

## ON THE BREEDING OF SOME SEA BIRDS ON THE ACTÆON AND ADJACENT ISLETS.

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On the 31st October and the 28th November last year I visited the Actæons, touching on the first occasion at Southport Island, and, on the second, at the Blanche Rock, of shipwreck notoriety. The object of my visit was to gain information on the breeding of our sea birds on these out-of-the-way islets, and the following notes purport to give an account of the nesting of the few species which were found on them. A few words descriptive of the islets may not be out of place.

Southport Island is a low, grass-covered tract, lying about half-a-mile off, and in line with the southern head of Southport. It is, taking a rough estimate, about 500 yards long by 200 broad, of an oval shape, with a tolerably regular coast-line, and rising on its southern side to an altitude of about 60 feet. This side is tolerably steep, and, in fact, almost precipitous at the western end, where there is a little reef or cove indenting the steep face to a depth of about 15 yards, its sides at the top clothed with bushes (out of which I roused a fine immature Sea Eagle, *H. leucogaster*), and at the bottom a pebbly floor, up which the water rushes as the swell rolls in to land. The northern side slopes down to a boulder-strewn shore, which becomes more rocky at the eastern point of the island. Long grass and brackens, mixed with occasional Barilla bushes, clothe the surface of the island, and snakes are said to be unpleasantly abundant on it.

To the south of the island, and standing out of deep water, is the Blanche Rock, a pinnacle of about 40 feet in height, and of very unpleasant notoriety in having been the means of sending the good ship *Blanche* to the bottom many years ago. This rock, like other isolated points not far from the land, is frequented by numbers of Cormorants, *P. leucogaster*, which breed there in company with a few small Gulls, *L. Novæ Hollandiæ*, and an occasional Pacific Gull, *L. Pacificus*.

The Actæon Islands lie four miles to the south of Southport Island, and about two from the mainland; they are divided into two groups, the southern one one and a-half miles from the northern, and called in the map the Sterile Islands, although they are locally known as the Little Actæons. There is one isle in each group, the rest being mere rocks and of small extent. The Great Actæon consists of three pear-

shaped islets, joined by narrow isthmuses, or raised pebbly beaches, and were probably, at no distant date, separated from one another. The most northerly of the three is by far the largest, measuring about 600 yards long by 300 broad, with an altitude of about 60 feet. On the east the sides are steep, but composed of deep black, guano-like mould, clothed with rank vegetation and Barilla bush. Here the Pinguin and Mutton Birds, *Puffinus brevicaudus*, breed, burrowing to a considerable depth in the soft earth, beneath the surface of which masses of tussock-grass are to be found, not yet decayed. This arises from the constant excavations made by the birds, at the mouths of which quantities of soil are thrown out year after year, resulting in the covering up of the tussocks. The two smaller islets are very low, scarcely rising above the top of the shingly beaches, and in the centre of one there is a depression. They are densely clothed with Barilla bushes, brackens, and rank vegetation of much variety, the droppings of the birds leading, of course, to this luxuriant growth.

I was unable on both trips to visit the Little Actæon Islands, owing to the heavy swell that prevailed; this is the better locality of the two for the breeding of sea-birds and was the spot where the eggs of the Sea Eagle, *H. leucogaster*, were found by Mr. Graves some years ago. The islet is very low and appears to be more shingly than the Great Actæon with somewhat less overgrowth.

The height of the breeding season in most years appears to be about the 30th of November. At that time both species of Gull and the short-tailed Petrel are breeding in the greatest numbers; though the Terns, *S. Poliocerca*, and Black Oyster-catchers, *H. unicolor*, probably nest a little later.

The following species are known to breed, or to have bred, on the islets above-mentioned:—

*HALLIETUS LEUCOGASTER*, *Gmelin*.

A nest of the grey-backed Sea Eagle was found on the Little Actæon three years ago at the end of November. The nest was a large structure of sticks and sea-weed placed on the ground. A similar position is chosen by this Eagle in the islands in the Straits where there are no trees. I have seen its nest on the Scamander River at the top of a high gum, and in the tropics it invariably builds on trees both inland near "tanks" and on the sea-coast. My observations of the eggs in Ceylon testify to the shape being variable, some being very round while others are long ovals or pointed at one end. The colour is dirty white, and by my measurements are 3·17 to 2·77 inches in length by 2·18 to 2·02 inches in breadth. I have taken several nests of this species and always found it somewhat cowardly in its behaviour,

never attempting to attack the intruder, though it will swoop down at him, delivering its hard clanking note.

*EUPHEMIA CHRYSOGASTRA*, *Latham*.

It is probable that the orange-billed Grass Parrakeet breeds on the Actæon Islands, it is always there in more or less numbers during November and December. I flushed it frequently from among the long grass and bushes, but could not find its nest. Gould was equally unsuccessful many years ago when he found it in abundance on the Island. It probably nests in holes in the ground, a very abnormal habit if it does breed there, and this fact makes it very desirable that its nesting-place should be found.

*ACANTHORHYNCHUS TENUIROSTRIS*, *Lath.*

I saw several "Spinebills" on the Great Actæons, and I have no doubt that this honey-eater breeds there.

*ANTHUS AUSTRALIS*, *Vig. and Horsf.*

The Titlark was observed on Southport and Actæon Islands and would have been breeding at that season of the year. The nest of this species, like that of all the Pipets, is a neatly formed cup-shaped structure, firmly built into a depression in the ground. It is made of grass stalks, and dry blades, and is thinly but carefully lined with hair and very fine grass, the interior measuring 3 inches across. The eggs vary from two to four (I have found a bird incubating the lesser number), and are of a greyish-white ground when fresh.

*HÆMATOPUS UNICOLOR*, *Wagler*.

The Sooty Oyster-catcher was nesting on Great Actæon on the 28th November, but I could not find its eggs. Several pairs frequented the island, which were breeding, this being easily seen by their manner, but they baffled my search for their nests. The eggs of this species are among the handsomest that are found on the Australian Coasts, the markings excelling that of other eggs in richness and beauty. The ground colour is generally rich creamy, or yellowish stony, and the markings consist of large blots and clouds of sepia black, running, in some eggs, into a hieroglyphic form either at the large end or all over the shell, over light sepia and almost grey clouds, spots, and markings. In shape they are much like the eggs of the *Laridæ*, as are all Oyster-catchers; they are very shapely ovals, narrowed at the small end, but not in any way pointed. They measure from 2·23 to 2·55 inches in length, and from 1·6 to 1·7 inches in width.

*STERNA POLIOCERCA*, *Gould*.

This handsome Tern breeds at the Little Actæon, where its eggs have been taken by Mr. Hinsby, our well-known collector.

He informs me that the nests were slight depressions among shingle, overgrown with herbage, just above high water mark, a few herbs and strips of seaweed being the only lining in the bottom. The eggs were two in number. The ground colour varies from pale yellowish stone to stony white, and the markings, which are very handsome, are hieroglyphic in character, consisting of zigzag and otherwise irregular linear blotches, slightly confluent in parts, and laid on over light inky grey or lilac streaks and spottings. They measure from 2.24 to 2.3 inches in length, by 1.52 to 1.55 inches in breadth.

In Mr. Hume's exhaustive account of the Indian Ocean representative of this Tern (*S. Bergii*, Lichtenstein), contained in Vol. iv. "Stray Feathers," pp. 473-4, he describes the eggs obtained at its great breeding haunt, the Island of Astolah, off the Mekran Coast, as extraordinarily variable, and possessing great richness in colouring. The ground colour varies from "white, greenish and pinkish white, to pale buff, pale yellowish, and again pure pale pinkish stone colour to the richest and warmest salmon pink." The markings which are deep burnt sienna and pale inky purple are either in the form of large blotches, and spots predominant at the large end or of "entirely hieroglyphic lines." Twenty-five eggs vary from 2.3 to 2.7lin., and in breadth from 1.63 to 1.78in.

#### LARUS NOVÆ HOLLANDIÆ, *Stephens.*

On the 31st October I found this species breeding at the south point of the Great Actæon. About 50 pairs were nesting, according to the habit of this Gull, close together. During the early part of the next month many more must have bred, making a large "colony," as an immense number of eggs were taken by the inhabitants of Recherche, who make an annual raid upon the unfortunate birds. The nests I found at the end of October were all fresh, so that the height of the breeding season would be about the 10th of November. They were situated under the rank herbage and thistles growing at the edge of the pebble beach, none of them being more than four yards from the margin of the vegetation. Little hollows between the rolled pebbles lined with herbage formed the nests, which were placed as near one another as a couple of feet. No nests contained more than two eggs at this time, the third not having been laid. In colouring there are three types of eggs of this gull, viz.:—yellowish, chocolate, pale earth brown, olive grey, and stone grey, the former usually possessing the heaviest markings.

An egg of the latter type before me is evenly clouded throughout the surface with two shades of rich deep sepia, over larger primary clouds of inky grey in two shades; some of the clouds are longitudinal, and others transverse. Eggs of the light type are blotched and speckled with two or three shades

of umber brown (thickly at the larger end) over softened primary markings of bluish grey in two shades. In some examples the umber markings are pale and small, and the bluish grey much washed off at the edges. In a few the umber markings take a hieroglyphic form, chiefly round the larger end, and these are the handsomest eggs. In shape the eggs of this Gull vary somewhat, and are either stumpy ovals with a broad end, pyriform ovals, or ovals regularly shaped at each end. They measure as follows:—length, from 2·02 to 2·18 inches; breadth from 1·45 to 1·59 inches.

While examining the nests, I found the birds less anxious as to their safety than some species; they flew round with querulous cries for a little while, and then settled down on the rocks close at hand with comparative unconcern.

#### LARUS PACIFICUS, *Latham.*

This Gull is a later breeder than the little species. On the 31st October there were no nests on the Islands; but on the 20th of November I learned that large numbers of eggs had been taken by the Recherche people. On the 28th, I only found two nests, as the birds had evidently been driven away from the Islands, owing to the wholesale taking of their eggs. The nests were constructed in the centre of the wild celery plant, which was growing among the smaller rounded boulders near the top of the rocky shore. The centre of the plant was trampled down into a hollow and a few tufts of grass placed in the depression, forming a nest 10 inches wide by 5 inches deep. The eggs of this species are very large and vary considerably in size and shape; they are usually broad ovals, more or less stumpy at the small end, but some have a pointed or pyriform shape. I do not observe much variation in the ground colour, which is olive grey or pale stone grey or whitish stone colour. The markings are generally small and sparingly distributed over the surface without regard to either end, and are of a pale umber brown, or light sepia in some, over brownish blue spots, blots and specks, these again overlying primary pale spots of blue grey. Occasionally eggs are found with large handsome clouds of reddish sepia, overlying faint blotches of bluish grey. A series of five vary in length from 3·0 to 2·69 inches and in breadth from 2·1 to 2·2 inches.

#### PUFFINUS BREVICAUDUS, *Brandt.*

The "Mutton Bird" is said by the inhabitants of Southport to come to the Actæon Islands in vast flocks about the 24th of November, and to commence breeding at once. On the first occasion I visited the Islands no birds were seen anywhere about the Islands; and on the second (28th November) had I not accidentally discovered a "Mutton Bird" in what I took for a Penguin's nest, I should have left with the impression

that there were none on the Island, as not a sign could be seen of any examples flying round it. At the north end, where the earth bank above the rocks is steep, and riddled with nest holes, I detected the bird in question at the end of a hole, and pulling her out, found an egg in the nest. I subsequently unearthed half-a-dozen birds from holes round the same part of the island, so that it may be inferred that a small colony were breeding there, although the probabilities were that no very great number of birds would visit the island at that late period. The holes were in some instances 6 feet deep, and in one I found both a Penguin and a Petrel, so that the latter must have appropriated the Penguin's habitation, which probably, however, was originally made by the Petrel. When molested in their holes they fight savagely, but do not utter any noise until driven out of their nest, when they utter a low querulous cry. In some nests there was a little grass, in others the egg was deposited on the bare ground. The egg of this Petrel is enormous for the size of the bird, and is a well known article of food among the Straits Islanders and people living on the coast near the bird "colonies." It is white with a chalky excrescence in some examples, though this is not rough like that of a Cormorant's egg. Examples in my collection measure from 2.76 to 2.95 inches in length by 1.78 to 1.86 inches in breadth. A bird I took from the nest proved to be a male, showing that both sexes assist in the duties of incubation. The time of coming on shore to breed is, I am told, the same at the Friar Islands and those at the mouth of Port Davey, where this Petrel breeds in great numbers, in company with the Broad-billed Prion (*Prion vittatus*).

*PHALACROCORAX LEUCOGASTER*, *Gould*.

The White-breasted Cormorant was nesting in as large a number as the space would admit of on the top of the Blanche Rock. There were about 30 or 40 pairs there, in company with a few little Gulls, which not unfrequently nest in such situations. The nests of the Cormorants were situated in hollows and crevices in the rock, a few strips of seaweed and portions of marine plants forming the receptacle for the eggs. These are three to four in number, elongated ovals in shape, some almost the same at both ends, others slightly pointed at one end. The primary colour is very pale seagreen, but large portions of the shell are covered with a chalky white layer, in some examples rough and in others smooth. Fifteen examples vary from 2.23 to 2.5 inches in length and 1.53 to 1.56 in breadth. A typical egg measures 2.48 inches by 1.5 inches. These eggs were taken by Mr. Joseph Graves on the 20th, it being too rough on the occasion of my visit on the 28th to land on the rock.

*EUDYPTULA MINOR*, Forster.

This Penguin was found breeding on Southport Island and on the Great Actæon on the occasion of both my visits. They excavate a hole in the ground of varying depth from three to six feet, and form a largish cavity at the end for the eggs; in some places have two. Among the dense, matted herbage, in the centre of the Actæon Islands I found the nest under cover of a thick roof of vegetation, with an entrance to it formed under the same, like a tunnel. Here I found the birds carrying on an extraordinary "corroboree" of growls and hoarse crowings, the performers being outside their nests, while the young were hidden beneath the herbage, the comical situation appearing to be that the birds were groaning over the tedious duties of maternity, while their spouses were busy far away at sea in pursuing their prey. Two eggs are laid, one, probably the first, being nearly always soiled with earth, or blood-stained. They are pointed ovals in shape, some more tapering than others; the texture is usually smooth, but there are chalky excrescences in some. A series of about a dozen measure from 2.18 to 2.39 inches in length, and from 1.54 to 1.69 inches in breadth.

These Penguins run with considerable speed, particularly when pursued, for half-a-dozen yards, and then fall forward, lifting themselves up again with their wings, and again making another rush onward. They proceed under water with great speed, literally flying with their rudimentary wings, their course consisting of a series of zigzag darts, which must prove highly effectual in the capture of their prey.

The fisherman have, I am sorry to say, a cruel antipathy to these defenceless birds, and delight in taking them from their nests and worrying them with their dogs. They fight dexterously against their tormentors, and I have seen one keep two terriers off when attacked in a pool of water. Last year a party of men visited the Actæons on the 20th of November, whether from Recherche or Southport is a matter of uncertainty, and with inconceivable barbarity set the islands on fire, roasting alive the unfortunate Penguins, which were breeding in large numbers on the north end of the Great Actæon, and when I visited the island the week following I found the ground strewn with roasted carcasses of the birds. This is such wanton cruelty that it should be put down by the Territorial Police. The barbarians who commit these atrocities appear not to have the sense to perceive that there are plenty of fish in the sea for Penguins as well as for human food, and that the destruction of the unfortunate birds can make no appreciable difference to the fish supply. It is only where numbers of the larger species of Cormorants frequent inland water that much damage is done to fish.