OBSERVATIONS ON THE GREAT SHEARWATER
IN THE BREEDING-SEASON

BY

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(Plates 55-59).

The Great Shearwater (Puffinus gravis) is common in the North Atlantic during the northern summer months and its distribution and migratory movements in that region have been studied and summarized by Wynne-Edwards (1935). According to *The Handbook* it is a summer- and autumn-visitor to the British Isles where it has frequently been recorded off the coast.

Very few, however, have had the fortune of visiting its breeding-grounds. This species is only known to breed on Nightingale and Inaccessible, two of the three main islands, which form the Tristan da Cunha group (Latitude 37° 5' S. and Longitude 12° 15' W.).

An expedition to Tristan da Cunha was recently organized by a number of leading South African Fishing and Canning Companies to investigate some of the marine-biological and agricultural problems of these South Atlantic islands. As a member of this expedition I had a chance of visiting the breeding-quarters of the Great Shearwater. We first landed on Nightingale on February 16th, 1948. The island has a circumference of approximately 2 ½ miles and lies at a distance of 23.8 miles from Tristan da Cunha, the main island of the group. Nightingale is by far the lowest of the three islands, the highest point being 1,242 feet. Practically the whole island is covered with a very dense vegetation of tussock-grass (*Spartina arundinacea*), which is so high that it closes over one's head. It is amongst this tussock that the Great Shearwater has its burrows. Thousands of birds breed here and the greater part of the ground is undermined by the burrows, which makes walking very strenuous. At the time we visited the island we only saw fairly large young, completely covered with blue-grey down, which was lighter on the breast and ventral part of the neck. According to the Rev. O. P. Lawrence, the leader of the expedition, who spent over two years on Tristan da Cunha during the war, the Great Shearwater lays in early September and the young fly in late May. This agrees with Matthews's (1932) suggestion that the breeding-season is September to November. Wynne-Edwards (1935) referring to the breeding-season writes “one would infer from North Atlantic observations that it begins about Christmas and continues till March or April”. Our observation of fairly large downy young in the middle of February seems to agree with Wynne-Edwards's statement. The possibility remains, however, that the breeding-season of this species is spread out over a fairly long period. The digging out of a large number of nests is required to settle this
point, but unfortunately we did not have the opportunity to do this.

The old birds spend most of the day-time out at sea, where we often saw them during our cruises in the M.V. “Pequena”. They were then usually seen in fairly large flocks, all sitting on the water. Wynne-Edwards in quoting Collins also mentions this habit of sitting in “rafts”. We could not determine whether the birds were feeding while concentrated in these “rafts”. They were certainly not seen to do so while being approached.

During the morning and early afternoon very few old birds were noticed on the island. After 4 p.m., local time, the Great Shearwaters started to come back to the island. While walking on the tussock-clad slopes we saw the first birds alighting rather clumsily among the tussock and on the path. At about 6 p.m., local time, the air above and around Nightingale became thick with the thousands of shearwaters which were wheeling around before plunging down into the dense tussock-jungle to seek their burrows. It was a most fascinating sight. The noise was terrific. The perfectly symmetrical cone of Tristan da Cunha silhouetted against the soft pink evening sky in the distance made the picture superb. Lawrence, Macnae and the writer traversed the tussock-jungle until we reached some projecting rocks just on the fringe of the plateau. There we sat amongst the wheeling, croaking birds and absorbed the unique situation. Some of the shearwaters came so close that they could be photographed with flashlight. The croaking noises uttered by the birds were most peculiar, and strongly reminiscent of the noise made by the old-fashioned hooters of early motor-cars. The air remained thick with wheeling birds until 8 p.m., by which time most of the birds had settled down. The fact that these birds find their own nests in the burrows amongst the dense tussock-grass is an achievement in itself. Wilkins (1923), who visited Nightingale and Inaccessible in May, 1922, also records this flocking of shearwaters to the islands after sunset, although at that time there was no trace of breeding activities.

We noticed that, as is the case with other petrels, the Great Shearwater cannot take to flight on level ground, and it usually has to get on to an elevated point, such as a rock, before it can take off. Some of the rocky outcrops amongst the tussock-grass showed distinct signs of wear and tear, caused by the feet of the numbers of birds which daily climb up the sides in order to take off, usually very early in the morning.

We left Nightingale early on the morning of the 17th, but on March 4th, Mr. W. Naclae, four islanders and the writer again visited the island, where we spent most of the day and the evening. Once more we saw the shearwaters coming in at sunset. The Great Shearwater is locally known as the “petrel”. The species is in great demand by the islanders, who come over
in their open boats from Tristan to kill large numbers of the young, together with the young of the Yellow-nosed Albatross (Thalassarche ch. chlororhynchus) and the Rock-hopper Penguin (Eudyptes c. cristatus). The birds provide them with cooking-fat and oil for their oil-lamps.

As regards the feeding habits of the Great Shearwater, Bent (1922) mentions active diving on occasions. According to this author “it dives from the surface of the water on which it first alights” and “is able to swim well under water”. The Handbook mentions that if necessary the birds will dive in pursuit of prey; they stoop suddenly, flop on the water breast first with considerable violence, then plunge and literally fly under water, afterwards swallowing the catch on the surface. Wynne-Edwards (1935) never saw this species dive. According to this author “when feeding they fly just clear of the waves, alighting every few yards and then rising again; like Fulmars they have to settle before taking food”. I can confirm these observations. My observations were made on February 28th at Gough Island, some 200 miles south of Tristan da Cunha. The ship was anchored in a small bay, sheltering from a strong northerly wind. At about 6 p.m., local time, thousands of birds, consisting of Great Shearwaters, Silver-grey Petrels (Priocella antarctica), subantarctic Terns (Sterna v. vittata), Noddis (Anous s. stolidus) and Sooty Albatrosses (Phaetetria f. fusca) were feeding close to the ship. Although the weather was appalling, with frequent squalls, I had a perfect opportunity of comparing the different ways of feeding of the different species. The Great Shearwaters were flying slowly just above the water, looking down into it and frequently alighting horizontally. Food was then caught by dipping the bill into the water. On some occasions they dived just underneath the surface for a very short time, after which they took to flight again to repeat the procedure. As we did not shoot any birds we cannot be certain of the nature of the food taken. Plankton samples showed an abundance of a certain Pteropod and it is possible that this was the organism the birds were catching. Owing to the very bad weather we had at Gough, only three hours were spent on the island itself and it was not possible to check the observations made by others that this shearwater does not breed here. They were certainly very abundant in the surrounding waters. According to Mathews only the Gough Island Shearwater (Puffinus assimilis elegans) breeds on this island. Several of these birds, which are smaller and on the whole darker than the Great Shearwater, were seen.

According to the literature the Great Shearwater has only been found breeding on Nightingale and Inaccessible. Inaccessible was visited twice, the first time on the morning of February 17th and the second time on the afternoon of March 5th. On both occasions we were only on the island for a short time and did not
climb on to the plateau. During our short stay we saw no trace of nest-burrows of the Great Shearwater.

In conclusion it may be worth while to record that the only Great Shearwaters seen on the voyages from Cape Town to Tristan and back were sighted when we were from one to two days' sail from Tristan da Cunha. Bird countings during the trip from Tristan to Gough Island and vice versa revealed an abundance of this species over the whole stretch of ocean between the two islands.

REFERENCES.


Particulars about the equipment used in taking the photographs.

All the photographs were taken by flashlight, excepting that of a flock of Great Shearwaters on the water, and the one of a piece of rock showing the scratches made by the feet of petrels scrambling up the sides before taking off.

The cameras used were model III Leicas. The flashlight-gun was the newest model Leica synchronized flashlight-gun, manufactured in the U.S.A., which made it possible to take pictures at a two-hundredth of a second. Philips flashlight-bulbs were used. All the flashlight pictures were taken at a two-hundredth of a second, with diaphragm 6 to 9. The film used was Panchromatic plus x 35 mm. Kodak film.
Fig. 1. Nightingale, the breeding grounds of the Great Shearwater.

Fig. 2. Footmarks of Great Shearwater and Rock-hopper Penguin on a rock at Nightingale.

(Photographed by Dr. G. J. Broekhuysen).
Fig. 3. Adult Great Shearwater (*Puffinus gravis*) photographed at Nightingale.

(Photographed by Dr. G. J. Broekhuysen)
Fig. 4. A "raft" of Great Shearwaters in the waters around Inaccessible.

(Photographed by Dr. G. J. Broekhuysen)
Fig. 5. Great Shearwater wheeling over tussock-grass just before alighting near its nesting burrow.

Fig. 6.—Great Shearwater plunging into tussock-jungle in search of its nest-burrow.

(Photographed by Dr. G. J. Broekhuysen)
Fig. 7. Two adult Great Shearwaters. One is just alighting.
Fig. 8. Young Great Shearwater removed from its hole.

(Photographed by Dr. G. J. Broekhuysen)