

## VISITING SPECIES.

			Bass St. and S. Pacific. Tasmania. Bight. S. Indian.			
<i>Procellaria cinerea</i> ..	..	..	—	×	×	×
<i>Priocella antarctica</i> ..	..	..	—	—	×	×
<i>Pterodroma inexpectata</i> ..	..	..	—	×	—	—
<i>Pterodroma melanopus</i> ..	..	..	—	×	—	—
<i>Pterodroma lessonii</i> ..	..	..	×	×	×	×
<i>Pterodroma mollis</i> ..	..	..	—	—	×	×
<i>Macronectes giganteus</i> ..	..	..	×	×	—	×
<i>Petrella capensis</i> ..	..	..	—	×	×	×
<i>Pachyptila cœrulea</i> ..	..	..	—	×	×	×
<i>Pachyptila vittata</i> ..	..	..	×	×	—	×
<i>Pachyptila desolata</i> ..	..	..	×	×	—	×
<i>Diomedea exulans</i> ..	..	..	×	×	×	×
<i>Diomedea chionopectera</i> ..	..	..	×	—	—	—
<i>Thalassarche melanophrys</i> ..	..	..	×	×	×	×
<i>Thalassarche chrysostoma</i> ..	..	..	×	×	—	×
<i>Thalassarche chlororhynchus</i> ..	..	..	×	×	×	×
<i>Phœbetria fusca</i> ..	..	..	—	×	×	×
<i>Phœbetria palpebrata</i> ..	..	..	—	—	×	×

The following species, which have appeared in lists of Australian birds, are rejected for want of evidence as to their occurrence:—*Fregetta leucogaster*, *Puffinus leucomelas*, *Puffinus lherminieri*, *Procellaria æquinoctialis*, *Pterodroma brevipes*, *Pterodroma neglecta*, *Pagodroma nivea*, *Thalassoica antarctica*, *Diomedea epomophora*, and *Diomedea albatrus*.

There remain 11 breeding species and 26 visiting species.

In conclusion, I would like to express the deep obligation of all Australian workers on these birds to Mr. G. M. Mathews, who, in his "Birds of Australia," has brought together such a valuable amount of information concerning the literature of birds of this order.

## Penguins.

BY R. STUART-SUTHERLAND, R.A.O.U., INVERCARGILL, N.Z.

### PART II.—PENGUINS OF THE AUSTRALASIAN REGION.

ELEVEN species of Penguins belonging to five genera (of the recognized six) are found in this region, the most numerous being probably the members of the genus *Eudyptula* (the Blue and Little Blue Penguins). The genus *Catarrhactes* is, however, the most interesting, on account of the large number of species, and that a pronounced melanistic form occurs, as well as a geographical variety. All the descriptions are taken from actual specimens (dried skins), and the measurements from the flesh, unless otherwise stated.

#### GENUS *Aptenodytes*.

"Bill longer than the head, rather slender; lower mandible



covered with a smooth, naked skin ; tail very short ; tarsi covered with short feathers."—Buller.

*Aptenodytes pennanti*. King Penguin.—The upper surface, including the head, throat, and fore neck, bluish-grey, becoming darker on the hind part of the neck. A patch of golden yellow on each side of the nape, which is continued downwards, to meet on the front of the neck, the yellow colour gradually fading away into the white of the upper breast. The under parts white or whitish-cream ; bill black, save the base of the lower mandible, which is pinkish ; legs and feet black. Length very variable (dried skins)—34 to 37 inches ; wings, 10.75 to 11.25 inches ; bill, 4.2 to 4.5 inches. Egg, 4.0 to 4.3 inches, tapering at one end ; colour—inside shell beautiful pale blue, outside chalky-white.

My acquaintance with this variety is only in zoological gardens, museums, and the examination of skins (adults and young) and eggs. Hutton and Drummond give the Macquarie Islands only as the habitat. Sir Douglas Mawson says :—"The site of the rookery (Macquaries) is a stony flat about one hundred yards from the water's edge, and here are collected five or six thousand birds—all that now remain on this island." Dr. Kidder states that it breeds at Kerguelen Island, but he secured no eggs there. One at least of the adult skins I have examined was secured at Stewart Island, where Buller says it breeds. It does not do so now, although it has been reported by some, who mistake the Yellow-eyed Penguin for this species. Stragglers are said to occur in the most unlikely places. I have even been told that it is occasionally seen at and around Taiaroa Heads, but I did not meet with it during a two and a half years' stay in that district. During the months of November and December, when, according to locality, the nesting season commences, only one egg is laid, which is incubated in a sort of pouch formed by a fold of heavily-feathered skin completely covering the egg when it is rested on and between the feet. The period of incubation is said to be 35 days. The chick is covered with a greyish-brown, coarse, furry growth, and looks far larger when three or four months old than an adult. The full plumage, with the characteristic yellow patches, is not assumed until the second year.

#### GENUS *Pygoscelis*.

Bill moderate both in length and stoutness ; lower mandible more or less feathered. Tail long, of 12 to 16 feathers. Upper tail coverts short.

*Pygoscelis papua*. Rock-Hopper, or "Johnny" ("Gentoo Penguin" of Dr. Bruce).—The upper plumage slaty-grey, with the head and neck darker. The summit of the head marked with a conspicuous white patch. Bill dark reddish. Eye brown. Length variable—29 to 31 inches ; wing, 8.8 to 9.3 inches ; bill, 2.9 to 3.2 inches ; tail, 1.3 inches. Egg roundish in shape, 2.6 to 2.9 inches in length ; colour dark sea-green inside, chalky-white outside, though generally stained with soil and guano.



This Penguin, even as a straggler, is not seen on the New Zealand coast, and is not mentioned by Buller in his manual. The principal rookeries are on the Macquarie Islands, but the greatest numbers are found on the South Orkney and South Shetland island groups. Bruce says it was estimated that upwards of one hundred thousand "Gentoos" nested in the Scotia Bay rookeries in 1903. On the Macquaries one or sometimes two eggs are laid during October or November in a nest formed of a few stones, but little or no attempt is made at nest-building proper. The young, after the downy stage is past, are similar in plumage to the adult save that the throat and chin are white.

GENUS *Catarrhactes*.

Bill moderate in length, but very stout; sides of the upper mandible much swollen near the base. Tail long, of 14 or 16 feathers. Upper tail coverts moderate to short.

*Catarrhactes pachyrhynchus*. Thick-billed Penguin.—Upper surface of the body bluish-black, darker on the head and throat; a plume of golden-yellow feathers over each eye. Hutton says:—"Posterior margin of the flipper with a very narrow white band of one row of white feathers only." Eye brown. Feet pinkish-flesh colour above, black beneath. Length fairly constant—28 inches; wing, 8.4 to 9.1 inches; bill, 2.8 to 3.0 inches; tail, 1.2 inches (measurements taken in the flesh). Egg varying in shape from long and tapering to short and globular; size, 2.3 to 3.3 inches, the average being 2.8 inches; colour—chalky outside, very pale blue inside.

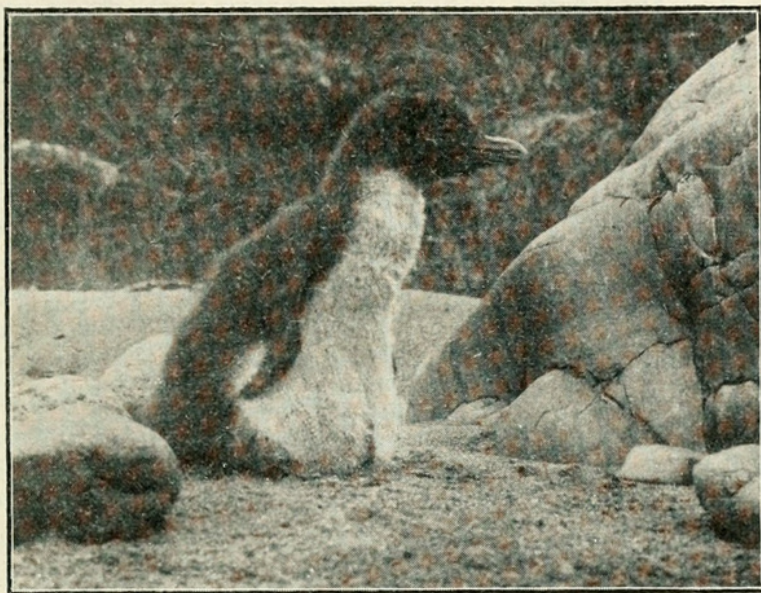
This showy bird breeds in small colonies in caves at Preservation Inlet. Upwards of sixty were found nesting in one cave, and numerous observations and measurements were made of the adults, young, and eggs. Several very interesting trips were made, although the floor of the cave was coated with several inches of slimy mud, and the walls and roof dripped horrible ooze. The stench was awful, and breathing somewhat difficult, a match or lantern burning with a dull yellowish flame. The first trip was made on the 16th August, 1919, and only eggs were seen, some heavily incubated. On the first fine day following—namely, the 22nd—we were lucky enough to strike a pair of chicks at the moment of chipping the shells. One was taken and carefully examined, and I concluded that the young are born blind. The measurements are as follows:—Length, 6.1 inches; wing, 1.4 inches; and bill, 0.6 inch. The nail on the upper surface of the mandible is ivory-white, and both mandibles are tipped with reddish. There is a decided unfeathered tract down the centre of the lower breast and abdomen.

To be sure that the young are born blind, another visit was undertaken six days later, and a chick then approximately six days old was examined and found to be still blind. Bad weather—heavy gales and hail squalls—then came on, and it was impossible to go again in a small flat-bottomed boat for nearly a fortnight,



when all the chicks were too far advanced, and it was then too late to make further observations on this very interesting point.

Hutton says that in the young the chin and throat are greyish-white; but after examining about three dozen young ones I am able to say that this is wrong, as in all those seen these parts were decidedly a dull black (see photograph of young one about ten days old).



Young of the Thick-billed Penguin, showing black chin and throat.

No trace of any nest—not even a stick, stone, or hollow—was found. The eggs were in some instances in an inch of mud, and the sitting birds, bespattered and stained, were maintaining positions as nearly upright as possible. One and two eggs were the usual clutches, although one was seen with three, one of which was very large (3.3 inches in length), and the others very small (2.3 and 2.4 inches respectively). It was interesting to watch the parent carrying the chick in her beak to escape the human marauders. One was reminded of a cat carrying a kitten.

By the end of September the cave was deserted, and no more notice was taken of it; but when passing on our way to the fishing grounds on 13th December, 1919, nearly four months after the first visit, the loud, hurried, screaming cries of Penguins were heard, and we put ashore to investigate. About twenty of these birds were found, but our greatest discovery was that of eggs. Eggs in all stages of incubation, judging by the feel, were strewn in every direction—in the mud, in crevices in the rocks, and under ledges—in every case plentifully spattered with the sticky mud. This is the first time that the fact of Penguins nesting twice in one year has been recorded, as far as I can learn. I was much struck with the grand condition of the birds observed, and again noted the fact that absolutely no nest of any description



was attempted, the eggs in every instance being laid and incubated in an inch or so of mud. Nest-forming material of every sort—fine sticks, small stones, fern and other leaves—were obtainable by the birds at the entrance of the cave, if required.

[Since writing the above a most thorough search of the cave was made with a powerful light, and in one very inaccessible corner, previously overlooked, two nests, one of which was occupied, were found formed of short sticks. This corner was fairly dry, and the sticks, which were coated with dried mud, were from 6 inches to a foot in length and a quarter to a half inch in thickness. Each nest was composed of about two handfuls of such sticks. A very careful examination revealed the fact that these were the only formed nests in the whole colony of approximately 60 birds.]

*Catarrhactes filholi*.\* Campbell Island Penguin.—The upper plumage bluish-black, becoming darker on the hind neck, crown, and throat. Yellow crest composed of fine feathers which spread fan-wise, the inner ones on both sides inclining towards centre of top of the head. The crest commences behind the termination of the culmen, and not between the nostrils and the end of the culmen, as in the other crested varieties. Bill brownish-red; feet flesh-colour; eye brown. Length, 23 inches; wing, 5.7 inches; bill, narrow, 2.0 inches; tail, 1.1 inches. The egg is very pale blue in colour, and is comparatively large. One specimen measured 3.3 inches. This may, of course, be abnormal.

Although said to breed only at the Campbell and Auckland Islands, this Penguin is occasionally seen at Preservation Point, and I believe stragglers breed here in small numbers. It is readily distinguished on shore by the peculiar form of its crest.

*Catarrhactes chrysocome*. Yellow-crested Penguin (*Eudyptes chrysocomus* of Buller).—Throat and the hind part of neck, with the sides of the face and crown, black, the remainder of the upper plumage bluish-black; under surface white. From the base of the upper mandible on each side a broad line of canary-yellow passes over the eye, and is continued beyond into a crest of fine filamentous feathers. Edge of flipper white. Eye reddish-brown. Length, 26 inches; wing, 8.3 inches; bill, 2.6 inches; tail, 1.6 inches. Egg very pale blue, 2.4 to 2.8 inches in length.

This striking Penguin breeds on most islands in the Southern Ocean, but principally on the Snares, Aucklands, Campbells, and Macquaries. It is replaced on the Bounty and Antipodes Islands by a slightly larger geographical sub-species known as *C. sclateri*.

*Catarrhactes sclateri*. Great-crested Penguin.—Similar to *C. chrysocome*, save that the crest is much reduced in length and the wing is more broadly edged with white in the majority of birds. Length, 29 inches; wing, 9.2 inches; bill, 2.9 inches; tail, 1.7 inches. Egg pale bluish inside, chalky outside, 2.7 to 3.1 inches in length.

\* Some authorities claim this is synonymous with *C. chrysocome*.—EDS.



This species forms moderately large rookeries, differing thereby from *C. chrysocome*, which nests only in very small colonies.

A melanistic form of probably *C. pachyrhynchus* or *C. chrysocome* also occurs, which is listed by many writers as a separate species under the title of *Catarrhactes (Eudyptes) atrata*. I think it is generally admitted that all melanistic forms differ somewhat in structure from their normal variety, and this is no exception. Prof. Evans says in his opinion a form of *E. vittata*, but this can hardly be so, if due regard is paid to the thin broken line of yellow running from the bill over the eye, and produced posteriorly into a long yellow crest.

*Catarrhactes atrata*. Black Penguin.—The upper surface dark bluish-black, with the sides of the head and throat jet black; under surface also jet black. Crest yellow, inclining to orange. Bill very massive and deep, light brownish-red. Feet black excepting the toes, which are dark reddish-brown; hind toes very much reduced. Length (dried skin), 27 inches; wing, 7.6 inches; bill, 2.7 inches.

Specimens are very rarely taken at the Snares and Campbell Islands, but I think that if systematic searches were made amongst the nesting colonies of Crested and Thick-billed Penguins, probably many more would be secured. I have no record of any albino forms in this genus.

*Catarrhactes schlegeli*. Royal Penguin.—The upper plumage dark slaty-grey; under surface, including the throat, white, sometimes marked with isolated slaty-grey feathers. The yellow eye stripes, which meet on the forehead and form a crown rather than a crest, are continued backwards and very finely streaked with black. The gape pale yellowish. Bill reddish-brown. Length very variable, ranging from 26 to 30 inches; wing, 6.5 to 8.2 inches; bill, 2.6 to 2.9 inches; tail, 1.4 inches. Egg chalky white, 3.1 to 3.4 inches.

As a straggler I have on numerous occasions observed this variety on the beaches around Taiaroa Heads (Otago Peninsula). The majority of the specimens seen, however, were injured in some manner. Of three seen on one day, two had injured legs and one had a damaged wing. This is peculiar, and would give one the impression that the birds only landed when absolutely compelled to do so. An injured bird, although repeatedly placed in the water, always returned to the same spot. One specimen had scraped a hollow in the sand just a few feet above high water mark, and allowed itself to be handled without the least movement. Its leg had been injured in some manner. When placed in the water it swam away, always below the surface, but within one hour had returned to the hollow in the sand. This happened repeatedly, but our game was cut short by a sportsman, who despatched the dangerous beast with a military rifle at close range. I have no records of its breeding on the New Zealand coast, the principal rookeries being on the Macquarie and Campbell Islands.



*Catarrhactes vittata*.\* Southern Penguin.—This Penguin I have seen only as a museum exhibit. Sir W. L. Buller's description is as follows:—" *Eudyptes vittata*.—Top of head brown, inclining to bluish on the front, and passing into pale brown towards the back of the head. Sides of the head and throat brown, with a broad superciliary white streak; upper part of neck and back brown, inclining to bluish in places; under surface pure white. Bill reddish-brown. Feet red, with blackened webs. Length, 28 inches; wing, 7.1 inches; bill, 2.32 inches (culmen 2.1). Habitat, southern extremity of New Zealand."

GENUS *Megadyptes*.

Bill moderately long, not so stout as in *Catarrhactes*; swelling at base of upper mandible hardly noticeable. Tail short, of 20 feathers.

*Megadyptes antipodum*. Yellow-eyed Penguin.—The crown of the head light yellow very finely streaked with black, margined with a quarter-inch band of clear yellow without streaks. The throat and face on the sides lightly tinged with yellowish-grey, becoming more yellow below the gape. The upper surface dark slaty-grey; under surface white. Bill reddish-horn. Feet large proportionally, fleshy-pink in colour. Eye lemon yellow. Length variable—29 to 31.5 inches; wing, 8.7 to 9.1 inches; bill, 2.9 to 3.2 inches; tail, 1.3 inches. Egg white, 3.1 to 3.5 inches.

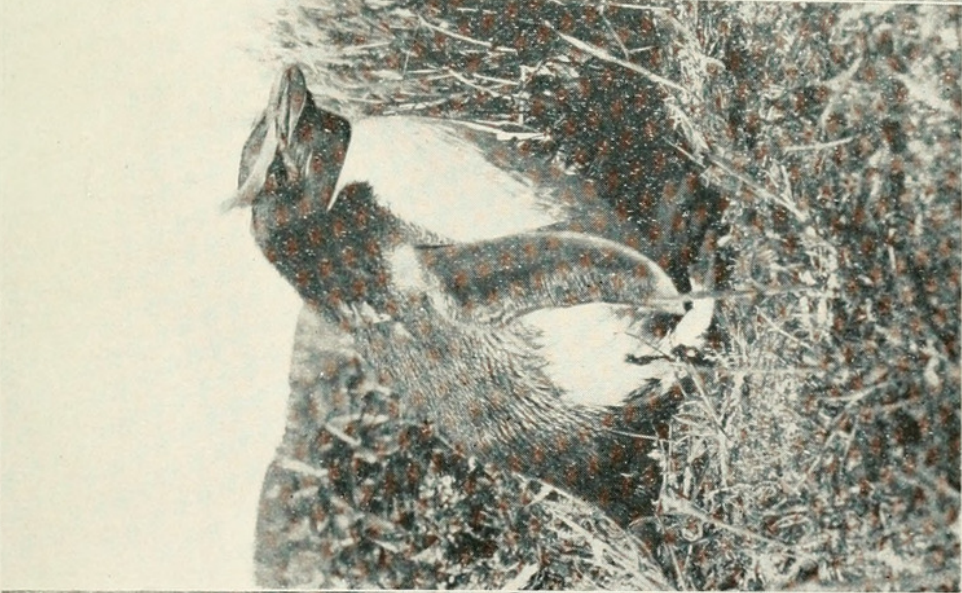
This Penguin is more often wrongly named than any other. "Royal," "King," "Crowned," and "Crested" are some names so applied. The eye of this bird is peculiar, the power of sight being apparently confined to the lower portion, if notice is taken of the remarkable manner of holding the head. Especially is this noticeable if the object looked at is on a level or higher than the bird's head. The nesting season commences in September at Stewart Island, where the nest is formed of sticks and lined with leaves, generally on the outskirts of the bush at the foot of a tree or under a fallen trunk. The nest is better made than in any other variety, and one—but sometimes two—chalky-white eggs are laid. The period of incubation is said to be 32 days. Never breeding on the mainland, the principal rookeries—if a score or so birds nesting together can be called a rookery—are located at Stewart Island, the Snares, Auckland, Campbell, and Macquarie Islands. As a straggler, I have on several occasions observed this species around Taiaroa Heads, and the above description and measurements are taken from a specimen secured there. The egg is described from specimens taken at the Snares and Stewart Island.

\* Through the kindness of Prof. Hutton, I have received a minute description and photographs of the typical specimen of *E. vittatus* in the Canterbury Museum, Christchurch. There can scarcely be any doubt that the species is founded on a worn and faded example of *C. pachyrhynchus*.—W. R. Ogilvie-Grant, "Cat. of Birds Brit. Mus.," vol. xxvi., p. 638.

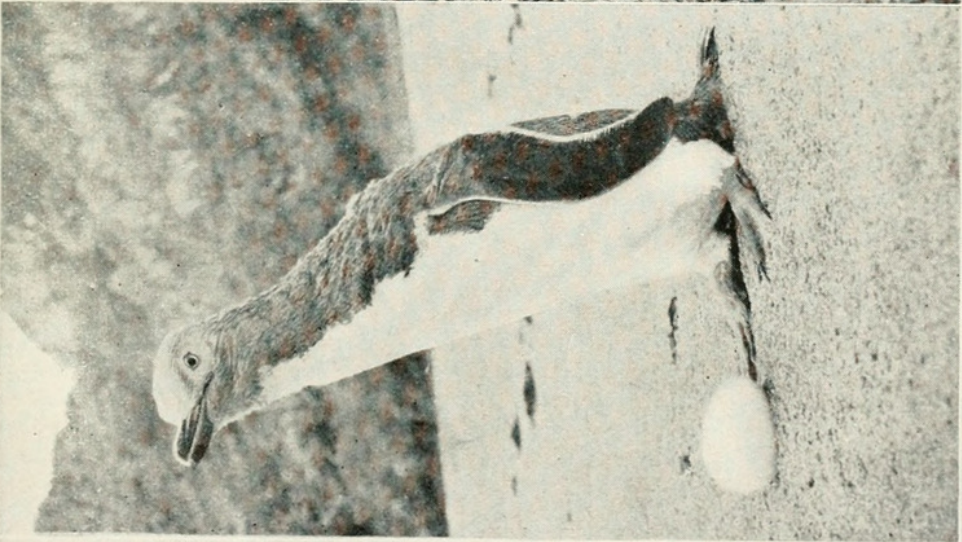




3. Blue.



2. Thick-billed.  
Penguins.



1. Yellow-eyed.







GENUS *Eudyptula*.

Bill short and stout. Tail very short, almost wholly concealed by the upper tail coverts.

*Eudyptula minor*. Blue Penguin.—Upper plumage variable, ranging from pale metallic blue to dull bluish-grey; each feather streaked centrally with black. Under surface up to the throat and chin glossy white; the chin is sometimes pale greyish. The flipper edged on the posterior margin with white. Eye silvery-grey. Length fairly constant—17.5 inches—but specimens measure from 16.5 to 18.5 inches or more; wing, 5.75 inches; bill, 1.9 inches. Egg white, roundish; 2.2 to 2.5 inches in length.

The Blue Penguin is too well known to need much special treatment. The range extends from about 32° S. latitude to some of the islands off the New Zealand coast, most numerous at the Chathams. Small numbers nest in caves and holes in Preservation Inlet, and the young are a common sight on the beaches. The foregoing remarks apply also to the beaches between Cape Saunders and Taiaroa Heads. Hutton says the female is smaller than the male, but I do not think regularly so. I have a female skin (dried) which measures 19.4 inches.

*Eudyptula undina*. Little Blue or Fairy Penguin.—Similar to the last in general appearance; the white patch formed by the under tail coverts relatively larger than in the preceding. Length, 13.6 to 14.3 inches; bill, 1.1 or 1.2 inches; wing, 4.7 to 4.9 inches. Egg similar to the above, but smaller; 1.9 to 2.1 inches.

Probably even more abundant on the coast than *E. minor*. As far as the southern portion of the South Island is concerned, I might add that it does not nest in the same cave rookeries as its larger congener, although they mingle freely at other than nesting times. However, the usual nesting-place is a burrow, which may sometimes extend 10 feet in soft soil. The two eggs are laid in November, and the young when hatched are a dingy drab colour on the back and head and a dull dirty white on the under surface.

*Eudyptula albosignata*. White-flipped Penguin.—Like *E. minor*, save that the wings are widely bordered on both edges with white; and Hutton says, "with a more or less distinct white patch near the middle of the posterior margin." Length, 17.0 inches; wing, 5.6 inches; bill, 1.8 inches; tail, 0.8 inch. Egg white; 2.1 to 2.3 inches.

When my attention was first drawn to this variety I somewhat doubted its existence, thinking that it was probably only a freak; but I had the opportunity of seeing a couple of skins and an egg in Dunedin, and am now quite convinced. I know little about this bird, which is said to be obtained only in the vicinity of Banks Peninsula. In nesting and other habits it apparently does not differ from *E. minor* and *E. undina*.





Stuart-Sutherland, R. 1920. "Penguins." *The Emu : official organ of the Australasian Ornithologists' Union* 20(2), 74–81.

<https://doi.org/10.1071/mu920074>.

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