

"Discovery" Expedition.

First Annual Report 1926.



LONDON

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Origin of Committee.

The outcome of the report of the Inter-Departmental Committee on Research and Development in the Dependencies of the Falkland Islands, which was presented to Parliament in April, 1920 (Cmd. 657), was the appointment early in 1922 of a Research Ships Committee to consider and recommend what practical steps could be taken for the provision of the two special vessels which had been suggested for the proposed researches.

For financial reasons it was at that time impracticable to build even a single ship, and the Ships Committee was compelled to explore the possibility of obtaining a suitable vessel by purchase. They finally recommended the purchase of the S/S “Discovery,” which it was considered might be reconstructed so as to approximate to the requirements laid down for the smaller of the two vessels. With the acquisition of the “Discovery” an Executive Committee, known as the “Discovery” Committee, was appointed by the Secretary of State for the Colonies in March, 1923, to carry out subject to his instructions investigations on the lines recommended by the Inter-Departmental Committee.

Composition of Committee.

The Committee consists of two representatives of the Colonial Office and one representative each of the Admiralty, the Ministry of Agriculture and Fisheries, the British Museum (Natural History), and the Royal Geographical Society, with Sir J. Fortescue Flannery, Bart., Consulting Naval Architect to the Crown Agents. Sir John Middleton was also a member of the Committee when he was Governor of the Falkland Islands.

Objects of Investigations.

A summary of the measures recommended by the Inter-Departmental Committee is given in paragraph 156 of their Report (Cmd. 657). The main objective is to make the first serious attempt to place the whaling industry upon a scientific basis; but it is hoped, also, to add to scientific knowledge in other directions, particularly in oceanography, to ascertain the extent and capacity of the local fisheries, and to render service to navigation by carrying out a hydrographic survey of the whaling areas of the Dependencies. Geological and magnetic work were in view, but it has not yet been possible to make a beginning in those branches of the investigations.

Period 1923—1925.

The first two years of the Committee's labours were mainly occupied by the reconstruction of the “Discovery,” a work



Photo by J. Russell & Sons, Southsea.

ROYAL RESEARCH SHIP “DISCOVERY” (FALKLAND ISLANDS).

which presented many difficulties. Wooden shipbuilding is an art now nearly extinct and much special material not easily obtainable had to be procured. It was not until the beginning of October, 1925, that the ship left England for her first voyage in the service of the Expedition. With the approval of H.M. the King the ship has been styled "The Royal Research Ship 'Discovery' (Falkland Islands)".

Detailed regulations were drawn up and approved by the Secretary of State for the Colonies for the management of the investigations and for the guidance of the officers of the Expedition.

To the post of Director of Research Mr. Stanley W. Kemp, B.A., Sc.D., Superintendent of the Zoological Survey of India, was appointed in June, 1924. Commander J. R. Stenhouse, D.S.O., O.B.E., D.S.C., R.N.R., an officer experienced in Antarctic navigation, had been appointed Master of the "Discovery" in June, 1923.

Besides the Director, three zoologists and a hydrologist were engaged for employment on the "Discovery."

For the hydrographic survey, the Lords Commissioners of the Admiralty agreed to lend an officer of the Royal Navy, who would serve on the "Discovery" as an officer of the Marine Executive Staff. The remainder of the ship's complement was fixed as follows:—

Surgeon,
2 Deck Officers,
2 Engineer Officers,
3 Cadets,
9 Petty Officers,
12 Seamen,
4 Stokers.

Marine Station.

A laboratory was established at Grytviken, South Georgia, for the examination of whales captured at the adjacent whaling station. For this work three Zoologists and a Hydrologist were appointed. Although the building was only completed in February, 1925, 181 whales had been examined by the 10th of April in that year.

Whale Marker.

In 1925 the resources of the Committee had increased sufficiently to enable them to build a second ship. This vessel, since named the "William Scoresby," is of the Whale Catcher type and is intended mainly to endeavour to work out a method by which whales can be marked, which would be of great assistance to the researches, and also to undertake trawling with commercial



"DISCOVERY" EXPEDITION MARINE STATION, GRYTVIKEN, SOUTH GEORGIA.

trawls and other enquiries into the local fishing grounds. The vessel is also equipped for carrying out, when possible, for purposes of comparison, observations similar to those undertaken by the "Discovery."

Scientific Programme.

In outlining the programme of the work to be undertaken by the "Discovery" on her first voyage, no attempt was made to define a scheme which should be rigidly adhered to. Much of the work was either novel in character or had to be carried out under unusual conditions, and until the most suitable methods had been worked out and standardised it was obviously necessary that the procedure should be open to modification as circumstances might dictate.

The amount of direct work on whales which the "Discovery" would be able to accomplish was limited. She was required mainly to undertake investigations planned to yield as much information as possible on the environment of whales, and particularly the supply of whale food and the causes which affect its quantity and geographical distribution. To that end the programme provided for a series of routine observations being made at fixed "stations" throughout the voyage. The original programme provided that work should be begun in the Gulf of Guinea, which appears to be the northern limit of the migrations of southern whales, and that there should be a full season's study of the whaling grounds of the Dependencies. The postponement of the "Discovery's" departure from England until October, 1925, made it necessary to abandon the contemplated visits to the West African whaling stations, and the ship proceeded to Cape Town, calling at Las Palmas and St. Helena *en route*. The scientific gear and equipment was tested with generally satisfactory results. The scientific specimens collected included two interesting dolphins (*Steno rostratus*); the skeleton of one of them was sent to the British Museum (Natural History). The ship arrived at Cape Town on the 20th December, 1925.

From the foregoing it will be seen that, at the close of 1925, the "Discovery" was at Cape Town *en route* for her first visit to the whaling grounds of the Dependencies; the laboratory in South Georgia, or, as it is called, the Marine Station, had been at work for some ten months; and a second vessel was under construction. The new ship was launched on the last day of the year, and was named "William Scoresby" to commemorate the father and son of that name who were both distinguished as practical whalers, while the younger was also a pioneer in the scientific study of whales. The son's "Account of the Arctic Regions and Northern Whale Fishery," which was published in 1820, has been described in the Dictionary of National Biography as the foundation stone of arctic science.

Work in 1926.

R.R.S. "Discovery."

The "Discovery" left Cape Town on the 17th January for South Georgia, via Tristan da Cunha, which was reached on the 30th January. Mails and stores were landed on that day, and on Sunday, the 31st January, the inhabitants were assembled and a message from H.M. the King was read by the Officer Commanding. The opportunity was taken to investigate the marine fauna off the Island. The hand lines procured many fishes, one of them (probably *Chilodactylus fasciatus*) being described as plentiful and of excellent flavour. The ship sailed on the 1st February, arriving at South Georgia on the 20th February. The weather throughout the voyage to South Georgia was consistently bad and seriously interfered with the scientific programme. On the passage, five deep water stations were made. No indication was found of the cold submarine current which was believed to flow northwards from the ice at a depth of about 1,000 metres. At two points on the passage, in 46° 35' S, and 50° 26' S, the bottom consisted of Radiolarian ooze, which seems to have been reported previously from the Pacific alone. Whales were seen and became numerous 40 miles from Cumberland Bay. After her arrival the ship was engaged in observations on the whaling grounds of South Georgia. Ten days were spent by the scientific staff in cruising on whale catchers and in visiting the shore whaling stations and a floating factory. A matter of great interest is the statement of the Director that throughout the season the "Krill" (whale food) found in the stomachs of Blue and Fin whales consisted of *Euphausia superba*, a single species of small shrimp like crustacean. The coasts of South Georgia are very poorly charted, and during the stay of the "Discovery" as much survey work as possible was undertaken. A special visit was paid to Undine Harbour in order to fix positions at the north-west end of the island.

The "Discovery" left South Georgia on the 17th April, and arrived at Port Stanley, Falkland Islands, on the 25th April. During a short cruise to the northern end of Falkland Sound quantities of *Grimothea gregaria* were taken. This species, the pelagic post-larval stage of *Munida gregaria* (a Decapod crustacean resembling a small lobster), is said to be the "Krill" of the Falkland Islands.

The vessel left Port Stanley on the 20th May to return to Cape Town, and her course was laid to the north-east in order to pass the reported position of two shoals. High seas frustrated the attempt to make observations on the first of the shoals, and deep soundings only were obtained in the reputed position of the second. On the passage nine full "stations" were made, and large plankton nets were towed at intervening points. The

vessel reached Cape Town on the 29th June and went into dry dock at Simonstown in order to be fitted with anti-rolling keels. The first tour had shown that the heavy rolling which had always been a feature of the "Discovery" was in bad weather a serious hindrance to the proper operation of the scientific gear.

During the stay in Cape Town the scientific staff were fully employed. Their work was greatly facilitated by the hospitality and assistance received in Cape Town and elsewhere. Laboratory facilities were kindly provided at the Cape Town University. Special study was devoted to *Euphausia superba*, the water samples collected by the "Discovery" were examined, research was made into the fat-content of blubber, and progress was made in determining the more important constituents of the South Georgia plankton. Visits were paid to the Union Company's whaling station at Durban, when 21 whales were measured, and to the whaling stations of Messrs. Irvin and Johnson (South Africa) Limited at Saldanha Bay and at Hangklip, False Bay, a station which was closed down in 1922, but had lately been re-opened. The latter firm kindly accommodated two members of the scientific staff at the Saldanha Bay Station for about four months. Although whales were scarce, valuable data were obtained, including some very early embryos; the smallest (a Sei Whale) was only about 2—3 mm. long. It is believed that the latter is the youngest embryo which has ever been found in any whale. On the 21st September the ship left Simonstown and made two short cruises off the African coast, for work off the Saldanha Bay whaling grounds and in deep water. Africa was left for South Georgia on the 27th October, the route proposed being south from the Cape to about latitude 58°, where it was hoped to reach finer weather and easterly winds. The programme was upset by exceptional ice conditions, and the course was altered to north-west when the ship was to the east and south of Bouvet Island. South Georgia was reached on the 5th December, and the survey of the whaling grounds was resumed.

Marine Station, South Georgia.

The laboratory staff had remained at work since the station opened early in 1925. The southern winter of that year was devoted mainly to the study of the material collected before the winter began. Whaling restarted about the middle of October, but few whales were caught till Christmas, when they became plentiful. The station was closed down at the beginning of the winter of 1926. By that time (April) the number of whales examined had risen to 738. The material gathered could not be regarded as complete, however, until observations had been made extending over a whole year. For that purpose the work at Saldanha Bay, to which reference has already been made, was started in May and carried on until October. Observations at

South Georgia were resumed early in November. The information obtained has yielded many important points of interest.

Other work done at the Marine Station includes the chemical analysis of water samples collected by the "Discovery" and investigations on the elephant seals and bird life of the Island. A beginning was made in 1926 with observations on the rich fauna of Cumberland Bay.

Research Steam Ship "William Scoresby."

This vessel, to which reference has been made in the earlier part of this report, was ready for sea in June, 1926. She carries two scientific officers and a crew consisting of:—

Master,
2 Deck Officers,
2 Engineer Officers,
6 Petty Officers,
5 Seamen,
3 Stokers.

She left Hull on the 26th June, and Dartmouth, where she had put in for minor engine adjustments, on the 30th. After calling at St. Vincent she reached Cape Town on the 1st August. She was employed in whale marking and in making a series of plankton stations off the African coast until the 21st October, when she sailed for South Georgia, taking with her the scientific staff of the Marine Station as passengers. Grytviken was reached on the 8th November and, pending the arrival of the "Discovery," a line of plankton stations was run along the north-west coast and whale hunting was undertaken for marking purposes. After the "Discovery's" arrival, the "William Scoresby" assisted in the plankton survey of the whaling grounds.

Scientific Collections.

In order to deal with the collections of scientific specimens gathered by the Expedition, an additional scientific officer has been appointed to take charge of, and to sort and arrange, the material pending the return of the officers who would work on it in this country.

Through the good offices of the Trustees the material has been housed, and laboratory accommodation has been provided at the British Museum (Natural History) South Kensington.

Financial.

The expenses of the investigations are met from the revenues of the Dependencies.

Up to the 31st May, 1925, all expenditure was incurred under the direct authority of the Secretary of State for the Colonies. From the 1st June, 1925, subject to the general directions of the

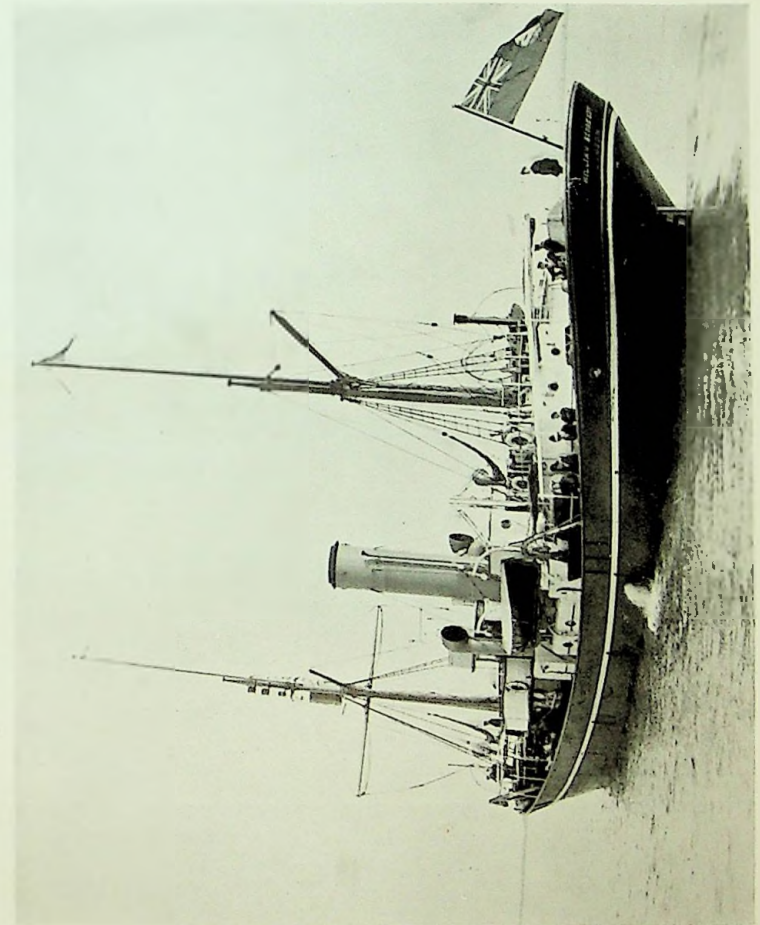


Photo by T. H. Straker, Hull.

RESEARCH STEAMSHIP "WILLIAM SCORESBY."

Secretary of State and in accordance with an approved code of general regulations and instructions, the Committee were authorised to incur expenditure within the limits of the sanctioned Estimates. Annual accounts, duly audited by the Director of Colonial Audit, are laid before the Legislative Council of the Falkland Islands. The following table shows the actual expenditure incurred up to the end of 1925, and the approved Estimates for the years 1926 and 1927:—

<i>Service.</i>	<i>Actual Expenditure to 31.12.25.</i>		<i>Approved Estimate 1926.</i>		<i>Approved Estimate 1927.</i>	
	£	s. d.	£	s. d.	£	s. d.
RECURRENT EXPENDITURE:—						
"Discovery" Committee	3,837	18 2	1,825		1,923	
Scientific Staff	*	—	—		9,100	
R.R.S. "Discovery"	29,335	8 5	30,170		17,950	
Marine Station	5,273	19 5	3,563		1,283	
R.S.S. "William Scoresby"	421	7 0	19,689		16,605	
Pensions and Insurance Contributions	1,128	6 10	270		270	
			<hr/>		<hr/>	
			39,996	19 10	55,517	47,131
<i>Deduct</i>						
Miscellaneous Receipts	30	5 9	310		410	
			<hr/>		<hr/>	
			39,966	14 1	55,207	46,721
CAPITAL EXPENDITURE:—						
R.R.S. "Discovery"	130,329	17 2	—		—	
Marine Station	9,992	4 0	—		100	
R.S.S. "William Scoresby"	10,268	19 4	24,140		—	
			<hr/>		<hr/>	
			150,591	0 6	24,140	100

Arrangements for 1927.

The plans for 1927 provide for a plankton survey of the whaling grounds at South Georgia to be undertaken by the "Discovery" in conjunction with the "William Scoresby" during January. The "Discovery" will then visit the other Dependencies, the South Orkneys and South Shetlands, and if ice conditions permit will also proceed further south as far as Neumayr Channel. The passage to the Falkland Islands will be made via Cape Horn and the Straits of Le Maire, the ship arriving at Stanley towards the end of April. From Stanley the ship will sail for South Africa, which should be reached about

* The expenditure under this head up to 1926 is included under the heads "Discovery," "Marine Station," and "William Scoresby."

the end of June, and will then work along the west coast of Africa touching at whaling stations *en route*, arriving home in October.

The Marine Station will be closed for the southern winter and the staff will return to this country. The Station will reopen about October, 1927.

The "William Scoresby" will undertake trawling off the Falkland Islands until May, when she will leave for Cape Town and work on whale marking off the African coast. She will then return to South Georgia in time for the opening of the Whaling Season 1927-28.

After a period of leave on their return, and before further work at sea is undertaken, the Scientific Staff will be employed in this country for some two or three months in working up the results of the collections.

Conclusion.

As has been pointed out in the beginning of this report, it has been necessary, for financial reasons, to proceed with the investigations with one ship (and that the smaller), aided occasionally by the diversion of the Whale Marker from her normal duties, instead of with two vessels as originally recommended by the Inter-Departmental Committee. Consequently there has been delay, but the "Discovery" Committee have every reason to be satisfied with the broad and scientific spirit in which the investigations are being conducted by Dr. Kemp, the Director of Research, and his staff both at sea and on shore; with the cordial co-operation in the scientific work given by the officers and crews of both ships; and with the rate of progress having regard to the means available. The competent handling of the "Discovery" and the "William Scoresby" has done much to minimise the risks inseparable from an enterprise of this character. The Committee desire in particular to record their appreciation of the skill and devotion to duty shown by Captain Stenhouse and his officers and men in navigating the "Discovery" often under peculiarly difficult and trying conditions.

