

think it is revealing any secrets to tell you that our own islands, Bute and the Cumbraes, and some other bits in the Clyde estuary, are among the very richest we have struck. Here harvesting began in 1943, an attractive price was offered, and as you probably know, the collecting of this seaweed went on actively from June till September. Even so, there are several rich areas which have not been touched because they are difficult to get at, but we hope that in future all the shores may be properly harvested.

One curious thing we found was that here inside the Clyde, where it is so abundant, nobody was in the habit of using it, whereas on the west coast and on the outer islands, where it is comparatively scarce, many housewives kept a store of dried and bleached weed to use in making puddings. Because of the lime salts in it, milk will set to a firm sort of blancmange when boiled with some *Girgantina*, and this is a popular dish with children.

In war-time the country always seems to turn to its seaweeds in search of raw material. It was so during the last war, especially in America, and it is so in this war. There is another substance produced from seaweed, this time from the brown weeds, the tangles, the knot-wracks and the bladder-wracks, a substance which is called alginic acid. Before the war the beginnings of an industry were just appearing. Several research workers had been engaged for some years on products made from alginic acid, and they were making silk, and cellophane, and custard powder. Now the business has increased enormously, but the substances they make are shrouded in deep mystery. There is still a lot of research work going on, and I hope that when the war ends seaweed will still have a place among the raw materials of industry.

At anyrate, I hope I have persuaded you that the research work undertaken at marine stations is not a luxury, even in war-time.

BIRDS OF THE SCAR ROCKS.

THE WIGTOWNSHIRE GANNETRY.

By JOHN MORELL McWILLIAM.

(Read 14th March, 1944.)

The Scar Rocks are situated in Luce Bay, almost due east of the Mull of Galloway, and about five miles from land on either side of the bay. They consist of the Big Scar, a precipitous rock about a hundred yards long and about fifty feet high, and several smaller rocks about half a mile away. At the west end of the Big Scar there is a semi-isolated stack which I have heard called the "Castle Rock." As compared with the great bird-rocks everything here is on a miniature scale. My photographs, showing the fine outline, perhaps make the rock appear larger than it really is. The true scale can be seen from the row of Kittiwakes nesting on a ledge of the Stack.

It appears that no one claims private ownership of the Scars. I wrote to Mr Kenneth McDouall of Logan on this point and he kindly replied—"I cannot give you any definite answer on who owns the Scar Rocks. My father used to say that they belonged to Logan, but I have no paper or charter to show that they do. Neither do they seem to belong to any parish. Therefore, I conclude that they are Crown Property." The Marquess of Bute and others have searched on my behalf for references to them in the usual historical sources, but without success. The larger bird-rocks, like the Bass and Ailsa, figure frequently in old documents, but the Scars are much too small for human habitation, and

seem to have had no commercial value, and so do not come into ancient history in any form, though they are marked on some of the very early Scottish maps.

The word "Scar," with all its variants, comes from the Gaelic "sgeir," a cliff or a rock. At the Old Place of Mochrum there is an estate map, dated 1790, which has at the foot two pictures, one of which is entitled "View of Bigsars and Mull of Galloway from Mochrum Fell." Though in past years naturalists have occasionally visited the Scars, little was ever published about them. It is quite remarkable how little notice was taken of this very interesting bird-rock. There is a prevailing view that it is difficult to reach. The tides in Luce Bay can be treacherous at times, and one may suddenly run into rough water, but as compared with other bird-rocks, the Scars are not specially difficult of access, and it is strange that the literature about them is so scanty. Gray and Anderson, in "The Birds of Ayrshire and Wigtownshire," 1869, and Gray in "The Birds of the West of Scotland," 1871, give some notes on the sea-birds nesting there, which I incorporate in this paper. They are not mentioned in either the ("Old") or "New Statistical Account of Scotland."

I first visited the Scars, by sailing boat from Port William, on June 6th, 1921, but was only able to spend half an hour on the rock. My notes show that at that date only a few of the Guillemots had eggs. I saw few Razorbills. A Great Black-backed Gull had two eggs. Most of the Kittiwakes had only one egg. There were several nests of Herring-Gull. I saw one Rock-Pipit. I have notes of Cormorant and Shag.

Eighteen years later, on July 5th, 1939, I visited the Scars again, with Lord David Stuart, in Mr George Downie's boat, from Drummole. As we came near the rock we could see three or four Gannets on one of the highest points. We hardly thought it possible that they

could be nesting; but there is always a chance. We went to the part of the rock where we had seen the Gannets, but saw no nest. We spent an hour and a half on the rock, Lord David ringing birds while I photographed. A Cormorant ringed that day by Lord David was killed at Leith, near Edinburgh, in an air raid on October 10th of the same year. A rising wind prevented us from staying longer on the rock.

On August 1st, following, Lord David and I again reached the Scars, and again saw the Gannets at the same place. The rock at this point is very rough, and once again we failed to find a Gannet's nest. Later, while Lord David was ringing birds some distance away, I came on a Gannet's nest with a young bird. I continued photographing other birds lower down on the rock, waiting for Lord David to come back and assure me that it really was a Gannet, when suddenly an exclamation from above told me that he also had seen it. We examined the young bird carefully and at some length, and I then photographed it. This young bird, with its parents, constituted the twenty-first known Gannet colony of the world. The discovery was duly reported in "British Birds."

In "The Oologists' Record" for September, 1939, the Rev. F. C. R. Jourdain reported that he had visited the Scars with a friend on June 6th, 1939, and had seen Gannets sitting on the rock, but no nest. A short note on this was also published in "British Birds." The paper in "The Oologists' Record" contains some general account of the birds of the Scars.

Then came the War, and in the next couple of seasons I was unable to re-visit the Scars. Mr Gavin Maxwell went out on May 17th, 1941, but saw no Gannets (James Fisher in lit.). However, aerial photographs taken by the Royal Air Force showed Gannets present on the rock in 1941 and 1942 (Eighth Report of

the British Trust for Ornithology, 1942). I landed again on the Scars on July 14th, 1942. From the nature of the rock it is not easy to make an exact count, but my estimate was that there were then twenty to twenty-five nests, in three small groups round the highest part of the rock. I took a full series of photographs, and published a second paper in "British Birds." I learnt that a number of Gannets' eggs had been taken shortly before my visit, and it is likely that there may have been thirty-five to forty pairs of Gannets on the rock that year.

In 1943 Mr A. B. Duncan and I visited the Scars, landing on June 24th, after having to wait two days for favourable weather, during which we received little encouragement from the weather prophets. We saw at once that the Gannets had again increased in number. Hatching had just begun, with only two or three young birds out of the shell, so a much smaller proportion of the birds remained beside their nests than on my visit in 1942. This made it more difficult to ascertain the numbers, but we were in agreement that there were between forty and fifty pairs, my companion, who did most of the bird-counting, suggesting that the emphasis should be laid on the forty rather than on the fifty. They were now nesting in four small groups on the edges of the cliffs. I took several photographs, but most of these, for the reason given, do not show as many birds as those taken in 1942. The eggs had been laid over a considerable period, as they showed every degree of staining, some appearing to be recently laid.

There was only one immature Gannet in the neighbourhood of the rock. The practically complete absence of immature birds from this and most other breeding stations suggests that most Gannets may never revisit their place of origin in the four or five years between the time of hatching and the time when they return to breed as adult birds.

I have now taken a series of about seventy photographs of the birds of the Scars in 1939, 1942 and 1943, of which about thirty show Gannets, and a number of aerial photographs have also been taken by the Royal Air Force. A good series through the years is very desirable, as it has never hitherto been possible to make a full and continuous record of the development of a Gannetry. Most of the known colonies are very old; some apparently new ones in North America were at least not discovered till they had been in existence for a considerable time, and a recently formed Shetland colony is situated on cliffs where the birds could hardly be adequately photographed. It is possible that no Gannet colony may ever again give so good an opportunity for a complete photographic record. We know that in this case colonisation has gone on steadily without any very great increase in any year, and entirely by birds which had not been bred on the rock. We are coming to the time when home-bred birds may return to breed, and it will be interesting to see whether the annual increase becomes more rapid in the next few years.

The lay-out of this colony is interesting. The birds are at present nesting in four groups on the cliff edge. Gannets rise with difficulty from flat ground, so the reason for the choice of breeding sites is obvious, the birds being able to launch out over the edge without any difficulty. Later they may have to take up less desirable sites. The photographs show a surprising mixture of species, the Gannets nesting immediately beside the other rock-birds. In a typical Gannetry the nests are spaced out at distances of a couple of feet or so, just outside pecking range, as regular as soldiers on parade, while other species are entirely squeezed out. If these Gannets increase to a point they will occupy sections of the rock entirely by themselves, and other birds will have to go elsewhere. Photographs taken in five or ten years, if the Gannetry prospers, may show a

very different picture. It is remarkable that at present none seem to nest on the isolated stack, which apparently would be very suitable. But it cannot be taken as certain that this Gannetry will be permanently successful, as during the war there are special factors that may tell against it, apart from ordinary risks and chances.

Our knowledge of the past history of Scottish birds is fragmentary, and it is at least possible that in the past there may have been other attempts at colonisation of the Scars by the Gannets. We know that unsuccessful attempts have been made in recent years in other places. It is possible that Gannets nested on the Scars in 1883. In that year Robert Service, of Dumfries, believed that he saw two nests. So far as is known he never reported this discovery himself, so he cannot have regarded it as satisfactory. It is mentioned in "The Gannet," by J. H. Gurney, 1913:—"On May 25th, 1883, Mr R. Service found two Gannets' nests on the Big Scaur, one of them containing a broken egg, and he saw the old birds flying close at hand." Mr Gurney, though he published this record for what it was worth, was not satisfied with it, as he wrote to Mr H. S. Gladstone:—

"Keswick Hall,
"Norwich, June 5th, 1914.

"Dear Gladstone,

"Service told me about the Gannets on the Scaur Rock, and I have mentioned it somewhere in my book. Yes, I see it is on p.112. He seemed very confident that it was not a Cormorant's egg, but I agree with you that it is rather a suspicious case." I have to thank Sir Hugh Gladstone for allowing me to print this letter. Sir Hugh (H. S.) Gladstone, in "The Birds of Dumfriesshire," 1910, published in Service's life-time, wrote that "A few pairs have bred on the Big Scaur (Wigtownshire), but not of recent years." Since the present colonisation of the Scars credence has been given

to this record which it had not received before. It is accepted at its face value in "The Handbook of British Birds," and in a recent important paper by James Fisher and H. G. Ververs, though it had previously been disregarded in "A Practical Handbook of British Birds," and all other text books. It is undeniably the most charitable thing to give Service and his Gannets the benefit of the doubt.

In fact, we are becoming more tolerant in ornithology as in other matters, of stories of unlikely happenings. The last generation has seen enormous and inexplicable extensions of range amongst birds, notably sea-birds. It is remarkable that this has occurred most conspicuously amongst certain species, such as the Fulmar Petrel, that normally lay only one egg, at least in Britain. In these great extensions of range of our time we are not to think that we are witnessing anything new in Nature. There can be little or no doubt that from time to time, to a degree far greater than was commonly believed, birds achieve great increases in numbers or great extensions of range, followed perhaps, in some cases, by great "withdrawals according to plan." A species may perhaps remain fixed and stable over a long period, and then embark on something new. But our knowledge of the past history of birds is far too short, covering in most cases only a few centuries, to allow us to form a complete picture as regards the degree and frequency of such changes. That can only come in time, and not in our time. Those who are not specialists are sometimes irritated or amused at the desire of ornithologists to ascertain exact numbers or exact distribution, and yet it is only by exact knowledge that an approach can be made to certain larger questions, especially of the ebb and flow of bird-life. It is mainly as a contribution to the study of the extension of range of the Gannet that this paper is offered. Any person who wishes to study the Gannet population of the world can do so now in Mr James Fisher's and Mr

H. G. Vever's admirable and exhaustive paper, "The Breeding Distribution, History and Population of the North Atlantic Gannet (*Sula bassana*)."

A LIST OF THE BIRDS OF THE SCAR ROCKS.

Rock-Pipit (*Anthus s. petrosus*). I saw a Rock-Pipit in 1921, and on subsequent visits. Mr A. B. Duncan saw two pairs in 1943.

Peregrine Falcon (*Falco p. peregrinus*). In 1942 I was told with full details, how a Peregrine nested on the very highest part of the main rock about twenty years earlier.

Fulmar Petrel (*Fulmarus g. glacialis*). Mr James Fisher wrote to me in 1942: "Did I tell you that Gavin Maxwell of Monreith visited the Scar Rocks on 17th May, 1941? He saw no Gannets at all, but saw two pairs of Fulmars. One bird was sitting on a ledge, and two were flying round, and one was on the water half a mile away." I saw a Fulmar between Drummore and the Scars on July 14th, 1942, but have never seen one at the rock.

Cormorant (*Phalacrocorax c. carbo*). There is a good colony of Cormorants on the Scars. Mr W. B. Alexander looked up Mr Jourdain's notes of his visit in 1939 for me. He "counted 71 nests with eggs or young and there were certainly some others. Total 75 occupied and 12-15 unoccupied nests or robbed by Gulls; say 87-90 pairs." Group-Captain W. Underhill kindly sent me an aerial photograph that shows very clearly the "scarts" (Cormorants and Shags) nesting on the main slope of the rock, taken on May 24th, 1943. The dark birds show up well against a white background. It is clear that in many cases a pair of birds are sitting together. All told I should estimate that this photograph shows about 120 "scarts," and that these might represent a hundred nests. The number of "scarts" nesting on the rock as a whole must be greater than this, as a fair amount of ground is not accounted for. My photographs show Cormorants and Gannets and Guillemots nesting side by side. Cormorants ringed here by Lord David in 1939 have been taken at Loch Ken (Kirkcudbrightshire), Peterhead (Aberdeen), Leith (Edinburgh), Connah's Quay (Cheshire), Calstock (Cornwall), Weston-super-Mare (Somerset), Lyme Regis (Dorset), and Caledon (Tyrone).

Shag (*Phalacrocorax a. aristotelis*). Shags are not so numerous as Cormorants. Mr Jourdain in his notebook says of them "two colonies, both small, one of half-a-dozen nests on the topmost ridge, overlooking the Cormorants, and another (perhaps 9-10 nests) lower

down: say 16 in all." One ringed by Lord David in 1939 was taken at Tarbert (Argyll).

Gannet (*Sula bassana*). The Scar Rock colony no doubt originated from Ailsa, which is only 60 miles distant by sea. The next nearest Gannetry is Grassholm in South Wales. Gannets possibly bred on the Scars in 1883; there was at least one nest in 1939; probably over thirty nests in 1942; between forty and fifty in 1943. Gannets have commonly a long nesting season, lasting perhaps from February till October. When the young are fully grown they are deserted by their parents and have to take to the sea and fend for themselves. In general they do not return for four years, till they are fully adult. In the immature stage they are of a dark grey colour, or piebald after two or three years. It would seem that in 1941 Gannets did not begin to nest on the Scars till at least the second half of May; possibly late breeders are more likely to colonize a new place. There is evidence for this in other species.

Common Gull (*Larus c. canus*). Gray and Anderson write of this Gull as breeding on the Scars. I should consider this a very doubtful record, as seventy years ago the Common Gull was not known to nest so far south. I have never seen Common Gull on the Scars.

Herring-Gull (*Larus a. argentatus*). Has nested on the Scars since Gray and Anderson's time. I saw several nests in 1921 and perhaps twenty-five nests on subsequent visits.

Great Black-backed Gull (*Larus marinus*). Usually one pair nests on the rock. I saw a nest in 1921 and in 1939.

Kittiwake (*Rissa t. tridactyla*). Nests in considerable numbers on the higher part of the main rock, and on the Stack. A hundred or more non-breeding birds, some in obviously immature plumage, sit on the slopes of the rock.

Razorbill (*Alca t. britannica*). There are perhaps only a dozen pairs of Razorbill on the rock. I noted them as scarce in 1921. Mentioned by Gray and Anderson as "a native of the Scaur Rocks." Jourdain in his paper speaks of their scarcity.

Guillemot (*Uria a. albonis*). Much the most numerous species, nesting on the main rock and the Stack. Some are excessively "tame." A few "Ringed" Guillemots are to be seen, probably less than one per cent. Gray and Anderson noted this "colour-phase" as occurring in very small numbers in their time.

Puffin (*Fratercula a. grabae*). Robert Gray in *The Birds of the West of Scotland* says of the Puffin that "their haunts are from Cape Wrath to the Scaur Rocks." Gray and Anderson in their paper name it in the introduction, with Guillemots and Razorbills, as incubating on the Scars, but in their list of species in the same paper they do not give the Scars as a breeding-station. I never saw them on the Scars, but in 1943, when we were a few hundred yards from the rock Mr A. B. Duncan pointed out four Puffins on the water. It is, I think, possible that a very few pairs may nest on the more inaccessible part of the Stack, and that larger numbers may have nested at one time. Certainly there is no very suitable ground for them.

NUMBERS OF BIRDS ON THE SCAR.

On June 24th, 1943, Mr A. B. Duncan spent about an hour in counting birds, and has allowed me to use his figures.

Guillemot	...	...	...	...	1505 pairs.
Razorbill	...	...	...	...	15 "
Cormorant	...	...	...	...	50 "
Shag	...	...	...	...	40 "
Herring-Gull	...	...	...	...	25 "
Great Black-backed Gull	...	...	...	...	1 "
Kittiwake	...	...	...	...	150 "
Gannet	...	...	...	...	50 "
Rock-Pipit	...	...	...	...	2 "

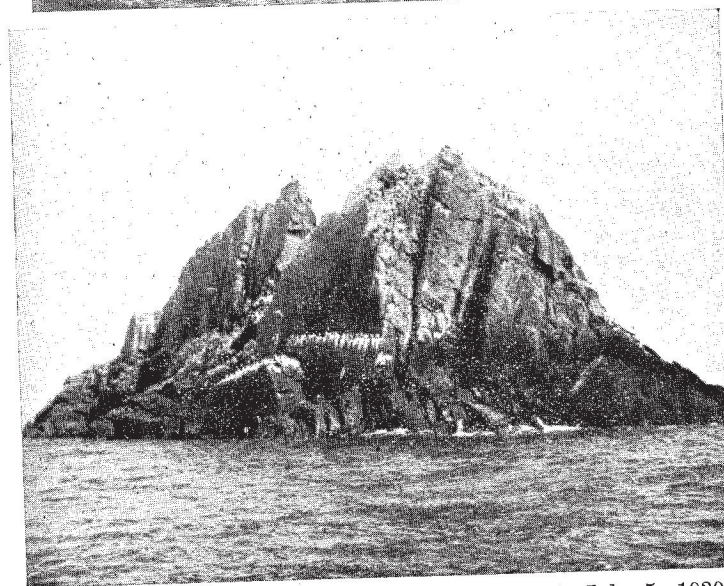
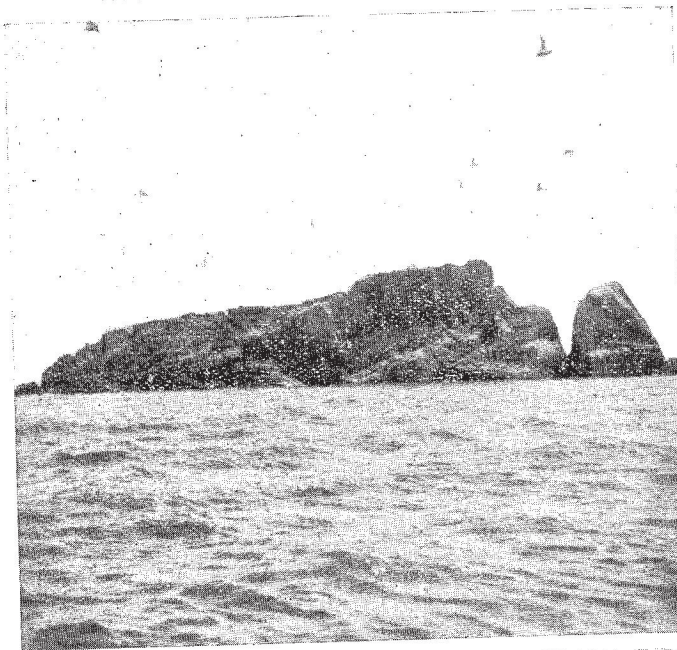
LITERATURE CITED.

- Fisher, James, and Vevers, H. G., *The Breeding Distribution, History and Population of the North Atlantic Gannet (Sula bassana)*. Part 1. *The Journal of Animal Ecology*, Vol. 12, pp. 173-213. 1943.
- Gladstone, H. S., *The Birds of Dumfriesshire*. 1910.
- Gray, Robert, *The Birds of the West of Scotland*. 1871.
- Gray, Robert, and Anderson, Thomas, *The Birds of Ayrshire and Wigtownshire*. 1869. First published in *The Proceedings of Natural History Society of Glasgow*, Vol. 1.
- Gurney, J. H., *The Gannet*. 1913.
- Jourdain, F. C. R., *The Foundation of a Gannet Colony*, in *The Oologists' Record*, Vol. 19, pp. 55-56.
- .. Note-book unpublished. In the possession of The British Trust for Ornithology.
- McWilliam, J. M., *Breeding of the Gannet on the Scar Rocks, Wigtownshire*, in *British Birds*, Vol. 33, pp. 105-107.

McWilliam, J. M., *The Scar Rocks Gannetry, 1942*, in *British Birds*, Vol. 36, pp. 62-64.

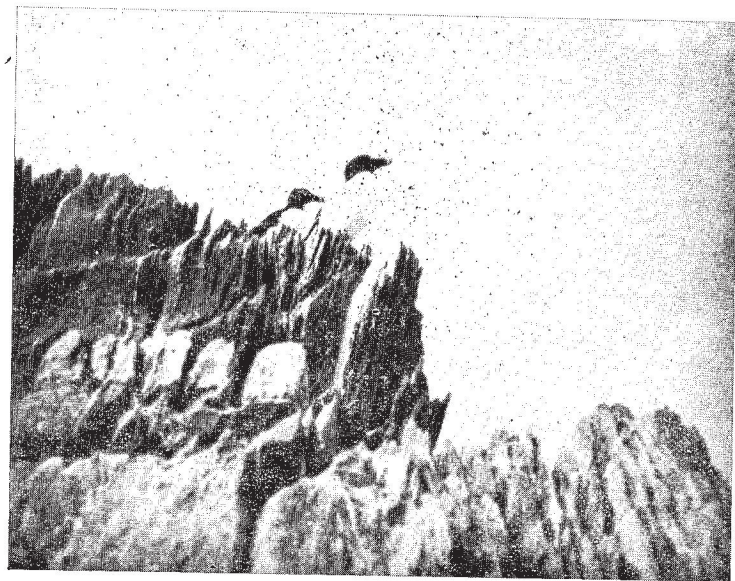
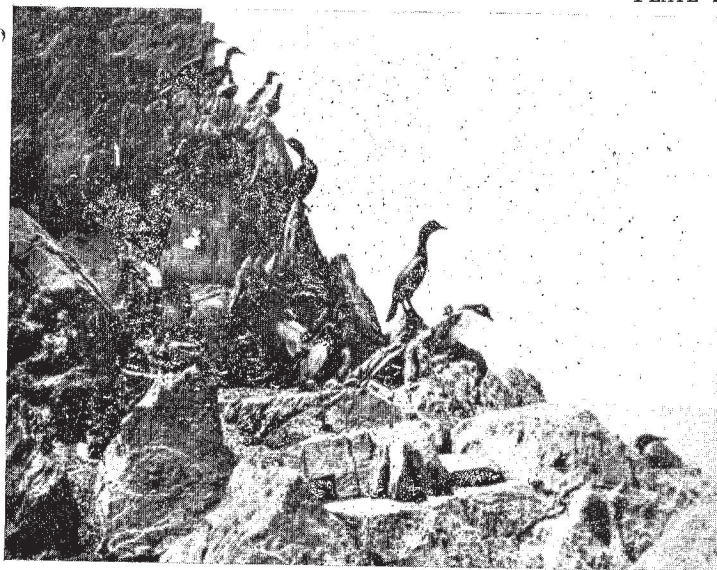
PHOTOGRAPHS.

All the illustrations in this paper are from photographs taken by myself on the Scar Rocks. I have to thank the Council of the Buteshire Natural History Society for their liberality in printing so many. I have also to thank the publishers of *British Birds* for permission to print five photographs that appeared in that journal, and for giving me the use of the blocks.



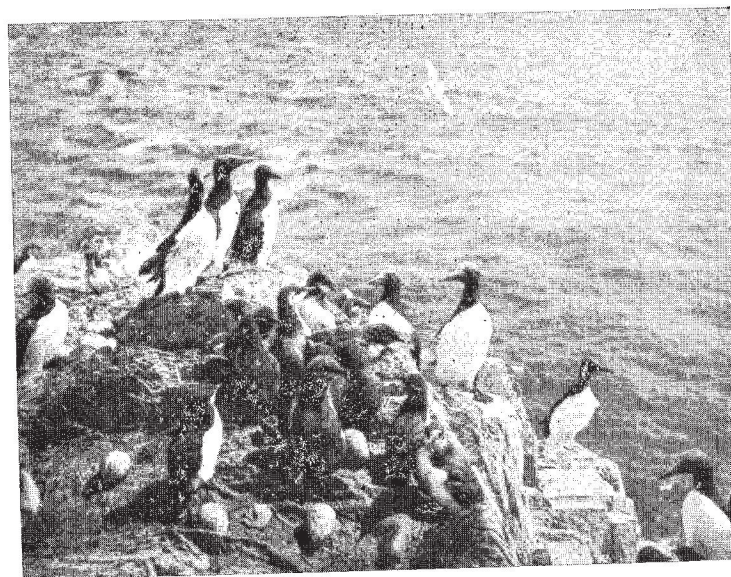
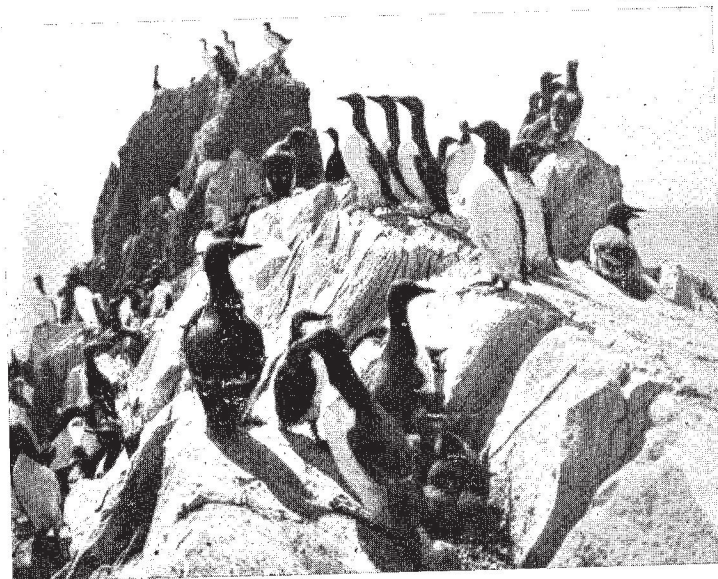
Upper: The Sear Rocks from the North-West, July 5, 1939.
(Courtesy of "British Birds.")
Lower: The Sear Rocks with the Stack in the foreground,
showing row of nesting Kittiwakes, July 5, 1939.

PLATE 2.



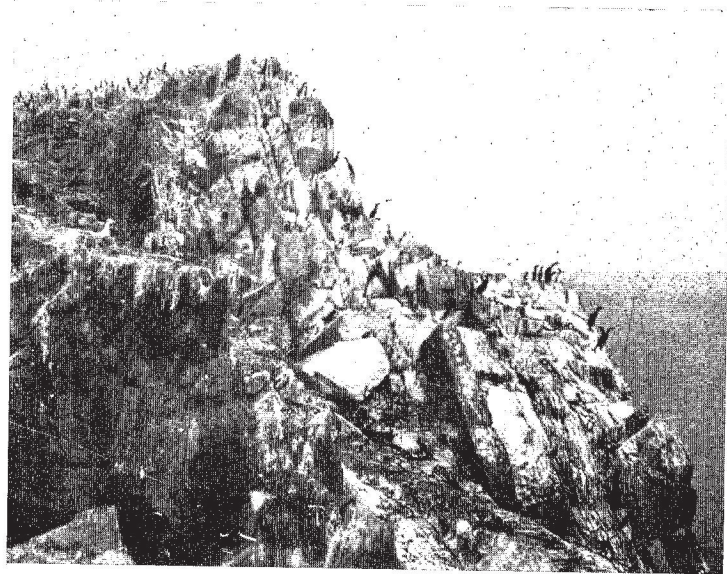
Upper: Shags and Guillemots, July 5, 1939.
Lower: Razorbills, June 24, 1943.

PLATE 3.



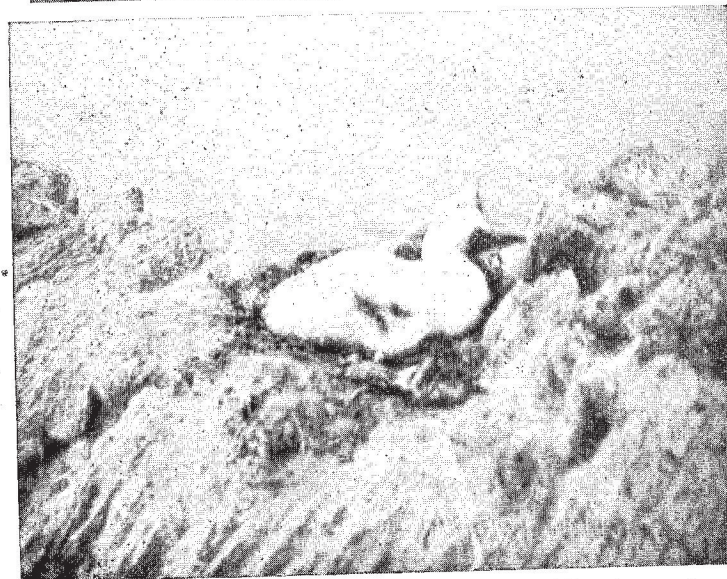
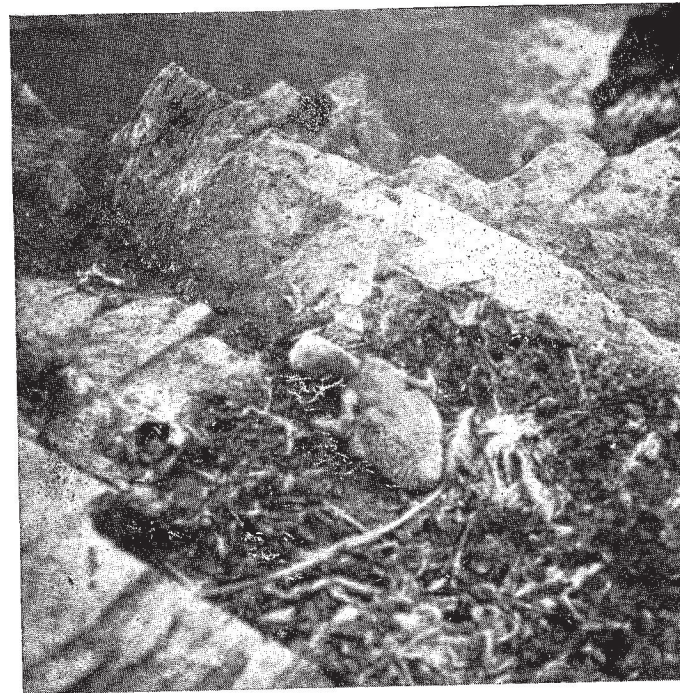
Upper and Lower: Guillemots, July 5, 1939.

PLATE 6.

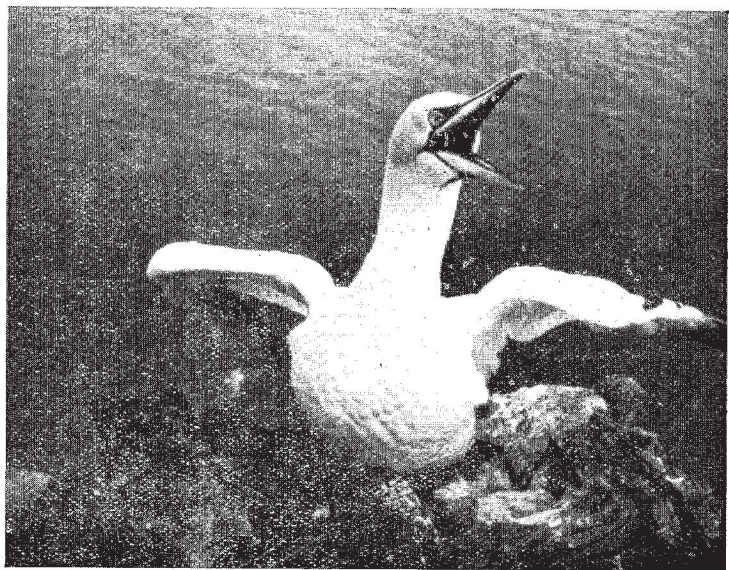
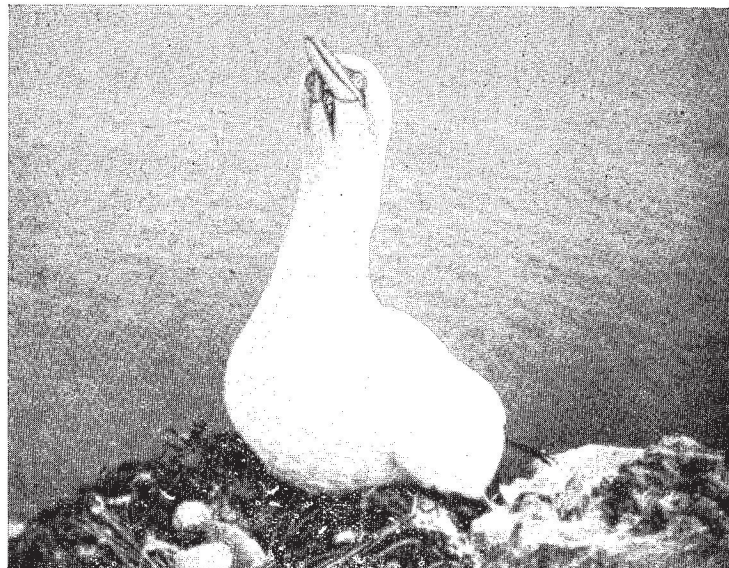


Upper and Lower: Gannets, Guillemots and Shags, July 14, 1942.
(Courtesy of "British Birds.")

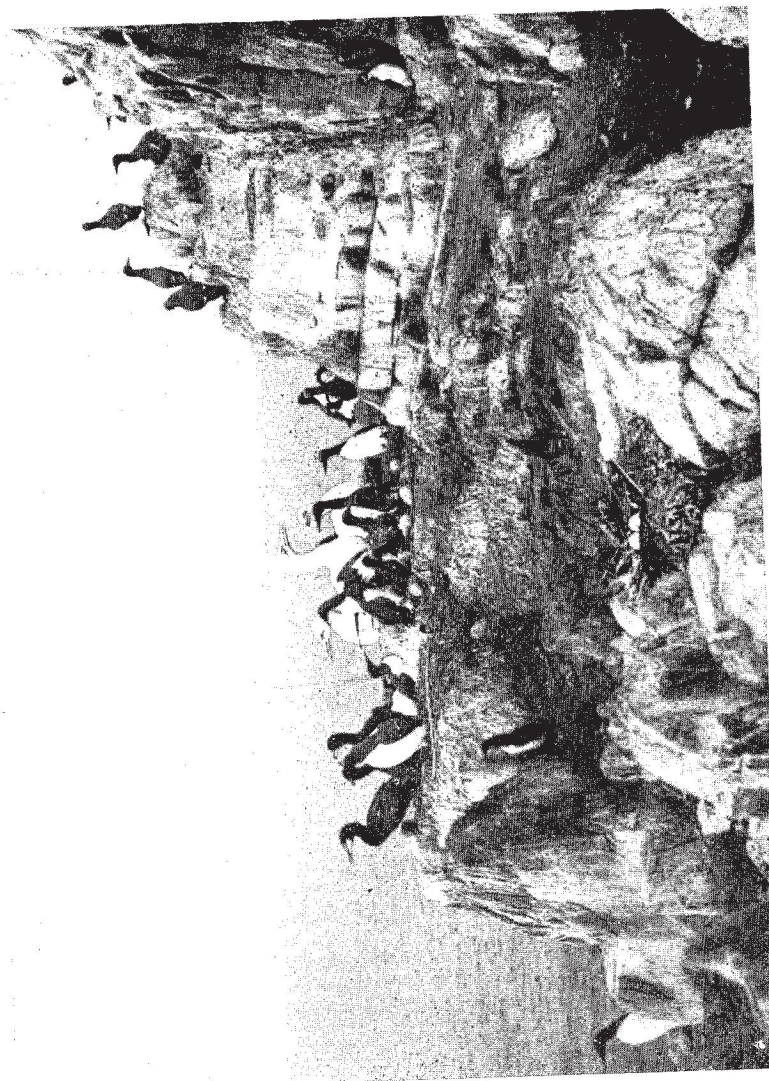
PLATE 7.



Upper: Young Gannet, August 1, 1939. (Courtesy of
"British Birds.")
Lower: Young Gannet, July 14, 1942.



Upper and Lower: Two attitudes of Gannet with newly hatched young, June 24, 1943.



Gannets, Guillemots and Cormorants, July 14, 1942. (Courtesy of "British Birds.")