

16.—THE OCEAN BIRDS OF THE PERTH BEACHES.

By L. GLAUERT.*

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The study of the ocean birds cast away on our local beaches may be said to have commenced in the winter of 1915, when W. B. Alexander, M.A., then on the staff of the Museum, collected a number of Prions and a Petrel at Cottesloe Beach. Two years later, the late F. L. Stronach, a retired civil servant living at North Cottesloe, became interested, and during the next few years was partly responsible for the rapid growth of the Museum's collection of Procellariiformes, his bag on one occasion consisting of no less than 20 specimens, representing six species, and ranging from a yellow-nosed Albatross or Mollymawk to the white-faced Storm Petrel.

On my return from active service in 1920 I took up residence near the coast and from then onwards regularly patrolled the local beaches in the winter time, now and again securing specimens of unusual interest. To my lasting regret I failed to realise the importance of a flock of over 20 Prions which had come to grief against the wall of a dressing shed at North Cottesloe in 1921.

My successes induced Dr. A. L. Serventy to become interested, and he in turn influenced the veteran collector, H. Lawson Whitlock, then living in Perth, to participate in the search for "Ocean Derelicts." Unfortunately little of the material these expert collectors secured found its way into the Museum, although details published in the "Emu" have made possible the incorporation of their results in this paper.

The material obtained differed from year to year, no doubt owing to the direction, intensity and duration of the gales. In this connection it may be noted that Prions, which were very plentiful 20 years ago, have been scarce during the last year or two, whilst the Cape Pigeon or Pintado Petrel, first recorded in 1920 and subsequently a great rarity for several years, was undoubtedly the commonest victim of recent winter storms, if we except the much larger Giant Petrel or Nelly, which appears in numbers every year.

The area covered by this paper ranges from Safety Bay, south of Pt. Peron to North Beach, a distance of about 30 miles.

Birds haunting coastal waters or the shore are not included.

A key has been appended to assist in the identification of the species dealt with in this paper. It has a purely local value and so would be of little use on our south coast or in the Eastern States where a different avifauna occurs, although some forms are found both here and there.

Pygoscelis adeliae (Hombr. & Jacq.). Adelie Penguin.

The Museum possesses a specimen, A4819, caught near City Beach on Easter Monday, 1937. As some Japanese whalers had called at Fremantle a short time before it is most probable that the bird was an escaped pet.

Eudyptes crestatus moseleyi (Math. & Iredale). Rock Hopper.

A specimen captured alive on Rottnest Island in 1909 is the only local record, although hardly a year passes without one or more living birds coming ashore somewhere in the lower South-West.

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Eudyptula minor woodwardi (Math.). Little Penguin.

This bird breeds upon Penguin Island and adjacent islets where it persists in spite of the persecution suffered at the hands of visitors. Unless the protection under law is made more effective it is only a question of time before it is driven away from these local breeding grounds. The bird is said to go "far out to sea" in search of its food.

It is doubtful whether the separation of the western bird from the eastern *E.m. novahollandiae* (Stephens) is justified.

Diomedea exulans (Linne). Wandering Albatross.

There is no record of this bird from local beaches, the Museum material having been obtained at Bunbury, Hamelin Bay, or out at sea. The species is included because on 20th October, 1938, birds which had been following the ships all morning remained with us until Rottneest was sighted. The species breeds on Kerguelin, the home of so many of our ocean waifs.

Diomedea (Thalassarche) melanophrys melanophrys (Temminck). Black-browed Mollymawk.

This shy and solitary species is but scantily represented in the collection by A1787, an adult found at Cottesloe, 21st August, 1920, a skull, A4618, from Swanbourne, July 1935, and a young female obtained at Swanbourne on 1st June, 1941, A5490. F. Lawson Whitlock also records the bird from local beaches.

Diomedea (Thalassogeron) chlororhynchos (Gmelin). Yellow-nosed Mollymawk.

This is undoubtedly the commonest of our albatrosses. It can be seen off the south coast at all times of the year and in the winter months its range is as far as north of Shark Bay, the type of Rothschild's *carteri* having been collected at Point Cloates. There are 16 entries in the Museum register since 1912.

Diomedea (Thalassogeron) chrysostoma (Forster). Grey-headed Mollymawk.

The first local record was a bird captured alive on the sandhills at Cottesloe in June, 1917, A1257, by the late F. L. Stronach, who for several years forwarded much valuable material to the Museum. Additional specimens from Cottesloe are A1776, 21st June, 1920, A2788, 23rd July, 1926, and A4646, 2nd September, 1935.

Dr. W. Macgillivray has suggested that Australian specimens have their breeding ground somewhere in the vicinity of St. Paul or Amsterdam Islands.

Macronectes giganteus (Gmelin). Giant Petrel.

This giant among the Procellariidae rivals the albatrosses in size and so is often wrongly identified as a Sooty Albatross of which there are, as yet, no records from local beaches. In spite of its size it is one of the most frequent victims of winter gales, a number, nearly all young birds, reaching the Museum every year. Since 1912 no less than 38 have been presented or collected locally.

The majority are in the dark first juvenal plumage with few or no white feathers about the face. Other forms are occasionally met with showing a varied amount of white about the head.

A bird which struggled ashore at Cottesloe on 1st July, 1940, and was photographed before it recovered its strength and flew off to sea had a white chin. The Museum also has a white specimen, A4837 (male), found at Busselton in June, 1937, and a breeding bird with whitish head and neck, A5076 (male), caught at Australind by Mr. E. Matters in September, 1939. A description of this bird is given in an appendix.

Another bird, A5183, with dark crown, grey face and white chin and throat was received on 25th September, 1940, from Mr. A. V. Newman of Cape Leeuwin, who killed it after it had attacked two ladies on the beach. As the internal organs had been removed the sex could not be determined. Like A5076 it had a limy incrustation at the base of the upper mandible. It has been stated that this is a characteristic of female birds, yet A5076 was sexed by the Museum taxidermist, Mr. O. H. Lipfert, as a male.

Daption capensis (Linne). Cape Petrel.

This striking bird, though known to be common to the south of Australia, was first added to the list through the late F. L. Stronach's discovery of a male at Cottesloe on 23rd June, 1920. Since then no less than 24 specimens have reached the Museum from local beaches, one storm in 1939 yielding no less than eight. Both white-chinned and black-chinned birds were represented.

Halobaena caerulea (Gmelin). Blue Petrel.

The first local specimen A2299 was found at North Fremantle by Mr. B. R. Lucas on October 26th, 1921, a second skin has the data A4669 (male) Leighton, September 24th, 1935, Kevin Jeffrey. The bird's presence is also noted by F. Lawson Whitlock and Dr. D. L. Serventy. The bird is rare in collections.

The Blue Petrel resembles the Prions from which it can be distinguished by its larger size and the white tips to the tail feather. There is also an absence of the pectinations so highly developed in the upper mandible of the Whale bird.

Genus **PACHYPTILA**.

The Prions have long been recognised as a most puzzling group of birds, superficially, except for the shape and structure of the bill, they are very much alike, forming a series which might logically be included in one species as was suggested by Loomis. However, the study of birds from different nesting sites suggests that the matter is not so simple. The most recent reviewer, R. A. Falla (1940) recognises the following species and subspecies from localities in the Southern Indian Ocean from which the birds on our local beaches may be presumed to have travelled although there is always the possibility that birds from other nesting sites are present as they are known to range far afield.

Pachyptila vittata macgillivrayi (Mathews). St. Paul Island.

Pachyptila salvini salvini (Mathews). Marion Island.

Pachyptila salvini crozeti (Mathews). Crozet Islands.

Pachyptila (Heteroprion) desolata desolata (Gmelin). Kerguelen, Macquarie Islands. Antartica (Cape Denison).

Pachyptila (Heteroprion) belcheri (Mathews). Kerguelen, Falkland Islands.

Pachyptila (Pseudoprion) turtur fallai (Oliver). ? Southern Indian Ocean.

Pachyptila (Pseudoprion) crassirostris eatoni (Mathews). ? Kerguelen.

One hundred and thirty-five of these little birds have reached the Museum from local beaches since 1912 suggesting that along the extensive coast line of South-Western Australia thousands must be cast up every year.

The great majority of our material falls within the limits of *P.salvini* and *P.desolata*, broad-billed *P.vittata* and small-billed *P.turtur* being rarely met with. Until we know more about the nesting sites of prions and the changes that take place with increasing age the separation of forms by the size, shape and structure of the bill alone will increase not diminish the confusion existing today.

***Puffinus (Ardenna) carneipes* (Gould).** Fleshy-footed Petrel.

This resident of the southern coast though migrating north and south each year is rarely cast up on metropolitan beaches. The Museum records are confined to A999 found at Cottesloe, May 13th, 1916, and A3861 caught alive at Como on the Canning River, May 14th, 1931. Mr. F. Lawson Whitlock mentions that a number "came ashore during October both locally and at Bunbury."

It would seem that the northward journey is undertaken in October and the movement south in May. Gould's type locality is "islands off Cape Leeuwin."

***Puffinus (Thyellodroma) pacificus chlororhynchus* (Lesson).** Wedge-tailed Petrel.

This petrel, locally known as the Mutton Bird, breeds on Rottnest where its burrows are tunnelled in the sandy soil near Point Peron. It also inhabits Carnac. Specimens from both islands are in the Museum collection. The following may be regarded as local victims of the storm A3858 Welshpool Road, 10 miles east of Perth, May 12th, 1931, A4485 (male) North Fremantle, September 19th, 1934, A5191 Cottesloe, October 8th, 1940, A5192 Cottesloe (female), October 8th, 1940.

The islands off Fremantle appear to be the southern limit of the bird's breeding range on the west coast of Australia.

Puffinus assimilis glauerti* (Math.). Little Shearwater.

This little bird every year falls a victim to winter gales. It is known to breed upon the Houtman's Abrolhos, and is probably the form recorded as breeding on Rottnest Island by Angus Robinson. Twenty-five local specimens have reached the Museum since 1912, a very high figure when it is recalled that local species rarely succumbed during the gales, probably because their knowledge of the locality enables them to find adequate shelter.

***Pterodroma lessonii lessonii* (Garnot).** White-headed Petrel.

The first record of this rather rare petrel is A818 found at Cottesloe Beach by W. B. Alexander in August, 1915. Additional skins in the collection are A2531 found at Cottesloe, October 15th, 1922; A4456 from Leighton, July 6th, 1934, and A5005 from North Beach, June 30th, 1939. The stomach of the last bird contained a cephalopod beak and the remains, shell and flesh of a spirula.

*Mathews, G. M., *Emu*, Vol. XXXVI., April, 1937, p. 278.

Pterodroma macroptera alban (Math.). Grey-faced Petrel.

This bird which breeds on certain islets off our south coast occasionally appears as an ocean derelict on local beaches. The Museum skins are A2946 (male) Cottesloe, July 9th, 1928, A5060 (female) Cottesloe, August 28th, 1939, A5187, Cottesloe, October 7th, 1940. In addition there are A4257, Maddington, October 31st, 1932, and A3625 (young female) Northam, November 14th, 1929.

The local bird is intermediate between the typical bird from Kerguelen described by Falla and the sub-species *gouldi* from Eastern Australia and New Zealand in the amount of grey on the face and measurements.

Pterodroma mollis mollis (Gould). Soft-plumaged Petrel.

This attractive bird was first added to the local list through the discovery of a specimen on the beach at Cottesloe by the late F. L. Stronach on August 8th, 1919, A1646 (female). Other specimens from Cottesloe in the Museum are A1767 (female) May 29th, 1920, A2588 August 25th, 1923, and A5042 (female) August 21st, 1939; A5064 (female) was found at North Fremantle, August 28th, 1939. In addition there are other records of material preserved elsewhere.

Pterodroma lugens (Kuhl).^{*} Kerguelen Petrel.

This bird distinguishable from all other dark petrels as yet known to have been found locally by its smaller size and dark grey plumage was first recorded from Australian beaches by F. Lawson Whitlock in 1927, the specimen having been found at Cottesloe Beach on June 3rd of that year.

The Museum has a skin from Leighton A4672 (female) collected September 24th, 1935, and a skull A4679 from remains found on the same beach a month later.

Further finds are recorded by Dr. Serventy.

Oceanites oceanicus parvus (Falla). (?) Wilson Storm Petrel.

Two Wilson Storm Petrels were collected on Cottesloe Beach by Dr. D. L. Serventy on May 29th, 1926. These are the only local records supported by material. The male A2790 in all its measurements, except the tail, is close to the type of Falla's sub-species from Royal Sound, Kerguelen, it also has the "less defined pale edging on the greater wing coverts." The female A2791 is somewhat larger and has well defined whitish edges to some of the greater wing coverts as in the typical form. The above name is therefore given with some hesitation.

Pelagodroma marina dulciæ (Math.). White-faced Storm Petrel.

Now and again specimens are found on local beaches after stormy weather. The Museum records are: A1631, A1644, A1650, A2960 and A5186 from Cottesloe and A2948 from Fremantle. The bird is known to breed on islets off the coast.

Phæthon rubricauda westralis (Math.). Red-tailed Tropic Bird.

This northern bird at times visits the Perth area. On December 30th, 1928, a couple flew so low in a southerly direction at Cottesloe that their characteristic tail feathers could be recognised with the naked eye. Several

^{*}*Pterodroma brevirostris* (Lesson) auct.

others have been seen since that date. The Museum has a specimen A2754 shot at Gingin and a second A5092 caught whilst incubating its eggs on the beach at Busselton. I have also had a report that a bird had been seen flying low at Albany "five or six years ago."

Morus serrator serrator (Gray). Australian gannet.

A few individuals make their appearance in Gage Road and Cockburn Sound every winter. The local specimens in the collection are A4168 found on the Fremantle Railway Bridge in June, 1932, and A4851 from North Fremantle, July, 1937. There is also a mounted specimen C461 found at Cottesloe in 1896.

Fregata minor minor (Gmelin). Greater Frigate Bird.

A specimen, A1252 caught alive on Mount's Bay Road on May 4th, 1917, is the only evidence of the presence of the species as a wanderer near Perth.

Catharacta skua lönnbergi (Math.). Brown Skua.

Two or three birds can usually be seen off Fremantle in the winter months. The bird might be mistaken for a large mutton bird but can always be distinguished by its heavy body and more laboured flight. When closer the white patch on the wings acts as a good identification mark. It is a scavenger and usually hunts its own food though it may harass other sea birds but not to the same extent as the Arctic or Parasitic Skua. The Museum possesses a single specimen A2366 secured out at sea.

Stercorarius parasiticus (Linne). Arctic Skua.

The Arctic or Parasitic Skua which breeds in the northern hemisphere is a regular summer visitor to our shores and can often be seen pursuing the twisting and turning Silvergull or Tern until the recently caught fish is disgorged. Both light and dark phases are represented every year. A character of the species is the somewhat elongated *not twisted* central tail feathers. F. Lawson Whitlock records that on one occasion he found an exhausted bird on the beach at Cottesloe, which, however, managed to elude capture.

Stercorarius pomarinus (Temminck). Pomarine Skua.

The Pomarine Skua is another northern visitor to Gage Roads in summer time. It is smaller than the Brown Skua and somewhat larger than the Arctic Skua from which it can be distinguished at close quarters by the curious twist in the somewhat elongated central tail feathers. Light and dark phases occur.

Observations made from the "Zephyr" when travelling to or from Rottnest indicate that it is rarer than the Parasitic Skua.

***Sterna dougallii gracilis* (Gould). Roseate Tern.**

The Roseate Tern breeds upon the Houtman's Abrolhos. North-west gales at times bring it south, as is shown by the single specimen, A5029, in the Museum collection. The bird was found dead at Scarborough in July, 1939. F. Lawson Whitlock also records its presence at Cottesloe.

***Sterna fuscata glauerti* (Math.). Sooty Tern.**

The Sooty Tern breeds on the Houtman's Abrolhos. A specimen, A1511, obtained on the Swan River in December, 1917, is the only local material in the Museum. This bird arrives at its nesting site in September, leaving again about April.

***Anous tenuirostris melanops* (Gould). Lesser Noddy.**

This bird, which nests in great numbers on the Houtman's Abrolhos, is now and again blown into local waters and cast ashore dead or alive after severe north-westerly gales.

Specimens obtained in the vicinity of Perth and now in the Museum collection are A2689, A2696, A2789, A4805, A4996, A5001, A5065, and A5070.

F. Lawson Whitlock also records the species from Cottesloe.

APPENDIX.

DESCRIPTION OF AN ADULT *MACRONECTES GIGANTEUS* FROM AUSTRALIND, NEAR BUNBURY.

This specimen, A5076, is of interest as it is the first representative of the mature or brownish-grey colour phase with white head and neck to reach the Museum. This bird belongs to the "intermediate phase with white head and neck." The back from the zone of transition at the neck to the tail is uniform greyish or dark-brownish grey according to the lighting, the feathers all having blackish shafts and in most cases lighter edges. The tail is lighter with less brown and the under tail coverts whitish. On the head the forehead is white, the crown mottled, some of the feathers being grey at the tip, the hind neck pale almost white, sides of the face white with a few pale grey feathers on the cheeks and near the gape, chin and throat white, the feathers in these parts being white to the base. The under parts are mottled greyish, the individual feathers being either uniform greyish or becoming darker towards the tip with, in many instances, brownish-grey edges, probably due to wear. In all cases the shafts are light, almost white. Feathers on the legs greyish, almost white towards the base. In general appearance the bird seems to resemble those illustrated by Falla (B.A.N.Z. Antarctic Research Expedition, Vol. II., Birds, figure 133, right foreground, Caroline Cove, Macquarie Island).

The soft parts of the bird when received were:—Iris dark, feet reddish slate, webs brownish-grey, claws horn, bill whitish horn with limy incrustation at the base of the upper mandible. Measurements taken:—Length 932, wing 520, tail 216, tarsus 101, culmen 99, width 33.5, depth 38.5. Sex—male. (O.H.L.)

KEY TO THE SPECIES.

1. Flightless birds	2	
Active flying birds	3	
2. Large birds, white ring round eye ...	<i>Pygocelis adeliae</i> (Hombr. & Jacq.)	
Medium sized birds with yellow crests	<i>Eudyptes crestatus moseleyi</i> (M. & I.)	
Small birds yellow crests absent ...	<i>Eudyptula minor woodwardi</i> (Math.)	
3. Nostrils at the end of a longer or shorter tube ... ..	...	4
Nostrils normal ... ..	...	22
4. Size large (Albatrosses and giant petrel)	...	5
Size smaller (Petrels, Prions, Storm petrels) ... ..	...	9
5. Tube extending almost to the tip, bill heavy	<i>Macronectes giganteus</i> (Gmelin)	
Nasal tubes short ... ..	...	6
6. Size large, wing spread to 12 ft. or so ...	<i>Diomedea exulans</i> L.	
Size smaller, wing spread to 8 ft. or so ...	7	
7. Culminicorn* and latericorns in contact behind the nostrils	<i>Diomedea melanophrys</i> (Temm.)	
Culminicorn and latericorns <i>not</i> in contact behind the nostrils	8	
8. Culminicorn broad, rounded basally ...	<i>Diomedea chrysostoma</i> (Forster.)	
Culminicorn narrow, bluntly pointed basally	<i>Diomedea chlororhynchos</i> (Gmel.)	
9. Blue-grey above, white below	10	
Blackish above, white below	16	
Dark brown or dark grey above and below	18	
10. Tail broadly tipped with white ...	<i>Halobaena caerulea</i> (Gmel.)	
Tail broadly tipped with black ...	<i>Pachyptila</i> species	11
11. Black tip to tail wider (40 mm.), bill less than 25 mm. in length	<i>P. (Pseudoprion)</i>	12
Black tip to tail narrower (to 30 mm.), bill more than 25 mm. in length ...	...	13
12. Width of bill $10\frac{1}{2}$ to $12\frac{1}{2}$ mm.	<i>P.Ps. crassirostris</i> (Math.)	
Width of bill 8 to 11 mm.	<i>P.Ps. turtur</i> (Kuhl.)	
13. Lamellae in upper bill well developed, visible when the bill is closed ...	<i>P. Pachyptila</i>	14
Lamellae rudimentary <i>not</i> visible when the bill is closed	<i>P. (Heteroprion)</i>	15
14. Width of bill 18 mm. or <i>more</i> , length 33 mm. and more	<i>P.P. villata</i> (Forster)	
Width of bill 17 mm. or <i>less</i> , length to 33 mm.	<i>P.P. salvini</i> (Math.)	
15. Width of bill 12 to 15 mm.	<i>P. (Heteroprion) desolata</i> (Gmel.)	
Width of bill 10 to 12 mm.	<i>P. (Heteroprion) belcheri</i> (Math.)	
16. Head dark grey, back white with black blotches	<i>Daption capensis</i> (L)	
Head white, back grey, size large ...	<i>Pterodroma lessonii</i> (Garn.)	
Head and back dark brownish-grey, size medium	<i>Pterodroma mollis</i> (Gould)	
Head and back dark, below white, size smaller ... ..	...	17
17. Head and back blackish, face white ...	<i>Puffinus assimilis</i> (Gould)	
Head and back dark slate, face white, dark stripe below the eye to the ear coverts	<i>Pelagodroma marina</i> (Lath.)	
18. Size small approximating a willy wagtail, upper tail coverts white	<i>Oceanites oceanicus</i> (Kuhl.)	
Size larger approximating a magpie, upper tail coverts like the back ...	...	19
19. Bill long and slender	<i>Puffinus</i>	20
Bill short and deep	<i>Pterodroma</i>	21
20. Sooty black, tail square	<i>Puffinus carneipes</i> (Gould.)	
Sooty brown, tail wedge-shaped ...	<i>Puffinus pacificus</i> (Gmelin).	

21.	Sooty black, larger	...	...	...	<i>Pterodroma macroptera</i> (Smith)	
	Slaty grey, smaller	...	...	...	<i>Pterodroma lugens</i> (Kuhl.)	
22.	Plates of upper bill distinct	...	...	...	...	23
	Plates of upper bill fused more or less completely	...	...	...	...	25
23.	Size larger, brown with white wing patch				<i>Catharacta skua</i> (Brunn)	
	Size smaller, usually dark above and paler below †	...	...	...	...	24
24.	Central tail feathers elongated, twisted				<i>Stercorarius pomarinus</i> (Temm.)	
	Central tail feathers elongated, not twisted	...	...	...	<i>Stercorarius parasiticus</i> (L.)	
25.	Bill long, slender, hooked at the tip	...			<i>Fregata minor</i> (Gmelin)	
	Bill shorter, stouter, not hooked at tip	...	...	...	...	26
26.	Size larger	...	...	...	...	27
	Size smaller	...	...	...	...	28
27.	Middle tail feathers elongated, narrow, red	...	...	...	<i>Phaethon rubricauda</i> (Boddaert)	
	Middle tail feathers, not elongated, not narrow, not red	...	...	...	<i>Morus serrator</i> (Gray)	
28.	Dark with whitish head	...	...	...	<i>Anous tenuirostris</i> (Temm.)	
	Dark upper parts, whitish below	...	...	...	<i>Sterna fuscata</i> (L.)	
	Upper parts pale grey, under parts with rosy suffusion in life	...	...	...	<i>Sterna dougallii</i> (Montagu)	

* The upper bills of Albatrosses, Mollymawks, Prions and Petrels consist of three plates, the culminicorn terminating in the nail or dertrum and flanked on either side by a latericorn. The arrangement of these plates is important, in *D. exulans* and *D. melanophrys* the culminicorn is in contact with the latericorns behind the nostrils whilst in *D. chlororhynchos* and *D. chrysostoma* it is separated from them. In *D. chrysostoma* the culminicorn is broad and rounded basally but in *D. chlororhynchos* it is narrow and bluntly pointed.

† A darker phase in the species of *Stercorarius* also occurs off our coast.

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