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ANTARCTIC NEWS BULLETIN

A QUARTERLY BULLETIN

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No. 11.

September, 1953.

AUSTRALIA ON THE ANTARCTIC MAINLAND.

Plans for next year's Expedition.

The Antarctic Division of the Australian Department of External Affairs is finalising plans for the establishment of a base on the Antarctic continent next January.

The Expedition Ship.

The new motor vessel "Kista Dan" has been secured to convey the expedition to the Antarctic mainland. The owner-builders, Messrs. J. Lauritzen of Copenhagen, are one of the major ship-building companies of Europe, and the "Kista Dan" was built especially in 1952 for navigation in Polar waters. With an overall length of 212 ft. and a breadth of 36 ft., the vessel has a d.w. of 1200 tons and a speed of 12 knots. From the enclosed and insulated crow's nest on the foremast, the navigator can detect the submerged parts of icebergs otherwise barely visible. Here are steering control, controls and indicators for revolutions and pitch of propeller, rudder indicator, gyro repeater and telephone, so that the two occupants, seated behind the big windows, can navigate the vessel direct from the crow's nest.

In front of the propeller, on either side of the hull, are three broad, heavy fins projecting horizontally from the underwater hull, designed to force ice away from the propeller. Above the rudder is an ice-knife to protect rudder and rudderstock from ice damage when the ship is going astern.

The unusually great fuel-oil bunker capacity of 264 tons gives a range of action of 14,500 miles. Specially thick one inch plating and 12" frame-spacing give great strength to resist ice-pressure, and the stern is specially designed to enable the ship to run up on ice and break it.

There is space for aircraft and arrangements for handling them. The vessel carries a combined aluminium ice-boat and sledge, complete with equipment necessary for ice-transport.

The "Kista Dan" will be manned by a Danish crew under Captain Petersen. The vessel will proceed from Melbourne to Heard Island and then south to the continent, cruising westwards along the coast until a suitable site for a base is located.

The Personnel.

Mr. P.G. Law, Director of the Antarctic Division, will travel south in charge of the Expedition but will return with the vessel as will the air-crew of two pilots and a ground-staff man under Flight Lieut. D.W. Leckie. The officer in charge of the base will be Mr. Robert G. Dovers, a 32-year-old surveyor whose father was south with Mawson in 1912. Mr. Dovers was on Heard Island for a year in 1948, on Macquarie Island for six months in 1949-50, and was Australian observer with the French expedition in Adelie Land last year.

The other members of the party are:-

L. Macey (42) Technical superintendent
R.J. Dingle (33) Weather observer
W.J. Storer (28) Radio operator
J. Russell (33) Engineer

B.H. Stinear (40) Geologist
 R.O. Summers (31) Medical Officer
 B. Warne (35) Carpenter
 L.C. Corby (39) Cook
 G. Schwartz (32) French observer who will assist with tidal observations and the training of dogs.

Mr. Bruce H. Stinear, the geologist, is a New Zealander, born in Christchurch. He has had field experience in geological surveys in Australia and New Guinea, as well as in New Zealand. For three years he was petroleum technologist with the Australian Bureau of Mineral Resources, and later was in charge of the chemicals and engineering section of the Department of Defence Production in Melbourne. He served as a navigator in the R.N.Z.A.F. during the war.

Equipment for the Base.

The Director of the Antarctic Division has given details of equipment which will be taken by the expedition.

During the last fifty years much experience has been gained by successive expeditions to Antarctica and each has contributed something towards the technique of living and working under the difficult conditions encountered in that region. The forthcoming Australian expedition has profited from the experience of expeditions led by the Australians, Sir Douglas Mawson and John Rymill, the continuing British expeditions in the Falkland Islands Dependencies, the recent French expeditions to Adelie Land, and the Norwegian-British-Swedish Expedition to Queen Maud Land, in addition to personal experience gained by its own members at Heard and Macquarie Islands. The aim has been to use modern techniques and mechanical equipment wherever possible to relieve the physical strain on personnel, so that with only a small team of ten men much work can be accomplished.

Four Different Huts.

The living hut, containing sleeping, messing and recreation quarters for ten men, is a strong, wooden hut of Norwegian manufacture similar to those used by the recent Norwegian-British-Swedish expedition. The second hut is a prefabricated one containing working accommodation for radio, meteorological and survey personnel in addition to a surgery and a photographic dark-room. The design of this hut, which includes many novel features, has been developed by the Antarctic Division and the Department of Works in collaboration with a Melbourne contractor as a result of experiments at Heard Island. It can be erected by six men in two days. The third hut is a more conventional one of pre-cut timber which will be the engine-room and workshop. Each of these huts will be insulated and warmed by electric "space heaters". The fourth will be a Nissen hut of galvanized iron in which all supplies and equipment will be stored. All huts will be fitted with trapdoors in the roofs to permit entry and exit in winter when the huts may be snowed under.

Electric power will be supplied to the new station by two diesel-electric generators each providing 15 KVA of power. The workshop will contain welding equipment, a lathe and tools for working in metal and wood.

Radio transmitters of a type designed for the R.A.A.F. during the war and used at Heard and Macquarie Islands for six years have proved dependable and will be used by the new expedition for wireless telegraphy to Australia. In the field, portable American transceivers powered by either batteries or hand-cranked generators will enable the surveying party to communicate with the base.

Supplies from many nations.

Dog sledges of Norwegian manufacture, incorporating modifications resulting from the experience of the N.B.S. expedition, will be hauled by huskies which have been bred and trained at Heard Island during the last three years.

Clothing consists of a variety of specialized items - windproofs of Australian design, eiderdown jackets from France, polar ski boots from Norway, winter boots and woollens from Australia.

Polar tents are being made in Britain to a design which has persisted with only minor modifications since Scott's antarctic expeditions early this century. Field parties, sheltering in these tents, will heat up English "pemmican" over Swedish "Primus" stoves for their evening meal and later sleep snugly in

eiderdown sleeping-bags laid on insulating platforms to keep them off the ice.

Tracked snow vehicles called "weasels", manufactured during the war in U.S.A. but purchased from the French Antarctic Expedition, will be used to explore the antarctic hinterland. They will haul "caravans" of Australian design and manufacture in which the men can work, eat and sleep. Fuel and other supplies will be hauled on solid hickory sledges built in Norway. A well-known make of British tractor will be used for haulage around the station, particularly during the unloading of the ship, and later on experiments will be carried out to test the value of this tractor on long survey trips.

An efficient surgery will be equipped with instruments, anaesthetic and blood-transfusion equipment, and a portable X-ray unit.

Reconnaissance from the air.

The polar ship "Kista Dan" will carry two expedition aircraft which will be operated by a team of three men of the R.A.A.F. The "Auster" aircraft are those which were used very successfully by the NBS expedition in 1950. They have been extensively modified for use under antarctic conditions and can be fitted with either floats or skis. Fitted with floats they can be used to reconnoitre a passage through pack-ice for the "Kista Dan" and later, on skis, they will take off from the snow surface of the Continent to carry out survey flights in the region of the new base. Stores will be landed from rubber pontoons which have been used with great success at Heard and Macquarie Islands.

Kitchen equipment will include a slow-combustion anthracite stove and in addition there will be a gas stove supplied with fuel from cylinders of compressed gas.

Built onto the main living hut will be an annexe to contain special wind-measuring apparatus and other meteorological instruments.

In case of Fire.

Possibly the greatest hazard in any antarctic establishment is fire. Special precautions have therefore been taken in addition to the supply of adequate fire-fighting equipment. Huts will be separated from each other, and any connecting passageways will be made of galvanised iron and fitted with fireproof and smokeproof doors. Emergency electric generators and radio will be housed separately for use in case fire damages the main equipment. A special store of food, clothing and essential equipment will be cached away from the main station to provide sustenance to the men in the event of their huts being destroyed.

Work of the expedition.

Among the many fields of research with which the Expedition will be concerned are geology and ionospherics. Mining in Polar regions has been proved practicable in, e.g. Spitzberge and Alaska, but before mining can be carried out there must be a general geological survey of outcropping rocks, followed by prospecting for mineral deposits.

The ionospheric disturbances which often accompany strong auroral displays frequently disrupt short-wave radio communication and are of great prospective importance in connection with jet and rocket transport. The new base will provide a very important link for the investigation of these disturbances.

FALKLAND ISLANDS DEPENDENCIES SURVEY.

The Falkland Islands Dependencies Scientific Bureau has kindly supplied the following outline of the more recent work of the Survey.

- Base A. The new ionospheric recorder installed in March at the Port Lockroy ionospheric station, is working satisfactorily.
- Base D. (Hope Bay) A sledging party which set out on 27th April returned to base on 17th July, having travelled 720 miles in 75 days. The party visited the Jason Islands (at 66°25'S., 61°50'W.) as planned, completed the survey of this area and of Robertson Island, and at a point further south reached the edge of the Larsen Ice Shelf. The discovery of a good overland route from Hope Bay to South Pitt Point should now enable sledging parties to reach the Larsen Ice at any time of the year. Geological work was carried out wherever possible on this journey.

The living hut has now been erected at View Point, the subsidiary meteorological station. (See Bulletin No. 10)

- Base F. (Argentine Islands) A dearth of seals in the vicinity of the base has made it necessary to go further afield to obtain a good supply of dog-food. In the course of one of these journeys a cairn was found at Booth Island; this was presumed to have been erected by Charcot on his first expedition to Graham Land.
- Base G. (Admiralty Bay, King George Island). An extension has been built on to the existing base and a new aerial mast erected.
- Base H. (Signy Island, South Orkneys). Seal counts were made regularly up to the end of May when the annual migration took place.

Normal meteorological and wireless schedules have been maintained at all bases including B (Deception Island) and M (South Georgia).

R.R.S. "John Biscoe". The "Biscoe" returned to Port Stanley at the end of April having completed a second southern voyage lasting two months. Plans to attempt a third voyage were cancelled, as ice reports received from the bases were unfavourable.

The "Biscoe" arrived at Southampton at the beginning of June, in time to take part in the Royal Fleet Review at Spithead, and has now been honoured with the title "Royal Research Ship".

It is due to leave Southampton again at the beginning of October with personnel and stores for the 1954-5 season.

F.I.D.S. Scientific Reports.

The first six reports of the series have now been published by the Stationery Office, and others are in process of publication. The early numbers will be chiefly concerned with geology and biology, but geophysical reports may be expected in the future. From time to time historical reports, and reports summarising the state of knowledge in particular subjects, may also be expected.

THE SUB-ANTARCTIC

A.N.A.R.E. Activities

On Coronation Day afternoon a party of five men from the Heard Island base made an expedition to christen and raise the flag over the newly completed "Big Ben Hostel", an ice-house constructed on the Baudissen Glacier as a shelter for field parties during blizzards. The Queen's health was drunk and the party returned to the station for a sumptuous evening meal.

Photographers of the Antarctic Division hope next year to photograph the Aurora Australis in three dimensions. Alan Campbell-Drury, the photographer on Heard Island, explained to an "Argus" writer that it was proposed to use two cameras, set several miles apart and operated simultaneously by means of radio signals. "The stereoscopic effect of the aurora will be gained," he said, "by an exaggerated twin-lens principle which will take into account the phenomenon's great distance from the earth's surface."

Far-Flying Birds.

Several giant petrels ringed on Heard Island have been discovered on Australian beaches: on June 9 at Fremantle (ringed January 6), on 19 July near Queenscliff, Victoria, and on 20 July near Point Lonsdale, Victoria.

The Melbourne "Age" publishes a photograph taken on Macquarie Island on December 3, 1952, of a female Black-browed Albatross whose body was found on April 12 near Merrimbula in New South Wales. As parent albatrosses rarely desert their young until the chicks can fly, and this bird's babies were still nested on March 26, the mother-bird must have flown more than 1300 miles in about two weeks against the savage gales of the Antarctic Ocean. Giant petrels have been known to fly 5,000 miles with the westerly gales to Argentina, South Africa and South Georgia, but never before has an albatross been known to make such a journey as this. In fact, none of the species has previously been recovered in another land region after leaving the Antarctic breeding ground.

Flies which do not Fly.

Mr. Eric Ealey, an ANARE biologist back from Heard Island, said that there were flies and moths on the island, but they did not fly. Most of the flies looked like ordinary house flies without wings. Neither flies nor moths were air-

borne, as the fierce winds, which reach 120 miles an hour, would blow them off the island. Instead, they crawled to dead birds or other prey. The only species of spider found, a black one, spun no web as there was nothing on the wing to catch. A web would not hold against the winds in any case.

NEW ZEALAND IN THE SUB-ANTARCTIC

(Received by R/T in July from Campbell Island.)

Midwinter's Day passed quietly enough marked only by a very tasty meal in the evening and a few noggins and cigars. There was no beard contest as three of the members have returned to the ranks of the cleanly shaven. The party are all very fit and are beginning to produce a sun tan from their daily ultra-violet sunbaths. It's a bit cold for swimming as one member of the party discovered when diving to recover a camera in Perseverance Harbour.

Rob Stanley is making a movie predominantly of the animal life on the Island, all in colour; we only hope that his first attempt will be successful. Most of the birds and seals have departed and, except for a friendly sea bear who always plays around the boat or with the dogs, not many seals are seen in the harbour these days. The fluffy Royal Albatross chicks look very forlorn on their exposed nests, especially after one of our occasional snowfalls.

The party are very interested in Campbell Island publicity - via Antarctic news and radio requests sessions, would like to point out that the rigours of the climate are greatly overrated. The sun is seen much more than is generally believed and it is probably no colder than Invercargill. Admittedly a bit wet, but some of the party have seen more mud, and in North Auckland at that.

(Sgd.) C.P.B. Sewell
Officer in Charge

The "Bulletin" was in radio-telephone contact with the officer in charge on the evening of September 10, when Mr. Sewell gleefully pointed out that Campbell Island had had a beautiful sunny day, "not a cloud in the sky."

All is well with the party, who are in good spirits. The sea-elephants are returning to the island, and some big bulls have been seen. A few sea-leopards have also been noticed.

The party is very proud of the latest addition to its numbers - a clutch of Australorp chickens. The setting was originally one of sixteen eggs, but the voracious Campbell Island rats accounted for six of them. Of the remaining ten eggs, however, six were successfully hatched.

Three of the present party will be returning to New Zealand early in November, Mr. C.P.B. Sewell (Officer in Charge) and Messrs. T.D. Bannister and R.J. Stanley. The other two men are staying on for a further year.

How You can Help

Here is a chance to prove that our interest in the Antarctic is not merely skin-deep. The men on Campbell Island live very isolated lives. They need plenty of reading matter. Have you any up-to-date magazines, digests, etc. which would be good reading for them? They have a gramophone, but they need more records. Can you help them in that way? Any reading matter or gramophone records which you would like to donate may be forwarded to:-

Miss C. Bremner,
Civil Aviation Branch,
Air Department,
WELLINGTON C.1.

or to the Secretary, New Zealand Antarctic Society, P.O. Box 2110, Wellington, within the next two or three weeks.

THE SOUTH GEORGIA SURVEY 1951-52

"The Polar Record" gives some further information about V. Duncan Carse's expedition in South Georgia, to which we have referred in Bulletins No. 9 and No. 10. The object of the expedition, which was assisted by a grant from the Royal Geographical Society (not, as stated in our last issue, the Geological Society) was to map the south-west coast from Cape Disappointment to King Haakon

Bay, a distance of 70 miles, and the interior south and west of Allardyce Range.

The work done from November 1951 till an injury to geologist Trendall compelled a hurried return to Grytviken in January, 1952, was outlined in the Bulletin for March. On 25 January the five remaining members of the party were landed by catcher at Fortune Bay on the north coast with food for thirty-five days. Rain, fog and sleet again made surveying difficult, but a short journey was made west and north to the isthmus between King Haakon Bay and Possession Bay. The party returned to Stromness Bay at the end of February.

During the third week in March a four-man party was landed at Royal Bay to complete the work started in December. They failed to locate a depot left in January and had to return to base a few days later. Meanwhile the fifth man spent a week on board a sealer off the south-west coast, making compass-controlled sketches of the bays, until exceptionally bad weather brought the sealing season to a sudden close. The whole party left South Georgia in the whaling tanker "Southern Opal" on 18 April, 1952.

DEVELOPMENTS AT KERGUELEN

We are indebted to L'Administrateur en Chef de la France d'Outre-Mer (Chef des Missions aux Iles Australes) for the following information about recent activities on Kerguelen Island.

In connection with ionospheric research, a station comprising instruments for the investigation of the middle ionospheric layer, cathode-ray direction-measuring equipment, and instruments for recording variation in reception of radio-station WWV, began operations at the beginning of July.

Early in August, a provisional seismological station also began to function. It is installed on a monolithic concrete base, measuring eight metres, and comprises seismographic recorders and a magnetic balance. This station is only a temporary one, to be replaced by a permanent geophysical station now under construction which it is expected will be completed in October.

The "Herbagère" (grasses research station) which is intended to provide for intensive culture under artificial "Closed circuit" conditions is already functioning with promising results, notably in the provision of fresh fodder.

The general developmental work forecast in the information previously supplied (see Bulletin No. 10) has been carried out, especially as regards the unloading quay, and further improvements will shortly be made.

ARGENTINE AIR FORCE ACTIVITIES IN THE ANTARCTIC.

The Minister for Air has appointed Brigadier Saturnino Armentanzas Commander of the Aeronautical Task Force in the Antarctic. The Ministry is at present reviewing the activities of the Argentine Air Force in the Antarctic. Training and Scientific Investigation Flights are being considered, as well as the installation of a base in Dundee Island and the establishment of a first class weather forecasting station at the military airport of Rio Gallegos.

WITH THE WHALERS.

The 1952-3 Season.

Statistics published in the Norwegian Whaling Gazette confirm the forecasts of a reduced Antarctic whaling catch in the season which ended on March 16. The number of whales killed in the final three weeks was much less than anticipated by the Committee of International Whaling Statistics, the body which determines the date on which the season shall close. Weather may have been wholly or partially responsible for the drop; if not, the reason must be a fall in the whale population, which would be disastrous for the industry.

The total catch was as follows:

Blue whales	3,866	
Fin whales	21,197	
Hump-back whales	954	
Sei whales	123	
Total baleen whales		26,140
Sperm whales	2,185	
Total number of whales		28,325

The baleen-whale catch is equivalent to 14,866 blue-whale units, or 1134 less than

the 16,000 allowed.

(The whale tally in 1951-52 was 32,575
and in 1950-51 31,180)

The average oil-yield per blue-whale unit, was 127 barrels. The total oil production (whale oil and sperm oil) was 1,994,190 barrels.

The whale catch and oil-yield per country operating was as follows:

	<u>Factory Ships</u>	<u>Whales</u>	<u>Total barrels of oil</u>
Norway	7	10,381	766,786
Great Britain	3	6,173	448,608
U.S.S.R.	1	2,726	152,824
Japan	2	2,645	207,335
South Africa	1	2,460	151,600
Panama	1	2,365	164,150
Holland	1	1,575	102,887
Total	<u>16</u>	<u>28,325</u>	<u>1,994,190</u>

In South Georgia.

The reduction in catch is reflected in the figures from the South Georgia shore station where the hunting period extended over six months (October 16 - April 16). The three companies operating report a yield of 113,158 barrels of whale-oil, 23,000 barrels less than in the previous season. While the general drop in whales caught is noticeable (2,267 as compared with 2,662 in 1951-52) even more significant is the startling reduction in the number of blue whales caught. In the peak year of 1926-7 the number was 2,569. In 1950-51 this had dropped to 82. In the season just closed 4 blue whales were caught.

In Other Parts of the World.

Despite the reduced catches reported above, the Antarctic remains easily the major whaling area. The Norwegian Whaling Gazette for June publishes an illuminating comparison between the catch in the Antarctic 1951-52 season and the catch in fields outside the Antarctic in 1952.

	<u>Antarctic incl. South Georgia</u>	<u>Other Fields.</u>
<u>Total whales killed</u>	35,237	14,515
Oil production in barrels		
Whale oil	2,190,009	267,147
Sperm oil	286,389	160,664
<u>Total oil production</u>	2,476,398	427,811

The principal catches outside of the Antarctic were as follow:

Kurile Islands (U.S.S.R.)	2,105 whales
Chile	1,374 "
Cape Province (South Africa)	1,371 "
Natal	1,081 "

New Zealand's contribution, from J.A. Perano's Marlborough Sounds station, was 122 whales.

International Whaling Commission.

Japan has invited the Commission to Tokyo for the sixth session, to commence on 19 July, 1954. The invitation has been accepted.

The Commission has set up a special scientific sub-committee comprising Australia, France, Holland, Japan, Russia and the United Kingdom. The sub-committee will meet in Stockholm next year.

Japan and "the Limit"

A Tokyo press message says that Japan does not favour proposals made at the recent International Whaling Conference in London for a reduction in the present world quota catch of 16,000 blue-whale units. Leaders of the Japanese whaling industry believe that this reduction would be harmful to them. They claim that scientific investigations of whale resources are still inadequate and that fears of dangerous depletion are unfounded. Under the World Whaling Agreement, no restriction

is effective unless all 17 members are unanimous: the Japanese say, however, that if all other members of the Commission wish to reduce the catch (some have urged a reduction to 15,000) they will accept the decision.

Whaling in the Ross Sea.

In a series of maps published in the June issue of "Norsk Hvalfangst-Tidende" is shown the whaling catch in the various sections of the catching field in the Antarctic, during the whaling seasons 1937-8 to 1951-2.

An extraordinary feature brought out in this survey is the increased catch in the Ross Sea area, south of New Zealand, as compared with other areas. New Zealand's Ross Dependency extends from 160°E. to 150°W. The ten degrees between 150° and 160°W. form part of the "sanctuary" where whaling is banned. In the remaining part of the Dependency no whales were taken in 1937-8, 90 fin-whales and 90 blue-whales in 1938-9, and again none in 1945-6 when whaling re-commenced after the war. In subsequent seasons the catches were approximately as follows:-

	<u>Fin-whales</u>	<u>Blue-whales</u>	<u>Hump-backs.</u>	<u>Total</u>
1946-7	170	270	-	440
1947-8	610	750	-	1,360
1948-9	1,590	720	-	2,310
1949-50	2,260	2,430	-	4,690
1950-1	2,920	2,570	230	5,720
1951-2	4,960	1,480	190	6,630

This increased catch in the Ross Dependency is the more significant when it is realised that the total catch in the Antarctic has remained practically stationary at about 30,000 whales throughout this 1946-1952 period.

TO PROBE THE OCEAN'S DEPTHS.

Headed by Captain J.Y. Cousteau, Chief of the French Navy's Undersea Research Group, and author of the remarkable book "The Silent World", a party of French scientists has begun a four-year survey of the world's oceans. The expedition which has been organised by Captain Cousteau and is sponsored by the French Navy, is working from the research-ship "Calypso". Equipment includes the new Cousteau-Girardot submarine cine-camera, a jeep, a helicopter and an oceanographic device known as the bothothermic bomb. After a period in American waters the "Calypso" will enter the Weddell Sea in the Antarctic, and in the second two years will work off New Zealand and in the Ross Sea before proceeding to Australian and African waters.

FAMILY LIFE OF AN EMPEROR

On 16 October, 1950, Dr. Sapin-Haloustre, the biologist of the French Adelie Land Expedition, working with two dog-sledge teams along the coast of the Antarctic Continent 70 miles west of the base, Port Martin, discovered at Pointe Géologie (66°39'S) the fourth Emperor penguin rookery ever to be visited by man. The first at Cape Crozier, Ross Island (77°29'S) was discovered by Skelton and Roys of Scott's "Discovery" Expedition in October 1902, and visited by Dr. E.A. Wilson and two companions in "the worst journey in the world" during the winter of 1911. The second was discovered by Hoadley of Mawson's first Australian Expedition at Haswell Island, west of the Shackleton Shelf (67°15'S) in November, 1912. The third, a small one, was discovered by Stonehouse of F.I.D.S. north-east of Margeurite Bay, Graham Land (67°52'S) in October, 1948.

An attempt to reach the newly-found rookery by "weasel" in November, 1950, was frustrated by the break-up of the sea-ice, and in January 1951 the party was relieved. The leader of the new expedition, conscious of the importance of the discovery, twice sent his biologist Dr. Condron to visit the rookery. In June 1951 a mid-winter weasel journey was made over the sea-ice. The five men reached Pointe Géologie in four days, but had difficulty in finding the rookery. At last they saw what looked in the distance like a large flat area of rock in the middle of a triangular ice-filled channel 800 metres wide at its base and 500 metres long, in a group of islets near the western face of the Terra Nova glacier. A series of sharp metallic cries attracted their attention and approaching closer on foot they found the "rock" to be a dense mass of Emperor penguins.

"It was a never-to-be forgotten sight," says Dr. Condron. "With no natural shelter, on the open sea-ice, there they were, packed one against the other and all facing the centre of the rookery. We saw nothing but their blue-grey backs. But as we approached, and while the rest remained quite indifferent, a few

turned, quite unaggressively, in our direction, enabling us to admire the impeccable whiteness of their breasts with their reflections of gold, and the yellow spot which adorned the sides of their necks."

Dr. Cendron estimated that at this time the rookery contained 5,000 birds. All the eggs had been laid, and the birds were "sitting".

He again visited the rookery in September (1951) and found the birds with their chicks no longer on the sea-ice but massed on the shelf-ice bordering the islands where the rookery is situated, and above sea-level. The fact that some eggs were found at the level of the tide-cracks suggests that the birds had moved to the higher level before hatching took place, and some had lost their eggs during the difficult crossing of the tide-crack area.

When the second expedition was relieved in January, 1952, it was planned that a small group of four men should occupy a second base to be established at Pointe Géologie itself - a few hundred yards from the rookery. However, the fire which destroyed Port Martin during the night of 23 January altered this plan, and seven men under M. Marret, including the biologist Prévost and the Australian observer Dovers (appointed to lead the Australian mainland party next year), took up residence at Ile des Petrels, Pointe Géologie, while the remainder returned to France. So the observation of an Emperor rookery throughout the whole nesting-cycle became the main task of the third expedition. This group returned to civilization in January this year, and the report of their observations is awaited with great interest by ornithologists, and many others. Meanwhile the results of the observations made in 1950-51 have been published, and make interesting reading.

"Let us isolate three birds" says Dr. Cendron of his June visit to the rookery. "Two are pressed close up against each other, side by side. The third stands behind them and wedges his breast into the space between the backs of the two others: leaning a little forward he places his beak between their necks and supports himself on their touching shoulders."

Thus, save for the outer ring, only a minimum of bodily surface is exposed. On a relatively mild day it was noticed that the mass loosened up somewhat and a few birds turned outwards, some even leaving the group and lying in the fresh snow, pluming themselves, yawning or stretching their necks to the sky in the characteristic Emperor manner.

The egg is held in an "incubator" formed by the upper surface of the feet and a fold of the abdomen not covered with feathers: the skin is in direct contact with the egg. Here the sub-cutaneous tissue is devoid of fat but is particularly well supplied with blood-vessels, enabling a temperature of 37° to be maintained.

The observers examined the birds on the outer edge of the group and found that 88 per cent were "sitters". And all those examined were males. This confirms the observations of Stonehouse who spent ten weeks (June-August 1949) at the rookery in Marguerite Bay and found that "immediately after the egg is laid the female moves out across the sea-ice to open water, leaving the male to hold the egg for the full incubating period of sixty days."

During their visit the Frenchmen saw several groups and individuals leave for the north, some forty in all. Once they saw a dozen birds moving in Indian file, some "tobogganing". But none were seen to arrive.

The other visits to the rookery were made after the chicks had been hatched. When discovered in 1950, it was computed that there were 2750 birds, including about 750 chicks. Again all the birds were in one or two compact masses of varying shape (triangular, V or X-shaped, etc.) but there were "strays" for miles around. The Emperor has developed a definitely communal life. The chicks did not appear to recognise their own special parents but were in little groups dispersed among the adults, and when frightened rushed headlong for the nearest breast. In fact, under blizzard conditions, or when danger threatened, the chicks could not be seen at all. Under sunny skies, however, they were often on the outskirts of the group. Further evidence of the advanced communal life of the rookery was seen in the complete absence of rows - but there was plenty of row, likened by one observer to a very noisy fowl-run.

The feeding of the chicks seemed to take up most of the birds' time. The nearest open water was 80-100 kilometres away, but four kilometres off was a network of crevasses up to a metre wide, and between the rookery and this spot were regular tracks worn in the snow, along which there was constant traffic. Birds were seen plunging into and leaving the crevasses, and apparently they fish in the

sea-water under the ice.

The French parties took many photographs in colour and black-and-white and exposed several cinematograph films. In September 1951 Imbert recorded the cries of adults and chicks.

The Emperor is extraordinary in that he completely reverses the usual cycle of life in cold lands. The Emperor leaves the continent in summer, just when for a few months conditions are relatively favourable - free water for fishing, no blizzards, rocks warmed to a plus temperature - and leads a wandering life in the pack. Then when the autumn blizzards begin and the sea-ice begins to form, back south he goes, into the teeth of the wind, and settles down on the completely deserted coast, to raise his family.

"The wind blows without respite", says Dr. Sapin-Jaloustre, "at 100 to 150 K.M. per hour; the dense blizzard reduces visibility to a metre and lets loose a ceaseless bombardment of small ice-fragments; man has great difficulty in breathing, is incapable of any efforts, and is blinded in a minute by a mask of ice. His skin freezes in about 90 seconds. 20 metres away from his hut and he will never find it again. In these conditions ... the Emperor hatches his egg."

(Compiled from "Notes Ornithologiques", 3 and 4, and "Mammifères et Oiseaux de la Terre Adélie," by courtesy of Expeditions Polaires Françaises; and a note in "Nature" by courtesy of the Falkland Islands Dependencies Scientific Bureau. Ed.)

OUT OF THE SOUTH

The Antarctic inspires Music and Poetry.

Those who have noted the heights of literary art to which Shackleton, Scott and Ommaney have risen, and those who know the beauty of Wilson's paintings of Antarctic scenes, will expect the great white land to inspire further works of art. Recently two such works have appeared.

"Sinfonia Antartica"

Those who were impressed by the music written by Vaughan Williams for the film "Scott of the Antarctic" will be interested to know that the composer has used that music in a new major work, a symphony which he has entitled "Sinfonia Antartica". It is in five movements and lasts three quarters of an hour. The full production calls for organ, piano, vibraphone and wind-machine, as well as a choir of women's voices and a soprano soloist. In an appreciation in "John o'London's Weekly" Mr. Sidney Harrison of the Guildhall School of Music calls it descriptive music. "At times," he says, "I was made to shiver - to feel the implacable hostility of the blizzard."

(To be broadcast from all YC stations at 9.5 p.m. on Monday, October 12, and 8.50 p.m. on Saturday, October 17)

"Worsley Enchanted"

Douglas Stewart, New Zealand-born Australian poet, dramatist and short-story writer, who dramatised Scott's last expedition as "The Fire in the Snow" broadcast by the A.B.C. in 1941, has now looked at Shackleton's 1914-17 expedition, ostensibly through the eyes of Frank Worsley, the New Zealander who was perhaps closest to Shackleton of all his men. The result is a sequence of seventeen poems in which the reader shares the terror and the glory of that great venture, in the mood rather of Shackleton himself, visionary and man of action in one.

There is good straight descriptive writing here:

"Grey water, grey weather,
Sang Crean at the tiller,
The snow-flakes' cold feather
The hiss of the foam."

but to the poet

" the waves
Are shadows of some vaster doom
Shaking the spirit"

There is beauty here:

"...golden as life is the light on upland and peak
And white as delight are the pennants the breakers
flourish"

but there is ugliness too

"When men who have lost their ship renew their lives
On the moving floes that destroyed it: the foolish quarrels
Despair and weakness and hunger that tear at the nerves,
And each man's thrust and parry with his merciless fate."

These poems offer no mere facile narrative, though Mr. Stewart can depict with fine economy the moving moment, as here the landing on South Georgia:

"Gigantic the mountains rear
Where rocks and glaciers mingle
But we have done with fear
Who thought to have done with speech
And at long last we hear
The sound of a keel on shingle,
The thrust of a boat on a beach."

He who reads this poem-sequence, "Worsley Enchanted" with comprehension will come a little closer to the heart of the Antarctic.

("Sun Orchids and Other Poems" by Douglas Stewart, with pen drawings by Norman Lindsay. Angus and Robertson, 1952.)

FOR SERVICE RENDERED

The following are among the awards made by the Royal Geographical Society for 1953:

The Back Grant to G. de Q. Robin, senior British scientist on the Norwegian-British-Swedish Antarctic Expedition 1949-52: for geophysical explorations in Queen Maud Land.

(Mr. Robin was also awarded the Bruce Medal, given by the Royal Society of Edinburgh for a notable contribution to science in Polar regions.)

The Cuthbert Peek Grant to Duncan Carse, leader of the South Georgia Expedition, 1952, for exploratory surveys and mapping.

THE ROSS DEPENDENCY

New Administrator Appointed.

Captain H. Ruegg, nautical adviser to the Marine Department, has been appointed Officer in Charge of the Ross Dependency which is administered by New Zealand under an Order in Council of the British Government promulgated in 1923. He succeeds the late Captain W. Stuart. Captain Ruegg was born in Hong Kong and went to sea at the age of 16, his first voyage being to New Zealand in the old "Corinthic". He has not previously been in the Antarctic, but it is hoped that he will follow the usual practice of officially "visiting" the Dependency at an early date.

MORE ARGENTINE NEWS

The Navy Department has arranged a cycle of auditions from the Antarctic, in order to acquaint the school children throughout Argentina with the manner in which tasks are carried out in the polar regions. These describe the hardships and difficulties experienced there.

The Argentine Navy continues with the planning of assignments for the Antarctic force next summer under the command of Captain Alicia E. Ogara. The Commanders of the transport vessels "Bahia Aguirre" and "Bahia Buen Suceso" as also of the rescue ship "Yamana" have been appointed. These three ships will form part of the Task Force.

The Argentine Consulate-General in Wellington reports that plans are going ahead in connection with projected flight from Melbourne to Rio Gallegos, Patagonia. Meteorological conditions are being studied and the necessary technical research being undertaken to draw up the special charts needed for navigation during the flight.

When a Chilean patrol from O'Higgins Base arrived early in September at the Argentine Antarctic outpost at Esperanza (Hope Bay), a message of welcome and good wishes was transmitted by the Argentine Minister of National Defence.

AN "ENDURANCE" DIARY

One of the five men who accompanied Shackleton on his great voyage in the little "James Caird" from Elephant Island to South Georgia, the man who, in fact, by decking in the boat made the voyage possible, died in Wellington Hospital on September 24, 1930. He was Harry McNeish.

Born in Ayrshire in 1866, McNeish was a ship's carpenter for 23 years and went south with Shackleton as carpenter on the "Endurance" in 1914. He was over 50 years of age when the boat journey to South Georgia was made. After returning to England he made several trips to New Zealand in the service of the New Zealand Shipping Company and eventually settled here. One of his treasured possessions was a small diary, dog-eared and stained, which is now preserved with many other Antarctic rarities in the Alexander Turnbull Library in Wellington.

The diary opens on December 9, 1914:

"Under sail course SE $\frac{1}{2}$ S very light wind sighted a stream of ice 7 a m started engine 11.15 course SE made fast all sail and set them again at 2 pm sighted the pack 4.15 entered pack 5 p m went about two miles and found it too heavy came out clear again at 9 p m run 91 miles steering ENE heavy snow"

There are numerous references to his work as carpenter e.g.

"Started making togals for sledges seal meat for dinner put up loker in Boss's cabin in the afternoon"

All were busy, and happy, on Friday December 18:

"Three penguins visited us this evening. Mr. Hussy gave them a selection of music but when he started a Scotch selection they got disgusted and walked away." Presumably, McNeish being a Scot, it was the rendition on Hussey's famous banjo, and not the airs themselves, which caused this reaction.

But soon comes a note of trouble:

"Jan. 2nd (1915)

Lat 69-49 S Long 15-35 W run 124 miles tempreture 26 turned out 7 had breakfast oiled all round then cleaned tools we had a good deal of open water up till noon today but we have got into a bit of very heavy ice so we are hanging on waiting for an opening but it is started to blow now."

"Monday 4th

Lat 69-59 S Long 17 - 4 W
We are jamed in floe temperature 20

"Tuesday 5th still in the floe

"Wednesday 6th still in the floe

"Thursday 7th still in the floe and drifting north."

They got free again this time on Jan. 9, but:

"Monday 18th We have come to a full stop again"

and on

"Sunday 24th Still fast and no signs of any opening the pressure is still a serious business if we dont get out of it soon I would not give much for our chances of ever getting away from here as we seem to be wedged into a bay and there is only one chance for us that is a breeze of SE wind.

Monday 25th

Still fast we tried today to cut away the ice to releife the ship but it is no use as there is a piece about 70 foot square under our keel forward

Tuesday 26th

Still fast the water has opened out a bit ahead of us but the floe we are in is still as sound as ever we caught a young emperor penguin today

Wednesday 27th

Still fast we had another trial to break the ice around our stern and after getting through a piece it came up and jamed the stage and almost the men so we gave it up tempreture 9 14 degrees below freezing point

Thursday 28th

Tempreture 6 very cold still fast and no signs of any change Lat 76-50S

Long 40W we are drifting NW and our seal meat is finished the dogs are on short rations and we have only tinned meats ourselves so things dont look so well."

And so the long drift began. The diary has its recurrent notes: "cold", "exercising the dogs", long walks on the ice for exercise, odd jobs of carpentry:

"I repaired the pantry door;"

"I am closing in the space on the port side forward"

but it is mostly "the usual routine" until

"23rd July Lat 73-14 South Long 49 West I am fitting one of the whale boats on the runners of the motor sledge ready for crossing the ice to the nearest known land 170 miles as near as we can judge from here."

"26th July

Lat 72-52 South Temp minus 16 we had an anchious time of it last night as the ice pressure was bad all round us and we were turned in with our Burberrys and Finscoes on ready to jump at a call but everything went off alright during the night the pressure is within 20 yards of our stern and it is to be hoped it will stay there we saw the sun for the first time for 86 days and that means a lot to us now we dont want this floe to break up untill there is some open water for it would mean the ship being crushed if we got adrift at present"

"August 1st

Blowing a gale of Southerly wind and the floe we were in has all broken up we got the dogs on board at 10.30 and everyone got our warm clothes put up as small a bundle as possible ready to get on to the floe it was noon before we had the boats and everything ready we have had a start out of our monotony if ever anyone had one for the ice has all broken up and the worst part of it was it broke right through the middle of the ship (there is a rough sketch here. Ed.) one half going one way and one another it almost broke us in two halves this hung on for about 20 minutes when the piece that was catching our bows split the other way one piece going under our bows which relieved us for a time but we are still in a precarious position it is 7 p m and there is no signs of a lull the ice seems to be jamed up solid so there will be a lot of pressure when the gale subsides"

But the "Endurance" was not done yet.

"Sunday 23rd (October)

.... We have sprung a leak I am working all night to stop it the pressure is getting worse

"Monday 24th

I dont know what Lat we are in at present but things look a bit serious now I have built a coffer dam in the engine room and we are still managing to keep the water down with the pumps Sir Ernest and most of the hands are packing sledges I am afraid it is all up with the ship

"Wed Oct 26th

We have left the ship this afternoon as she is going to pieces fast the stern post broke this evening and then the keel was torn out of her then she filled rapidly

(To be continued)

ABOUT THIS URANIUM

In an address to the Port Adelaide Rotary Club, Sir Douglas Mawson said there was considerable evidence of uranium deposits in the Antarctic. With the aid of air transport operating from the main shipping base soon to be established, mines far into the interior could be worked.

WHEN IS A MAN TOO OLD?

Mr. R.G. Casey, in announcing the men chosen to form the party which is to establish the Australian station on the Antarctic mainland, said that it had often been thought that most men over 25 were too old to go to the Antarctic; but the Australian party would range in age from 28 to 42. A correspondent recalled that Amundsen was 39 and Scott 43 when they reached the South Pole. Scott's companions were - Wilson 39, Evans 37, Oates 32, Bowers 28.