 409; *Lawr. in Baird's B. N. Amer. p.* 826; *Elliot, B. N. Amer. Intr. cum fig.* (*head*).

Procellaria glacialoides, *Smith, Illustr. Zool. S. Afr. pl.* 51; *Gray, List Anseres Brit. Mus. p.* 162; *id. Gen. B.* iii., *p.* 648; *Gould, B. Austr.* vii, *pl.* 48; *Reichenb. Handb. Longipennes, pl.* xiii., *fig.* 789; *Cass. U. S. Expl. Exp., Birds, p.* 409; *Pelz. Reis. Novara, p.* 146; *Layard, B. S. Afr. p.* 361; *Buller, B. N. Zeal. p.* 301; *Sharpe, Voy. Ereb. and Terr. App. p.* 33.

Priocella garnoti, *Hombr. & Jacq. Voy. Pole Sud, pl.* 32, *fig.* 43.

Thalassoica glacialoides, *Reichenb. Handb. Longipennes, pl.* xiii., *fig.* 789 (*pess.*); *Bp. Consp.* ii., *p.* 192; *Gould, Handb. B. Austr.* ii., *p.* 467; *Coues, Proc. Philad. Acad.* 1866, *p.* 31; *Giglioli, Faun. Vertebr. Oceano, p.* 47.

Thalassoica glacialoides *var. polaris et tenuirostis, Bp. Consp.* ii., *p.* 192.

Thalassoica polaris, *Bp. C. R.* xlii., *p.* 768.

Procellaria smithi, *Schl. Mus. P. B. Procell. p.* 22; *Finsch, J. f. O.* 1872, *p.* 255, 1874, *p.* 174.

Ad. suprà clare argentescenti-canus, plumis celatè albicantibus; pileo antico et facie laterali albicantibus, regione paroticâ vix cano lavatâ; colli lateribus clare canis; tectricibus alarum et scapularibus dorso concoloribus; remigibus cinerascenti-brunneis, intùs versùs basin albicantibus, secundariis extùs cinereo lavatis; caudâ omninò canâ; corpore subtùs toto purissimè albo, crisso laterali cano lavato; subalaribus et axillaribus purissimè albis, margine alari cano; rostro carnescente, versùs apicem carnescenti-corneo, ad apicem nigro; pedibus cinereis, tarso pallidè coccineo lavato. Long. tot. 16·5, culmen 1·8, alæ 12·8, caudæ 5·5, tarsi 2·15.

The description is taken from a specimen procured at Kerguelen Island by Lieut. Alexander Smith, who accompanied the Antarctic Expedition, and on his return

presented it to the British Museum (Cf. Gray, Cat. Anseres, p. 162). None of the recent expeditions seem to have obtained it, but John Nunn's Narrative states that this species "was used, when young, by our party as food, and our supplies were "obtained by digging the young birds from the burrows in the sand or tussock-"banks on the lee or S.E. side of the island. The bird was known and eaten by us "under the name of the White Night-hawk." The Antarctic Expedition also procured a specimen of this species at Kerguelen Island. Great difference exists in the size and thickness of the bill and legs.

Specimens are in the national collection from South Africa (Type of *P. glacialoides: Sir A. Smith*); Antarctic Seas (*Antarctic Expedition*); Louis Philippe Island; Lat. 44° S., Long. 110½ W. (*J. Macgillivray*); Straits of Magellan; and off Valparaiso (*Capt. W. S. Brett*); as well as the following from the present locality;—

a. ad. Kerguelen Island; Lieut. A. Smith.

b. ad. „ „ Antarctic Expedition.

Sir J. Hooker's Journal contains the following important note:—"A smaller "bird than *D. capensis*, about the size of a fowl, of a dusky brown colour, with a "white bar across the wings. It is not uncommon." This surely must have been *Thalassæca antarctica*, figured in the "Voyage of the Erebus and Terror."

Œstrelata brevirostris.

Procellaria grisea, *Kuhl. Beitr. Zool.* 1820, *p.* 144, *fig.* 9 (*nec Gm.*); *Schl. Mus. P. B. Procell. p.* 9.

Procellaria brevirostris, *Less. Man. d'Orn.* ii., *p.* 611; *Gray, List Anseres, etc., Brit. Mus. p.* 163; *id. Gen. B.* iii., p. 648.

Œstrelata grisea, *Coues, Pr. Philad. Acad.* 1866, *p.* 148 (*nec Gm.*).

Fulmarus griseus, *Gray, Handl. B.* iii., p. 107.

Œstrelata kidderi, *Coues, Bull. U. S. Nat. Mus.* ii., *p.* 28; *Kidder, l. c. p.* 15.

Œstrelata brevirostris, *Salvin in Rowley's Orn. Misc. p.* 235.

♀ *Ad.* saturatè cinereus, plumis clariore cinereo marginatis ad basin multo pallidioribus; pileo laterali concolori cinereo, regione oculari saturatiore, fronte lorisque vix pallidioribus; corpore reliquo subtùs cinereo, plumis basaliter albicantibus, pectoris lateribus clarè cinereo lavatis; tectricibus alarum superioribus et subalaribus cinerascenti-brunneis, cinereo lavatis; tectricibus primariorum et remigibus nigricanti-cinereis, intùs pallidioribus; infrà pallidè cinereis; caudâ sordidè cinereâ; rostro nigro; tarso pedibusque fuscis, unguibus nigris. Long. tot. 12·8, culm. 1·1, alæ 10·2, caudæ 4·0, tarsi 1·35.

This species may almost be said to have been rediscovered by the recent expeditions to Kerguelen Island, as it had not been satisfactorily identified by naturalists for some years, and was apparently unknown to Dr. Coues when he wrote his well-known papers on the *Procellariidæ*. In his account of the American collection of

birds from Kerguelen, he named this species after Dr. Kidder, who accompanied the American expedition as naturalist; but Mr. Salvin shortly after showed that it was the same as the bird described by Lesson in 1828. In justice to the late Mr. George Robert Gray it must be noted that he correctly identified the specimens brought by the Antarctic Expedition (*Cf. List Anseres, p.* 163). This useful little list appears to have been overlooked by Dr. Coues.

Afterwards in the "Handlist" (p. 107), Gray made the mistake of referring *Œ. brevirostris* as a synonym to *Pterodroma macroptera;* and the Kerguelen birds he referred with a query to *Fulmarus griseus* (*Kuhl.*). In this arrangement he was following Dr. Coues' identifications of 1866.

With regard to the name *unicolor* of Gould, quoted by Gray as a synonym and noticed by Coues, I cannot find that it was ever published. A specimen with this name attached, in Mr. Gould's handwriting, is in the Museum, and is doubtless the authority for Mr. Gray's quotation.

a. ad. Tristan d'Acunha. Capt. Carmichael, R.N.*

b. c. ad. Kerguelen Island. Lieut. Alex. Smith.

d. e. f. ad. Kerguelen Island. Antarctic Expedition.

g. a. d. Christmas Harbour, Kerguelen Island, Feb. 1840. Antarctic Expedition.

♀. ad. Royal Sound, Kerguelen Island. Rev. A. E. Eaton.

[This Petrel is less common than *Œ. lessoni* about Observatory Bay. I am unacquainted with its call, the birds not even screaming when dug out, although they bit and scratched the hand. They burrow into clayey soil near lakes and upland marshes. The burrow is rather smaller in diameter than that of *M. æquinoctialis*, but in all other respects is very similar to it. During the early portion of the breeding season the floor of the tunnel leading to the nest chamber is flooded with water an inch or two inches deep; and any one who saw it then for the first time in his life, with water trickling in a little streamlet out of its mouth, or standing stagnant within it, would readily suppose it to be an old hole abandoned long ago. Towards the beginning of autumn (February), however, the ground becoming dry, the water disappears. The nest is composed of damp and decayed vegetable matter, comprising sprigs of *Acæna* and *Azorella*, tufts of *Festuca erecta*, &c. It is two or three inches in height, and slightly concave.

The first nest was taken on the 8th of November. The embryo was tolerably advanced in growth. In January, in a branch of a *Majaqueus* burrow, was a nestling which seemed to be the young of *Œ. brevirostris;* the *Majaqueus* egg was in the chamber of the main burrow, to which there was only one entrance.—*A. E. E.*]

* Printed in Gray's List of Anseres "Tristan de Chusan," which we believe to be a misprint for Tristan d'Acunha.

Œstrelata lessoni.

Procellaria lessoni, *Garnot, Ann. Sci. Nat.* vii., *p.* 54, *pl.* 4; *Less. Traite, p.* 611; *Gray, List Anseres Brit. Mus. p.* 163; *id. Gen. B.* iii., *p.* 648; *Gould, B. Austr.* vii., *pl.* 49; *Reichenb. Handb. Longipennes, pl.* xx., *fig.* 339; *Finsch, J. f. O.*, 1872, *p.* 255, 1874, *p.* 207; *Buller, B. N. Zeal. p.* 303, *pl.* 29, *fig.* 3; *Sharpe, Voy. Ereb. and Terror, Birds, App. p.* 33; *Cab. & Reichen. J. f. O.* 1876, *p.* 329.

Procellaria leucocephala, *Forster, Descr. Anim. p.* 206; *Gould, Ann. N. H.* xiii., *p.* 363; *Pelz. Reis. Novara, Vög. p.* 145.

Œstrelata leucocephala, *Bp. Consp.* ii., *p.* 189; *Gould, Handb. B. Austr.* ii., *p.* 451.

Rhantistes lessoni, *Bp. C. R.* xlii., *p.* 768.

Œstrelata lessoni, *Cass. Pr. Philad. Acad.* 1862, *p.* 327; *Coues, op. cit.* 1866, *p.* 142; *Giglioli, Faun. Vertebr. Oceano, p.* 40; *Coues and Kidder, Bull. U. S. Nat. Mus.* ii., *p.* 27; iid. *op. cit.* iii., *p.* 14.

♂ *Ad.* suprà clarè canus, plumis puriùs cinereo marginatis, basaliter albidis, scapis linealiter nigris; pileo antico albido, posticè cinereo, plumis ad basin cinerascentibus: loris cinerascentibus; regione oculari nigricante, et regione paroticâ nigricanti-schistaceo lavato; facie laterali reliquâ albâ; colli et pectoris lateribus clare cinereis albido tanquam irroratis; corpore reliquo subtùs purè albo, lateribus corporis et hypochondriis angustè nigro striolatis; subalaribus cinerascenti-brunneis, angustè cinereo terminatis; axillaribus cinerascentibus, basaliter et apicaliter albidis; alis suprà nigricanti-brunneis, tectricibus medianis et majoribus cinereis albo marginatis; remigibus sordidè cinerascenti-nigris, intùs cinereo-brunneis; scapularibus ad basin cinereis, ad apicem nigris; uropygio saturatè brunneo, cinereo lavato; supracaudalibus canis, albido terminatis; caudâ albâ, plumis cano irroratis, rectricibus duabus mediis canis; rostro nigro; pedibus carneis, digitis suprà nigris; membrano ad apicem nigro; iride saturatè brunnea. Long. tot. 15·5, culm. 1·5, alæ 12·4, caudæ 5·5, tarsi 1·7.

♀ *Ad.* mari similis, seb pileo puriore albo, et scapis plumarum dorsalium et hypochondriarum minùs distinctè indicatis. Long. tot. 16·5, alæ 12·3, caudæ 5·2, tarsi 1·7.

The descriptions are taken from a pair of birds collected by Mr. Eaton in Kerguelen Island. Compared with some other specimens from Australian seas, they do not show any differences, unless it be that the black on the feet is not so extended. Dr. Kidder describes the latter as follows:—Tarsus and foot flesh-pink, "black along upper surfaces of digits, and on the web near the claw." This agrees with the markings exhibited by the Kerguelen Island birds, but in a South Australian specimen quite the terminal half of the webs are black, and the birds collected by the "Rattlesnake" also show this peculiarity. In the plumage a

certain amount of variation is shown in the vermiculations of grey on the head, and in the amount of grey on the tail, the latter being almost entirely white in some with grey mottlings, while in others it is almost uniform grey, mottled only on the outer web.

For a description of the young birds, Dr. Kidder's paper (*l. c.*) must be consulted. This species, which was obtained by all the recent expeditions, does not appear to have been collected in Kerguelen Island during the Antarctic Expedition, nor is it mentioned in Nunn's Narrative. In the National collection are examples from New Zealand (*Sir George Grey*); Southern Seas (*Antarctic Expedition*); South Indian Ocean, Lat. 40¾° S., Long. 125½° E., Jan. 14, 1847 (*J. Macgillivray*); South Pacific Ocean, Lat. 44° S., Long. 110½° W. (*J. Macgillivray*); Lat. 36° 39 S.; Long. 10° 3′ S. (*Sir George Grey*), and the following :—

a. b. ♂. ♀. ad. Royal Sound, Kerguelen Island. Rev. A. E. Eaton.

[In Captain Hutton's paper before referred to, allusion is made to an undetermined species of Petrels to which the euphonious sobriquet *Procellaria diabolica* has been applied. It was said to be a bird inhabiting Desolation Island, which flew about by night uttering unearthly shrieks. There are good reasons for supposing the sprite to be Lesson's Petrel. It is difficult to describe the cry of this bird. For a long time there was no finding out which of the Petrels gave utterance during its flight to its weird sounds. Whenever its cry was heard, I went out with a lantern to endeavour to get a sight of the bird, but without success. At last, near Thumb Peak, we dug up some large birds whose outcries, when caught by the beak, plainly identified them beyond all question with *Œ. lessoni*.

The burrow of this Petrel can be recognised externally by its being about as large as an ordinary rabbit's hole and dry, and by its entrance being generally sparsely bestrewn with green shoots of *Acæna*. It is usually excavated in *Azorella*, the tunnel is short, the large terminal chamber contains no special nest, and when the hand is cautiously introduced to feel after the egg, it is promptly and severely bitten by the old bird. It is therefore well to take the precaution of dragging her forth from the interior before an attempt is made to secure the egg. Her removal can be easily effected. While she is stooping forward at the entrance of the nest-chamber looking out in readiness to bite, a piece of stick is presented to her, which she seizes instantly, and whilst it is being shaken to make her hold it fast, her beak is suddenly grasped with the hand, and she is drawn up by it out of the burrow shrieking loudly. Care must meanwhile be taken to prevent her from thrusting her claws into the hand. Nests were found from the extreme confines of the sea shore to an altitude of about 300 feet above the mean level. They were common amongst *Azorella* at the foot of the cliffs near Thumb Peak, and on the summit of the lower terraces; also on some of the hills near the Swain's Harbour Transit Station. There were also some nests near the principal station on a slope by a freshwater lake on the landward side of a hill.

There is a specimen of Lesson's Petrel in the S. African Museum, captured in Lat. 32° 46′ S., Long. 59° 13′ E.—*A. E. E.*]

Œstrelata mollis.

Procellaria mollis, *Gould, Ann. N. H.* 1844, *p.* 363; *id. B. Austr.* vii., *pl.* 50; *Cass. U. S. Expl. Exp.* 1858, *p.* 410; *Schl. Mus. P. B. Procell. p.* 11; *Pelz. Reis. Novara, Vög. p.* 146; *Finsch, J. f. O.* 1874, *p.* 255, 1872, *p.* 207; *Cab. & Reichen. J. f. O.* 1876, *p.* 329.

Procellaria inexpectata, *Forster, Descr. An. p.* 204.

Cookilaria mollis, *Bp. Consp.* ii., *p.* 190.

Rhantistes mollis, *Bp. C. R.* xlii., *p.* 768.

Œstrelata mollis, *Coues, Pr. Philad. Acad.* 1866, *p.* 150; *Gould. Handb. B. Austr.* ii., *p.* 453; *Giglioli, Faun. Vertebr. Oceano, p.* 42.

Ad. cinerascenti-brunneus, plumis clariore cinereo marginatis; plumis frontalibus albido marginatis; alis saturatiùs brunneis, tectricibus majoribus vix cinereo lavatis; supracaudalibus caudâque cineraceis; loris albis; regione oculari et paroticâ anticâ cinereo-nigris; facie laterali et corpore subtùs toto purè albis, colli lateribus et hypochondriis cineraceo irroratis, pectore laterali concolori cineraceo; subalaribus brunneis, albido marginatis, majoribus interioribus pallidius cinerascenti-brunneis; remigibus infrà saturatè brunneis, secundariis intùs pallidioribus; rostro nigro; tarso, digitis ad basin, et membrano interdigitali dimidio basali carnescenti-albis, pedibus aliter nigris. Long. tot. 12·5, culm. 1·2, alæ 10·1, caudæ 5·85, tarsi 1·45.

For description of the young bird and variations in the plumage, Dr. Coues' article in the Philadelphia 'Proceedings' must be consulted.

As will be seen by Mr. Eaton's note below, he believes that he saw this species, which was procured in Kerguelen Island by the German expedition.

The British Museum contains specimens of this Petrel from South Australia (*Sir George Grey*); and the South Atlantic, Lat. 36° 50′ S., Long. 27° 50′ W.; Lat. 34° 43′ S., Long. 40° W. (*J. Macgillivray*).

[Off Cape Sandwich and the neighbouring low land, and out at sea during the first few days sail from Kerguelen Island, I noticed a Petrel very like *Œ. lessoni*, but differing from that species in having a dark coloured tail and back. This may have been *Œ. brevirostris;* but when I was looking through the collection in the S. African Museum on my return to the Cape, I was led to believe the species I had seen to be *Œ. mollis*, Gould, which is represented in the collection mentioned by a specimen taken in Lat. 31° 26′ S., Long. 30° 26′ E., exhibited as *Procellaria mollis*, Gould.

The lice of *Œ. mollis*, according to Bulow, are *Trabeculus schilingii* and *Colpocephalum furcatum* of that author.—*A. E. E.*]

Procellaria nereis.

Thalassidroma nereis, *Gould, P. Z. S.* 1840, *p.* 178; *id. B. Austr.* vii., *pl.* 64; *Bennett, Gath. Nat. p.* 240; *Abbott, Ibis*, 1861, *p.* 164; *Gray, Ibis*, 1862, *p.* 245; *Buller, B. N. Zeal. p.* 322; *Finsch, J. f. O.* 1872, *p.* 257, 1874, *p.* 213; *Sharpe, Voy. Ereb. & Terror, Birds, App. p.* 34.

Procellaria nereis, *Gray, Gen. B.* iii., *p.* 648; *Bp. Consp.* ii., *p.* 196; *Coues, Pr. Philad. Acad.* 1864, *p.* 81; *Gould, Handb. B. Austr.* ii., *p.* 476; *Giglioli, Faun. Vertebr. Oceano, p.* 36; *Gray, Handl. B.* iii., *p.* 104, *no.* 10852; *Scl. and Salv. Nomencl. Av. Neotr. p.* 148; *Coues & Kidder, Bull. U. S. Nat. Mus.* ii., *p.* 31; *iid. op. cit.* iii., *p.* 16; *Cab. & Reichen. J. f. O.* 1876, *p.* 329.

Oceanitis nereis, *Cab. J. f. O.* 1875, *p.* 449.

♀ *Ad.* suprà sordidè cinerea, uropygio et supracaudalibus clariùs cinereis, his subbasaliter albis; caudâ quoque clarè cinereâ, nigro terminatâ, rectricibus extimis nigricantibus; pileo et collo undique et collo postico cinerascenti-fumosis, interscapulio clariore cinereo lavato; scapularibus dorso concoloribus, longioribus nigricantibus; tectricibus alarum cinerascenti-fumosis, marginalibus angustè cinereo lavatis, medianis clariùs cinereis angustè albo terminatis; remigibus sordidè cinereis, primariis extùs ad basin nigricantibus, secundariis etiam magis nigricantibus; gutture, præpectore, et pectoris summi lateribus fumosis; corpore reliquo subtùs purè albo, hypochondriis imis et subcaudalibus cinereo lavatis; subalaribus et axillaribus purè albis, minoribus et marginalibus fumoso-brunneis, his imis albo terminatis; remigibus infrà cinerascentibus, intùs versus basin albidis; rostro et pedibus nigris; iride nigrâ. Long. tot. 7, culm. 0·55, alæ 5·0, caudæ 2·8, tarsi 1·2.

Compared with an Australian example in the collection, the Kerguelen skin has rather a larger bill, and is more dusky brown on the head and throat, and has the brown colour extending lower down on to the fore-neck; these characters are, however, exhibited in another Australian example, so that there seems to be only one species. The Sea-Nymph Petrel was not previously known to inhabit Kerguelen Island, but specimens were collected by the English, American and German expeditions.

The British Museum contains specimens from New Zealand (*Sir George Grey*); off the eastern coast of New South Wales (*J. Macgillivray*); Lat. 43° S., Long. 140° E. (*J. Macgillivray*), and the following :—

a. ♀ ad. Royal Sound, Kerguelen Island. Rev. A. E. Eaton.

[Late in the night of the 6th of November the faint cry of a strange bird in the distance roused me from sleep. Calling for a dark lantern, I proceeded with George Wilson, the sapper on watch, to search for the Petrel, guided by its call, which was uttered at intervals until we were quite close to it. The light being now turned on in the right direction, the bird was discovered sitting upon the open ground within a

yard or so of us, and it was so dazzled that it made no attempt to escape, being caught by hand. It proved to be a female of *P. nereis*. Its call was very similar to the crake-like cry of *P. oceanica*. Dr. Kidder* said that this Petrel was common at Molloy Point. As no other example was either seen or heard by me besides that mentioned above, I suspect that this species rarely ventures so far up the Sound as Observatory Bay.

From the specimen of *P. nereis* whose casual capture is mentioned above, six examples of its parasite, *Lipeurus clypeatus*, Giebel, were obtained.—*A. E. E.*]

Oceanitis tropica.

Procellaria grallaria, *Licht. Verz. Doubl. p.* 83.

Procellaria oceanica, *Bp. Zool. Journ.* iii., *p.* 89 (*nec Kuhl.*).

Thalassidroma tropica, *Gould, Ann. N. H.* xiii., p. 366.

Thalassidroma melanogastra, *Gould, Ann. N. H.* xiii., *p.* 367 ; *id. B. Austr.* vii., *pl.* 62; *Layard, B. S. Afr. p.* 358; *Finsch, J. f. O.* 1872, *p.* 257, 1874, *p.* 212; *Buller, B. N. Zeal. p.* 319 ; *Hutton, Ibis*, 1874, *p.* 42; *Buller, l. c. p.* 121; *Sharpe, Voy. Ereb. and Terr. Birds, App. p.* 34; *Cab. & Reichen. J. f. O.* 1876, *p.* 329.

Fregetta tropica, *Bp. Consp.* ii., *p.* 197 ; *id. C. R.* xlii., *p.* 769; *Coues, Pr. Philad. Acad.* 1864, *p.* 87.

Fregetta melanogastra, *Bp. C. R.* xlii., *p.* 769; *Coues, Pr. Philad. Acad.* 1864, *p.* 87 ; *Gould, Handb. B. Austr.* ii., *p.* 479 ; *Giglioli, Faun. Vert. Ocean., p.* 38.

Procellaria melanogaster, *Schl. Mus. P. B. Procell. p.* 6; *Gray, l. c. p.* 105.

♀ *Ad.* Fumoso-nigricans, uropygio nigerrimo, plumis imis albo terminatis; supracaudalibus conspicuè albis, fasciam latam exhibentibus; tectricibus alarum cinerascenti-brunneis, majoribus pallidioribus vix albido terminatis; tectricibus primariorum et alâ spuriâ saturatius fumoso-nigricantibus; remigibus nigris vix versùs apicem cinereo lavatis, intùs pallidioribus, fumoso brunneis; secundariis clariùs cineraceo lavatis et anguste albo limbatis; caudâ nigrâ, vix cinereo lavatâ, ad basin extremam albâ ; gutture toto, faciei et colli lateribus, præpectore et pectore summo fumoso-nigricantibus, gulæ plumis basaliter albis; corpore reliquo subtùs purè albo, medialiter fumoso-nigricante, fasciam latam per pectus et abdominem ductam exhibentibus ; subcaudalibus albis longissimis basaliter albis, ad apicem dimidialiter fumoso-nigricantibus; subalaribus et axillaribus purè albis, his versùs basin fumosis, tectricibus marginalibus brunneis, majoribus pallidè cinerascenti-brunneis anguste

* Since the preceding paragraph was written Dr. Kidder's Report has been sent me from the Smithsonian Institute. At p. 32 he writes of this species as follows :—" The first specimens were taken on the " 28th and 29th of October, being dug out by the dogs from small burrows under clumps of *Azorella*. A " pair captured on the latter date were found under a tussock not two yards above high-water mark, on the " beach, under a high cliff. No eggs were found at that date. Eggs were first found, December 12, under " the overhanging margins of clumps of grass and 'Kerguelen tea' (*Acæna ascendens*), in a bit of swampy " lowland near the sea. Strange to say, I have only found the male with the egg. In this locality there " were no burrows, the overhanging herbage seeming to afford sufficient protection to the nests."

albo terminatis; rostro et pedibus nigris; iride nigrâ. Long. tot. 7·6, culmen 0·6, alæ 9·4, caudæ 3·15, tarsi 1·55.

♂ *Ad.* similis fœminæ adultæ. Long. tot. 7·2 culm 0·6, alæ 6·8, caudæ 3·0 tarsi 1·6.

The differences between *O. melanogastra* and *O. tropica* are extremely slight, consisting in the white throat and the greater amount of black on the abdomen and centre of the body in the latter bird. I believe it possible that *O. leucogastra* is also only a stage of plumage of the same species, the four specimens in the Museum being apparently immature, with narrow whitish edgings to the feathers of the upper surface. Whether this is the case I am, however, unable to prove at present. The following are the series of measurements of the specimens in the British Museum.

	Total Length.	Culmen.	Wing.	Tail.	Tarsus.
a. ♂ O. melanogastra, Kerguelen Island	7·2	0·6	6·8	3·0	1·6
b. ♀ „ „	7·6	0·6	6·4	3·15	1·55
c. ♂ O. tropica, Lat. 6° 33′ N., Long. 18° 6′ W.	7·0	0·6	6·7	3·0	1·65
d. ♀ „ Lat. 12′ S., Long. 30½° W.	7·0	0·6	6·55	3·1	1·6
e. ♂ O. leucogastra	7·0	0·6	6·55	3·3	1·45
f. „ S. Australia	6·8	0·6	6·1	2·95	1·6
g. „ „	7·1	0·6	5·95	3·1	1·6
h. „ Lat. 37½° S., Long. 42° E.	7·6	0·6	6·3	3·0	1·5

[Occasionally late in the evening and during the night a piercingly shrill piping note repeated singly at intervals of four or six seconds used to be heard on the hills about Observatory Bay. Generally the sound changed its direction, showing that the bird which uttered it was flying. This call might be imitated on a piccolo fife in the key of G or F. In its complete form it consists of a series of single notes separated by pauses of four seconds or more, followed by a jerky succession of notes in the same tone.

One night the sound was traced to a crevice in a cliff beneath an immovable rock. The place was marked by a pile of stones, and visited early the next morning. While efforts were being made to move the rock the bird within the recess became alarmed, and uttered a cry somewhat like that of a kestril hawk in its tone, but not nearly so loud. On another night the sound was followed up to a hill. Every now and then the bird ceased piping, but it recommenced whenever the call was imitated with the lips. Its nook was therefore easily discovered; it was in a terrace on the hillside under a piece of rock. The stone was pulled away, the nesting place laid open, and two birds in it disclosed, of which one escaped. The female was caught, and she proved to be an *O. melanogastra*. A third pair was caught in a slope of broken rocks near the top of a hill, a few nights later, in a similar way. Their nesting place had been used before, as there were fragments of an old egg-shell in the hollow that they

had prepared for laying in. After this I went for three weeks to Swain's Bay. On returning to Observatory Bay only one bird was heard on only one night. No eggs were found by anybody.

In the South African Museum are two examples of this petrel—one from the Southern Ocean, and another from the South Atlantic.—*A. E. E.*]

Oceanitis oceanica.

Procellaria pelagica, *Wilson, Am. Orn.* vi., *p.* 90, *pl.* 69, *fig.* 6 (*nec L.*).

Procellaria oceanica, *Kuhl. Beitr. Zool. p.* 136, *tab.* x., *fig.* 1; *Gray, Gen. B.* iii., *p.* 648; *Schl. Mus. P. B. Procell. p.* 6.

Procellaria wilsoni, *Bp. Journ. Acad. Philad.* iii., *pt.* 2, *p.* 231, *pl.* ix., *fig.* 2; *Yarr. Br. B.* iii., *p.* 517; *Fritsch, Vög. Eur. tab.* 61, *fig.* 3.

Thalassidroma wilsoni, *Audub. B. Amer. pl.* ccccIx.; *id. B. Amer.* 8*vo*, viii., *p.* 106, *pl.* 460; *Gould, B. Austr.* vii., *pl.* 65; *Macgill. Br. B.* v., *p.* 456; *Burm. Th. Bras.* iii., *p.* 446; *Cass. U. S. Expl. Exp. p.* 402.

Thalassidroma oceanica, *Schinz. Europ. Faun. p.* 397, *pl.* 1; *Gray, List Anseres, Brit. Mus. p.* 161; *id. Gen. B.* iii., *p.* 648; *id. List Br. B. p.* 225; *Pelz. Reis. Novara, Vög. p.* 145; *Degl. & Gerbe, Orn. Europ.* ii., *p.* 386.

Oceanitis wilsoni, *Keys. & Blas. Wirb. Eur. p.* 238; *Bp. C. R.* xlii., *p.* 769; *Salvad. Ucc. Ital. p.* 301; *Gigl. Faun. Vertebr. nell' Oceano, p.* 38.

Oceanitis oceanica, *Bp. C. R.* xlii., *p.* 769; *Gould, Handb. B. Austr.* ii., *p.* 478; *Salvad. Cat. Ucc. Sard. p.* 132; *Giglioli, Faun. Vertebr. Oceano, p.* 37; *Coues and Kidder, Bull. U. S. Nat. Mus.* ii., *p.* 30; *iid. op. cit.* iii., *p.* 16.

♂ *Ad.* fuliginoso-niger, pileo undique aliquot cinerascente, regione auriculari magis nigricante; tectricibus alarum fumoso-nigricantibus, majoribus versùs apicem pallidè brunneis, plagam formantibus; tectricibus primariorum remigibusque nigris, intùs brunnescentibus, secundariis quoque pallidioribus extùs brunnescentibus; plumis uropygialibus imis nigris albo terminatis; supracaudalibus purè albis; caudâ nigrâ, rectricibus ad basin albis, externarum albedine magis extensâ; corpore subtùs fumoso-brunneo, lateraliter saturatiore, subcaudalibus brunneis ad basin albis; crissi lateribus conspicuè albis, quibusdam fumoso lavatis; subalaribus fumoso-brunneis, intimis vix pallidioribus; rostro nigro; pedibus nigris, membranis flavis; iride nigra. Long. tot. 6, culm. 0·45, alæ 5·35, caudæ 2·45, tarsi, 1·35.

The above is a description of a Kerguelen Island skin, and after a comparison of our series I am unable to find any grounds for separating a northern and a southern species. Some examples are blacker and some are grayer, as is the case with other Petrels.

The British Museum specimens are from the following localities:—Yarmouth; Atlantic Ocean (*Rev. W. Hennah*); South Africa (*Sir A Smith*); South Australia (*Sir G. Grey*); Lat. 36$\frac{3}{4}$° N., Long. 12$\frac{1}{4}$° W. (*J. Macgillivray*); and from the ice off Louis Philippe Island (*Antarctic Expedition*). To these is now added the following:—

a. ad. Royal Sound, Kerguelen Island. Rev. A. E. Eaton.

[From the 10th of October, when we passed Cape Sandwich, until the middle or third week of November, we completely lost sight of the Storm Petrels. About the period last mentioned, however, they began to frequent Observatory Bay in large numbers. Their first appearance in it took place during a strong breeze which lasted several days. When this was succeeded by more moderate weather, we saw little of them in the day-time; but towards evening they used to fly over the water like Swallows, and some of them might be observed flying near the ground far away into the country, following the course of the valleys, or playing round the inland cliffs. We tracked them along the lower hill-sides and the margins of lakes over rocks and bogs; but our efforts to learn what became of them were unattended with success. Probably at that time they were not preparing to breed, and the birds were merely going overland from the bay to other inlets of the sea. At length when we went to Thumb Peak their mode of nesting was discovered. Carefully watching, with Lieut. Goodridge, R.N., the birds flying to and fro about the rocks, we observed that they occasionally disappeared into crevices amongst piles of loose stones, and crept under loose masses of rock. Having meanwhile ascertained their call, we were able by listening attentively to detect the exact positions of several of these hidden birds. They were easily caught when the stones were rolled aside; but they were in couples, merely preparing for laying, and therefore we did not find any eggs. On our way back to Observatory Bay after the Transit we called at the American Station, and were informed by Dr. Kidder that he had observed this Petrel on the shore near Molloy Point. The sea-shore in the neighbourhood of Observatory Bay is of a different character (for the most part) from that which is adjacent to the American Station, and, being less favourable than it, was seldom resorted to for nesting by the Petrels. But the country in general about our bay afforded them unlimited accommodation. For, provided that they can find a slope of shattered rocks with suitable chinks and crevices, or dry spaces under stones or large boulders sheltered from draughts, whether they be near the Sound or on the sides and summits of high hills, they readily appropriate them. The egg is laid upon the bare ground within the recess selected by the birds, either in a chance depression formed by contiguous stones or in a shallow circular hollow excavated in the earth by the parent. Having found numbers of their nesting-places I will describe my method of searching for them. Whenever there was a calm night I used to walk with a darkened bull's-eye lantern towards some rocky hillside, such as the Petrels would be likely to frequent. It was best to shut off the light and keep it concealed, using it only in dangerous places where falls would be attended with injury, and progress in the dark was hardly possible, lest the birds seeing it should be silenced. On arriving at the ground selected it was probable that Storm Petrels would be heard in various directions, some on the wing, others on their nests, sounding their call at intervals of from two to five minutes. Those on nests could be distinguished from others

flying by their cries proceeding from fixed positions. Having settled which of the birds should be searched after, a cautious advance had to be made in her direction, two or three steps at a time, when she was in full cry. As soon as she ceased an abrupt halt was imperative, and a pause of some minutes might ensue before she recommenced her cry and permitted another slight advance to be effected. In the course of this gradual approach the position of the bird might be ascertained approximately; but it had to be determined precisely, and to learn exactly where she was she had to be stalked in the dark noiselessly. No gleam could be permitted to escape from the lantern. Loose stones and falls over rocks,—to avoid them it was sometimes necessary to dispense with slippers, and feel one's way in stockings only, for should the Petrel be alarmed once with the noise or the light, she would probably remain silent a considerable time. Now and then it would happen that upon the boulder beneath which she was sitting being almost attained the bird would cease calling. When this occurred, and many minutes elapsed without her cry being resumed, it was advisable to make a detour and approach the rock from the opposite side, as her silence might be attributed to her seeing a person advancing towards her, and she would probably recommence her call so soon as he was out of sight. If she did not, a small pebble thrown amongst the rocks would usually elicit some sounds from her, as she would most likely conclude that the noise was being made by her mate returning to the nest. When the stone beneath which the bird was domiciled was gained at last, redoubled care had to be exercised. By stooping down and listening very attentively her position could be accurately ascertained. Then the lantern was suddenly turned upon her before she had time to creep out of sight, and her egg could be secured with the hand, or with a spoon tied on to a stick. Sometimes I worked without a lantern, and marked the positions of the nests with piles of stones so that they might be revisited by day. Several eggs were obtained in February from nests which had been thus marked early in the previous month. The first egg taken by us was found by a retriever on the 22nd of January, on an island in Swain's Bay. Captain Fairfax sent me a nestling a day or two before we sailed for the Cape. Two of the eggs were laid in unusual situations. One of them was found by a man under a *Pringlea* plant; but this may have been an egg of *Procellaria nereis*. The other was deposited just above the tide-mark in a cavity of a rock rather open to the air and light. I had found the bird there one night, had taken her up into my hand, and had gently replaced her in the hollow, nearly a month before the egg was laid.

The young bird in the egg has the tarso-metatarsal joint short.

In the S. African Museum there is a specimen of *P. oceanica* from the S.E. coast of Africa, another from the S. coast of Africa, and two from Table Bay. *A. E. E.*]

Prion vittatus.

Blue Petrel, *Forster, Voyage*, i., *pp.* 91, 153; *id. Drawings, No.* 87. Petrel bleu, *Buffon, H. N. Ois.* ix., *p.* 316. Broad-billed Petrel, *Lath. Gen. Syn.* iii., *pt.* 2, *p.* 414; *id. Gen. Hist.* x., *p.* 194.

Procellaria vittata, *Gm. S. N.* i., *p.* 560; *Kuhl. Beitr. Zool. pl.* xi., *fig.* 13; *Forster, Descr. Anim. p.* 21; *Schl. Mus. P. B. Procell. p.* 16; *id. & Poll. Faun. Madag., p.* 144.

Procellaria forsteri, *Lath. Ind. Orn.* ii., *p.* 827.

Prion vittatus, *Lacép. Mem. de l'Inst.* 1800, *p.* 514; *Gray, Gen. B.* iii., *p.* 649, *pl.* 178, *fig.* 1; *id. List Anseres, &c., Brit. Mus. p.* 165; *id. Voy. Ereb. & Terror, Birds, p.* 18; *Gould, Ann. N. H.*, xiii., *p.* 366; *id. B. Austr.* vii., *pl.* 55; *Bp. Consp.* ii., p. 192; *Reichenb. Handb. Longipennes, pl.* x., *figs.* 771, 772; *Gray, Ibis*, 1862, *p.* 247; *Pelz. Reis. Novara, Vög. p.* 147; *Gould, Handb. B. Austr.* ii., *p.* 474; *Coues, Pr. Philad. Acad.* 1866, *p.* 169; *Giglioli, Faun. Vertebr. Oceano, p.* 44; *Gray, Handl. B.* iii., *p.* 108; *Buller, B. N. Zeal., p.* 312; *Finsch, J. f. O.* 1872, *p.* 256, 1874, *p.* 211; *Sharpe, Voy. Ereb. & Terror, Birds, App. p.* 33.

Pachyptila vittata, *Illiger, Prodr. Syst. Mamm, &c., p.* 274: *Temm. Pl. Col.* 528; *Burm. Th. Bras.* iii., *p.* 444; *Cab. & Reichen., J. f. O.* 1876, *p.* 328.

Procellaria latirostris, *Bonn. et Vieill. Enc. Méth.* i., *p.* 81.

Pachyptila forsteri, *Steph. Gen. Zool.* xiii., *p.* 251; *Less. Traité*, p. 613; *Jard. & Selby, Ill. Orn.* i., *pl.* 47; *Swains. Classif. B.* ii., *p.* 374.

Pachyptila banksii, *Smith, Ill. Zool. S. Afr. pl.* 55.

Prion banksii, *Gould, Ann. N.H.*, xiii., *p.* 366; *Gray, List Anseres Brit. Mus.* p. 165; *id. Gen. B.* iii., *p.* 649; *Bp. Consp.* ii., *p.* 193; *Gray, Ibis*, 1862, *p.* 247; *Kirk, Ibis*, 1864, *p.* 338; *Layard, B. S. Afr., p.* 362; *id. Ibis*, 1867, *p.* 460; *Giglioli, Faun. Vertebr. Oceano, p.* 44; *Gray, Handl. B.* iii., *p.* 108; *Finsch & Hartl. Vög. Ostafr., p.* 815; *Finsch, J. f. O.* 1872, *p.* 256, 1874, *p.* 211; *Buller, B. N. Zeal., p.* 311; *Sharpe, Voy. Ereb. & Terror, Birds, App. p.* 34.

Procellaria banksi, *Schl. Mus. P. B. Procell. p.* 17; *id. & Poll. Faun. Madag.* p. 145.

Prion magnirostris, *Gray, Handl. B.* iii., *p.* 108.

Prion australis, *Potts, Ibis*, 1873, *p.* 85.

♂ *Ad.* clarè cinereus, pileo obscuriore; vittâ uropygiali indistinctè nigricante; tectricibus alarum brunneis vix cinereo lavatis; medianis et majoribus clarè cinereis; alâ spuriâ et tectricibus primariorum brunneis vix cinereo limbatis; remigibus cinereis, intùs albis, primariis longis extùs nigricantibus, secundariis intimis subterminaliter nigricantibus, albo terminatis; caudâ clarè cinereâ, versus apicem nigricante, rectrice extimâ omninò cinereâ; regione lorali cinereâ albo variegatâ; vittâ latâ superciliari albâ; macula ante-oculari nigricante; regione paroticâ sordidè cinereâ, plumis versùs basin albis; genis et corpore subtùs albis,

colli et pectoris lateribus clarè cinereis; hypochondriis et subcaudalibus cinereo lavatis, his longioribus apicaliter nigricantibus; subalaribus et axillaribus albis, his vix cinereo lavatis; rostro pedibusque cœruleis; iride saturatè brunneâ. Long. tot. 13·0; culm. 1·4; alæ, 8·3; cauda, 4·25; tarsi, 1·25; digit. med. c. u., 1·65.

♀. mari similis, sed rostro angustiore et laminibus minus conspicuis.

Although Mr. Eaton did not bring back a skin of this species, its occurrence in Kerguelen Island was certified by the discovery of a head in the stomach of a Giant Petrel. The American naturalists did not notice it, but the German expedition is stated to have brought back this species of Prion from the island.

Prion vittatus is a bird easily recognisable by the *shape* of its bill; in colour it exactly resembles *P. desolatus*, and a few words on the subject of these birds may not be out of place here, seeing that my conclusions are of a very different nature from those of recent writers on the broad-billed Petrels. To take first the paper by Dr. Coues in the "Proceedings" of the Philadelphia Academy for 1866 (*p.* 162), we find that he separates *Prion* (type *P. vittatus*) as a distinct genus from *Pseudoprion* (type *P. turtur*), keeping in the latter genus four species, *P. banksii*, *P. turtur*, *P. ariel*, *P. brevirostris*. The chief differences between *Prion* and *Pseudoprion* are to be found in the shape and laminations of the bill; and indeed the latter form almost the only specific characters for the distinguishing of the above-named four species.

Mr. G. R. Gray, in the "Handlist," follows the arrangement of Dr. Coues, keeping his genera as sub-genera, but he adds to *P. vittata* a second species, *P. magnirostris*, Gould (ubi?); and to *P. banksii* and its allies he adds *P. desolata* of Gmelin and of Kuhl, concerning which species see below.

The chief points to be noted are the reference of *P. brevirostris* of Gould (1855) to *P. ariel* of Gould (1844), in which I agree with Mr. Gray, and the reference of *P. rossii* of Gray to *P. banksii*, in which I do not agree with him, for an examination of the types shows me that if *P. ariel* were a species, it is also *P. rossii* of Gray. But *P. ariel* is *not* a species, according to my studies of the genus, and is only *P. turtur*, when not full grown. Again, I consider *P. banksii* to be also no species, but to be a stage only of *P. vittatus*, the laminations in the bill being developed with age, and not being specific characters.

The solution of this question has been much simplified for me by the examination of three birds presented to the British Museum by Sir George Grey, of which the following are illustrations (*Plate* VII., *Figs.* 2–5). They were sent as exemplifying the old male, old female, and young male of *P. vittatus*.

There are no differences in colour or markings. Then, again, any number of intermediate links are to be found in a series of specimens, and as a variation in the extent of the laminations accompanies a difference in size of bill, it follows that the birds must either be regarded as stages of one species, or must be divided into

several species, which has been the plan adopted by many recent writers. In the plate are figures of the largest and smallest bills in a series of *P. vittatus* (*Figs.* 3–7).

On comparing these figures with those of *P. desolatus* given on the same plate (*Figs.* 8–10), it will be seen that though the *size* varies, the *shape* is constant, the bill being bowed out from the base and gently incurved towards the tip. The variations in the dimensions of the wing and middle toe are shown in the accompanying list of specimens in the British Museum :—

a. ♀. Cape Seas (*A. Smith;* type of *P. banksii*). Wing, 7·55 ; middle toe, 1·45.

b. ♀. Coast of Australia (*Sir G. Grey*). Wing, 7·2 ; middle toe, 1·45.

c. ♂. Ad. Australian Seas (*Sir G. Grey*). Wing, 7·6 ; middle toe, 1·5.

d. ♀ . Ad. Australian Seas (*Sir G. Grey*). Wing, 7·15 ; middle toe, 1·4.

e. ♂ juv. Lat. 35° 1′ S. ; long. 6° 15′ E. (*Fd.*) Wing, 7·6 ; middle toe, 1·45.

f. ♂. Eastern entrance to Bass' Straits (*Macgillivray*). Wing, 7·4 ; middle toe, 1·5.

g. New Zealand (*Sir G. Grey*). Wing, 7·2 ; middle toe, 1·35.

h. New Zealand (*Sir G. Grey*). Wing, 6·8 ; middle toe, 1·35.

i. New Zealand (*Dr. Hector*). Wing, 6·8 ; middle toe, 1·6.

k. ♂. Ad. Pitt's Isl., Chatham Isl. (*W. L. Travers*). Wing, 7·85 ; middle toe, 1·65.

l. Auckland Islands (Antarctic Expedition). Wings, 6·65 ; middle toe, 1·45.

m. n. ♂. South Seas (Antarctic Expedition ; types of *P. rossii*).

♀. Skeleton. Menado ; *Dr. A. B. Meyer.*

The soft parts in the description are copied from an original label attached to Mr. Travers' specimen from Pitt's Island. Mr. Gould gives them as follows :— " Bill light blue, deepening into black on the sides of the nostrils and at the tip, " with a black line along the sides of the under mandible ; irides very dark brown ; " feet beautiful light blue." The plate represents the bill with a yellow " nail " at the tip, an important feature when considered along with the occasional appearance of a nail in specimens of *P. desolatus* (*vide infrà*). Dr. Buller, in describing the bill, does not notice this yellow nail, and further information is desirable on this point.

Prion desolatus.

Brown-banded Petrel, *Lath. Gen.* iii., *pt.* 2, *p.* 409 ; *id. Gen. Hist.* x., *p.* 187.

Procellaria desolata, *Gm. S. N.* i., *p.* 562 ; *Kuhl, Beitr. Zool. pl.* xi., *fig.* 7 ; *Gray, Gen. B.* iii., *p.* 648.

Daption desolatum, *Shaw, Gen. Zool.* xiii., *p.* 244.

Procellaria turtur, *Kuhl, Beitr. Zool. p.* 143, *pl.* xi., *fig.* 8 ; *Smith, Ill. Zool. S. Afr. pl.* 54 ; *Gray, List Anseres, &c., Brit. Mus. p.* 165 ; *id. Gen. B.*, iii., *p.* 648 ; *Schl. Mus. P. B. Procell. p.* 17 ; *Layard, B. S. Afr. p.* 361.

Prion turtur, *Gould, Ann. N. H.* xiii., 1844, *p.* 366; *id. B. Austr.* vii., *pl.* 54; *Bp. Consp.* ii., *p.* 193; *Reichenb. Handb. Longipennes, pl.* x., *figs.* 774, 775; *Coues, Pr. Philad. Acad.* 1866, *p.* 166; *Gould, Handb. B. Austr.* ii., *p.* 472; *Pelz. Reis. Novara, Vög. p.* 147; *Giglioli, Faun. Vertebr. Oceano, p.* 45; *Gray, Handl. B.* iii., *p.* 108; *Buller, B. N. Zeal. p.* 309; *Finsch, J. f. O.* 1872, *p.* 256, 1874, *p.* 311; *Sharpe, Voy. Erebus & Terror, Birds, App. p.* 34, *pl.* 29.

Prion ariel, *Gould, Ann. N. H.* xiii., *p.* 366; *id. Intr. B. Austr. p.* 117; *Bp. Consp.* ii., *p.* 194; *Gray, Ibis*, 1862, *p.* 247; *Giglioli, Faun. Vertebr. Oceano, p.* 45; *Gould, Handb. B. Austr.* ii., *p.* 473; *Gray, Handl. B.* iii., *p.* 108.

Prion rossii, *Gray, List Anseres, &c., Brit. Mus. p.* 165; *Bp. Consp.* ii., *p.* 195.

Prion brevirostris, *Gould, P. Z. S.* 1855, *p.* 88, *pl.* 93.

Halobæna typica, *Bp. Consp.* ii., *p.* 194.

Procellaria ariel, *Schl. Mus. P. B. Procell. p.* 19.

Æstrelata desolata (pt.), *Coues, Pr. Philad. Acad.* 1866, *p.* 155.

Pseudoprion banksii, turtur, ariel, brevirostris, *Coues, t. c. p.* 166.

Prion desolata, *Gray, Handl. B.* iii., *p.* 108.

Pseudoprion desolatus, *Coues, Bull. U. S. Nat. Mus.* ii., *p.* 32.

Pachyptila ariel et turtur, *Cab. J. f. O.* 1875, *p.* 449; *id. & Reichen. J. f. O.* 1876, *p.* 328.

Ad. clarè cinereus, pileo vix saturatiore, vittâ uropygiali nigricante indistinctâ; tectricibus alarum maximis brunneis, paullò cinereo lavatis, reliquis clarè cinereis; alâ spuriâ et tectricibus primariorum cinerascenti-nigris vix cinereo lavatis; remigibus cinereis, intùs albis, primariis longis extùs nigricantibus, secundariis intimis subterminaliter nigricantibus, albo terminatis; caudâ clarè cinereâ, versùs apicem nigricante, fronte canescente, plumis albido terminatis; loris et vitta latâ superciliari albis; facie laterali albâ, regione paroticâ superiore cinereâ; plagâ anteoculari fuscescente, albo variegatâ; corpore subtùs toto albo, colli et pectoris summi lateribus clarè cinereis; hypochondriis et subcaudalibus paullò cinereo lavatis; subalaribus et axillaribus albis; rostro cœruleo; pedibus lilacino-cœruleis, unguibus nigris ad basin lilacinis aut albis; iride cyanescenti-cinereo. Long. tot. 10·5, culm. 1·1, alæ, 6·95, caudæ 3·7, tarsi, 1·25, digit. med. c. u. 1·5.

The name of *P. desolatus* was originally conferred by Gmelin on Latham's "Brown-banded Petrel." The latter is stated to have been in the collection of Sir Joseph Banks, from the "Island of Desolation." The description is apparently taken from a dried specimen, as the colours assigned to the soft parts show:—"The "bill is black with the tip yellowish, the legs brown, webs yellow, claws black." These are the colours which dried skins exhibit, but they are not found in any species of Prion when alive. It is, therefore, most probable that Latham's description was taken from an actual skin, as in 1824 he reproduces it almost verbatim in his "General History of Birds," with the habitat "Island of Desolation; Sir Joseph "Banks." In many instances Latham appears to have drawn up his descriptions

from the paintings and drawings made by Forster, Parkinson, and Ellis, for Sir J. Banks, but, when he has done this, he generally states the fact in his latest work. We may therefore conclude that the type of his "Brown-banded Petrel" existed as a skin in Sir J. Banks' collection, probably as late as 1824, but it is not now in the British Museum. Ellis' drawing is unmistakeable, and was perhaps taken from the actual type-specimen when in the flesh; it was from access to this drawing that the late Mr. Gray was enabled to make out that *P. desolatus* was a *Prion*, and the collection of specimens by the recent expeditions has led to the re-discovery of an interesting species. On looking over the series of *Prion* skins in the Museum, I have found a specimen from Christmas Harbour, Kerguelen Island, collected during the Antarctic Expedition, and I have carefully compared it with the other birds in the Museum collection. It is of the species usually called by naturalists *Prion turtur*, and is, I believe, the true *P. turtur* of Kuhl. At first I was inclined to consider this a different species, as it has such a distinct yellow nail at the end of the bill, but whether this is a specific character or not, I cannot at present say for certain. It is very plain in some individuals, and in others very indistinct, so that it may be merely the fading of the bill after death. In the allied species, *P. vittatus*, Mr. Gould describes the bill as entirely blue, but then he *figures* it with a yellow nail to the bill: this character, therefore, should be looked after by any one who may have the opportunity. On mature consideration, I believe that *Prion turtur* is only the male of *P. desolatus*, and is distinguished by its larger bill. This organ alone defines it from *P. vittatus*, which has a differently *shaped* bill, more bowed sideways from the base to the tip. *P. ariel*, *P. rossii*, and *P. brevirostris*, are only young birds apparently with the bills not fully developed. The following is a list of the specimens of *P. desolatus* in the national collection.

a. Madeira. J. Gould, Esq.; type of *P. brevirostris*; wing 6·55, middle toe 1·4.

b. Cape Seas. Sir A. Smith; fig. *l. c.* as *P. turtur*; wing 7·3, middle toe 1·5.

c. Royal Sound, Kerguelen Island. A. E. Eaton; wing 6·95, middle toe 1·5.

d. Christmas Harbour. Antarctic Expedition; wing 7·15, middle toe 1·6.

e. Australian Seas. Wing 7·1, middle toe 1·4.

f. Cook's Straits, New Zealand. Dr. Lyall; wing 6·9, middle toe 1·5.

g. ♂. Indian Ocean, Lat. 40¾° S., Long. 123½° E. (*J. Macgillivray*). Capt. Stanley; wing 6·6, middle toe 1·5.

h. Indian Ocean (as above). Capt. Stanley; wing 7·3, middle toe 1·5.

The figures (*Pl.* vii., *pp.* 8–10) illustrate the variation in size of bill in this species. They show the constancy of the shape, notwithstanding a slight variation in size. On comparing these figures with those of *P. vittatus*, it will be seen that the outline of the bill in the present species is different from that of the last-named bird. When seen from above, the sides of the bill are nearly *straight*, and this form is constant, even when the size varies conspicuously.

[The burrows both of this species and of *H. cærulea* resemble rats' holes. They

are usually made in *Azorella* or amongst *Acæna* growing upon dry rocky slopes or stony ground; but a few of the birds took possession of some of the burrows out of which *H. cærulea* had been evicted, deepening them to adapt them to their own requirements. A well marked track leading to the mouth of the hole is worn by the birds running down the slope to gain impetus for their start on taking flight, which path they also use in returning to the nest if they chance to fall short of the entrance. Sometimes the burrows are branched, and have two or three entrances; occasionally their sidings are *culs de sac*, and only abandoned "leads." The egg is laid upon loose debris of *Azorella*, &c., or on the bare ground constituting the floor of the terminal chamber, as is that of *H. cærulea*.*

When we disembarked in Observatory Bay, *P. desolatus* was pairing. Eggs obtained on the 29th of November were fresh. Most of the nestlings had flown before we left the Island.

It has already been stated by Dr. Kidder, and also in the Proc. Roy. Soc. 1875, that during the breeding season, the various species of burrowing Petrels are found in their holes in pairs until the egg is laid; after that, until the young is hatched, only one bird at a time remains in the hole by day, the other returning with food at intervals during the night, and that when the nestling issues from the egg, the parents leave it by itself the whole of the day, and visit it only in the night. The Storm Petrels have the same habits.

The call uttered by this species in its flight may be denoted thus: u–u, u–u, u–u, and so on. Now and then, it also (as I suppose) uses another call, which is repeated only at distant intervals. It consists of three short notes slurred, and the intermediate note is three tones higher than the other two. At a distance, this has a resemblance to the mew of a cat.

The multitudes of Blue Petrels which breed in Kerguelen Island are hardly conceivable. Every dry hillside and knoll in the neighbourhood of Royal Sound was populous with them to a remarkable extent. During the day the birds were silent, excepting when a noise happened to disturb them and cause them to coo. But on calm nights at the end of October and beginning of November, their mingled cries produce a low continued murmur like the sound of distant street traffic in a large town, in which the calls of only the nearer birds can be distinguished, and the rustling of their wings as they fly by is almost incessant. Father Sidgreaves thought it would have been worth while to ascertain how many of them on an average crossed the disk of the moon viewed through a telescope in the course of five minutes; but more important work prevented this being done.

* According to Dr. Kidder (Bull. U. S. Nat. Mus. 1875, p. 36) the egg is covered with the debris. I am inclined to suspect that his finding it so was either dependent upon the style of the implement used by him in digging the birds out, or was attributable to the vivacity of his dogs when they drew the Petrel; for I employed a sharp shovel-headed spade, and no dogs, and usually saw the egg when I stooped down to look into the chamber.

They left the land before the Expedition sailed, so that towards the end of February scarcely a bird could be found anywhere in a burrow, and rarely could even one be heard at night, perhaps only one in ten or twenty minutes. They had withdrawn from the sheltered sound to the more open sea. When we were steaming past the Prince of Wales' Foreland *en route* for the Cape, large flocks of Blue Petrels were in close attendance upon dense shoals of fish between us and the shore, which were playing here and there at the surface of the sea, beating the water into foam.

This Petrel burrows rapidly, loosening the soil with its beak, and shovelling the earth backwards with its feet like a domestic fowl engaged in dusting itself, whilst its wings are held just a little apart.

Several examples of this species are in the S. African Museum under the names of *Prion banksii* and *P. turtur*, which have been captured at Green Point, near Table Bay. The louse obtained from *P. desolatus* is *Lipeurus clypeatus*, Giebel (one example only.)—*E. A. E.*]

Halobæna cœrulea.

Blue Petrel, *Forster, Voyage*, i., *p.* 91; *Lath. Gen. Syn.* iii., *pt.* 2, *p.* 415.

Procellaria cœrulea, *Gm. S. N.* i., *p.* 560; *Bonn. et Vieill. Enc. Méth.* i., *p.* 80; *Gray, List Anseres, &c., Brit. Mus. p.* 165; *id. Gen. B.* iii., *p.* 648: *id. Ibis*, 1862, *p.* 247; *Layard, B. S. Afr. p.* 361; *Buller, B. N. Z., p.* 306; *Finsch, J. f. O.*, 1872, *p.* 255, 1874, *p.* 208; *Sharpe, Voy. Ereb. & Terror, Birds, p.* 33.

Pachyptila cœrulea, *Illiger, Prodr. Syst. Mamm., &c., p.* 275.

Procellaria similis, *Forster, Drawings, No.* 86; *id. Descr. Anim., p.* 59.

Procellaria forsteri, *Smith, Ill. Zool. S. Afr., pl.* 411.

Halobæna cœrulea, *Bp. Consp.* ii., *p.* 193; *id. C. R.* xlii., *p.* 768; *Gould, Handb. B. Austr.* ii., p. 457; *Coues, Pr. Philad. Acad.* 1866, *p.* 163; *id. & Kidder, Bull. U. S. Nat. Mus.* ii., *p.* 34; *iid. op. cit.* iii., *p.* 17.

Halobæna typica, *Bp. C. R.* xlii., *p.* 768.

Zaprium cœruleum, *Coues, Bull. U. S. Nat. Mus.* ii., *p.* 34.

Ad. suprà saturatè cinereus, pileo distinctè saturatiore; fronte albicante; tectricibus alarum cinereis, minimis nigricanti-brunneis, majoribus albo terminatis; tectricibus primariorum nigricantibus; remigibus cinereis, intùs albis, primariis extùs nigricantibus, secundariis intimis albo terminatis, subterminaliter nigricantibus, scapularibus secundariisque concoloribus et eodem modo coloratis; caudâ quadratâ, cinereâ, conspicuè albo terminatâ; facie laterali et regione supraoculari albis, regione paroticâ summâ cinereâ; corpore subtùs toto albo, pectoris et colli lateribus et hypochondriis imis cinereo lavatis; subalaribus et subcaudalibus albis; rostro nigro; pedibus nigris; iride saturatè brunneâ vel nigrâ. Long. tot. 10, culm. 1·1, alæ 8·5, caudæ 4·0, tarsi 1·25.

The description is taken from Sir A. Smith's specimen from the Cape Seas,

figured by him as *P. forsteri*. The single specimen brought by Mr. Eaton is not adult, as it has still a few remains of down attached to the sides of the neck. It is much darker than the one described, but I am unable to judge whether this is a sign of age, or arises from the exposure of Smith's specimen to the light, which may have bleached it. The British Museum now possesses the following skins:

a. ad. Cape Seas. Sir A. Smith. Type of *P. forsteri*.

b. jun. Royal Sound, Kerguelen Island. Rev. A. E. Eaton.

[The resemblance between this Petrel and the *Prion desolatus* extends even to their coo. Their calls underground are so much alike, that on hearing one it is difficult to say to which of the two species the bird cooing should be referred without digging it up for inspection; and their tone is very similar in sound to the cooing of some foreign doves. But their calls during flight are very different from one another.

The comparative immunity of this species from the ravages of the men was due partly to its commencing to lay eggs later than the former, and partly to its nests being less easy of access than those of that Petrel. For *H. cærulea* is in the habit of burrowing into *Azorella* growing upon dry soft loam where no obstacles impede its progress; its eggs are therefore obtainable without much trouble. It had only just begun to lay when we first landed. So long as its eggs continued to be fresh, the liberty men dug out as many as they could, cruelly destroying the old birds, which they flung away in heaps; but when most of the eggs became uneatable through incubation, they abandoned petrel digging. About this time *P. desolatum*, burrowing in *Azorella* and *Acæna* where the ground was rocky, commenced laying, and thus naturally escaped their notice.

The eggs of *H. cærulea* were fresh and profusely plentiful so early as the 23rd of October. A nestling almost fully fledged was killed on the 9th of February.

Some of the old birds while they were dying cast up the contents of their crop, which were green like *ulva*.

Louse not observed; but there is a *Lipeurus* from this bird in the Halle Museum according to Prof. Giebel.—*A. E. E.*]

Ossifraga gigantea.

Giant Petrel, *Lath. Gen. Syn.* vi., *p.* 396, *pl.* 100.

Procellaria gigantea, *Gm. S. N.* i., *p.* 563; *Gray, List Anseres, &c., Brit. Mus. p.* 162; *id. Voy. Erebus & Terr., Birds, p.* 17; *id. Gen. B.* iii., *p.* 648; *Gould, B. Austr.* vii., *pl.* 45; *Reichenb. Handb. Longipennes, pl.* xii., *fig.* 332; *Lawr. B. N. Amer., p.* 825; *Cass. U. S. Expl. Exp. Orn., p.* 407; *Schl. Mus. P. B. Procell., p.* 18; *Pelz. Reis. Novara, Vög., p.* 144; *Layard, B. S. Afr. p.* 360; *Finsch, J. f. O.* 1872, *p.* 255, 1874, *p,* 206.

Procellaria ossifraga, *Forster, Descr. Anim., p.* 343.

Ossifraga gigantea, *Reichenb, Syst. Av. Tubinares, pl.* 20, *fig.* 332; *Bp. Consp.* ii., *p.* 186; *id. C. R.* xlii., *p.* 768; *Gould, Handb. B. Austr.* ii., *p.* 443; *Coues, Pr. Philad. Acad.* 1866, *p.* 32; *Giglioli, Faun. Vertebr. Oceano, p.* 48; *Gurney in Anderss., B. Dam. Ld. p.* 354; *Buller, B. N. Zeal., p.* 297; *Sharpe, Voy. Ereb. & Terror, Birds, App. p.* 33; *Coues & Kidder, Bull. U. S. Nat. Mus.* ii., *p.* 23; *iid. op. cit.* iii., *p.* 13; *Cab. & Reichen, J. f. O.*, 1876, *p.* 329.

Suprà brunneus, plumis omnibus marginaliter cineraceis; tectricibus alarum dorso concoloribus; remigibus saturatè brunneis, intùs chocolatinis; caudâ saturatè brunneâ; subtùs cinerascens, plumis brunneis cineraceo marginatis; subalaribus brunneis, imis cinerascentibus; remigibus infrà pallidioribus brunneis, propè rachidem quasi albicantibus; rostro perlato, vix carnescente, vel flavicanti-albo; pedibus sordidè nigris; iride saturatè brunneâ. Long. tot. 33, culmen 5·1, alæ 21·5, caudæ 7·7, tarsi 4·0.

The above is a description of a Kerguelen skin in the ordinary brown plumage, but whether this is the adult stage it is difficult to say. Many writers have drawn attention to the variation in plumage in the "Nelly," and the general opinion is that the white plumage represents an albinism, but in the "Wreck of the Favorite" (p. 187), the young bird is described as "grey, darker on the back," while the adult bird is said to be white. This view is borne out by the fact that the white-plumaged birds have generally some remains of brown feathers about their bodies. Dr. Kidder describes the nestlings as follows:—"The down of the young bird is entirely grey "in colour; the head is partly naked, and the bill, tarsi, and feet are coloured "nearly as in the adult, but somewhat paler. The first fully-formed feathers are "similar to the adult plumage." At the same time Dr. Kidder seems not to have noticed any white specimens, and that these are rare near the Cape is proved by the fact that Mr. Layard (*l. c.*) states that the species is common in Table Bay throughout the year, and that "a white variety is common up the west coast towards "Walwisch Bay."

In the British Museum are specimens from Wellington, New Zealand (*Dr. Hector*), and the South Pacific Ocean, as well as one from the present locality.

a. ad. Kerguelen Island. Antarctic Expedition.

[The breeding places of the Giant Petrel in Royal Sound, which had long been an enigma to us, were discovered on Long Island by a shooting party from the "Volage" on the 23rd of December. The nests (according to the statements of the officers) were of a similar make to those of Albatrosses, and contained half-grown nestlings. They were constructed above ground amongst *Azorella*, about 200 yards from the sea, not very far apart from each other. There were two groups of them on the S.W. side of the island, each consisting of about 30 nests, which were situated on the upper parts of very gradual slopes. One of the nestlings was brought off to the ship. It was about as large as a Cochin fowl. Whenever anybody walked past, it

ejected oil from its mouth to the distance of a yard, after the manner of Petrels; on this account it was summarily set upon and despatched. Its down was very dense and thick, and formed a regular jacket beneath which the young feathers were well developed. Dr. Garrod, of the Zoological Society, on dissecting it, found portions of two Prion's skulls in its crop. The eggs are probably laid as early in the season as those of the King Penguin.

Giant Petrels are well known as scavengers. When the *Globiocephalus* was exposed upon the beach in Swain's Bay, a couple of dozen of these birds used to take possession of the carcass during the absence of the flensing party. It was amusing to watch them assembling to feed upon it. Those which happened to be flying about in its immediate neighbourhood began to circle round it as soon as the men retired; and after passing and repassing it a few times they settled one by one upon the water, swam to the shore, and waddled quickly towards the krang. Others attracted to the spot by their movements might now be seen hurrying up from various directions to partake of the banquet. The largest of the birds meanwhile had taken her stand upon the krang with outstretched wings. There she stood tugging at loose ends of sinews, and with difficulty tearing off with her beak morsels of the tough flesh. If any of the others ventured to approach too near before she had allayed her hunger, she ran open-mouthed at them with wings half spread, and drove them off with loud croaks. Seldom did any dare to withstand her attack; if he did she allowed him to get what he could from off the tail of the carcase where he could make very little impression upon it, whilst she returned to the more fleshy portion of the trunk. When the stronger birds grew tired of eating, the others were permitted to feed; and this they did greedily, quarrelling from time to time amongst themselves. A few yards away upon the slopes of *Azorella*, small groups of Skuas were standing waiting impatiently for an opportunity of gorging themselves, but not daring to associate with the Giants. When the boat was rowed towards them, the Petrels alarmed waddled off in haste to the water, and swam away at full speed, looking like prototypes of the roc. We chased them, and they tried to rise from the water, running with their great feet splashing along the surface and flapping heavily with their wings (feet keeping stroke with wings), making quite as much noise as Swans starting to fly. Where it was perfectly calm they could hardly take flight; but where the breeze was blowing they easily rose into the air by running to windward. We drove some on shore up a hill; it was a most exciting chase as we gained rapidly upon them; but becoming fatigued with their climb they turned round and rushed past us down the slope with an impetus that sufficed to start them on the wing.

The Giant Petrel is troubled with an undescribed *Lipeurus* (Giebel), and with *Docophorus coloratus*, Rudow, neither of which were found by me.

There is an example of *O. gigantea* in the South African Museum from the Cape Seas.—*A. E. E.*]

Diomedea exulans.

The Albatross, *Edwards, Nat. Hist. B.* ii. *pl.* 88; L'Albatros, *Briss. Orn.* vi., *p.* 126.

Diomedea exulans, *Linn. S. N.* i., *p.* 214; *Gm. S. N.* i., *p.* 506; *Vieill. Gal. Ois. p.* 234, *pl.* 293; *Gray, Voy. Erebus and Terror, Birds, p.* 18; *id. Gen. B.* iii., *p.* 650; *Gould, B. Austr.* vii., *pl.* 38; *Bp. Consp.* ii., *p.* 184; *id. C. R.* xlii., *p.* 768; *Lawr. in. N. Amer. B. p.* 821; *Cass. U. S. Expl. Exp. p.* 397; *Schl. Mus. P. B. Procell. p.* 333; *Pelz. Reis Novara, Vög. p.* 147; *Gould, Handb. B. Austr.* ii., *p.* 427; *Coues, Pr. Philad. Acad.* 1866, *p.* 175; *Degl. et Eerbe, Orn. Eur.* ii., *p.* 366; *Giglioli, Faun. Vertebr. Oceano, p.* 49; *Gray, Handl. B.* iii., *p.* 109; *Anderss. B. Dam. Ld. p.* 355; *Finsch, J. f. O.* 1872, *p.* 254, 1874, *p.* 206; *Buller, B. N. Zeal. p.* 289; *Scl. and Salv. Nomencl. Av. Neotr. p.* 148; *Sharpe, Voy. Ereb. and Terror, Birds, App. p.* 32; *Bree, B. Eur.* 1876, v., *p.* 90; *Kidder & Coues, Bull. U. S. Nat. Mus.* iii., *p.* 11, *Cab. & Reichen. J. f. O.* 1876, *p.* 328.

L'Albatros du Cap de Bonne Esperance, *Buff. Pl. Enl.* 237.

Chocolate Albatros, *Lath. Gen. Syn.* iii., *pt.* 1, *p.* 308.

Diomedea spadicea, *Gm. S. N.* i., *p.* 595.

Diomedea albatrus, *Pall. Zoogr.* ii., *p.* 308; *Forster, Descr. Anim. p.* 27.

Diomedea adusta, *Tschudi, J. f. O.* 1856, *p.* 157.

Ad. purè albus, dorsi plumis, scapularibus et corpore subtùs plus minusve cinereo fasciatim irroratis; tectricibus alarum nigricanti-brunneis, basaliter albis; remigibus nigricantibus, secundariis et scapularibus albis, ad apicem cinerascenti-brunneis; caudâ albâ, cinereo versùs apicem marmoratâ, pogonio externo terminaliter nigricante; corpore subtùs toto cum subalaribus et subcaudalibus purè albis; rostro albido, vix coccineo tincto, versùs apicem flavicante; palpebris pallidè viridibus; pedibus albis, coccineo tinctis; iride saturate albâ. Long. tot. 38, culmen 7·6, alæ 25·5, caudæ 10·0, tarsi 4·9.

Juv. brunneus, alis caudâque saturatioribus; pileo dorsoque dilute brunneis, basaliter albis et pallidius marginatis; facie laterali, regione paroticâ, gulâque purè albis; subtùs pallidè brunneus, subcaudalibus saturatiùs brunneis.

Considerable variation is seen in the plumages of the Albatross from youth to maturity, the young birds being brown, and gradually becoming whiter and whiter with age.

According to Sir J. Hooker's "Journal" none of this species were observed at Christmas Harbour, but above Cape François "the nests were huddled together, as "many as 50 or 60 of them, and were built on the grassy slopes above the precipice "700 or 800 ft. above the sea. A good deal of straw and stubble was mixed with "them, or rather plastered up with the clay to give it consistency. Their height was "about 1½ ft., and their breadth much the same. From a distance they looked "like so many Cheshire cheeses."

The Museum contains specimens from the Cape Seas (*Capt. Harry, E. M. Langworthy*, &c.); South Australia (*Sir George Grey*); New Zealand; and one from Kerguelen.

a. Ad. Kerguelen Island. Antarctic Expedition.

[The Great Albatross bred on the flat ground near Shoal Water Bay. The birds captured on their nests were destroyed by liberty men from the U.S.S. Monongahela for the sake of their wing-bones and feet (just as the Sooty Albatrosses were by our men), much to the regret of Dr. Kidder and the American Astronomers. Capt. Fuller of the whaling fleet said that a few pairs of the birds build near Sprightly Bay. Their occurrence in the neighbourhood of Mount Campbell was reported by H.M.S. "Challenger."

The vicinage of the Prince of Wales Foreland would have been worth a visit; but there was no means of getting there from Observatory Bay by boat. The prevalence of sudden and violent squalls makes boat navigation in the open Sound extremely dangerous. An American boat's crew sailing from Three Island Harbour was once detained nearly a fortnight at the Foreland by strong winds blowing out of the Sound; and the men were almost starved before their schooner could rescue them.

An adult Wandering Albatross can breathe without much difficulty with a weight of about 130 lbs. upon its back. When specimens had to be killed we employed large men to sit down upon them, holding their beaks to prevent the birds from biting. The pink stains on the sides of the neck mentioned in letters from the "Challenger" and in Dr. Kidder's report were well marked in our adult examples.

Two new species of lice were obtained from this Albatross, namely, *Docophorus dentatus* and *Nirmus angulicollis*, Giebel. Previously *Lipeurus thoracicus*, Rudow, was known to occur upon it.—*A. E. E.*]

Diomedea melanophrys.

Diomedea melanophrys, *Temm. Pl. Col.* 456; *Gray, Gen. B.* iii., *p.* 650; *Gould, B. Austr.* vii., *pl.* 43; *Reichenb. Handb. Longipennes, pl.* xvi., *figs.* 797, 798; *Bp. Consp.* ii., *p.* 185; *Schl. Mus. P. B. Procell., p.* 33; *Gould, Handb. B. Austr.* ii., *p.* 438; *Pelz. Reis. Novara, Vög. p.* 148; *Coues, Pr. Philad. Acad.* 1866, *p.* 181; *Gray, Handl. B.* iii., *p.* 109; *Finsch, J. f. O.*, 1872, *p.* 254, 1874, *p.* 206; *Anderss. B. Damara Land, p.* 355; *Buller, B. N. Zeal. p.* 292; *Scl. & Salv. Nomencl. Av. Neotr. p.* 148; *Sharpe, Voy. Ereb. & Terror, Birds, App. p.* 32.

Thalassarche melanophrys, *Bp. C. R.*, xlii., *p.* 768; *Giglioli, Faun. Vertebr. Oceano, p.* 57.

Ad. suprà brunneus, dorso paullo cinerascente, scapularibus dorso concoloribus, imis nigricantibus; alis brunneis, tectricibus majoribus versùs basin cinereo lavatis; remigibus saturatè brunneis, intùs cinerascenti-brunneis, versùs basin albis; uropygio et supracaudalibus purè albis; caudâ cinerascente, versùs apicem brunnescentiore, ad basin albidâ; pileo et collo undique albidis, hoc vix brunneo lavato;

plumis supraocularibus saturatè brunneis; corpore subtùs toto purè albo; subalaribus et axillaribus fumoso-brunneis, majoribus versùs apicem cinerascenti-albis; remigibus infrà pallide fumoso brunneis, intùs basaliter albis; rostro fulvescenti-albo, basaliter nigro marginato; pedibus flavicanti-albis, pallide cœruleis; iride pallide brunneâ, saturatius marmoratâ. Long. tot. 28, culmen, 5·2, alæ 20·5, caudæ 8·0, tarsi 3·3.

[Not observed by us. The Challenger Expedition believed that they saw this Albatross on the eastern side of the island, but it was not seen by Dr. Kidder or by the German expedition. Its louse is *Lipeurus prox.*—*A. E. E.*]

The specimens in the British Museum are two in number.

a. ad. Cape Seas. Purchased.

b. ♂ jun. Off the entrance to Bass' Straits, July 11, 1847 (*J. Macgillivray*). Capt. Stanley.

Diomedea culminata.

Diomedea culminata, *Gould, P. Z. S.* 1843, *p.* 107; *id. Ann. N. H.* xiii., *p.* 361; *id. B. Austr.* vii., *pl.* 41; *Gray, Gen. B.* iii., *p.* 650, *pl.* 179; *Bp. Consp.* ii., *p.* 185; *id. C. R.* xlii., *p.* 768; *Schl. Mus. P. B. Procell.*, *p.* 35; *Coues, Pr. Philad. Acad.* 1866, *p.* 183; *Gould, Handb. B. Austr.* ii., *p.* 437; *Gray, Handl. B.* iii., *p.* 109; *Cab. in Von der Decken's Reis.* iii., *p.* 52; *Finsch, J. f. O.* 1872, *p.* 254, 1874, *p.* 206; *Buller, B. N. Zeal. p.* 295; *Sharpe, Voy. Ereb. & Terror, Birds, App. p.* 32; *Cab. & Reichen. J. f. O.* 1876, *p.* 328.

Diomedea chlororhynchus, *Audub. B. Amer.* 8*vo.* viii., *p.* 79.

Thalassarche culminata, *Giglioli, Faun. Vertebr. Oceano, p.* 59.

Ad. pileo colloque undique pallidè cinereis; plumis ante-ocularibus et regione oculari saturatè cinereo lavatis; fasciâ infra-oculari albâ; dorso cinerascenti-brunneo, scapularibus alisque nigricanti-brunneis; remigibus nigricantibus, intùs chocolatinis, scapis flavicantibus; uropygio et supracaudalibus purè albis; caudâ saturatè cinerascenti-brunneâ, scapis flavicanti-albidis; corpore subtùs toto purè albo, facie et colli lateribus vix cinereo lavatis; pectoris lateribus intimis celatè et axillaribus intimis saturatè brunneis, his longioribus et subalaribus purè albis, subalaribus alæ margini proximis brunneis; rostro nigro, culmine corneo, mandibulâ imâ et gonyde aurantiacâ. Long. tot. 30, culmen, 4·7, alæ 20, caudæ 8·0, tarsi 2·8.

Juv. similis adulto, sed saturatior, pileo colloque saturatiùs cinereis.

This species occurs in the German list as obtained at Kerguelen Island, a skeleton of the bird having been preserved. Dr. Kidder in the American Report also states that it was common along the coast, and was occasionally seen in Royal Sound.

The following specimens form the series at present in the British Museum.

a. ad. Lat. 36½° S., Long. 95½° E. Capt. Stanley. June 5, 1847 (*J. Macgillivray*).

b. ad. Australian seas. J. Gould, Esq.

c. juv. Off Van Diemen's Land, August 3, 1839.

d. juv. Off Veragua. Mr. Brydges.

Diomedea fuliginosa.

Albatross with a white eyebrow, *Cook's Voyage*, i., *p*. 38.

Sooty Albatross, *Lath. Gen. Syn.* iii., *pt*. i., *p*. 309.

Diomedea fuliginosa, *Gm. S. N.* i., *p*. 595; *Gray, Gen. B.* iii., *p*. 650; *Bp. Consp.* ii., *p*. 186; *Lawr. B. N. Amer. p*. 823; *Schl. Mus. P. B. Procell., p*. 35; *Pelz. Reis. Novara, Vög. p*. 149; *Gray, Handl. B.* iii., *p*. 109; *Finsch, J. f. O.* 1872, *p*. 254, 1874, *p*. 206; *Buller, B. N. Zeal. p*. 296; *Sharpe, Voy. Ereb. & Terror, Birds, App. p*. 33; *Cab. & Reichen. J. f. O.* 1876, *p*. 328.

Diomedea spadicea, *Less. Man. d'Orn.* ii., *p*. 391.

Diomedea fusca, *Audub. B. Amer. pl.* ccccliv.; *id. op. cit.* 8*vo*. viii., *p*. 83, *pl*. 454.

Diomedea palpebrata, *Forster, Descr. Anim. p*. 55.

Phœbetria fuliginosa, *Bp. C. R.* xlii., *p*. 768; *Gould, Handb. B. Austr.* ii., *p*. 441; *Giglioli, Faun. Vertebr. Oceano, p*. 60; *Coues, Pr. Philad. Acad.* 1866, *p*. 186; *id. and Kidder, Bull. U. S. Nat. Mus.* ii., *p*. 21; *iid. op. cit.* iii., *p*. 12.

Ad. suprà fuliginoso-brunneus, plumis dorsalibus sæpè pallidiùs marginatis; loris, facie laterali, mentoque saturatiùs brunneis; annulo supra- et post-oculari argentescenti-albo; alis fuliginoso-brunneis, remigibus saturatiùs brunneis, scapis albicantibus, secundariis basaliter cinerascentibus; caudâ saturatè brunneâ, rectricum scapis conspicuè albis; corpore subtùs cinerascenti-brunneo, plumis obscurè fulvescenti-brunneo marginatis; subalaribus et remigibus infrà chocolatino-brunneis; rostro nigro; pedibus pallidè carneis; iride purpurascenti-griseo. Long. tot. 27, culm, 4·7, alæ 20·5, caudæ 10·5, tarsi, 3·0.

Besides three examples from South Australia (*Sir George Grey*), and Lat. 38° S., Long. 30° E. (*J. Macgillivray*), the British Museum has the following:—

a. ad. Royal Sound, Kerguelen Island. Capt. Inglis, R.N.

[The Sooty Albatross is common in Royal Sound. The hills near the sea on the mainland and islands present occasionally places suitable for its nidification. As a rule the nests are built in the most sheltered situations that can be found at the foot of the precipitous terraces of volcanic rock which are so characteristic of the neighbourhood. Here and there recesses hollowed out at the base of these terraces and cliffs are thoroughly protected by the overhanging rock from wind and rain. In dry nooks of this nature *D. fuliginosa* constructs its nests of pieces of adjacent plants (especially *Festuca erecta*) disposed in the form of a low truncated cone hollowed out at the top. The nests appear to be used many years in succession, as the original materials of several that were examined seemed to have been reduced by age to

vegetable mould. These old fabrics are relined with fresh dry grass when the birds return at the commencement of the breeding season. The position of her nest is liable to be betrayed to persons walking within sight of the female when she is sitting, for every now and then while she is observing their movements she will utter her cry, and thus reveal her situation. If anyone goes near her she assumes a rather formidable attitude, and ruffling up the feathers of the neck snaps fiercely and loudly with her beak at the intruder, the noise resembling that made by a large dog in catching flies. But notwithstanding her menacing gestures the egg can be secured (if it be desired) without displacing her from the nest. A pocket handkerchief presented to her with the left hand, or a hat placed gently upon her head, will completely engross her attention while the egg is being abstracted from beneath her with the right; and she will afterwards remain in the nest complacently watching her visitor's retreat. Nearly a dozen of their nests were taken by the English Expedition. From one found near Thumb Peak a female was brought by Staff Commander Inglis, of H.M.S. "Supply," from whom the skin preserved was obtained. On the 23rd of October a female was killed, while she was sitting with the male in her nest, by Lieut. Dowding, R.M.I., and Mr. Edwardes, Assist. Surgeon of H.M.S. "Volage." They found that she would have laid her egg in the night, its shell being spotted already. Another female subsequently laid in the same nest. The Rev. J. B. Budds found a nestling about a week before we sailed from Royal Sound; a newly born kid was sitting upon it. On our way to the Cape we saw a Sooty Albatross the pale band on whose neck was of a dirty white instead of the usual ash colour.

A single specimen of a *Lipeurus* was found upon a Sooty Albatross in Royal Sound (probably a moulted skin).—*A. E. E.*]

PELECANIDÆ.

Phalacrocorax verrucosus.

Graculus carunculatus, *Schl. Mus. P. B. Pelecani, p.* 20 (*spec. b.*).

Halieus (Hypoleucus) verrucosus, *Cab. J. f. O.* 1875, *p.* 450, *pl.* 1, *fig.* 1.

Graculus carunculatus, *Coues & Kidder, Bull. U. S. Nat. Mus.* ii., *p.* 7; *iid. op. cit.* iii., *p.* 8.

Halieus verrucosus, *Cab. & Reichen. J. f. O.* 1876, *p.* 329.

Ad. suprà purpurascenti-niger, pileo paullò cristato; interscapulio vix viridescente; scapularibus et tectricibus alarum distinctè viridescentibus; remigibus brunneis, extùs viridescente lavatis; caudâ nigrâ; facie laterali et genis anticis purpurascenti-nigris; genis posticis, colli lateribus, et corpore subtùs toto, purè albis, hypochondriis imis tibiisque purpurascenti-nigris; subcaudalibus albis, longioribus purpurascenti-nigris; pectore laterali celatim viridescenti-nigro; subalaribus sordidè viridescenti-nigris, his imis et remigibus infrà brunneis; rostro nigro; carunculis

rostri basalis lætè flavis; pedibus flavis; iride cyaneâ. Long. tot. 25, culm. 2·25, alæ 11·2, caudæ 5·0, tarsi 2·4.

Juv. purpurascenti-brunneus, dorso obscurè viridescente; subtùs brunneus, plumis basaliter albidis, faciem striolatam exhibentibus; genis posticis gulâque purè albis.

Professor Schlegel, who has a Kerguelen specimen in the Leiden Museum, considers it to be specifically the same as the Falkland Island Cormorant, "très "reconnaissable à une large raie blanche s'étendant sur les plumes de l'aile couv- "rant l'avant bras." Dr. Coues, after examining the specimens brought by Dr. Kidder from Kerguelen, writes: "I have no hesitation in identifying this species "as above, although the single adult specimen collected does not show the white "trans-alar fascia spoken of by authors." He is, however, evidently influenced by Schlegel's determination. On the other hand, Dr. Cabanis considers that the Kerguelen bird is different on account of its smaller size, especially of the feet and bill, and from the want of the white band in the wing. The other differences mentioned by Dr. Cabanis do not seem to me to be of any great importance, but the Kerguelen skins in the Museum certainly do exhibit the differences enumerated by him. I consider that the material at my disposal is too limited to decide the question, and I therefore follow Dr. Cabanis in his determinations.

a. ad.; *b.* juv. Kerguelen Island. Antarctic Expedition. [C.]

[The habits of this Cormorant are so similar to those of the common British species, that it is needless to describe them. Mention has already been made elsewhere (Proc. Roy. Soc. 1875) of their remarkable tameness. Another strongly marked trait in their disposition is inquisitiveness. Not only will they direct their flight towards a man walking by the shore, in order to have a good look at him; but if he chances to be standing still, the Shags will not unfrequently alight close to him to stare at the stranger. Sometimes they are attracted by noise, not however quite to so great an extent as the Spitsbergen Guillemots. On the day of our first landing in Observatory Bay, whilst standing amongst a flock of Cormorants which were basking on a point, I fired at a Teal. The Shags fled precipitately at the sound of the report; but three minutes had hardly elapsed before five and twenty of the birds were standing round me in a circle almost within reach of the gun, mute with astonishment, looking at me first with one eye and then with the other.

There is much virtue in a mere name. Our men called these Cormorants "Shags," and would not touch them. Some of our American friends (not the astronomical party) having designated them "Shag-ducks," shot a few dozens of them with rifles, to eat them. They could have killed as many as they pleased, for in the intervals of fishing the Cormorants rest in the cliffs, and do not readily take flight unless thoroughly alarmed.

The Shags in Observatory Bay were commencing to build on the 16th of October. The first eggs were found by us about the middle of November.

The British Cormorant (*P. carbo.*) has a *Docophorus*, but the louse of the Kerguelen species was not discovered, though I procured a carpet bag full of the nestlings for my Skuas. Dr. Kidder found "a tick of prodigious size" upon some young birds.—*A. E. E.*]

Tachypetes aquila.

The Man-of-War Bird, *Edwards, Gleanings*, vi., *p.* 209, *pl.* 309.

La Frégate, *Briss. Orn.* vi., *p.* 506, *pl.* xliii., *fig.* 2 A.

Pelecanus aquilus, *Linn. S. N.* i., *p.* 216.

Le Grand Frégate de Cayenne, *Buff. Pl. Enl.* vii., *pl.* 961.

Frigate-Pelican, White-headed Frigate-Pelican, and Palmerston Frigate-Pelican, *Lath. Gen. Syn.* iii., *pt.* 2, *pp.* 587, 591, 593.

Pelecanus leucocephalus and Pelecanus palmerstoni, *Gm. S. N.* i., *p.* 572.

Fregata aquila, *Illiger, Prodr. Syst. Mamm. & Av. p.* 279; *Gray, List Anseres Brit. Mus. p.* 190; *Gosse, B. Jamaica, p.* 477; *Reich. Handb. Steganopodes, pl.* xxxi., *figs.* 372; *G. C. Taylor, Ibis*, 1859, *p.* 150; *Schl. Mus. P. B. Pelec. p.* 2; *Buller, B. N. Zeal. p.* 339; *Gigl. Faun. Vertebr. nell' Oceano, p.* 63; *Sharpe, Voy. Erebus & Terr., Birds, App. p.* 35.

Tachypetes aquila, *Vieill. N. Dict. d'Hist. Nat.* xii., *p.* 143; *id. Gal. Ois.* ii., *p.* 187, *pl.* cclxxiv.; *Kittl. Kupf. Vög. p.* 15, *taf.* xx., *fig.* 1; *Less. Traité, p.* 606; *Audub. B. Amer. pl.* ccccxxi.; *id. B. Amer.* 8vo. vii., *p.* 169, *pl.* 421; *Bp. Consp.* ii., *p.* 167; *Lawr. B. N. Amer. p.* 873; *Hartl. Orn. W. Afr. p.* 260; *Burm. Th. Bras.* iii., *p.* 549; *Cass. U. S. Expl. Exp. p.* 358; *Newton, Ibis*, 1859, *p.* 369; *Blasius & Baldam. in Naum. Vög. Deutschl.* xiii., *p.* 287; *Gould, Handb. B. Austr.* ii., *p.* 499; *Finsch & Hartl. Faun. Central-Polyn. p.* 265; *Finsch, J. f. O.* 1872, *p.* 260, 1874, *p.* 216; *Cab. & Reichen. J. f. O.* 1876, *p.* 329.

Tachypetes leucocephalus, *Kittl. Kupf. Vög. p.* 15, *taf.* xx., *fig.* 2.

Attagen aquila, *Gray, Gen. B.* iii., *p.* 669; *Gould, B. Austr. Intr. p.* c; *Jerd. B. Ind.* iii., *p.* 853.

Fregata leucocephala, *Reichenb. Handb. Steganopodes, pl.* xxxi., *fig.* 373.

Tachypetes palmerstoni, *Cass. U. S. Expl. Exp. Birds, p.* 359.

Tachypetes minor, *Hartl. Orn. Madag. p.* 87.

Ad. Niger, dorso toto æneo viridi et purpureo nitente, plumis lanceolatis; pileo saturatiore, saturatè viridi; alis caudâque nigris vix bronzino lavatis; gulâ nudâ rubrâ; corpore reliquo subtùs nigro, pectore medio purpureo, lateraliter æneo-viridi; subalaribus nitidè nigris; rostro cinerascente, versùs apicem nigro; pedibus carneo-brunneis; iride nigra. Long. tot. 34, culm. 4·0, alæ 23·0, caudæ 16·0, tarsi circa 2·85.

Juv. brunneus, purpureo et viridi nitens; tectricibus alarum pallidè brunneis albicante marginatis; pileo nigro, collo postico brunneo, plumis pallidius marginatis; gulâ nudâ minùs extensâ, gutture et facie laterali saturatè brunneis; pectore albo, abdomine brunneo, subcaudalibus et subalaribus nigris; alis caudâque nigris.

The German expedition brought back a head of this species obtained at Kerguelen Island; it has not been met with by any other of the visitors. I have not assured myself that *T. minor* is really a distinct species, for although some of the birds are evidently less bulky in their proportions, on measuring them, the supposed differences of size are found to be very slightly pronounced. As the Museum series is not sufficient to enable me to determine the question for certain, I have refrained from giving a list of the specimens.

IMPENNES.

Aptenodytes longirostris.

Patagonian Penguin (*pt.*), *Penn. Phil. Trans.* lviii., *p.* 91, *pl.* 9; *Lath. Gen. Syn.* vi., *p.* 563.

Aptenodyta patachonicha (*pt.*), *Gm. S. N.* i., *p.* 556.

Le Manchot de la Nouvelle Guinée, *Sonn. Voy. N. Guin. p.* 180, *pl.* 113.

Le Manchot des Isles Malouines, *Buff. Pl. Enl.* x., *Pl.* 975.

Apterodyta longirostris, *Scop. Del. Faun. et Flor. Insubr.* ii., *p.* 91, *no.* 69.

Pinguinaria patachonica (*nec Forster*), *Shaw in Miller's Cimel. Phys. pl.* 45; *id. Nat. Misc.* xi., *pl.* 409.

Hairy and Woolly Pinguin, *Lath. Gen. Hist.* x., *p.* 392.

Aptenodytes pennantii, *Gray, Ann. N. H.* xiii., *p.* 315; *id. Gen. B.* iii., *p.* 642; *Reichenb. Handb. Pygopodes, pl.* 1, *figs.* 1, 2; *Bp. C. R.* xlii., *p.* 775; *Gould, P. Z. S.* 1859, *p.* 98; *Scl. P. Z. S.* 1860, *p.* 390; *Hyatt, Cat. Orn Coll. Boston Soc. N. H.* i., *p.* 11; *Cab. & Reichen. J.f. O.* 1876, *p.* 330.

Spheniscus pennantii, *Schl. Mus. P. B. Urinatores, p.* 3; *id. Dirent.* p. 268.

Aptenodytes longirostris, *Coues, Pr. Philad. Acad.* 1872, *p.* 193; *Sharpe, Voy. Erebus and Terror, Birds, App. p.* 37, *pl.* 32; *Coues and Kidder, Bull. U. S. Nat. Mus.* ii., *p.* 39; *iid. op. cit.* iii., *p.* 18.

Suprà cinerascens, plumis omnibus cinereo apicatis, supracaudalibus majus distincte terminatis; alis cinereis, pennis remigialibus seriatim cinereo terminatis, margine alari summo nigricante; caudâ rigidâ nigrâ; pileo summo usque ad nucham nigro; facie laterali gulâque totâ nigris; plagâ latâ aurantiacâ à regione paroticâ posticâ per collum lateralem angustante et gulam nigram marginante; colli lateribus cinereis dorso concoloribus, anticè latè nigro marginatis: jugulo medio aurantiaco; corpore reliquo subtùs sericeo-albo, pectoris lateribus dorso concoloribus; alâ subtùs albâ, versùs basin et apicem nigricante, margine alari latè nigricante; rostro nigro, versùs basin mandibulæ carneo; pedibus nigris; iride lætè brunneâ. Long. tot. 34, culm. 3·4, alæ 11·5, cauda 4·4.

The Kerguelen Island specimens in the British Museum are of larger bulk than those from the Falkland Islands.

a. ad. Kerguelen Island. Antarctic Expedition.

b. ad. Swains' Bay, Kerguelen Island. Rev. A. E. Eaton.

c, *d*. ad. Falkland Islands. Antarctic Expedition.

e. juv. ,, ,,

[The King Penguin does not breed in Royal Sound nor in Swain's Bay. The master of the schooner "Roswell King," Capt. Fuller, stated that it breeds in very few places upon the island; that a large community occupy a position on the hills west of Mount Ross near Table Bay (Kerguelen Island), and that there are others near Cape Sandwich. They were seen from the "Volage" in December at this last-named locality. The eggs are laid about the beginning or middle of October.

In December and January small parties of these Penguins come into sheltered inlets to moult. We used to find them in Swain's Bay, Carpenter's Cove, and in a bay near Vulcan Cove. Usually they were standing amongst the herbage within a few yards of the shore; occasionally they were between the tide marks. The officers of H.M.S. "Volage," who had more opportunities than I had of seeing these birds, were of opinion that they remained on shore without food until the moulting was completed; because if the Penguins while the change of plumage was progressing came from the sea every day, their breasts would in all probability be denuded of feathers, for they are then so easily detached from the skin that they could hardly fail to be stripped off in the efforts of landing; whereas their breasts were well clothed with old loose feathers until the new plumage was matured. There are so few land animals in Kerguelen Island that the unwonted sight of people walking never failed to attract the notice of the King Penguins. Standing at their ease in their sheltered hollows they uttered as it were derisive cries from time to time while the strangers laboured through the *Azorella*. Seldom did they take the trouble to stir when anyone approached them, but remaining in a group, some standing still, others lying down, they quietly awaited the progress of events. Their unconciousness of danger was singularly shown by the following incident. One day while grappling for *Algæ* in Swain's Bay I came with one of the men upon six Kings in a group. Seeing that some of them had finished moulting and were well coloured, we walked up to them, seized the two finest by their necks, and sat down upon their backs. The others stayed beside us unconcerned at the fate of their companions, though they were beating the ground beneath us with their wings and gasping for breath within a yard or so of them. "What shall be will be:" so they made themselves comfortable, and they were not molested. Meanwhile my bird was becoming moribund; and happening to look at its eyes I noticed that the colour of the iris was a very dull hazel, and that the pupil in contracting assumed a quadrangular form. The eyes of the survivors of the party presented the same peculiarity, which appears to be a characteristic of the species.

There are four examples of this Penguin from the Crozettes in the South African Museum, 2 young and 2 adults.

The louse of the King Penguin is *Goniodes brevipes*, n. sp., of which I found only one example.—*A. E. E.*]

Pygoscelis tæniata.

Le Manchot Papou, *Sonnerat, Voy. N. Guin. p.* 181, *pl.* cxv.

Aptenodytes papua, *Forster, N. Comm. Götting.* iii., *p.* 140, *pl.* 3; *Gm. S. N.* i., *p.* 556; *Vieill. Gal. Ois.* ii., *p.* 246, *pl.* 299 (*var.*).

Papuan Penguin, *Lath. Gen. Syn.* iii., *pt.* 2, *p.* 565.

Apterodyta papuæ, *Scop. Del. Faun. et Flor. Insubr.* ii., *p.* 91, *No.* 71.

Chrysocoma papua, *Steph. Gen. Zool.* xiii., *p.* 59.

Pygoscelis papua, *Gray, List Anseres, &c., B. M., p.* 153; *id. Voy. Ereb. & Terror, Birds, pl.* 25; *Reichenb. Handb. Pygopodes, pl.* ii., *fig.* 738; *Hyatt, Cat. Orn. Coll. Boston Soc. N. H.* i., *p.* 13; *Cab. & Reichen., J. f. O.* 1876, *p.* 330.

Eudyptes papua, *Gray, Gen. B.* iii., p. 641; *Cass. U. S. Expl. Exp. p.* 264; *Gould, P. Z. S.* 1859, *p.* 98; *Abbott, Ibis*, 1860, *p.* 336.

Aptenodytes tæniata, *Peale, U. S. Expl. Exp. p.* 264.

Pygoscelis wagleri, *Sclater, P. Z. S.* 1860, *p.* 390.

Spheniscus papua, *Schlegel, Mus. P. B. Urinatores, p.* 5.

Pygoscelis tæniata, *Coues, Pr. Acad. N. Sci. Philad.* 1872, *p.* 195; *Scl. & Salv. Nomencl. Av. Neotr., p.* 151; *Sharpe, Voy. Ereb. & Terror, Birds, App. p.* 38; *Coues & Kidder, Bull. U. S. Nat. Mus.* ii., *p.* 41; *iid. op. cit.* iii., *p.* 18.

Ad. suprà nigricans vix cinereo lavatus; alis magis cinereis, margine alari conspicuâ et remigum apicibus fasciam terminalem latam formantibus albis; supracaudalibus rigidis nigricantibus cinereo lavatis; rectricibus nigris, marginaliter brunnescentibus; fasciâ latâ verticali albâ ab utroque oculo per verticem ductâ; facie laterali et gutture cinerascentibus, gutturis plumis albido variis; corpore reliquo subtùs sericeo-albo; alâ inferiore albâ, remigibus extimis apicaliter cinereis plagam conspicuam exhibentibus; pectore subalari et plagâ alterâ ad ortum alæ positâ cinereis; rostro lætè aurantiaco, culmine nigro; pedibus aurantiacis; iride læte brunneâ. Long. tot. 31, culm. 2·4, alæ 8·5, caudæ 5·5.

a. ad. Kerguelen Island. Antarctie Expedition.

b. ad. Kerguelen Island. Antarctic Expedition.

c. juv. Falkland Islands. Sir W. Burnett and Admiral Fitzroy.

[The Johnnie (as the whalers call this bird) is common in Royal Sound. It builds in communities, some of only a dozen, others from 70 to 150 families. A more populous colony upon the mainland was visited by six officers from the ships, who estimated the number of nests in it to amount to 2,000 or more. These larger communities are approached from the sea by regular paths, conspicuous at a

distance, like well-worn sheep tracks, which lead straight up the hill from the water. Their formation is due to the Penguins being very particular about where they land and enter the sea. A small party of the birds occupied a position upon the neck of a low promontory within an hour's work of Observatory Bay. Their nests were nearest to the farther side of the isthmus; but when they were approached the male birds used to run to the water, not by the shortest route where it was deep close to the rocks, but by the longest to a place where the shore was shelving. It was amusing to see them start off in a troop as fast as their legs could carry them, holding out their wings and tumbling headlong over stones in their way, because as they ran they would keep looking back instead of before them, and to hear their outcries. Panic and consternation seemed to possess them all; but the females (possibly because they could not keep up with their mates) seldom went far from their nests; and, if the intruder stood still, soon returned and settled down again upon their eggs. Not many weeks had passed before a change was effected in their conduct. The young were hatched, and now the mothers anxiously endeavoured to persuade them to follow the example of their fathers and run away to sea. But the nestlings preferred to stay in their nests; they did not mind if the stranger did stroke them; although their anxious mothers ran at him with open mouths whenever he dared to do so. Only a few of the older chicks could be prevailed upon to stir; and they after waddling a few yards became satisfied with their performance and turned to go home again. The mothers, who had straggled to a greater distance, began to return too. It was now that the more tardy youngsters began to experience the ills of life. Every Penguin that had reached its place before them aimed blows at them as they passed by towards their own abodes. One of the little birds certainly did seem to deserve correction. It saw its neighbour's nest empty and sat down in it. The old female Johnnie, the rightful occupier, presently returned in company with her own chick, to whom, having put her head well into his mouth, she began to administer refreshment after his run. Seeing them so pleasantly engaged, the small vagrant, thoughtlessly presuming upon her generosity, went nearer and presented himself to be fed also, as if he had a right to her attention and care. She looked at him while he stood gaping before her with drooping wings, unable for the moment to credit what she saw. But suddenly the truth flashed upon her, and provoked by his consummate audacity she gave vent to her indignation, pecked his tongue as hard as she could, chased him out of the nest, darting blows at his back, and croaked ominously after him as he fled precipitately beyond the range of her beak, leaving trophies of down upon the scene of his unfortunate adventure. The whole of this community of Penguins was subsequently boiled down into "hare soup" for the officers of H.M.S. "Volage;" and very nice they found it.

The nests were composed of dried leaf-stalks and seed-stems of *Pringlea*, together with such other suitable material as happened to be at hand. There were two eggs

in every nest, and one of them was invariably larger than the other. Most likely the birds hatched from the larger eggs are of the opposite sex to those which are produced from the smaller. Whether the big or the little egg is the first to be laid was not ascertained.

As is the case with many other kinds of birds, Johnnies are very regular in their habits. Every afternoon at nearly the same time they repair to the shore when they have done fishing, landing in small parties at their accustomed places at the heads of shallow inlets. On issuing from the water they dispose themselves to rest, seldom proceeding beyond the verge of the shore. Those which are inclined to sleep put their heads behind their flippers; the others stand amongst them with the neck shortened so as to bring the head down close to the body with the beak slanting upwards and forwards, somewhat in the manner of a very young thrush during repose. Their eyes present a rather tearful appearance, and resemble bits of dull black glass set in their heads,—perhaps the nictitating membrane may be kept drawn over them. At frequent intervals a kind of watery fluid is ejected from their mouth by a shake of the head.

I was led to suspect that these Penguins are liable to be attacked by seals,* for in places not much frequented by man, if they once effect a landing they do not readily return to the water on being alarmed, but run away from the sea up hill as fast as they can go. After they have gone some distance they turn round and look back while they take breath; but as soon as they are rested sufficiently they willingly resume the ascent. It is not until they have been driven so far as to become thoroughly tired that they refuse to proceed further; but when this stage has been reached it is useless to urge them to advance without a pause. As they face about, the sight of the boot ready to push them over is greeted with deprecating sighs, and should these be disregarded, and they be sent over upon their backs, as soon as they regain their feet they rush at their driver, launch their bill at his knees, beat their wings furiously against his calves and shins, and make a dash on all fours down the hill at full speed to regain the sea.

When they became accustomed to being chased by men, the Penguins acquired the habit of betaking themselves to the water at the first alarm.

A small party of these birds used persistently to land in Observatory Bay every evening at the very time when the men erecting our huts were returning to the ship after their work. Such of the Johnnies as managed to escape being caught one day were sure to reappear the following evening just at the critical time, dragging themselves out of the water to afford sport to the men. By the time that the huts were completed the survivors were reduced in number to a couple of birds; and there can be little doubt that these would have followed their late companions into the soup-kettle had the putting up of the Observatory occupied one more day.

* In the Arctic Regions Loons are occasionally caught on the water by Walrus.

The cry of the Johnnie distantly resembles the short bark of the fox.

In the South African Museum there is an adult specimen from the Crozettes.

Its louse is unknown. A full-grown bird sent me by Captain Fairfax was infected with a tick.—*A. E. E.*]

Eudyptes chrysolophus. (Plate VIII., fig. 2.)

Catarractes chrysolophus, *Brandt, Bull. Acad. Sci. St. Petersb.* ii., *p.* 314 (*nec auct. recent.*).

Eudyptes chrysocome (nec Forster), *Abbott, Ibis*, 1860, *p.* 337; *Scl. P. Z. S.* 1860, *p.* 390; *Cab. & Reichen. J. f. O.* 1876, *p.* 330.

Eudyptes diadematus, *Gould, P. Z. S.* 1860, *p.* 419; *Schl. Mus. P. B. Urinatores*, *p.* 8; *Coues, Pr. Philad. Acad.* 1872, *p.* 206; *id. & Kidder, Bull. U. S. Nat. Mus.* ii., *p.* 47; *iid. op. cit.* iii. *p.* 20.

Eudyptes catarractes, *Gray, Handl. B.* iii., *p.* 98.

Ad. suprà nigricans cinereo lavatus, alis cinereo nigricantibus, margine alari summâ vix albicante, margine remigiali medialiter albâ; caudâ rigidâ, dorso concolori; facie laterali gulâque dorso concoloribus; pilei plumis nitidis nigris elongatis cristam formantibus, frontis plumis basaliter aurantiacis; fasciâ superciliari cristali a loris suprà oculum per latera capitis ductâ; corpore reliquo subtus purè albo, pectoris lateribus dorso concolori; alâ subtùs albâ, margine alari nigricante, plagâ nigricante etiam propè ortum alæ et ad apicem remigialem positâ.

Long. tot. 24, culm. 2·35, alæ 7·15, caudæ 4·8.

Juv. similis adulto, sed minor et fasciâ superciliari sulphureâ nec aurantiacâ distinguendus.

I never commenced the study of a bird under greater disadvantages than in the present instance. Dr. Coues and Drs. Cabanis and Reichenow both record a species of Penguin from Kerguelen Island under the names of *E. diadematus* and *E. chrysocome* respectively, and I have no specimen before me wherewith to test these identifications. This is the more unlucky as I do not agree entirely with the identificätions of recent authors, and a good series of the Kerguelen Penguins would have been of great service. The latest writers on these birds have been Professor Schlegel, Prof. Hyatt, and Dr. Coues, and they all agree in recognising four species, where at the most I can only find three distinct ones, as follows:—

a. superciliary streak golden yellow, commencing above the eyes, not from the base of the bill; forehead golden yellow at the base of the feathers, black at the tips . . . . . *chrysolophus.*

b. superciliary streak sulphur yellow commencing at the base of the bill.

a. forehead crested, no yellow bases to the feathers, the sulphur-coloured eyebrow produced backwards, longer than the black plumes of the head . . . . . *chrysocome.**

b. forehead crested, no yellow bases to the feathers; the sulphur-coloured eyebrow very long and drooping and coterminous with an inner black crest . . . . . *saltator.*

Dr. Coues in his usual painstaking manner has worked out these Yellow-crested Penguins from the material at his disposal in America, and after examining them carefully and describing the differences in plumage in detail he observes:—"Although I "am able to distinguish the three currently accredited species, in the few specimens "examined, yet the distinctions are not of a very satisfactory nature, and I strongly "suspect that when specimens enough shall have been compared, the supposed "specific characters will melt insensibly into each other, so that at most only varietal "distinction can be reasonably asserted. Indeed I am not sure that differences of age "or season or special conditions of plumage may not be the sole basis of the supposed "species." These remarks apply to *E. catarractes*, *E. chrysocome*, and *E. chrysolopha* of his paper. As regards the first of these, "at once distinguished by the shortness "of its tail . . . . also known by its inferior size, &c.," I am convinced that these are only signs of immaturity, and Von Pelzeln's plate in the 'Novara' Voyage opens our eyes to the way in which these birds progress from the nestling to the adult. Size alone appears to me to be of no value as a character, and it is curious to see how some of these Penguins (*E. chrysolophus*, i.e. *E. diadematus*, for instance) differ in their bulk, though apparently in full, richly-crested, adult plumage. With

* The synonymy of the true *E. chrysocome* appears to be as follows:—

Eudyptes chrysocome. (Plate VIII., fig. 3.)

Aptenodytes chrysocome, Forster, *N. Comm. Götting.* iii., *p.* 135, *pl.* 1; *id. Descr. Anim. p.* 99.
Pinguinaria cirrhata, *Shaw in Miller Cimel. Phys. pl.* xlix.
Pinguinaria cristata, *Shaw, Nat. Misc. pl.* 437.
Eudyptes chrysocome, *Gould, B. Austr.* vii., *pl.* 83.
Eudyptes pachyrhynchus, *Gray Voy. Erebus and Terror, p.* 17; *id. Gen. B.* iii., *p.* 641; *Finsch, J. f. O.* 1872, *p.* 261, 1874, *p.* 217; *Gray, Handl. B.* iii., *p.* 98.
Chrysocoma catarractes, *Bp. C. R.* xlii., *p.* 775; *Gould, Handb. B. Austr.* ii., *p.* 517.
Chrysocoma pachyrhynchus, *Bp. C. R.* xlii., *p.* 775.
Spheniscus chrysocome, *Schl. Mus. P. B. Urinatores, p.* 6.
Eudyptes catarractes, *Giglioli, Faun. Vertebr. Oceano, p.* 28.
Eudyptes chrysolopha, *Gray, Handl. B.* iii. *p.* 98.
Eudyptes chrysocomus, *Buller, B. N. Zeal., p.* 345, *pl.* 33, *fig.* 1.

Hab—South Australia, Tasmania, and New Zealand. (N.B. If the species also occur in the Falklands, then the following synonyms must be added:—Eudyptes nigrivestis, *Gould, P. Z. S.* 1860, *p.* 418; E. nigriventris (lapsu), *Gray, Handl. B.* iii., *p.* 98.

Spec. in Mus. Brit.

a. ad. New Zealand. Type of *E. pachyrhynchus.*
b. ad. „ Dr. Lyall.

this exception the conclusions of the present paper are much the same as those of Prof. Schlegel, Dr. Coues, and Prof. Hyatt, as regards the number of species recognisable. The last-named gentleman, in addition to certain characters, such as the shape of the black on the throat, &c., brings forward the number of the scutellæ on the first joint of the toes, a distinction which I have not found to hold good, and the writer himself does not seem to have much confidence in it, as in one species he says, "there *may* be three or four scutellæ on each toe."

A few words as to the nomenclature of these Penguins. I must protest against the introduction of *E. catarractes* into the genus, a name founded on an old plate of Edwards and quite irrecognisable, as will be seen by any one consulting the following references which apply to it :—

The Penguin, *Edwards, N. H. Birds,* i., *p.* 49, *pl.* 49 (no locality given, no eyebrow mentioned or depicted; clearly an immature bird and a bad figure).

Le Gorfou, *Briss. Orn.* vi., *p.* 102 (bird not seen by him, and the description evidently derived from Edwards).

Phaeton demersus, *Linn. S. N.* i., *p.* 219 (*ex Briss. nec Pelecanus demersus, L.*).

Red-footed Pinguin, *Lath. Gen. Syn.* iii., *pt.* 2, *p.* 570.

Aptenodyta catarractes, *Gm. S. N.* i., *p.* 558.

Chrysocoma catarractes, *Steph. Gen. Zool.* xiii., *p.* 61.

Then as regards the name *chrysolophus* of Brandt, this appears to me to have been misapplied by all the recent writers on Penguins, and I cannot resist the impression that the original description has not been consulted. I therefore transcribe it :—

"Catarractes chrysolophus, Brandt. Cristâ in mediâ fronte incipiens, maxima ex parte e pennis vitellinis compositâ; color niger in gulâ triangularis; tectricum caudæ superiorum mediæ albido-flavicantes.

"Catarractes chrysocome, Forster. Crista intùs nigra extrinsecus sulphurea angustè in rostri basi incipiens posticè dependens; color nigra in gula trinicatus; tectrices caudæ superiores omnes dorso concolores."

As no locality is given for these two birds, we have nothing but the bare descriptions to go upon, and there seems to my mind no doubt that *C. chrysolophus* of Brandt is *C. diadematus* of Gould, the latter name becoming of course a synonym. At the same time Brandt's *C. chrysocome* is not the true *chrysocome* of Forster, but is the bird called by authors *Eudyptes chrysolophus* (Brandt), but which turns out not to be the true *chrysolophus.* Apparently we have here as complete a tangle as can be found in the annals of ornithology, and that is saying much !

Although no specimens were brought by Mr. Eaton, Dr. Coues identifies the species without hesitation as *E. diadematus,* Gould.

Spec. in Mus. Brit.

a. b. ad. [Antarctic Expedition]. The Admiralty.

c. juv. Falkland Islands. Antarctic Expedition.

d. ♂ ad. Falkland Islands. Oct. 1842. Antarctic Expedition.

e. ad. Berkeley Sound, Falkland Islands. Antarctic Expedition.

[This species was not met with by the English transit party on Kerguelen Island. The sealers brought some of its crests to our ships, and spoke of it as the "Macaroni." From what the officers of the "Volage" told me, I was led to understand that the sealers said that the bird was not found anywhere near the southern end of Kerguelen Island. The crests obtained were brought from Herd's Island. Sir Wyville Thomson in one of his letters to "Good Words" (op. cit. 1874, Nov., p. 314) states that the "Macaroni" occurs at Christmas Harbour in small numbers in company with the Rock-hopper; and that on the outer cliffs beyond the mouth of the harbour there are some strong Penguin rookeries consisting almost exclusively of the "Macaroni."—*A. E. E.*]

Eudyptes saltator. (Plate VIII., fig. 1.)

Le Manchot hupé de Sibérie, *Buff. Pl. Enl.* 984.

Chrysocoma saltator, *Steph. Gen. Zool.* xiii. *p.* 58, *pl.* 8.

Eudyptes chrysolophus (*nec Brandt*), *Gray, Gen. B.* iii., *p.* 641; *Abbott, Ibis*, 1860, *p.* 338; *Scl. P. Z. S.* 1860, *p.* 390; *Schl. Mus. P. B. Urinatores, p.* 7; *Gray, Handl. B.* iii., *p.* 98; *Scl. & Salv. Nomencl. Av. Neotr., p.* 151; *Coues, Bull. U. S. Nat. Mus.* ii., *p.* 45; *Kidder, op. cit.* iii., *p.* 19; *Cab. & Reichen. J. f. O.* 1876, *p.* 330.

Catarractes chrysolopha, *Reichenb, Handb. Pygopodes, pl.* 1*a. figs.* 12–14 (*pt.*).

Chrysocoma chrysolopha, *Bp. C. R.* xlii., *p.* 775.

Eudyptes chrysocome, *Pelz. Reis. Novara, Vög. p.* 140, *pl.* 5.

Ad. suprà sordidè cinereus, pilei plumis rigidis, elongatis, cristam frontalem exhibentibus, verticis lateralis plumis quoque elongatis, cum fasciâ latâ superciliari cristam duplicem formantibus; facie laterali cum colli lateribus gulâque totâ brunnescenti-cinereis: corpore reliquo purè albo; pectore laterali, hypochondriis, imis, et tibiis posticè cinereis; alâ suprâ saturatè cinereâ, margine alari summâ vix albidâ, secundariis etiam albo terminatis; caudâ rigidâ dorso concolori; alâ subtùs albâ, ad basin et juxtà marginem alarum summarum cinereâ; remigibus primariis versùs apicem cinereo-nigricantibus; rostro aurantiaco; pedibus albicantibus; iride coccineâ Long. tot. 23, culmen 2·0, alæ 7·0, caudæ 3·5.

Juv. similis adulto, sed cristâ absente et gutture albido brunneo mixto distinguendus.

I have fully discussed my reasons for changing the name of *chrysolophus* for this species under the heading of the previous bird, and it seems curious that Stephens' name of *saltator* has not been applied to it before, as the plate, though apparently derived from Buffon's illustration in the "Planches Coloriées," leaves no doubt as to the species represented.

The following specimens constitute the series in the British Museum :—

a. ad. [Cape of Good Hope]. Sir A. Smith.
b. ♂ ad. Tristan d'Acunha. J. Macgillivray, Esq.
c. ♂ juv. „ „
d. min. Bounty Island. Purchased.
e.f. min. Falkland Islands. The Admiralty.
g. ad. Kerguelen Island. Capt. Fairfax, R.N.

[On some parts of the coast where the interstices of fallen rocks piled up at the base of cliffs afford them suitable shelter, the *Eudyptes* abound. Their colonies in Royal Sound were smaller than those in Swain's Bay. The most populous of their communities visited by us were situated on the shores of the promontory to the eastward of Vulcan Cove. There were there some thousands of the birds, and they were very noisy. Their cry is a kind of guttural cackle somewhat like the syllables "Gurougha, gurougha, gurougha," pronounced rapidly. The designation "Rock-hoppers" applied to them by the whalers is extremely appropriate; for although they occasionally walk a few paces at a time over a plane surface of rock, with the confined gait of competitors walking in a sack race, their ordinary mode of progression is a series of bounds executed with much apparent ease and with an elasticity of motion such as is exhibited by Kangaroos. Standing amongst them silent (but most certainly not in silence) it was interesting to watch their proceedings. Those birds which had eggs far advanced in incubation remained in their nests, scarcely noticing the hand which stroked their backs unless they saw it move. Others stooping low peeped out of the neighbouring crevices beneath the boulders, or jumping a few yards away stood upon the rocks to gaze at their visitor, leaving their fresh eggs or empty nests unguarded. Birds more confident than these then began to come near, Sheathbills for the eggs, carefully avoiding the Penguins who croaked at them as they sauntered past them; and other Penguins who were ready to risk an approach for the sake of choice materials for nests so unexpectedly left at their disposal. Two or three hard pecks with its bill, and the *Chionis* is happy over its new laid Penguin's egg; two or three journeys to and fro, and the thieving Rock-hopper has carried off to his own nest the choicest portions of his timid neighbour's. The despoiled birds soon see what is going on at their homes, and come bounding back to the rescue. Satisfied with the dispersion of their depredators, this most hopeful of mothers seats herself upon her broken eggs demurely, while her neighbour with an air of resignation betakes himself once more to the task of collecting dried *Pringlea* seed-stalks and other rubbish for the repair of his ruined nest. Sometimes the eggs are laid upon the bare rock without anything else to rest upon. There is the same sexual difference in size between the two eggs in a nest of this *Eudyptes* as there is in those of the *Pygosceles*. The crest on each side of the head is separated into two divergent drooping plumes one above the

other, excepting in swimming, when the bird rising to the surface has the crest closely flattened down upon the sides of the head, where it forms a yellow streak. The eyes are reddish orange, with circular black pupils.

In the S. African Museum this species is represented from the Crozettes by two specimens (and perhaps a third) under the names *Eudyptes nigrivestis* and *E. chrysocoma.**—*A. E. E.*]

* In the same collection is another species from the Crozettes represented by one specimen marked *Eudyptes chrysolophus*, which was not found by us in Kerguelen. A second specimen under the same name *E.* "*chrysolophus*, var." from the same islands appeared to be an albino of the same species.

Explanation of the Plates.

(Plate VI.)

Querquedula eatoni, Sharpe. Figure of an adult specimen procured by the Antarctic Expedition.

(Plate VII.)

Fig. 1. *Stercorarius antarcticus*. Head of a specimen collected by Mr. Eaton in Kerguelen Island.

Fig. 2. *Stercorarius catarractes*. Head of a British specimen.

Fig. 3. *Prion vittatus*. Bill of an adult female from South Australia. Presented by Sir George Grey.

Fig. 4. *P. vittatus*. Bill of a young male from the same collection as the foregoing.

Fig. 5. *P. vittatus*. Bill of adult male from the same collection.

Fig. 6. *P. vittatus*. Bill of a very old male from the Chatham Islands.

Fig. 7. Bill of the type of *P. banksii*, from the Cape of Good Hope; probably of the same age and sex as fig. 4.

Fig. 8. *Prion desolatus*. Bill of the type specimen (probably a young male) of *P. brevirostris*, Gould, from Madeira.

Fig. 9. *P. desolatus*. Bill of a male specimen from Christmas Harbour, Kerguelen Island, with a very distinct yellow "nail" to the upper mandible; probably an old male bird.

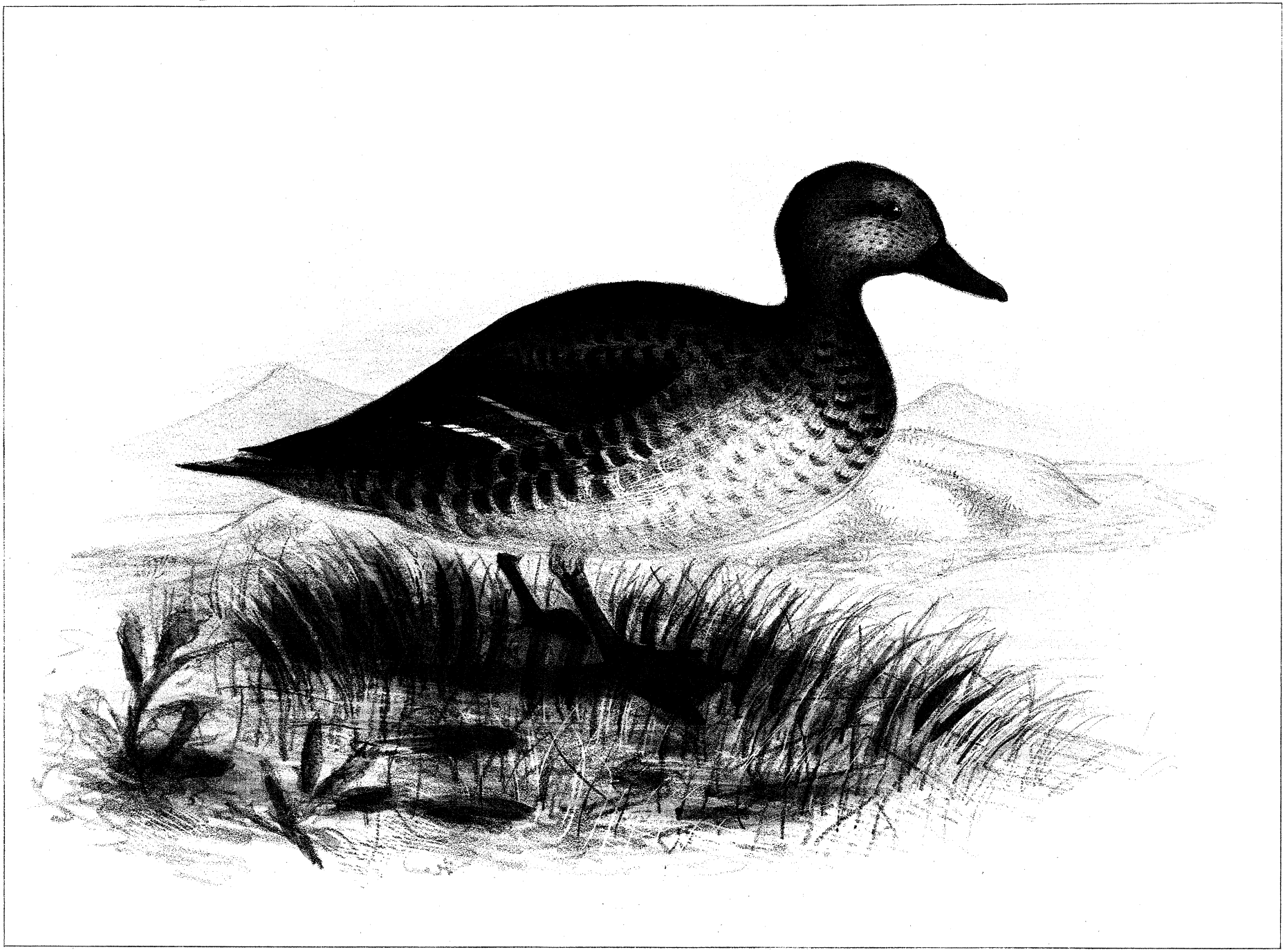
Fig. 10. *P. desolatus*. Bill of a female bird brought by Mr. Eaton from Royal Sound, Kerguelen Island.

(Plate VIII.)

Fig. 1. *Eudyptes saltator*. Head of an adult bird from Tristan d'Acunha.

Fig 2. *Eudyptes chrysolophus*. Head of an adult bird, procured by the Antarctic Expedition.

Fig. 3. *Eudyptes chrysocome*. Head of an adult bird from New Zealand. (Type of *E. pachyrhynchus*, Gray.)



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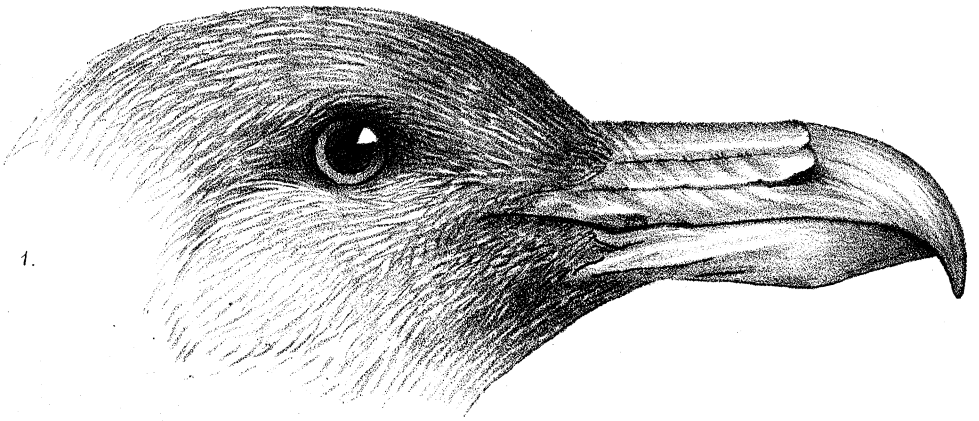
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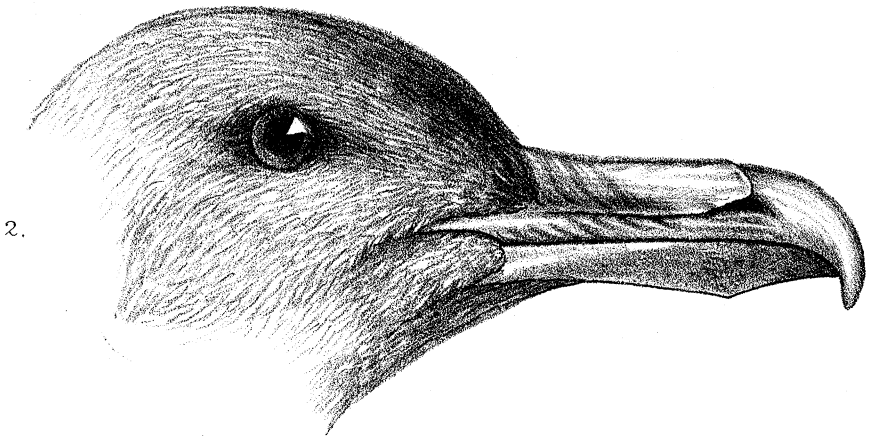
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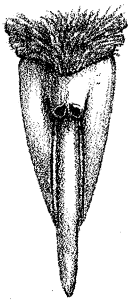
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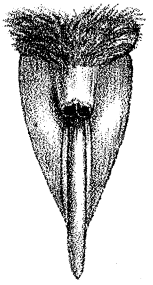
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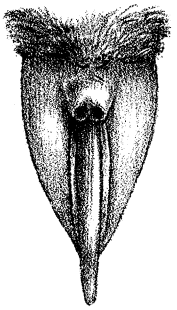
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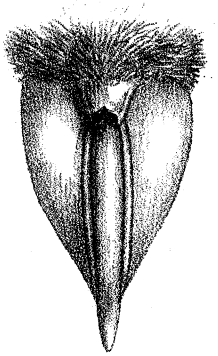
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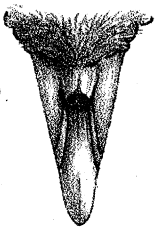
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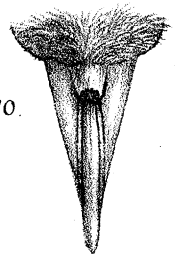
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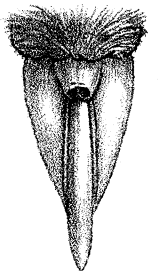
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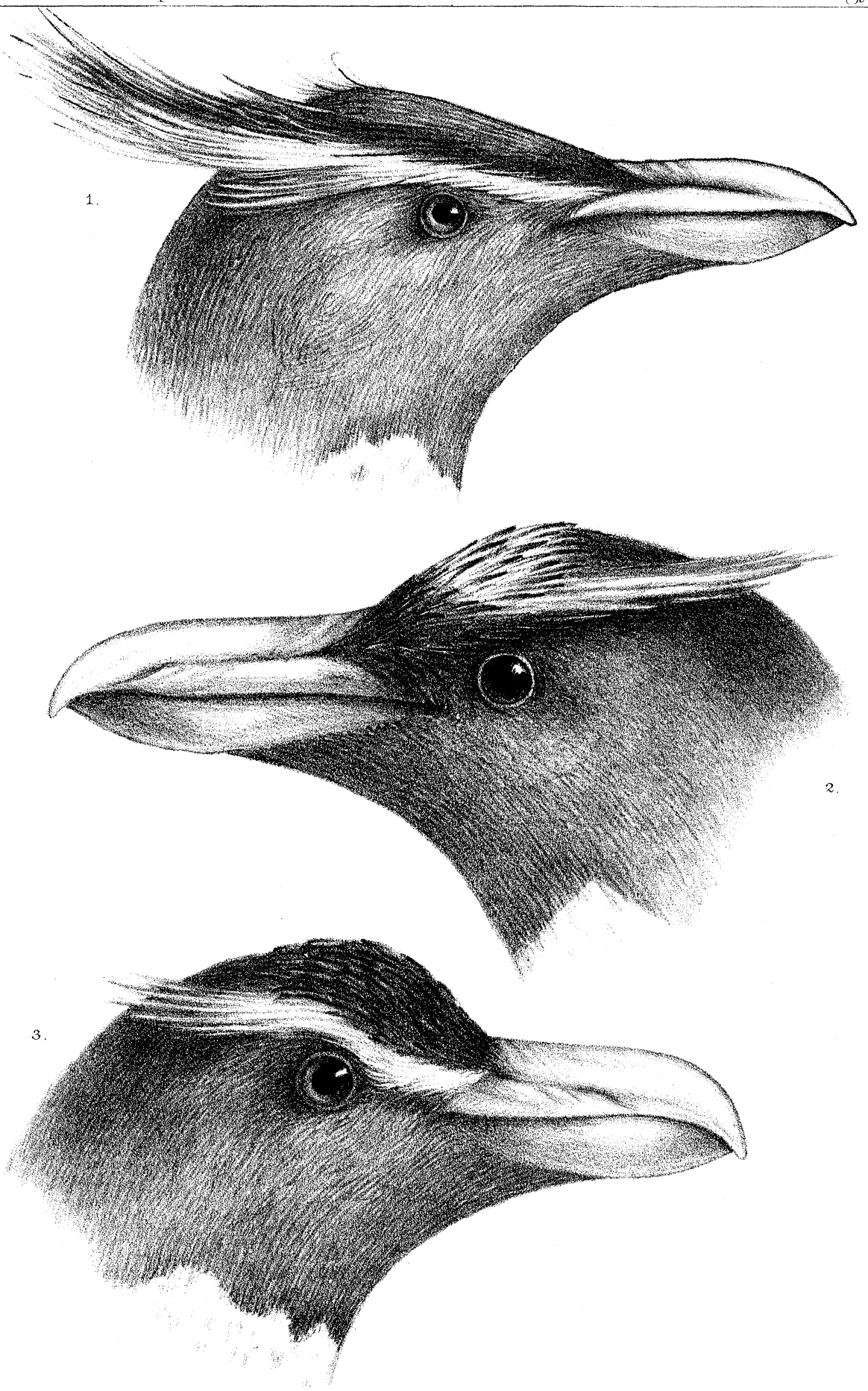
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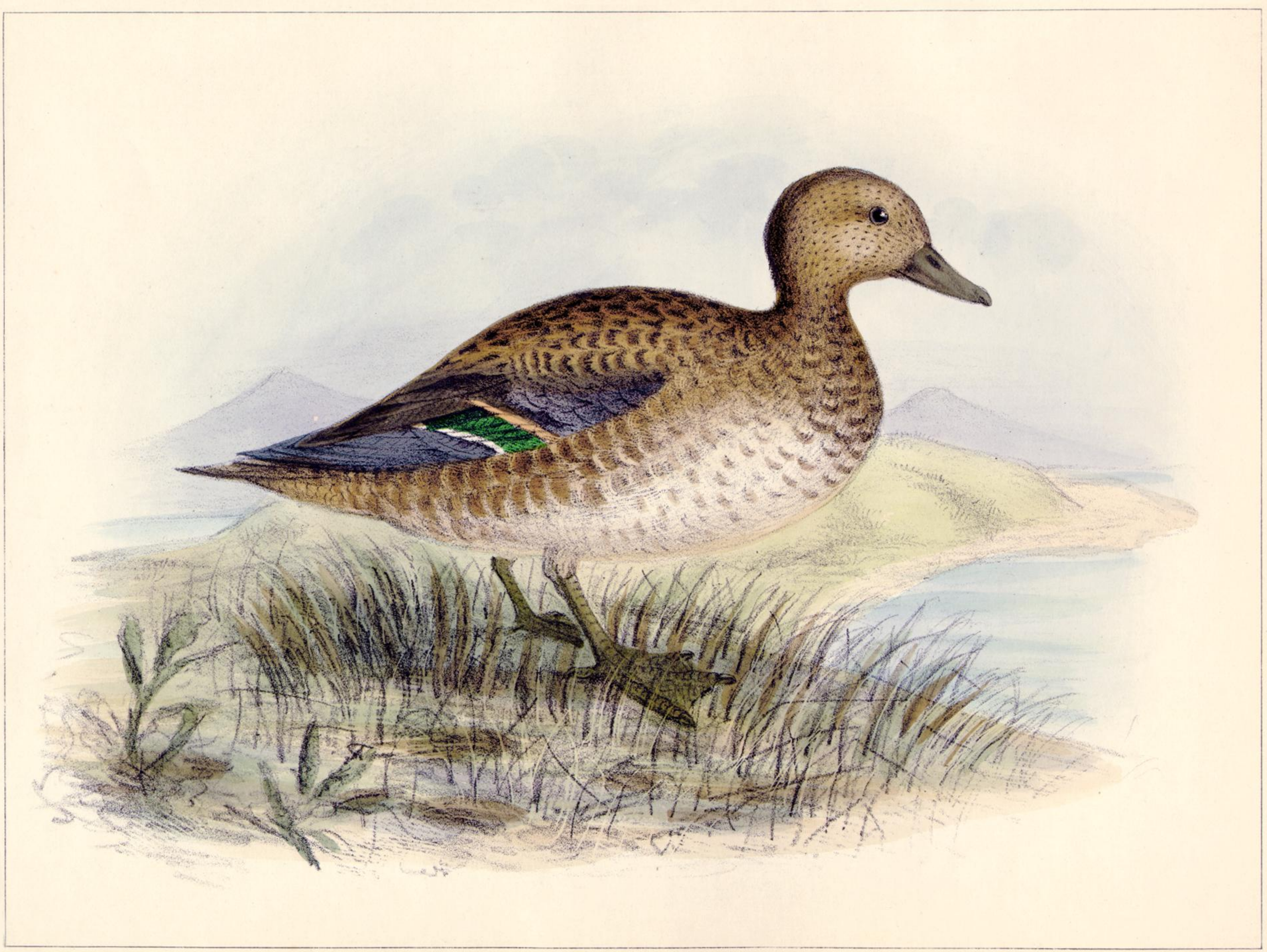

(Plate VI.)

Querquedula eatoni, Sharpe. Figure of an adult specimen procured by the Antarctic Expedition.