

the "leaves" longitudinally, beginning at the narrow end, the margins of the "leaf" remaining intact. Such a bag may be 4 ft. in length by 2 ft. in width, but they are made of all sizes, and hold from 25 to 125 birds. Finally, each bag is put into a flax (*Phormium*) basket, and held in position by tightly packed totara bark. Such a bag of mutton-birds will keep fresh for twelve months.

The salting method just described is a modern one. The ancient Maoris put a slit in the neck, and dissected the flesh from the skeleton. The boned birds were then boiled in fat, which was poured in the kelp bags round the birds. This method is still practised to some extent to supply special orders, but is no longer general.

Wholesale, the birds are worth about 5d. each. They are much esteemed by the Maoris, and many Europeans consider them a delicacy. Their chief drawback as a food is the large amount of fat which renders them not easy of digestion for many.

More than a hundred thousand birds are annually caught in the Stewart Island group, and this is certainly a low estimate. There is no falling-off in the supply, since it is quite impossible to catch all the young ones; moreover, the birds are in millions. The sea-hawks do not prey on the nestlings, but rats, originally brought by the boats, work a great deal of damage.

The young birds, as stated before, are enormously fat, a bird containing in its interior a lump of solid fat as large as the closed fist. This is removed, but it is not wasted, being sold to soapworks, &c., and used for various purposes, making, *e.g.*, a fairly good lubricating oil.

From the above account it may be seen that the mutton-bird industry is capable of great development with improved methods, the supply of birds being practically inexhaustible, while certain islands teeming with birds are as yet unexploited.

*The Nelly* (*Ossifraga gigantea Gmel.*).—This bird nests on an island near Fright Cove, Port Pegasus, in December.

*The Mollymawk* (*Thalassarche melanophrys*).—This magnificent bird is in abundance near the coast, but does not breed on any part of the Stewart Island group.

*The Blue Penguin* (*Eudyptula minor Forst.*).—A colony of these birds makes itself evident by the fearful noise made by them at night. They build in holes under ratas near the shore, and are plentiful in many parts of the island.

*The Yellow-eyed Penguin* (*Megadyptes antipodum Homb. and Jacq.*).—Rookeries of these occur on the east coast—*e.g.*, at Lord's River (Reischek, 74). At sundown they come ashore in considerable numbers.

*The Gannet* (*Sula serrator Gray*).—The gannet is never seen in fine weather, but during storms comes occasionally into Paterson Inlet.

*The Pied Shag* (*Phalacrocorax varius Gmel.*).—Rookeries of this shag are to be found in Paterson Inlet. The nest is placed in rata boughs overhanging the water, and is made out of dried twigs laced together (Buller, 14, p. 24).

*The Frilled Shag* (*P. melanoleucus Vieillot*).—This is given on the authority of Buller (14).

*The Spotted Shag* (*P. punctatus Sparrm.*).

*The Pink-footed Shag* (*P. chalconotus Gray*).—To be seen in Paterson Inlet and Port Pegasus. Also recorded by Buller.

*The Stewart Island Shag* (*P. Huttoni*).—This is the common shag or cormorant of the island. Its black shining back, white breast, white band on the wings, crested head, and flesh-coloured legs and feet render it conspicuous. Very frequently it is to be seen standing on some bare rock. It is common all round the island and in the inlets. The nests are placed in the rata-trees, a dozen or more near one another, and built of sticks. Whatever damage the shags as a whole may do on the mainland, they are quite harmless in Stewart Island, and there might well be included in the list of protected birds. It is no "sport" to take pot-shots at a bird standing motionless on a rock a few yards away.

*The Paradise Duck* (*Casarca variegata Gmel.*).—A few paradise ducks are to be seen in the vicinity of Mason Bay and the mouth of the Freshwater River (Reischek noted them also at Lord's River), but they were never common in Stewart Island. They nest about Christmas time on the tops of the hills.

*The Grey Duck* (*Anas superciliosa Gmel.*).—Flocks of grey ducks are common at the head of Paterson Inlet, the Rakiahua River, and the rivers of the east coast. They build in the swamps amongst the *Leptocarpus*.

*The Black Teal* (*Fuligula novae-zealandiae Gmel.*).—This extremely tame little bird swims up the rivers, but does not come into the salt or brackish water like the grey duck. It is gradually getting scarcer, as its tameness leads to its illegal destruction *all the year round*.\* It nests in grasses or sedges near the river-banks.

*The Stewart Island Kiwi* (*Apteryx Lawryi Rothsch.*).—This is the largest of the kiwis. It belongs to the spotted section of the genus. Its distribution in Stewart Island is remarkable, *it being found only to the south of the Freshwater River and Paterson Inlet*, coming east as far as Big Glory Harbour, and thence right to the sea on both coasts, and ascending to the mountain-tops. Fortunately, the Stewart Island kiwi is still very abundant. Being nocturnal birds they are not readily seen, but their mark—a funnel-shaped hole where they dig for worms—is very common. They nest under ratas, in hollow logs, and so on. The young ones appear about April. Mr. Marklund, then collector for Sir Walter Buller, describes how they make well-beaten tracks half a mile in length from the lower to the higher country (14). Worms are the principal food, but the "seeds" of *Gahnia procera* are also eaten, and thus the kiwi will undoubtedly assist the spreading of this plant.

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\* Of course, on the scenic and natural history reserves it is illegal to kill it at any time.