

ART. XX.—*Notes on New Zealand Ornithology.* By A. REISCHEK.

Communicated by Dr. Hector.

[Read before the Wellington Philosophical Society, 25th November, 1884.]

THE author of this paper has had seven years' experience as an ornithologist in New Zealand, and during the last six months has undergone very severe personal hardships in his endeavour to solve some of the most difficult problems respecting the habits of our rarest birds that are found only in the most remote and inaccessible parts of the islands. In February last he arranged for an expedition to the "Sounds," to study the habits of the kiwi and kakapo, and I had great pleasure and confidence in assisting him with the knowledge of that wonderful region which I have acquired from many exploring visits during the last twenty years. His plan was to take an assistant with him in the light-house steamer "Stella" when she tendered the Puysegur light-house at the south entrance to Preservation Inlet, and there hire a small whaleboat with which to make his explorations. But at the Bluff his companion fell sick after all the arrangements had been made and six months' stores for his party's use had been purchased and placed aboard the "Stella." Nevertheless he determined to proceed alone, and in due course was landed with his supplies in Dusky Sound, at the place where Mr. Docherty, the mining prospector, has built a hut. Mr. Docherty assisted him as far as lay in his power, and with great kindness placed his hut and his canoe at Mr. Reischek's service, but having to leave by the "Stella" on a visit to Dunedin, Mr. Reischek was left to follow his researches single-handed. The canoe was a very crank craft dug out of a small log, but he lashed on each side of it logs of the most buoyant wood he could find, and so gained sufficient stability to navigate the waters of the sound when the weather was fair, which it seldom is for more than a few hours at a time, so that he was storm-stayed often for days together on narrow ledges bounded by precipitous cliffs. But Mr. Reischek's greatest feats of endurance must have been in his exploration of the alpine regions that overhang the sounds. He spent weeks in cutting tracks to reach the lofty table-lands that form the summits of the mountains, carrying up provisions sufficient to enable him to spend many nights and days in observing and recording the habits of the strange birds that inhabit these localities. Having once myself spent eight months in what was after all only a most cursory examination of these wonderful sounds, I am able thoroughly to appreciate the work of an explorer who devoted six months of earnest work to one spot of them only.

My Researches during Six Months' stay in Dusky Sound, commencing on the 10th of April, 1884.

The scenery is beautiful owing to its variety. The sound is about 23 miles long by 2 miles wide. There are several coves which give good shelter to small vessels and boats, also a few easy landings. There are a number of large and small islands, such as the Sentinel and Resolution, which are parted by the Acheron Passage from the mainland, then Long and Cooper's Island, which divide the main channel and the Nine-fathom Passage; there is also a small island in Super Cove not marked on the chart. On the tops of most of these islands there are to be found small lakes and lagoons, but the bush is very dense and the country broken. The mainland ascends from the water in terraces, interrupted by many cliffs and precipices. Near the water is heavy bush, but higher up the vegetation is smaller and denser, and on some places nearer the Alps, it is so thick that I had actually to walk on the top of the scrub, or cut my way through it. The scrub consists mostly of silver pine and hakehake, and there is an extent of grass country well watered, with plenty of rich vegetation. I think it could be used as a sheep-run if the lower land and terraces were cleared to get food and shelter in the severe winter, when the Alps are snowed over. At present they are inhabited by thousands of the wander rats (*Mus decumanus*), which were a plague to me, and very destructive to the birds. Beyond that are the rugged mountains, where the schist has disappeared and left the colossus of granite behind, some of which are covered with snow. There are many fresh-water streams in the valleys, and, on top of the mountains, lakes and lagoons similar to other New Zealand Alps. Strange to say, on some of them I could only find an out-flow, but no inflow. When searching for life, I could find nothing but a few insects. The water is clear and cold. The formation is chiefly granite schist and mica schist, and I have never before noticed such a variety of accessories together in any part of this or the surrounding islands of New Zealand, as in Dusky Sound. Mr. Docherty informed me, and I have myself seen, ruby and peacock ore, yellow sulphide, molybdenite, iron pyrites, amphibole, tremolite, tourmaline, moscovite, chlorite, sphene, titanium, rutile, garnet, orthoclase, asbestos, wolfram, with black and green mica, varieties of quartz and spars and marble.

A better field could not be found for students in practical geology than this. The most of these accessories are found on the top of the Alps where Mr. Docherty has found the seven lodes; they are between two granite dykes, bounded on the west by Mount Huger; from north-east to south-west the granite cut through his lodes; to the east is a chasm which separates Mount Bender from these formations. Four lodes bearing

about from north to south, underlying west, three bearing about east to west underlying north intersecting each other; all these lodes show metal on the surface over 2,000 feet high. There is a valley where these lodes could be got with very little difficulty, also there is plenty of water power for machinery and timber for tramway, and the best anchorage in Dusky Sound is right opposite Mr. Docherty's huts, from whence he has cut a good track to the lodes; also there are two tracks I have cut, No. 1 to the lake I have found and peak above (no name), No. 2 follows eye on the left side of the sound to some succession of waterfalls. This country looks very broken, but any one who is used to alpine travelling could ascend the most of this mountain and also descend on the other side if he looked for the ledges. I would have cut a track to Lake Manapouri, but as the winter was so severe, and I have been alone, I could not venture. In August I measured the ice in one of the lagoons on top of the Alps and it was $6\frac{1}{2}$ inches thick, but the lakes on the eastern side of Mount Huger and the one I have found froze in much later. The heaviest frost I experienced in July, when in one night 8 inches of ice formed. Snow was lying from the 15th July to 30th September from 8 feet in depth. There are many snow-drifts and ice-fields, in getting over which I had to gain foothold by cutting steps with a tomahawk. I also experienced heavy snow-storms during the same period, but never without being accompanied by a severe thunderstorm, or *vice versa*. On the beach the heaviest fall of snow I noticed was 6 inches, in August, but it disappeared in three days. An incessant fall of rain continued during the whole winter in the low lands and of snow on the Alps. From the 10th to end of April there were only eight days without rain, in May only four days, in June thirteen days, in July four days, in August five days, in September ten days.

The following is a list of the species met with, against each of which I have attached the word rare or common, as the case may be:—

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|--------------------------------------|---|
| <i>Hieracidea ferax</i> | } Rare all along the coast. |
| „ <i>novæ-zealandiæ</i> . | |
| <i>Circus gouldi</i> . | Rare in the Sounds, common from Martin's Bay. |
| <i>Athene novæ-zealandiæ</i> . | Rare in the Sounds. |
| <i>Halcyon vagans</i> . | Very rare in the Sounds. |
| <i>Prothemadera novæ-zealandiæ</i> . | } Not very common in the Sounds. |
| <i>Anthornis melanura</i> . | |
| <i>Xenicus longipes</i> . | Common in the Sounds, rare in Martin's and Jackson's Bay. |
| <i>Xenicus gilviventris</i> . | Rare. |
| <i>Acanthisitta chloris</i> . | Common everywhere. |
| <i>Orthonyx ochrocephala</i> . | Common. |

- Gerygone flaviventris*. Rare in the Sounds.
Petroica macrocephala. Common everywhere.
Petroica albifrons. Common everywhere.
Turnagra crassirostris. Rare in Dusky Sound, common in Caswell and Milford Sounds.
Rhipidura flabellifera. Common everywhere.
 „ *fuliginosa*. Rare.
Glaucopis cinerea. Rare in Dusky Sound, common along the coast to Jackson's Bay.
Creadion carunculatus } Rare in Dusky Sound, common along the coast.
 „ *cinereus*. }
Stringops habroptilus. Common to Martin's Bay.
Platycercus nova-zealandiæ } Common along the coast.
 „ *auriceps*. }
 „ *alpinus*. Rare.
Nestor meridionalis. Rare.
 „ *occidentalis*. Not uncommon from Preservation Inlet to Jackson's Bay.
Carpophaga nova-zealandiæ. Very rare in the Sounds, Martin's and Jackson's Bay common.
Apteryx australis. Not very common, and only to be found from Dusky Sound to Jackson's Bay; in all other localities very rare.
Apteryx oweni. Rare in the Sounds, and small; Martin's and Jackson's Bay more common.
Charadrius bicinctus. I saw them on the Alps over 2,000 feet, by the lagoon.
Hematopus unicolor. Common.
Ardea nova-hollandiæ. Very rare in the Sounds, common from Jackson's Bay to Bruce Bay.
Ocydromus australis } Rare from Dusky Sound to Jackson's Bay, where
 „ *fuscus* } *O. australis* is common; I have found a
 „ *brachypterus*. } variety or species which I must compare
 before deciding.
Casarca variegata. Not very common.
Querquedula gibberifrons. Not very common.
Anas chlorotis. Not very common.
Anas superciliosa. Not very common.
Hymenolaimus malacorhynchus. Only common inland.
Fuligula nova-zealandiæ. Only common inland.
Larus dominicanus. Not common.
Larus scopulinus. Not common.

Sterna frontalis. Not common.

Diomedea exulans, *Diomedea melanophrys*, *Diomedea chlororhyncha*, *Diomedea fuliginosa*, *Ossifraga gigantea*, *Haladroma urinatrix*, *Procellaria capensis*, *Prion turtur*: all these species are not rare.

NOTES AND OBSERVATIONS.

1. *Xenicus gilviventris*. Rock Wren.

This harmless little bird which inhabits the higher regions on the Southern Alps is very tame, hopping about among *débris* grown over with alpine vegetation. I have found them plentiful on top of Mount Alexander, near Lake Brunner, in 1877, also on Mount Aleidus, Rakaia Forks, on the station of Mr. Neave, in 1879, not uncommon. To my surprise on the Alps in this sound they are exceedingly rare where I expected they would be very plentiful, as on many of these places there are not any human beings, or ever have been, to disturb them. By my examinations I found that the common European rats inhabit these Alps in thousands and they destroy every bird.

2. *Apteryx australis*. Roa. South Island Kiwi.

This bird, whose limits of existence are annually getting less, I met with on the 1st of June, 1884, west of Mount Bender, on the Alps over 2,000 feet high, among tussocks and low silver pine scrub. My dog got on a scent and followed it up on a well-worn track ten inches wide. As soon as he set, I examined the place and found a very large roa sitting under the scrub in a burrow, with his head under his side feathers, similar to the habits of all the species of *Apteryx*. As soon as I touched him he struck at me with his leg, clapped with his bill, and made a grunting noise. Judging from his size I mistook him for a female; but to my surprise on skinning it I found it was a male. At first I thought it was a large species which the natives have often told me about (the roaroa), but by careful observation I have found that this alpine inhabitant only differs in size from his lower ally, and never leaves the Alps in the severest winter. I have found them under snowed-over silver pine scrub, or in burrows between and under stones. Their tracks when come across are easily recognized, even without a dog. When the snow had disappeared I noticed them, especially from one lagoon to another. It is astonishing what a number of tracks one pair of these birds make. They also make their tracks in the bush, alongside of which I have often found places where they scratch with their feet and dig holes with their bills in the ground, also in rotten wood for insects, larvæ, and worms, etc. These holes are about 6 inches in depth, by 1½–2 inches wide at the top. The movements of the bird when not disturbed are very slow, the head bent down, and the tip of the bill regularly touching the ground. When they get disturbed they stand nearly upright, listen for a moment,

and then run with outstretched neck, and bill pointed downwards. When they get pushed hard they go into the first burrow they come to. In October the female begins to lay one white oval egg in a nest well lined with leaves and grass, either in a fallen hollow tree, or under the roots of large trees, especially rata, and under stones. The male hatches the egg. The female is much larger, and has a larger bill than the male. The cry of the male is shriller than that of the female. This bird is to be found from Dusky Sound along the coast (and also inland) to Casket Point, but everywhere rare, as the burrows have no shelter, and the bird no means of defence against the attacks of the number of dogs and cats run wild, who prey upon them, and I fear this peculiar and interesting bird will soon disappear, even from these beautiful and lovely wilds. I found in their crops insects and their larvæ, also a number of small stones for digestion.

3. *Apteryx oweni*. Grey Kiwi.

This bird is the smallest of the four existing species of *Apteryx*. In the sounds they are not very plentiful, they prefer dry and high spurs, where plenty of dead logs are lying about. I have, however, found them both in the low lands, and at over 2,000 feet above sea-level. They like places with several openings and plenty of room, and it is astonishing what small openings they go in and out of. Some I measured were only 3 and 4 inches in diameter. With the assistance of my dog it sometimes took me half a day to secure a bird, and very often I had to give up without result.

They go about singly till the pairing begins, and then both sexes call each other, and they continue in pairs till the female lays one large white oval egg. They build their nest together out of dry leaves and grass, which they carry in with their bill. The male hatches the egg. After laying they soon separate, and I have never found the female near the nest. The young birds are soon left to look after themselves.

I am certain that this kiwi breeds twice in a year, or in different seasons, as I have found a half-grown bird on the 21st June, a six-weeks-old bird on the 14th August, and one about two months old on the 3rd September. All these birds have been left by their parents. On the 16th September I found up the mountains (no name), 1,500 feet high, a male sitting on an egg in a nest under a rata, which he broke in defending by striking with his leg in a similar manner to all species of *Apteryx*. From that time I examined several nests. In this species also the male is smaller, and has a shorter bill than the female; also the cry is different, that of the male being shriller.

In their crops I have found insects, larvæ, berries and stones for digestion. This kiwi is distributed over the most isolated and uninhabited districts of the South Island, but its circle is getting every year narrower, as where civilization and culture appear, this bird soon disappears.

4. *Eudyptes pachyrhynchus*. Yellow-crested Penguin.

This noble bird has been found on the coast of the South Island, but is most plentiful in the West Coast Sounds, especially Dusky and Milford. In Dusky Sound there are several colonies, two in Super Cove and one on the west-north-west of Cooper's Island. These birds come on shore in July, when they begin to build their nests, which consist of a few sticks and leaves, which the male brings, while the female constructs a careless nest, either in a cave between cliffs or under large stones, and lays one and sometimes two eggs, similar to those of the *Eudyptula minor*, only larger and with a bluish tint. These birds breed in colonies. I have seen as many as 24 pairs together. Both sexes assist in hatching their eggs and rearing the young birds. About the beginning of September the young are covered slightly with down, the head and back black with a greyish tinge, the throat and abdomen white. This down increases in thickness as the birds grow larger. The female stays with the young the first few days and the male brings the food, which consists of various fish, especially the rock cod (*Percis colias*), which they masticate. Afterwards they take it in turns to attend the young. It is interesting to watch these birds: some on the alert, some coming out of the water with their prey, and others searching for their prey. When they are not disturbed they walk or hop upright rather clumsily; but when they are startled by an enemy they stoop down and use their flappers as forelegs. For climbing up on the rocks they also use their bills, when they get along very quickly. When anything approaches them they make a noise similar to a goose (*Anser domesticus*), and the female goes quickly to her young, while the male, if he is near, stops by the entrance of the burrow and bites furiously at any intruder. As the caves were low and difficult to get at in my first efforts my dog and I got many bites before we succeeded in securing any. Though clumsy on land, they can be very swift in the water. When swimming the body is under water and only the head out, and they swim slow. But when they dive they go with great rapidity. I have noticed them in the severest gales of wind, and it had not the slightest effect upon their movements, so great is their power in their native element. During my six years' researches I have only found two washed ashore. I have observed a colony of about 14 journeying to their breeding places together. On disturbing them they went in a similar manner to the porpoises, jumping out of the water and then diving with great rapidity to get out of the way. When these birds get often disturbed they leave their breeding settlements and seek for more solitary places, generally nearer the ocean, and more inaccessible. Mr. Gidal told me that in Caswell Sound there have been for years colonies breeding, but we could not find any of them, as the dogs drove them

away, and now people are living at the Marble Quarry. The only difference between male and female is the slightly smaller size of the latter. I have found an insect similar to the *Membranacea* inside the edges of the bill, which adhered so firmly that they parted in two on my trying to get them off. Eventually I had to poison them to succeed.

5. *Eudyptula minor*. Blue Penguin.

This little bird is not so common in the sounds. I have only found them in pairs, and they differ slightly in their habits from the larger variety. I have found their nests, which are better built, nearer the shore, and as far back as a mile in the bush; and in one instance in a burrow 12 feet long. Coming ashore in September, the male brings the sticks, leaves, etc., for the female to build, generally in a burrow under the roots of trees. Both are together in the day-time in their burrows, when they make a noise like a kitten; in the night they build their nest, and towards the end of September two white roundish eggs are laid, which are reared by both parents, and protected from any intruder, whom they pluckily attack. In the beginning of November, I have seen young birds covered with slight down, dark grey on the top of the head and the back, white on the throat, breast, and abdomen. The female is considerably smaller than the male. In the end of February and March, they leave the shore with their parents for their unfriendly element, where they are as active, but not so powerful of endurance as the larger species, as I have found many of them driven ashore after a severe gale, dead. Their food is fish and Crustacea. These birds are distributed over the North, South, and surrounding Islands of New Zealand, and where they are not disturbed they are very plentiful, especially on the Motutiri and Taranga Islands, Hauraki Gulf. Their enemies are the domestic dog and cat run wild.

6. *Nestor*, sp. Kaka.

This bird represents *Nestor meridionalis* in the sounds, but is not very plentiful. I have found them alone and in pairs or with their young, from two to four. They breed in hollow trees. The nest consists of a deepening lined with wood-dust and feathers out of the parent birds. They lay their eggs from beginning of March till April. Male and female hatch and rear the young birds together; in August the young birds are fullgrown. This bird is not so gregarious as his ally *meridionalis*, also different in plumage and construction of the skeleton and habits; the cry and whistle is shriller; the male is fiery red under the wings, the female golden yellow and a little smaller. These birds are very bold. On the 13th April, 1884, I found in a hollow tree a female with one egg and three young birds, which she pluckily defended by biting and scratching. At the cry of the female the male came swooping several times past my head. This species is the finest of the three existing species of *Nestor*,

As I have not seen any specimens of Dr. Buller's *Nestor occidentalis* nor of the *Nestor montanus* which were previously obtained and described I can only depend on my own observations, of which I am positive, and also can prove by a series of specimens I have collected of the *Nestor meridionalis*, North Island kaka—adult, half-grown nestlings, and egg—having a similar series of the above *Nestor* and also of *Nestor notabilis*.

At first I called this bird *Nestor occidentalis* according to the description Dr. Buller has in his Manual, which is similar, but I do not like to give it any name until I am sure that it is one of the previously-named species. I only hold by my own observations that in New Zealand there are three species of *Nestor*—as *Nestor meridionalis*, *Nestor*—? and *Nestor notabilis*.

7. *Stringops habroptilus*. Kakapo.

On my last researches in the sounds I had the opportunity to observe minutely the habits and habitat of these birds. They are common in some parts of the bush. The young ones are much duller in plumage than their parents. When hatched they are covered with white down, which in about a month's time gives place to a fledging of feathers, the down remaining upon the feathers until the birds are about three months old. In April last I found under the root of a red birch, in a burrow, two young kakapos. During the same month I found several other young birds of this species. So late in the season as the 12th May Mr. Docherty found a kakapo's nest containing a female sitting upon an egg with a chick just hatched. Mr. Docherty kindly pointed out the nest which I measured. The burrow had an entrance from both sides, and two compartments. Both entrances led to the first compartment, the second and deeper chamber being connected with the first by a small burrow of about a foot. The nest was in the outer compartment, and was guarded by very strong rocks, rendering it difficult to open up. The distance from the entrances to the nest were two feet and three feet respectively. The first chamber was twenty-four inches by eighteen inches, and twelve inches high. The inner compartment was fourteen inches by twelve inches, and only six inches high. The nest was formed by a deepening, lined with wood dust, ground by the bird as fine as sawdust, and feathers, which the female had evidently plucked from her own breast, which was quite bare. From my observations I am of opinion that the male bird takes no part in the hatching or rearing of the chicks, as in all cases the female was the sole attendant from first to last. I did not see a male near a breeding burrow, nor did I in any single instance find two grown-up birds in one burrow, though I have seen them in pairs on their nocturnal rambles. Whenever two males meet they fight, the death of the weaker sometimes resulting. The female is much the smaller (probably about three-fourths the weight), and duller in plumage. These bush kakapos are very common in various parts of the Sounds district.

The alpine kakapo—so called by me as I have never found this beautiful bird except on the high mountains—is considerably larger, and much brighter in plumage. I was under the impression before the winter set in that these birds inhabit the Alps in the summer time when there is an abundance of food; but to my surprise my later investigations proved this to be erroneous, for as I have said, I have never seen them anywhere else, though I have repeatedly seen them taking their nightly walks on the Alps, when the snow covered everything to a depth of three feet or more.

I was particularly anxious to observe the manner in which the kakapos make their tracks. I therefore hid myself on several occasions in proximity to one of the tracks, and in such a position that I could see every bird as it passed along. It was very amusing to watch these creatures—generally one at a time—coming along the track feeding, and giving a passing peck at any root or twig that might be in the way. Thus the tracks are always kept clean; in fact they very much resemble the native tracks, with the exception that they are rather narrower, being from eight to fourteen inches wide. The kakapos generally select the tops of spurs for the formation of their tracks. I was curious to know how the birds would manage when their tracks should be covered with snow. Opportunities were afforded of satisfying my curiosity. I found that they travelled on the surface of the frozen snow, and that their tracks were soon plainly visible, though not more than an inch between the level of the surrounding snow. In many places the scrub, which consists of silver pine, akeake, and other alpine vegetation, is so dense that the snow cannot penetrate it. The kakapos take advantage of this to make their habitations under the snow-covered scrub, where it is both dry and warm.

The kakapo leaves his burrow after sunset, and returns before daylight. If they cannot reach their own home during the darkness, they will shelter in any burrow which may be unoccupied, as they travel long distances. They consume large quantities of food, which consists of grass, grass seed, and other alpine vegetation. In July they are in splendid condition, those found having as much as two inches of fat upon them. The young birds are delicious food when roasted in the camp oven. I prefer them to any other game. I was much surprised and interested to find in the intestines of these old alpine fat birds parasites from six inches to two feet long. These parasites are flat, about a quarter of an inch wide, milky white, and jointed very closely. I have found three of these parasites knotted together, and many single ones tied in three or four knots. I have not found any parasites in the bush kakapos, although I made many examinations for that purpose. The alpine birds are

rare, but I was fortunate in securing about a dozen of them. Amongst them was a specimen of a beautiful varied plumage. On the top of the head very light green; back, wing-covers, and tail, yellowish-green with crimson spots; round the bill crimson; throat, breast, and abdomen yellow with crimson spots; bill light yellow; legs silver-grey; eyes dark-brown.

In the spring, when the sun begins to shed its warmth, the kakapos emerge from their burrows, and select some favourable spots in the sunshine, where they crouch down and remain the whole day. In September I selected a suitable day for observing this peculiarity. The snow had disappeared from all the sunny places. I found three birds in different places, sitting upon low silver-pine scrub. They took no notice of my approach until I had them safely in my hand, when they endeavoured to release themselves by biting and scratching. The bush kakapos, like the alpine, get very fat during the winter months. They differ from their alpine allies, inasmuch as they do not retain their own burrows except during the breeding season. All the rest of the year the bush kakapos take the first burrow that is unoccupied when daylight approaches.

8. In the course of my researches I found also two species of leeches, also various parasites. When crossing a creek in Dusky Sound, in September, 1884, I felt something on my feet, and on examining them found some small leeches, so I skinned a bird, tied the body to a string, and threw it in the same creek; on returning in an hour's time I found a good many of these leeches on the body, some being quite red from sucking the blood; these have been preserved in spirits of wine. The second and larger species I found in the bush, September, 1884, on the leaves of a birch; their colour was chestnut-brown, they stuck very hard when I was pulling them off. I only found two and gave you one.

I found a species of tapeworm in the intestines, rectum, of the alpine kakapos (*Stringops habroptilus*, Gray), which I got on the 25th September—these old male birds were very fat and had as much as two inches at the abdomen. The parasites were alive, from 6 inches to 2 feet long by $\frac{1}{4}$ inch wide, closely jointed, very thin at the end; three of them I found knotted together, and many single ones tied in three or four knots; as soon as I put them in alcohol they shrunk together and sent forth a milky white substance.

Another parasite was found on the large penguin, and has been described (*vide supra*, p. 194).

Fish in Dusky Sound.

I may be permitted to mention the wealth which lies in this sound undisturbed.

It could be made by enterprising people a paying industry, as there are so many feeding grounds and plenty of fish. If any one were to go with a boat before high water to these places they could fill their boat very soon.

The fish good for eating are hapuka, *Oligorus gigas*; rock cods, *Percis colias*; tarakhi, *Chilodactylus macropterus*; moki, *Latris ciliaris*, etc., etc. There are also two species of dolphin very plentiful, which could be easily secured and used for oil and their skin for leather. In fine weather the smaller species are there in hundreds similar to the common *Delphinus delphis*. I have seen the sound alive with these fish playing.

The second and larger species similar to the *Tursio*, is not as plentiful. They go in small groups from two to a dozen steadily along, the dorsal fin the most time out of the water. They make a roaring noise like the bellowing of a bull, especially in the night.

When I paddled from one place to another these fish would follow alongside my canoe.

ART. XXI.—Description of a new Octopus. By JAMES PARK.

[Read before the Wellington Philosophical Society, 14th December, 1883.]

AFTER heavy north-east gales molluscs of this class are not infrequently cast ashore between Stoke and Richmond, and during the fishing season great numbers are caught by the fishermen inside the Boulder Bank; but, except they are almost immediately secured, they are soon shrivelled up and beyond identification. In the present instance the specimen before you, which is a male *Octopus*, was captured near the Marine Baths, at the "Port," in some four feet of water, and I was fortunate enough to obtain it in a very fine state of preservation.

In general outline it somewhat resembles *Octopus tuberculatus*, but the arms are more slender and tapering and very much larger than in that species.

Class CEPHALOPODA.

Family OCTOPODIDÆ.

Octopus communis, sp. nov.

Body oval, stout, fan-shaped behind, smooth, without fins. Head large, long, rounded. Eyes large, round, prominent. Arms long, tapering, unequal; dorsal pair $\frac{1}{2}$ longer than ventral pair. The hectocotylus is shorter and more robust than the other arms, ending abruptly in a long, flattened process with a deep longitudinal groove. Suckers in two rows, not opposite,