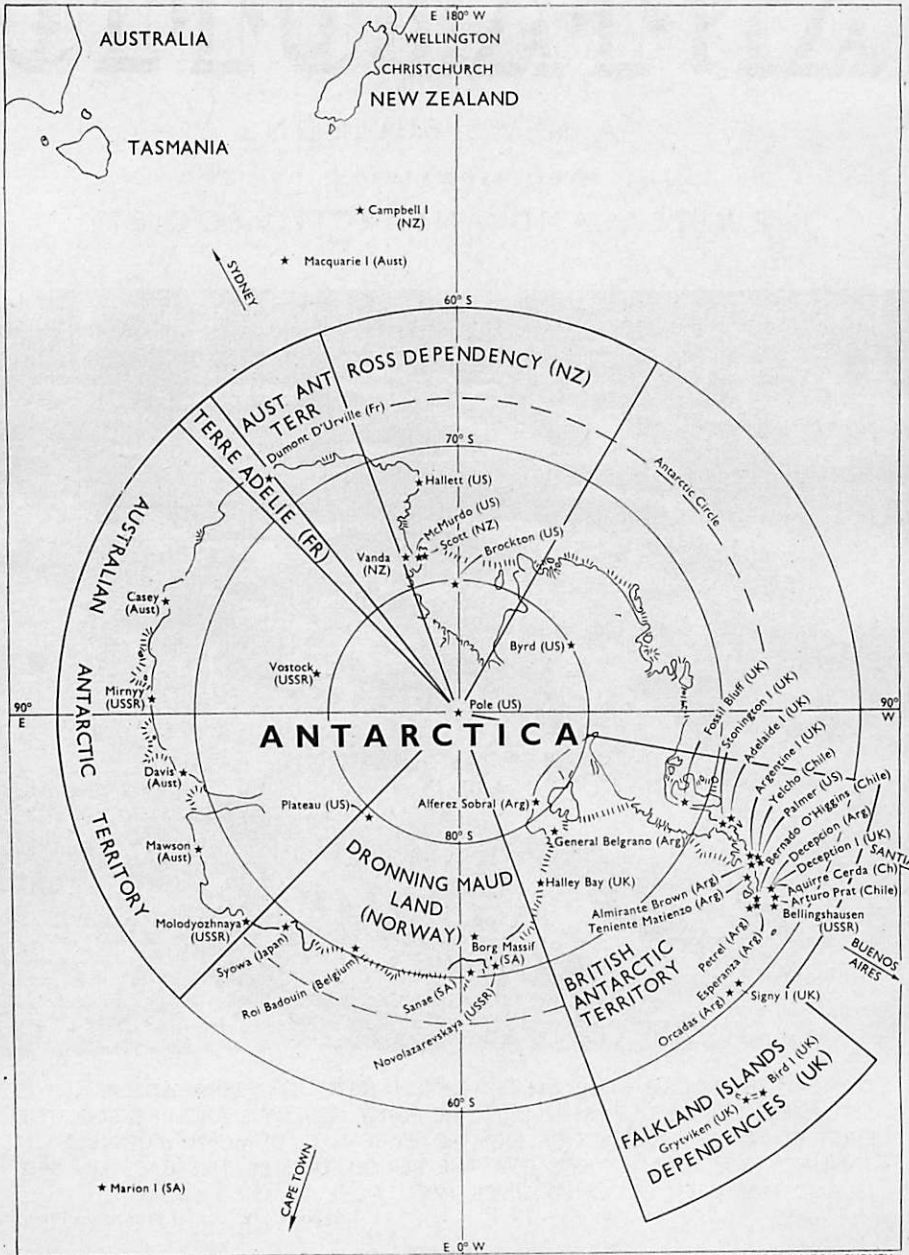
ANTARCTIC

A NEWS BULLETIN
published quarterly by the
NEW ZEALAND ANTARCTIC SOCIETY

DUMONT d'URVILLE, THE MAIN FRENCH BASE IN TERRE ADELIE. IT IS SITUATED ON I'ILE DES PETRELS IN THE POINT GEOLOGIE ARCHIPELAGO, THE FIRST POINT OF ANTARCTICA SIGHTED BY J. S. C. DUMONT d'URVILLE ON JANUARY 20, 1840. EXCEPT FOR THE PERIOD 1953-55 THE BASE ON THE ISLAND HAS BEEN OCCUPIED SINCE 1952.

—Expeditions Polaires Francaises Photo

Vol. 6, No. 6 **June 1972**



N.Z.M.S. 161

DRAWN BY DEPARTMENT OF LANDS & SURVEY
WELLINGTON, NEW ZEALAND, AUG 1969
3rd EDITION

"ANTARCTIC"

(Successor to "Antarctic News Bulletin")

Vol. 6, No. 6 **66th ISSUE** **June 1972**

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In this issue of "Antarctic" we are pleased to revive a feature which appeared regularly in our pages a few years ago. We refer to "The Reader Writes" in which we invite correspondence on aspects of our news items and feature articles.

We would also draw attention to Mr A. G. E. Jones's article "First Into The Ross Sea" which suggests the possibility that Captain James Clark Ross was not the discoverer of the sea named after him.

N.Z. Research Programme Increased for 1972-73

New Zealanders will be involved in two long-term international projects—the Ross Ice Shelf drilling project and the dry valley project—in the 1972-73 Antarctic season. They will co-operate with Americans and Japanese in the dry valley project, and will be concerned with scientists of five other nations—the United States, Australia, the U.S.S.R., Japan, and Britain—in the drilling of a hole in the Ross Ice Shelf to investigate the shelf ice, the underlying sea water, and the ocean floor.

Next season's programme, which has been announced by the Minister of Science (Mr L. W. Gandar), has been increased to about the level of the 1970-71 programme. More than 100 men from the Department of Scientific and Industrial Research, the Ministry of Works, the Meteorological Service, and four universities, will work at Scott Base, Vanda Station, on Ross Island, and in the dry valleys, the Trans-Antarctic Mountains, and Northern Victoria Land.

Antarctica's two known active volcanoes, Mount Erebus and Mount Melbourne, will be studied by the Institute of Nuclear Sciences and the chemistry division of the D.S.I.R. For the first time the Ministry of Works, which designed and established Scott Base 15 years ago, will have a part in the research programme. Its water and soil division will make glaciological and hydrological studies in and about Lake Vanda in the Wright Valley.

Scott Base will continue to be the centre of activity for laboratory-type studies (in radio, auroral and atmospheric physics, geomagnetism, and seismology) and a base for much of the field activity. Organisations involved will be the Physical Engineering Laboratory and the Geophysics Division, D.S.I.R., the Meteorological Service, and the University of Auckland.

Vanda Station, which has been a summer station since the 1970 winter, will be a base for summer activities in the dry valleys region. The Meteorological Service will make weather observations, record temperatures, solar radiation, and surface wind, and also record temperatures at a number of satellite screens in the valley.

Two scientists from Victoria University of Wellington will check the physical limnology of Lake Vanda for comparison with previous determinations and study current velocities. An electrostatic phenomena study of blowing dust and snow will be made at Vanda Station by a University of Auckland scientist, and the present atmospheric potential gradient study will be continued.

FIELD WORK

In the Wright Valley the Ministry of Works Water and Soil Division team will make water level and gauging records of dry valley lakes and the Onyx River, and mass balance measurements of Asgaard Range glaciers. A survey will also be made of selected areas of the McMurdo Ice Shelf.

Field work by the Geological Survey will include a study of the geology of the Bowers Mountains in Northern Victoria Land, by four scientists. They will do mapping, structural interpretation, stratigraphy, petrography, and sedimentation. Another party will study the geochemistry of the Koettlitz Glacier region.

The Geological Survey will also be associated with the Institute of Nuclear Sciences and the Chemistry Division, D.S.I.R., in the work on Mount Erebus, and Mount Melbourne (8337ft) which is in Wood Bay. Four scientists will make

heat output and hydrothermal studies of steaming ground and fumeroles, an analysis of geothermal gases, and steam and sulphur studies.

In the Wright and Taylor dry valleys a team from the Soil Bureau, D.S.I.R., will make soil and dyke studies. It will continue a soil mapping programme with particular interest in the high altitude and hydrothermally affected soils.

Japanese scientists will work in the final year of a three-year programme of geochemical studies of lakes and ponds in the dry valleys. Their team of four will be based near Vanda Station.

Scientists from the Oceanographic Institute will work from a United States Coast Guard icebreaker examining the sedimentation rates and trace element migration along the Ross Ice Shelf. The drill hole project will enable three scientists to study the ice margin of McMurdo Sound to extend the investigation of currents and associated plankton.

Cape Bird field station will be occupied again by biological parties from the University of Canterbury. They will continue studies of marine benthic ecology, plankton, and penguins and skuas. In southern McMurdo Sound three members of the university's Antarctic research unit will continue population and behavioural studies of the Weddell seal. The long-term banding and re-siting programme will be continued.

Teams from Victoria University of Wellington will work in the dry valleys, McMurdo Sound, South Victoria Land, and the Shapeless Mountain area in the Boomerang Range, which is about 150 miles west of Scott Base. One team of four will continue work on the volcanics project in the McMurdo Sound area, investigate distribution of salts in ice-free areas of South Victoria Land, and complete the programme of paleomagnetic sampling in the McMurdo and Shapeless Mountain areas.

A team from the University of Waikato will work in selected areas of the dry valleys next season. It will study post-glacial geomorphology, soils, and lake bed and delta sediments. A University of Auckland study in the McMurdo Sound-dry valley area, will concern the physiological adaptations of invertebrates.

LEDA PROJECT

Next season New Zealand and the United States will cooperate in the Leda project for the recording of whistlers and other VLF phenomena. A whistler-mode VLF receiving station built by the Physical Engineering Laboratory will be installed as early as possible in the season. It will be operated by American scientists in conjunction with Stanford University's studies of the magnetosphere.

One of the most interesting projects in the New Zealand programme will be the inspection and possible reconstruction in part of C. E. Borchgrevink's hut at Cape Adare. Two huts built by his expedition in the summer of 1898-99 are the oldest buildings on the Antarctic Continent, and have been recommended for preservation as historic huts by the last consultative meeting of the Antarctic Treaty nations.

No work has been done on these huts in the past because of the difficulty of access to Robertson Bay, which is about 70 miles from Hallett Station. The huts, and a third built by Scott's northern party in 1911, were last visited in the 1960-61 summer. Next season a United States Coast Guard icebreaker will land a small reconnaissance party to look at the huts and decide how much work is required to restore them.

During the summer a collector from the Canterbury Museum will collect a limited number of seals, birds, and penguins from the McMurdo Sound area. These will be placed in the national Antarctic centre which is part of the museum's new anniversary wing.

New Zealand will be the venue this year for the seventh consultative meeting of representatives of the Antarctic Treaty nations. The meeting will be held in Wellington from October 30 to November 10.

Main American Support Base Not Moving to Marble Point

McMurdo Station, the main American support base in the Antarctic, is likely to remain on Ross Island for a long time. To establish a new base at Marble Point, the rocky promontory about 50 miles from Ross Island on the western side of McMurdo Sound, and provide an airfield and harbour, would cost close to US$1000m.

This figure was given by Rear-Admiral L. B. McCuddin, the United States Navy support force commander, when he was in New Zealand to seek additional air support from the Royal New Zealand Air Force. The Marble Point proposal was included in the study of support costs made for the National Science Foundation by the Bechtel Corporation last season, but Admiral McCuddin said it appeared to have been shelved because of the cost. Such a move could be made but the major costs could not be recovered before the year 2000.

One major change likely to be made in the next few years, according to Admiral McCuddin, could be the closing of the nuclear power station on Observation Hill, which has provided power for McMurdo Station since 1962. He said a decision on the station would be made in the next year or two by the Navy and the Atomic Energy Commission.

Because of the loss of a Hercules aircraft supporting the French scientific traverse across Wilkes Land last season, the Navy will have only three ski-equipped Hercules aircraft next season for support operations. Two Hercules aircraft on order cannot be delivered because of a production backlog.

Admiral McCuddin has suggested to the R.N.Z.A.F. that its Hercules aircraft might help make a number of fuel drops at the South Pole. Also he would like the use of an R.N.Z.A.F. Orion to make a seal census. Although it will not have enough ski-equipped aircraft, the support force will use 43 Military Airlift Command Starlifter flights next summer compared with 34 last season.

Next season the support force will be slightly larger than usual. An additional 134 men of the Navy's Mobile Construction Battalion will continue work on the geodetic dome complex which will replace the present Amundsen-Scott South Pole Station, now buried under 20ft of ice and snow. The other major construction project will be the completion of Siple Station in Ellsworth Land, which will be manned next winter.

The Navy is now carrying out studies on Elliot Quay in Winter Quarters Bay, which was damaged by storms late last season. Divers will inspect the damage early next summer. If they find the wharf is damaged beyond repair, the construction of an ice wharf (a desperate measure, according to Admiral McCuddin) will be considered. Alternatively Elliot Quay could be replaced by a portable wharf such as has been used successfully in Vietnam.

Admiral McCuddin will return to Christchurch at the end of August with three Hercules aircraft and a Starlifter. One Hercules will be used to take scientists to McMurdo Station

This will be Admiral McCuddin's last visit as commander of the support force. The navy has transferred the support force headquarters to McMurdo Station and the new commander will be Captain A. N. Fowler. The re-organisation means the abandonment of the summer command team in Christchurch. The navy will also close its Washington headquarters on August 31 and transfer the staff to Davisville, Rhode Island.

WHO WAS ANTARCTIC ARCHER IN BYRD'S EXPEDITION?

Who was the Antarctic archer on Rear-Admiral R. E. Byrd's 1933-35 expedition, and why did he take a bow and arrows to Little America? These are questions raised by the presentation to the Canterbury Museum of a hunting arrow from the expedition.

Mr D. S. Bennett, who presented the arrow through the Canterbury branch of the New Zealand Antarctic Society, received it from Byrd's second-in-command, Dr Thomas C. Poulter, when he was on board the expedition's ship, Bear of Oakland, at Port Chalmers. But he knows nothing of its history.

It is possible that someone in the expedition decided that penguins or skuas might be killed more easily with a bow and arrow. Dr Poulter, however, was one of the expedition's physicists, not a zoologist.

Perhaps one of the veterans of the expedition might be able to provide the answers, and also tell us what happened to the bow.

A hunting bow and arrows are not the strangest items taken to the Antarctic. Charles J. V. Murphy, the "New York Times" correspondent with Byrd's second expedition has some amusing references to discoveries made in caches left by the first expedition.

While Byrd was at Advance Base Murphy kept the expedition records and later wrote three chapters for his leader's book, "Discovery." He says that members of the expedition used to amuse themselves by fossicking in the caches, and records among the finds a dozen strait-jackets, a case or two of a popular New Zealand cough syrup, Baxter's Lung Preserver, and a neat little still.

As Murphy recalls, from memory, that the alcoholic content of the cough syrup was about 28 per cent., the presence of the still was not surprising. Little America was then in a state of involuntary prohibition, but the combined technical abilities of the medical officer, biologist, geologist, and senior aviation officer, did not produce the hoped for result.

Murphy also comments on the honest apprehensions which caused the inclusion of the strait-jackets among the properties of the first expedition, and a quarter of a ton of cough drops for a climate where colds were almost unknown. According to Dr L. M. Gould, second-in-command of the first expedition, the cough drops were supposed to have been hard candy. Some were fed to Byrd's fox terrier, Igloo, to make him sick, by men working off petty annoyances with their leader.

The second expedition, Murphy admits, also brought some strange supplies with it. Among them were two bales of horsehair and a case of Lydia Pinkham's Vegetable Compound for which the supply officer could not account satisfactorily. There would have been two handsome coffins as well, satin-lined and with silver name plates, but Byrd sent them back in the Jacob Ruppert.

KILLER WHALES EAT PENGUINS

Thirty Emperor penguins were observed on the ice in Winter Quarters Bay early in April by Americans wintering at nearby McMurdo Station. The birds did not remain there long. A killer whale broke the relatively thin ice the birds were on and made a substantial meal.

ANARE REPORTS

Australians Meet Russian Scientists During Survey

Another phase of the Australian National Antarctic Research Expedition's survey of the southern Prince Charles Mountains survey several hundred miles south of Mawson was completed last season. In the course of their work Australian scientists made contact with members of the Soviet Antarctic Expedition working in MacRobertson Land. The Russians visited the Australian base camp at Mount Cresswell, and also made three calls at Mawson.

The Australian survey concentrated on the extension of the previously established geodetic survey and a study of the total mass flow of ice into the Lambert Glacier drainage basin. The geology of the area was examined on a macro-scale as a preliminary to more intensive work in the future, geomagnetic examinations were made, and lichens collected throughout the region.

Long periods of fine flying weather enabled the Prince Charles Mountains group to make an earlier start on field work from the main camp at the base of Mount Cresswell. A tractor team from Mawson had established the camp before the arrival by air of the survey party.

Three two-man teams of surveyors, geologists and geophysicists worked in the mountain locations, and a glaciologist and a surveyor established survey markers on the ice at 11 points round the perimeter. The expedition's fixed wing turbine-powered Pilatus Porter ferried men and freight between Mawson and Mount Cresswell and Moore Pyramid, the base camp for the second and third phases of the survey, and also established fuel dumps. A radio operator and a weather observer linked Moore Pyramid with Mount Cresswell, Mawson, and the aircraft.

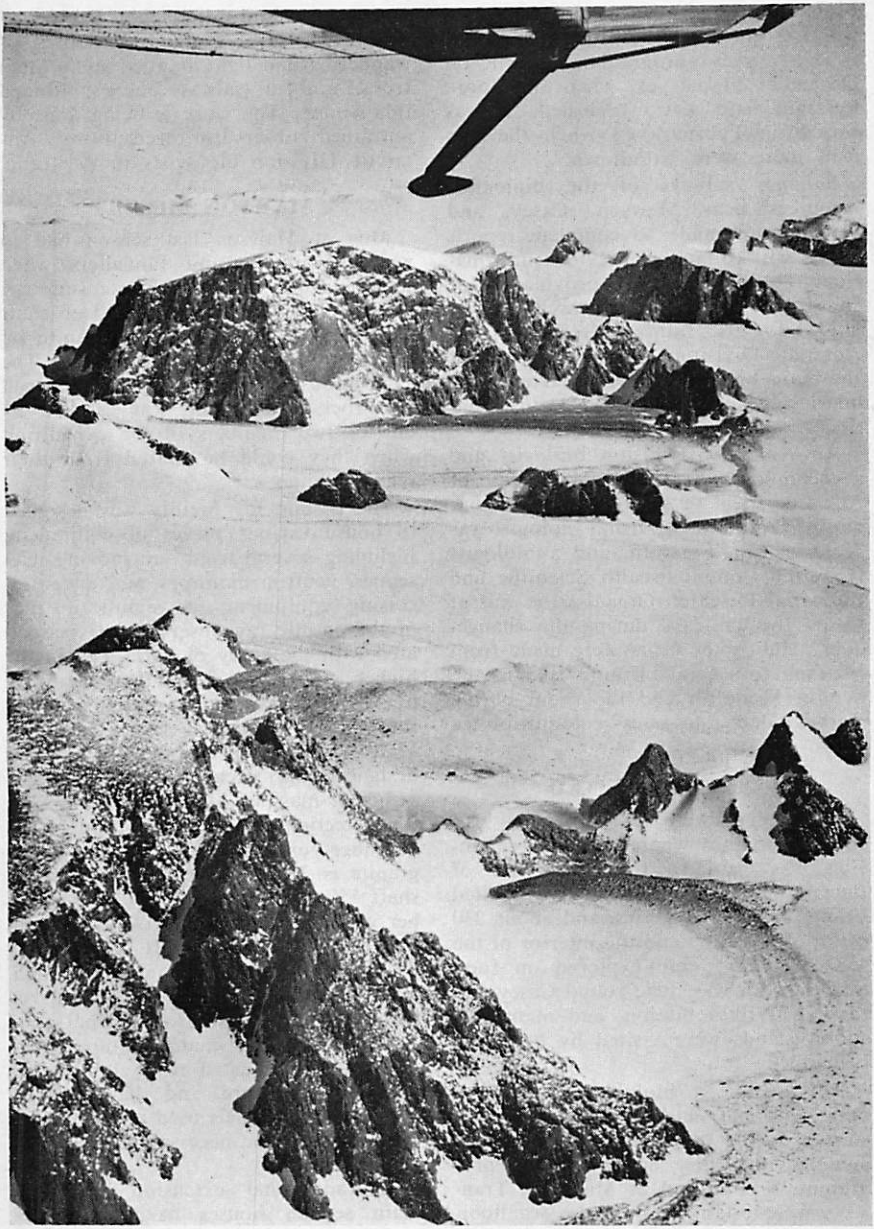
The Pilatus Porter was fitted with ice thickness radar and obtained more than 4000 miles of ice thickness profiles. The three Hughes 500 helicopters were used to move the field teams for the survey, and also made reconnaissance flights to Komsomolsky Peak and the Grove Mountains.

Seven men were stationed at the Mount Cresswell camp during the survey, and a weather forecaster worked at Mawson. A tellurometer survey loop was established from Mount Cresswell via the Seavers Nunataka, Mount Menzies, Mount Ruker, Mount Newton, Wilson Bluff, the south of the Mawson Escarpment, and Mount Stinear, and was closed back at Mount Cresswell.

Additional measurements were made to Mount Johns, a previously established geodetic station, and Mount Rubin. Komsomolsky Peak, an isolated 10,000ft peak 250 kilometres south-west of Wilson Bluff, was visited and a barometric height measurement made at the summit and the base. Angles to Komsomolsky Peak were taken from Mount Menzies, Wilson Bluff, and Mount Newton. A reconnaissance flight was made from the Mount Cresswell camp to Mount Harding in the Grove Mountains to the east with a view to establishing more glaciological stations there in future phases of the survey.

RUSSIAN VISITORS

Russian scientists visited the Mount Cresswell camp twice, and Mawson three times. Members of the Prince Charles Mountains survey team visited the Russian weather station manned by three men at Tatte Rocks in the Grove



An Australian National Antarctic Research Expedition flight over the Prince Charles Mountains.

—A.N.A.R.E. Photo. D. J. Lugg.

Mountains, and the geological team working at Mount Rubin.

The survey programme began on December 29 last year when the Moore Pyramid base was established. It was closed on February 13 when the two men there were withdrawn.

Summer surveys of the biological resources near Mawson, Casey, and Davis, were made to complete reports which will collate all previous information. These reports will provide a base for future biological research and a guide to its future direction. The Antarctic Division's policy is to transfer the main biological research from Macquaries Island to the Antarctic Continent.

An Antarctic Division biologist and a technologist from the University of Adelaide spent seven weeks at Mawson; another Antarctic Division biologist was at Davis for a month, and a biologist from the Commonwealth Scientific and Industrial Research Organisation was at Casey for ten days during the changeover. Helicopter visits were made from Mawson to several offshore islands, the Scullin Monolith and the snout of the Forbes Glacier to assess colonies of sea birds.

ISLANDS VISITED

Helicopters were also used to visit inland nunataks where particular attention was paid to the occurrence of lichens. Several islands were visited briefly by boat at Davis, and about 230 miles of coastline and the interior of the Vestfold Hills were explored on foot. Survey work was done round Casey and the old Wilkes Station, and many offshore islands were visited by boat and helicopter.

This winter a biologist at Mawson will continue inshore marine work started during the summer. During the summer the first scuba diving programme was started at Mawson. Transects were established on the sea floor, and areas were cleared to record the rate of their future recolonisation by benthic organisms.

Biologists visited Macquarie Island for five days last November during the changeover and did zoological and botanical work. Long-term studies of wandering and light-mantled sooty albatrosses and fur seals are being continued this winter. The work is being done by untrained observers directed by Antarctic Division biologists in Australia.

MAWSON MINERS

Men at Mawson last season had to work as miners and tunnellers when they helped to build the new cosmic ray facility. They had to blast a deep shaft and vault in the monolithic granite on which Mawson Station is built. The excavations were done by one trained hard-rock miner, who was assisted by one or two members of the expedition when they could be spared from their regular duties.

The cosmic ray facility was designed to house various pieces of equipment, including several fixed and moving telescopes, neutron monitors, and data processing equipment. A significant part of the cosmic ray observation is associated with the study of variations in the higher concentration of the stream of high energy cosmic particles reaching the earth.

A subterranean chamber had to be designed and excavated to supply a sufficient mass of high density absorber for detection of these variations. The chamber excavated from the native granite is 27ft by 12ft and 8ft high. A shaft 45ft deep gives access to the chamber which was driven horizontally from the bottom of the shaft. A smaller chamber, 10ft by 10ft and 8ft high, houses seismic equipment. It was driven from the opposite side of the shaft.

The shaft and chambers are lined, insulated, and heated to a closely controlled temperature, and the insulated, pre-fabricated panels used are six inches thick to meet the necessary temperature control.

An additional extension from the main section houses fixed telescopes, and the whole building is 54ft by 24ft. The shaft mouth and the floor of the building are connected by an insulated enclosure.

A more sophisticated latrine building,

using electricity and liquified petroleum gas was installed at Mawson last season. It replaces the incinerators, known as "flaming furies," which were built at the station some years ago. Other buildings erected recently include surgery at Davis, an emergency power-house and a hydrogen generation building at Casey, and remote transmitter buildings at Davis and Macquarie Island.

Brazilians to go South

Brazil is organising its first scientific expedition to the Antarctic. The expedition, which will be sponsored by the Engineering Club in Rio de Janeiro, is expected to sail to the Antarctic Peninsula in mid-December.

A Brazilian meteorologist, Mr R. J. Villela, who has been to the Antarctic with the Americans in 1961 and 1962, is the co-ordinator of the expedition's scientific programme. The Club of Sao Paulo is responsible for the procurement of cold-weather clothing and other individual equipment.

Mr D. Giobbi, founder of the Alpine Club, and Mr Villela, have written to Mr R. B. Thomson, superintendent of the Antarctic Division of the Department of Scientific and Industrial Research, about possible purchases of equipment in New Zealand. The items sought include 30 to 40 sets of light gear, and 12 of heavy gear, clothing, boots, sleeping bags, ice-axes, and tents.

Mr Thomson says he concludes from this information that there would be about 30 in the Brazilian party. The cost of buying such equipment would be between $10,000 and $15,000.

MARION ISLAND RESEARCH

A study of the food cycle in the wild life communities on Marion Island where millions of birds and seals thrive was made by the second South African biological expedition to the island. After a stay of five months the research party brought back large quantities of material and a documentary film of its work.

The party, with its laboratory equipment, went south in the French research vessel Gallieni, and was landed on the island by helicopter.

Organisers of the expedition, financed by the Department of Transport, were Professor E. M. van Zinderen Bakker, professor of botany at the Orange Free State University, and Mr J. U. Grobbelaar, lecturer in botany at the university. Other members of the party were Messrs R. Croome (Tasmania), V. Smith (Witwatersrand University) and A. de Villiers (Cape Town University).

A modern, new field laboratory is being built on the island. It will be ready for use by the next expedition in December.

R.G.S. DIRECTOR KNIGHTED

The name of L. P. Kirwan, director and secretary of the Royal Geographical Society since 1945, appeared in the Queen's Birthday Honours list in Britain this month. He was created a Knight Commander of the Order of St Michael and St George.

Sir Laurence Kirwan is the author of a history of polar exploration, "The White Road," published in 1959, but his main concern has been with archaeology and geography in the Middle East. He has contributed papers on archaeology, historical and political geography, and exploration, to scientific and other publications.

BRITISH SURVEY NEWS

Winter Party of 101 Will Work at Seven Bases

This year there will be a winter party of 101 men at the seven British Antarctic Survey bases. The main bases are at the Argentine Islands, Adelaide Island, and Stonington Island, all off the Antarctic Peninsula, Signy Island (South Orkneys), South Georgia, and Halley Bay. There is a subsidiary base at Fossil Bluff on the east coast of Alexander Island, and several field huts will also be occupied, some continuously by relays of staff.

Last season bad weather held up field parties and grounded aircraft but the sea was exceptionally ice-free, and B.A.S. ships were able to move without difficulty, even reaching the Marguerite Bay stations in early December—a record. Most areas were still ice-free, apart from scattered bergs, at the end of April. Halley Bay was the only exception, and even there small leads were still open.

The R.R.S. Bransfield returned to the Falkland Islands from Halley Bay on February 8 and after a short trip to Punta Arenas visited all the bases in the Antarctic Peninsula area. Calls were also made at Admiralty Bay (King George Island) Danco Coast, Port Lockroy, Graham Coast, and Loubet Coast to examine the unoccupied British bases. All the buildings except those at Admiralty Bay were in good condition, and well supplied with emergency food and clothing.

At the end of February the Bransfield met the John Biscoe at Marguerite Bay. The John Biscoe then sailed to the South Orkneys and South Georgia by way of the Falklands, and continued the marine zoological programme. A six-man geological-geophysical field party was established by the Bransfield on the Arrowsmith Peninsula in northern Marguerite Bay.

After a final visit to Adelaide Island the Bransfield took summer season visitors to Punta Arenas. She then acted as a beacon in Drake Passage for the end-of-season flight by the B.A.S. aircraft to South America. On her final visit to Signy Island and South Georgia in mid-April when she picked up the biological party from Bird Island she experienced bad weather with winds exceeding 100 knots.

The John Biscoe, having completed her zoological programme, sailed for the Falklands at the end of March, and arrived at Southampton on May 4. The Bransfield was expected on May 19.

AIR OPERATIONS

In spite of the usual very variable weather, the Twin-Otter and the Turbo-Beaver flew from Adelaide Island to Fossil Bluff several times in February and March to support field parties. A particularly bad spell of weather at the beginning of February delayed the evacuation of a geophysical party from western Alexander Island, but the party was finally taken back to Adelaide Island on February 8.

Flying was impossible again at the end of February and the beginning of March. The aircraft were grounded at Fossil Bluff, but they were able to collect and deliver final supplies from Adelaide Island to the Bluff on March 8.

Another two weeks elapsed before the weather was sufficiently good over the whole Antarctic Peninsula for the aircraft to start their flight back to Canada for winter servicing. They arrived at Toronto on March 28.

In addition to the established observatory programmes an airglow project has been set up at the Argentine Islands. By the end of March the photometer was operative and awaiting clear nights. Programmes of simultaneous whistler recordings at Halley Bay and the South African Sanae Station were started to coincide with the passes of the Ariel 4 satellite.

Professor D. H. Griffiths, continuing his geophysical work on the Scotia Island arc from the R.R.S. Shackleton erected a seismic array of one main and two satellite stations on the Barff Peninsula on the eastern side of Cumberland Bay, South Georgia. This is now performing satisfactorily.

FIELD PARTIES

Because of the bad weather surveyors who set out from Stonington Island in mid-March made very little progress although heavy snowfalls had bridged the numerous crevasses revealed by the exceptional summer ablation and melt. All parties had to return to base in the second half of April.

On Adelaide Island short journeys were made at the end of April to check the field depot at the plateau "air-strip" in preparation for next summer's flights. At the Argentine Islands trips were made to neighbouring islands to continue a census of Adelie penguins. Further north at Signy Island marine, freshwater and terrestrial biological projects were continued, and several parties also visited Coronation Island.

As reported in "Antarctic" (September, 1969) there are believed to be some 4000 reindeer on South Georgia, most of them on the Barff Peninsula where overgrazing appears to be threatening the vegetation. Successful hunts in this area have provided the base at King Edward Point wih a welcome supply of venison.

A small field hut has been erected on the Barff Peninsula for botanists and geologists who will be in the area again next summer. This hut will also be used by parties making a reindeer census throughout the winter.

Botanists working in the south-eastern part of South Georgia all summer were picked up from Royal Bay by the Bransfield at the beginning of February. She also picked up a Dutch film party which had been at the Bay of Isles since mid-November. A group of geologists which had been working at Royal Bay and to the south was picked up by the John Biscoe in mid-March.

Other geologists worked on both sides of Cumberland West Bay. Glaciologists continued work on Hodges Glacier inland from Grytviken, living in a small hut which was erected earlier in the season.

Two zoologists who spent the summer at a small hut on Bird Island, at the western extremity of South Georgia, studying fur seals and wandering albatrosses, were picked up by the Bransfield on her final visit in mid-April. Botanists on board were then landed briefly at several points in the extreme south-east of South Georgia.

In the Halley Bay area short glaciological journeys were made to level and measure the movement of stakes. The hinge zone marking the boundary between inland ice and the ice shelf was investigated again and a new route reconnoitred across it. Equipment was also salvaged from the sledge lost with a dog team down a crevasse earlier in the season.

Much maintenance work has been necessary at Halley Bay. Floors have had to be levelled and access shafts extended because the depth of overlaying snow has increased and the buildings have become distorted.

NO MORE FOOTBALL

One result of the permanent closure of Byrd Station last summer is the end of the traditional New Year's Day football match between teams of scientists and Navy men, which has been played for 11 years. This year the scientists won the last game 13-6. The score sheet is: Scientists, five wins; Navy, four. Three games have been drawn.

Italian Plan to Send Team South in 1973-74 Season

An Italian scientific team is interested in participating in New Zealand's Antarctic research programme in the 1973-74 season. A small Italian scientific and mountaineering team worked with the New Zealanders in the 1968-69 season, and now the Italian National Research Committee and the Ministry of Foreign Affairs have agreed to finance a second expedition to the Antarctic.

In the coming season Dr Carlo Stocchino, chief hydrographer of the Institute of Oceanography, Genoa, and Dr M. Manzoni, a geologist who was in the 1968-69 team, will come to New Zealand to discuss policy, transportation, fuel, and supplies with Mr R. B. Thomson, superintendent of the Antarctic Division, Department of Scientific and Industrial Research. They have indicated that they would like to visit the Antarctic to locate a suitable area for their research.

Already the Italians have begun negotiations with an Italian firm for the supply of one or two snocats and trailers which might be left behind in the Antarctic once their task is completed. The proposed expedition will be purely scientific, and is not expected to number more than six.

Italy's first Antarctic project was the result of a decision by the Ross Dependency Research Committee that some support be given to small groups from countries which are not concerned in the Antarctic Treaty, provided that logistic support was available. The Italians had set up a committee to investigate the possibility of ultimately participating in Antarctic expeditions, and Mr Thomson visited Rome to discuss the project.

Four Italians were then invited to work at Scott Base in the 1968-69 summer to gain knowledge and experience of New Zealand's scientific work. The party was led by Italy's best-known alpinist, Carlo Mauri, who had visited Scott Base the previous season, and taken part in an ascent of Mount Erebus. With him were Alessie Ollier, a leading guide and alpinist, Ignazio Piussi, an alpinist and former champion skiier of Italy, and Dr Marcello Manzoni, a geologist.

Mauri and Ollier worked with the Victoria University of Wellington and D.S.I.R. geological parties as field assistants in the Boomerang Range, about 150 miles west of Scott Base. Piussi and Dr Manzoni helped in the construction of Vanda Station and scientific investigations in the dry valley area.

During their two months in the Antarctic Mauri and Ollier, who were experienced movie photographers, made a documentary film to assist Italians to gain a knowledge of Antarctic conditions. Later the four men worked with New Zealand field parties before their return from the south.

Since he was in the Antarctic the adventurous Mauri has crossed the Atlantic aboard Thor Heyerdahl's papyrus raft Ra. Now he is planning to retrace Marco Polo's journey across Asia.

VOLUME V INDEX

Subscribers to "Antarctic" are reminded that the index to Volume V (1968-70) has been printed. Copies can be obtained from the New Zealand secretary, P.O. Box 1223, Christchurch. The price is 35 cents in New Zealand currency or the local equivalent.

Weather and Bad Terrain Reduce French Traverse

Because of bad weather, the difficult terrain, and the need to repair equipment, the French scientific traverse party led by Robert Guillard was unable to complete the whole of its planned journey across Wilkes Land towards the Soviet Vostok Station this season. In his report on the 1971-72 expedition to Adelie Land Paul-Emile Victor, director of Expeditions Polaires Francaises, says the party could not push beyond the 800-kilometre mark although plans were based on covering 1000 kilometres.

This season the Thala Dan left Le Havre on October 14, having shipped 770 tons of material for the summer season of the 22nd French Antarctic Expendition. It arrived at Hobart on December 1. The 46 members of the expedition, scientists and technicians, arrived by air from France and embarked on December 5. Also aboard the Thala Dan were Mr Pierre Rolland, chief administrator of French Southern and Antarctic Territories, and Mr Gaston Rouillon, assistant director of E.P.F.

Delayed by fairly thick pack ice several hundred kilometres wide, the Thala Dan arrived in sight of Dumont d'Urville on December 15. In spite of several days of blizzard, the disembarkation was completed on December 26, and the ship sailed on December 27 with Messrs Rolland and Rouillon, and 13 members of the 1971 winter party (TA 21). It reached Melbourne on January 3. Six members of TA 21 arrived in Paris by air on January 9 after an absence of nearly 13 months.

BASES RELIEVED

After having relieved Australian bases for the Australian National Antarctic Research Expedition, the Thala Dan left Melbourne on February 14 to return to Terre Adelie. She left again on February 28 to bring back 46 men: the members of the summer party, the rest of the TA 21 winter party, the members of the Wilkes Land traverse, except for Robert Guillard, who will lead the 1972-1973 winter party, and Mr Jean Vaugelade, assistant director of E.P.F. The ship arrived at Hobart on March 6.

On the day after the Thala Dan left Dumont d'Urville a responding beacon was installed on an iceberg at 65deg 11min S and 139deg 44min E. This iceberg is of triangular shape, 800 metres on one side, 200 metres at the base, and rises 30 metres above the sea level.

SATELLITE REPORTS

This new type of installation is intended to follow the movements of the iceberg, and therefore learn the direction and strength of the ocean currents. The beacon will be interrogated by the E.O.L.E. satellite, which is in polar orbit, and it will reply, indicating its position. It will also transmit information by the satellite to ground receiving stations, particularly to those of the National Space Research Committee in Brittany.

The Wilkes Land traverse was the main scientific project in the French programme last season. It was part of the International Antarctic Glaciological Project planned by France, the United States, the Soviet Union, and Australia. The first French objective was to link Dumont d'Urville (66deg 40min S—140deg .01min E) to Vostok (78deg 28min S—106deg 48min E), the distance of 2000 kilometres being covered in two seasons, half last season and half next season.

All the material for the journey was put on the Polar Plateau by TA 21 during the 1970-71 season. It included

five Castor tracked vehicles specially fitted out for long polar journeys (a cabin with bunks, telecommunications and navigation equipment), eight sledges and two caravans, one for use as a glaciology laboratory and the other for cooking and eating. This equipment was stocked at an advance camp called Carrefour (66deg 50min S—139deg 15 min E) at an altitude of 860 metres and 33 kilometres from Cape Prudhomme.

Several possible landing areas were marked off, the best (D 21) being situated about 20 kilometres south of the camp beyond the crevassed area. The leader of the traverse, Robert Guillard, and the scientific leader, Claude Lorius, were put in position at this spot in November.

SECOND POLE VISIT

Under the direction of Paul-Emile Victor 16 members of E.P.F.—10 men for the traverse and six for the summer season, flew to the United States Antarctic support force headquarters at Christchurch. They flew to McMurdo Station in a Starlifter on October 23.

Because of bad weather at D21 two flights by a United States Navy Hercules planned to put the traverse party in position, had to be cancelled before take-off on October 26 and 27. This delay allowed Paul-Emile Victor to take part in the first supply flight (since February) to the Amundsen-Scott South Pole Station. No flight had taken place sooner, the temperatures having been too low. On October 27 the temperature was minus 48deg.

The last time Paul-Emile Victor was at the South Pole was in 1956. He was then attached to the United States Antarctic expedition as a polar technician and French observer.

A flight to D21 took place on October 28. But the weather having deteriorated during the flight, the Hercules could not land and had to return to McMurdo Station after having flown over Dumont d'Urville.

The positioning flight finally took place on November 1 in the late afternoon. While the 10 men of the party immediately began removing the snow from the vehicles and sledges which had been parked for a year, the Hercules took off with Paul-Emile Victor and a member of the winter party whose repatriation had been arranged. In spite of an accident which damaged the front ski of the aircraft it was able to land at McMurdo Station without difficulty.

It took the traverse party two weeks to remove the material, load the sledges, and install the scientific apparatus in the laboratory caravan and the vehicles.

The sector of Antarctica where the surface is most distorted is in Adelie Land. Therefore the party had difficulties to overcome as soon as Guillard gave the signal for departure. It had to halt at D51 (altitude 2020 metres) after covering 110 kilometres in order to begin repairing the springs of the caravans, and the sledge runners.

On November 28 Guillard signalled his position at D59 (altitude 2460 metres) 190 kilometres south of Carrefour. His average speed was five kilometres an hour. The minimum temperature was minus 29.5 degrees, and the maximum wind speed 16 kilometres. Guillard reported permanent driving snow, and sastrugi up to a height of one metre.

The main American contribution to the I.A.G.P. is the air support given to the French group. In addition to putting in the men and the last supplies, four resupply flights were planned at 200, 400, 600, and 800 kilometres.

On December 2 a Hercules flew over the vehicles without being able to land. Two days later the aircraft repeated its attempt which succeeded this time. Thirty-six drums of fuel, fresh food and mail were unloaded on the ice-cap.

The take-off of the Hercules was less happy than the landing; two J.A.T.O. bottles broke loose on firing and struck the inside left engine. This broke loose, causing damage to the outer engine, and the propeller blades went through the fuselage. The aircraft, which had lightly left the ground, dropped back, and in its fall the left wing dragged deep in the snow, and it and the radar were damaged.

The ten members of the crew, who

were safe and sound, evacuated the Hercules and set up a temporary camp on the ice near the French group. A relief aircraft landed on December 7. The damaged Hercules, which could not be salvaged, was abandoned, and will serve as a depot shed.

The party continued its march at reduced speed because of snow, white-out, more and more severe temperatures (minus 32deg C) and a surface which was always corrugated by sastrugi.

Because of the loss of their resupply Hercules the Americans decided not to land any more but to drop fuel, supplies, and mail. The incident was disagreeable for the isloated men; they could receive letters but it was impossible to send their own.

At the 400th kilometre on December 27, and at the 600th on January 2, the Americans resupplied the convoy. Ten days later on January 12 there was another drop at 800 kilometres. The convoy ended there at an altitude of 3181 metres. The temperature was minus 35deg C, the wind strength was seven metres, and there was snow.

On the return journey the convoy had to struggle against a blizzard. But in spite of bad visibility it was able to advance by following the tracks, still visible, of the outward journey. The last stage of the route proved to be the most difficult because of a heavy fall of snow.

The vehicles have been overhauled, and, with the equipment, will be stored for the second journey in the 1972-73 season. During the winter the sledges will be overhauled at Dumont d'Urville.

Kinsey Cottage Now Preserved

A cottage closely linked with Captain Scott's two expeditions has been saved from demolition and preserved as a result of the energy and enthusiasm of members of the Canterbury branch of the New Zealand Antarctic Society. The building, at least 70 years old, has been moved from 66 Papanui Road, to a site at Ferrymead where historic material is preserved by the Ferrymead Trust.

"Warrimoo," 66 Papanui Road, was the home of Sir Joseph Kinsey, who has a place in Antarctic history as the New Zealand agent for both Scott and Shackleton. Scott, Dr Edward Wilson, and other members of the expedition knew Kinsey's home well and enjoyed his hospitality.

After Kinsey died at "Warrimoo" in 1936 the property changed hands several times, and last year it was sold to make way for a block of motels. The branch had been interested in the cottage, part of which had been fitted up as a dark-room, for several years, and had been told of its historic associations.

The branch was able to obtain the Kinsey cottage, as it is now known, but then faced the problem of finding a new site in three weeks before all the buildings at 66 Papanui Road were demolished. A site was found at Ferrymead; the next problem was how to move the cottage a distance of several miles. Funds were provided by the branch, several business firms made contributions, and members helped to transfer the cottage, and establish it on its new site.

There was a pile of rocks on the property for many years, but it has now disappeared except for a few rocks saved by the branch. They were just rocks to the motel builders. Some have been saved, however, because they have a history.

The rocks are the remains of ballast from the Terra Nova. About 30 tons of rocks from Cape Evans were hauled to the ship by Scott's ponies before she returned to Lyttelton from her first trip south. The ballast was unloaded, and some of the rocks found their way to Christchurch.

In the last 60 years the ballast has been dispersed far and wide. Some rocks were built into walls, and there is still one in the corner of a city bookshop.

JARE 12 TEAM RETURNS TO TOKYO BY AIR

After an absence of 17 months, including nearly three weeks locked in the ice aboard the icebreaker Fuji, 30 members of the 12th Japanese Antarctic Research Expedition, led by Dr Takasi Oguti, returned to Tokyo by air on April 29. Ten members of JARE 13, led by Mr Zenbei Seino, who made observations aboard the Fuji, arrived from Cape Town by sea about the middle of last month.

Caught in fast ice on March 7 ("Antarctic," March, p. 184) for the third time in three successive seasons after relieving Syowa Station, the Fuji finally freed herself at 5.40 a.m. on March 28, leaving the edge of the ice at 68deg 25.5min S—38deg 45min E. She reached Cape Town on April 10 and called at Jakarta before returning to Tokyo.

A week before the Fuji broke out of the pack ice two United States Coast Guard icebreakers, the Northwind and the Southwind, sailed to the assistance of the Fuji. The Northwind was at Lyttelton ready to leave for Hobart after service in McMurdo Sound and the Ross Sea when she was placed on stand-by. The Southwind, which had spent the summer in the Bellingshausen and Amundsen Seas, and helped to resupply Palmer Station, was at Rio de Janeiro when the call came.

When advice was received that the Fuji had broken clear of the ice, the Northwind was well south of Campbell Island. She and the Southwind were ordered to change course.

Scientific results of JARE 12 were briefly reported when the wintering team at Syowa Station returned to Toyko. At Mizuho, the small inland station about 185 miles south-east of Syowa, which was occupied for four months, samples of ice several thousand years old were obtained. Glaciologists bored into the ice-cap to a depth of about 240ft.

The upper atmosphere rocket sounding programme at Syowa produced valuable data on aurora, and the emanation from them of X-rays and ultra-violet rays. Data was also collected on the magnetic field and spontaneous radio waves.

MARKING HISTORIC AREAS

New Zealand's ten historic areas in the Antarctic will be officially marked by metal plaques bearing the relevant information in English, French, Spanish, and Russian. The Antarctic Division of the Department of Scientific and Industrial Research hopes to begin the task early next season and complete it before the end of the summer.

The marking of historic sites in the Antarctic is in accordance with recommendations made at the sixth consultative meeting of the Antarctic Treaty nations in Tokyo. It was decided that representatives of the 12 nations should recommend to their Governments that they adopt all adequate measures to preserve and protect all historic monuments in the Antarctic and to mark them with notices.

Each of the Antarctic Treaty nations, with the exception of the United States, has submitted lists of particular historic areas where official notices should be placed. The American list at present duplicates the list submitted by New Zealand.

Mr R. B. Thomson, superintendent of the Antarctic Division, says that New Zealand is responsible for the whole of the Ross Dependency which has been the most visited region in the exploration of the Antarctic. Historic sites and buildings in the region will be marked to preserve them for future generations.

FIRST INTO THE ROSS SEA

By A. G. E. JONES

It is generally agreed by Antarctic historians that in December, 1840, Sir James Clark Ross was the first man to sail his two ships into the sea now named after him. Through the researches of the author of this article it now appears possible that Ross was forestalled by about ten years.

When Samuel Harvey took command of the Venus in Liverpool in June, 1830, he did not realise that he would be making a place for himself in the early history of Antarctic exploration, as he was starting on an ordinary commercial voyage. He would seem to have been a Liverpool man—Samuel Harvey, soap boiler and tallow chandler, 60 Cheapside, may have been his father. He was third officer in the Emerald (Captain William Elliott) when she sailed from London in 1820; he was in her when she discovered Emerald Island*. The Venus appears to have been his first command.[1]

It would also have been a surprise to his owners, a Liverpool merchant, a ship-broker, two ship-owners, a grocer, two Liverpool surgeons, a gentleman and two Leith merchants who had bought shares in the Venus as an investment, leaving the management in the hands of Captain William Prowse (who had been a master in the trade between Liverpool and Jamaica, and held 4/64 shares in her.[2]

Furthermore, the Venus was in no way specially equipped for such a voyage. Captured as a prize in 1803, she was a barque of 288 tons, with no unusual features. In April, 1830, she had returned to Liverpool from South America with a cargo of cotton for a number of Liverpool merchants and like most other ships took two months to turn round.

In this time she was sold by the three merchants at Poole who owned her to the new Liverpool owners, and there were some small changes of ownership during the voyage. She was reinforced with iron knees, thoroughly repaired and given new upperworks, and was fitted with two iron cables as well as the hemp cable; her coppering was made good, and all in all she was like hundreds of other merchant ships.[3]

The change of ownership and the appointment of Samuel Harvey as master were registered on June 16, 1830. Under him she was destined for the Cape of Good Hope, Hobart Town and New South Wales. Harvey loaded the barque with pieces of cotton, baize, worsted stuffs, hardware, saddlery, woollen cloth for the Rev. Samuel Marsden, staves, iron hoops, muskets, salt, fire bricks, puncheons, beer, raisins and wine, with 40 quarter casks of gunpowder as a private venture for himself.[4]

THE VENUS SAILS

The Venus cleared the Customs and sailed on Friday, June 23, 1830. Early in September, when approaching the Cape of Good Hope, she spoke the Elphinstone, bound for Calcutta, and on September 12 anchored in Table Bay where she unloaded part of her cargo, put a few letters ashore and parted with one of her passengers. She sailed for New South Wales on October 1.[5]

It was on November 13 that the Venus reached Hobart Town and unloaded a variety of goods for the merchants of the settlement—hats, raisins, cocoa, coffee, tea, gin, brandy, tobacco, hardware, cottons, sugar, molasses, plums and other general cargo. She stayed there

*Now presumed to be non-existent.

until November 21 when she sailed for Sydney with goods and two passengers. It took a week to make the passage, and she arrived at Sydney on November 29, putting ashore woollen clothes, seeds, cloths, hardware, scythe handles, blubber knives and Captain Harvey's gunpowder.[6]

WHALING TRADE

In the ordinary course of events Captain Harvey would have sailed for England with a few passengers, but Sydney was growing rapidly as a port in its own right, and there had been a noteworthy development in the sperm and black whale fisheries. Exports of oil had risen from £7,278 in 1828 to £12,313 in 1829. There had also been a growth in the sealing trade. In 1828 there had been five vessels in the whaling trade, but now there were a dozen. Victualled for 15 months, they went mainly to the coast of Japan and the Solomon Islands, though the New Zealand fishery and Macquarie Island attracted a fair amount of attention.[7]

One man involved in this trade was Captain James Kelly, harbour master and pilot at Hobart, a master mariner who had circumnavigated Van Diemen's Land, made some interesting observations on the aborigines, had taken part in the early exploitation of Macquarie Island and had been called upon to give evidence before the Government commission of 1820. But strangely, at this time he was selling some of his vessels, advertising this as an opportunity, "a most noble chance for new hands wishing to embark in the whale fishery with good capital . . ."[8]

SOUTH FROM SYDNEY

The Venus sailed from Sydney on January 8, 1831, with whaling stores for the sperm fishery. Nearly a year later, on October 31, Harvey met John Biscoe (who was then on his way from Hobart to the South Shetlands, having discovered Enderby Land a few months before) in the Bay of Islands. Harvey returned to Sydney on December 31, 1831, with 140 tons of black oil and 30 tons of sperm oil.

On January 23, 1832, Harvey wrote to James Kelly:

"An opportunity offering, I thought you would have no objection to hear how I got on in my southern speck. After leaving Macquarie Island I proceeded as far south as 72deg S. but had such a succession of fog and thick weather it was utterly impossible to see further than a mile from the ship the whole time.

"McQuaries is entirely cut up, I landed at both ends of the island, but could see no signs of Elephant [seal] whatever; here I procured 170 prime skins. I put ashore at the head of Perseverance Harbour [Campbell Island] about 20 tons of salt and burnt it over. It would pay a boat's crew to remain here.

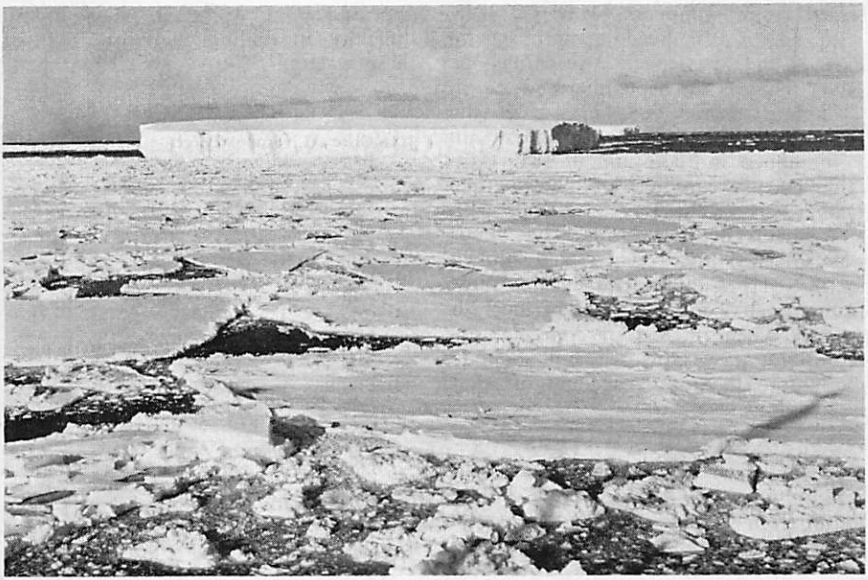
"I next proceeded to Cloudy Bay (New Zealand) where I got 140 tons of oil, and had a taste of the Sperm Gentlemen on my passage up. I have landed here 140 tons whale oil, 6 tons whalebone, 25 tons sperm oil, 170 Furskins, and am now fitting out for the Sperm fishery. I hope to be away in a month from this."[9]

These are the only available facts. Masters and owners in the South Seas trade were always unusually reticent about their movements, and in this case Harvey was under a bond of £5,000 not to disclose where he found his seals. When Biscoe met Balleny at Campbell Island in 1839 they traded information, but when he met Harvey at the Bay of Islands they exchanged no details. Biscoe was under instructions from his owners to maintain secrecy about his voyage, and his journal merely noted: "The Venus, Harvey at the opposite anchorage."[10]

HOW FAR SOUTH?

Details of the voyage were recorded in Harvey's log book but that was handed over to the Customs in London on his return and was destroyed after a lapse of seven years; but it is nevertheless possible to reconstruct the voyage.

Dr. J. S. Cumpston says that it was in February that salt was obtained from



Ice floes and bergs in the Ross Sea.

Antarctic Division, N.Z.D.S.I.R.

Kangaroo Island. So presumably Harvey must have gone there at the beginning of February, 1831, direct from Sydney; and his would have given him some 14 or 15 days to make Macquarie Island. Then he could have reached Lat. 72deg S. in 12 or 13 days, that is to say about the middle of March. From this "farthest south" he would have made for Campbell Island and the Bay of Islands, where he must have spent some weeks before leaving for Sydney.[11]

His longitude is nowhere stated, but is most likely to have been in the Ross Sea. In those waters fog and thick weather are not unusual, Balleny having experienced such conditions for days on end in 1839. Harvey made no mention of pack ice, and even though it does vary from year to year it may have disappeared completely by the end of February near the 180th meridian.

In 1842 Captain Sir James Clark Ross, in Lat. 72deg 27min S., Long. 178deg 40min W. found himself in fog on the edge of the pack ice, with ice freezing on the rigging. In 1902 the Discovery made a passage on January 3-8 and the pack ice gave little trouble. In January, 1908 Shackleton's Nimrod met thick weather but only small floe bergs with some pack in that latitude.

Amundsen described the passage of the Fram through the pack as "a four-day pleasure trip", and added that the best place to go through the ice is between 176deg E. and 180deg and the best time as about the beginning of February.

Icebergs are produced by the breaking up of the Ross Ice Shelf, but that does not occur to any great extent every year, and Harvey may have been in the Ross Sea when there were few bergs. Therefore, it seems likely that Harvey reached Lat. 72deg S. in about Long. 180deg in an open season.[12]

LATER YEARS

Captain Harvey continued in the Venus in the South Seas trade, sailing from Sydney in May, 1832, and returning a year later with 60 tons of sperm oil, and making another voyage between September, 1833, and January, 1835, bringing back 210 tons of sperm oil. He

sailed from Sydney on May 17, 1835, with sperm oil, head matter, general cargo, and passengers, reaching the River Thames on September 21.

Captain Harvey was master of the barque Rowena from Liverpool to Pernambuco in 1836, and in 1839 Captain Harvey, master of the barque Diane, was in the Bay of Islands with 500 barrels of sperm oil. The Venus was sold to other owners and broken up in 1841. Captain Harvey was most probably alive in the middle of the 19th century when interest in Antarctic exploration was growing, but nobody thought to record his account of what he had done.[13]

DANGEROUS WATERS

In 1840 Sir James Clark Ross, with the Erebus and Terror, struck boldly south from Campbell Island into the dense pack ice and came out into the open water of the Ross Sea. There was no reason for him to expect open water farther south as the experience of Balleny and Bellingshausen in those longtitudes had been most discouraging. It is just possible that during his stay in Hobart Ross heard of Harvey's voyage into a sea free from pack ice.

Dr. H. R. Mill mentioned an American master who was one of the few Antarctic navigators to perish in those seas:

> "He set out from New Zealand in 1826 with the intention, according to Morell, of seeking new land between 60deg and 65deg S. south of that island and was never heard of again. It might very possibly be that he penetrated the pack into the Ross Sea, and was unable to make his way out."

Any comment must obviously be speculation as there is no further information; but when one bears in mind the loss of the Sabrina, Balleny's consort in 1839, the possibility of broaching to in those dangerous waters, the risk of striking a growler and the possibility of being embayed by a large iceberg (like many masters rounding Cape Horn) and the usual hazards of the sea, it does not seem necessary to invoke the ice of the Ross Sea to explain the American's disappearance. Few vessels have found difficulty in finding their way out of these waters.[14]

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SOVIET NEWS

Polar Medicine Study at Molodezhnaya Station

An Institute of Polar Medicine will be established at Molodezhnaya, the main Soviet research centre in Antarctica. It will be housed in a 20-room glass and aluminium building, and staffed by 15 specialists in medicine and biology. Equipment will include three computers.

Studies to be undertaken at the institute will include microbiology and hygiene, and the physical and psychological effects on human beings of cold, enforced immobility, close proximity to others, and the long polar nights and days. Other investigations will involve the responses of the circulatory, respiratory, and sensory systems to extreme cold.

Dr A. F. Treshnikov, director of the Arctic and Antarctic Research Institute in Leningrad, told J. N. Wilford, a "New York Times" correspondent, in a recent interview, that the medical work should help the institute define the physical and psychological requirements for future polar explorers. Some of the most interesting data, he said, should come from Vostok Station, which is near the South Geomagnetic Pole, at an altitude of 11,444ft.

Previous studies have shown such marked change among the men at Vostok as decreased blood pressure, increased red blood cell counts, and various adjustments of the respiratory system to compensate for air that is half as dense as at sea level.

The primary emphasis of Soviet research in the Antarctic, according to Dr Treshnikov, continues to be meteorological—the study of atmospheric processes and their interaction with the massive ice sheet and the ocean currents.

Soviet scientists gather much of their data on upper atmospheric conditions from sounding rockets launched from Molodezhnaya. Similar observations are being conducted in the Arctic where the Soviet Union has two manned stations on drifting ice floes, and about 20 automatic monitoring stations.

Dr Treshnikov said the ultimate objective was to take the data from Antarctic and Arctic stations and develop mathematical models of global atmospheric and ocean circulations. This should lead to considerably improved weather forecasting.

DIRECT FLIGHTS

In a few years Soviet scientists may fly direct to the Antarctic by way of Australia or Madagascar to carry out their research rather than travel south by sea. When the veteran supply ship Ob called at Lyttelton for the first time early this year, Dr Y. Korotkevich, leader of the Soviet Antarctic Expedition. said that the establishment of a runway at Molodezhnaya for aircraft heavier than the Ilyushin 14s now in use would be considered.

"Nothing definite has been decided, but we think it likely that in a few years we will have proper landing facilities at Molodezhnaya, and that aircraft will be able to bring scientists down from the U.S.S.R.," said Dr Korotkevich.

RUSSKAYA STATION

Russkaya is likely to be the name chosen for the new Soviet research station which will be constructed next season at Cape Burks on the Hobbs coast of Marie Byrd Land. A reconnaissance of the coast was made at the end of last season by scientists in the Ob. The new station will be the sixth Soviet coastal station in the Antarctic.

More modern, functional, and comfortable dwellings will replace the existing wooden buildings at Soviet research stations in the Antarctic. Steel, aluminium, and plastic, are being used in their construction.

Two-storey steel and aluminium buildings, insulated with foam plastic, are planned at the oldest Soviet station, Mirny. Similar construction is being adopted for the dwelling houses, laboratories, offices, and recreation rooms at the main base, Molodezhnaya. They are being built of prefabricated metal units, glass, and plastics. Each building will stand on stilts 5ft to 10ft high so they are not buried by drifting snow.

Fossil trees and imprints of leaves and grasses were found by Soviet scientists who spent the Antarctic summer in the area of the Amery Ice Shelf in the mountains of MacRobertson Land. In a report on the last Soviet expedition the polar geologist, Professor Mikhail Ravish, said that the discoveries were made beyond the Prince Charles Mountains which run inland for some 430 miles, and are the only range in that part of the continent not now buried beneath the ice shield.

FLOWERING PLANTS

Two species of cereals—one hitherto unknown—have been discovered by Soviet scientists at Bellinghausen Station on King George V Island in the South Shetlands. This marks a new southern limit for flowering plants.

The discovery was announced in a report to the Soviet Geographical Society by Igor Simonov, leader at Bellinghausen Station. King George V Island, known to the Russians as Waterloo Island, in latitude 60deg S, is one of the warmest in the Antarctic, though it is mostly under an ice-cap, and the only plants found there previously have been mosses and lichens.

King George V Island is one of the research areas designated by the International Committee for Antarctic Studies, and Soviet scientists have been working there for four years.

Scientists in Leningrad, using radiosondes, have discovered that parts of the upper atmosphere over the South Pole are subject to sudden heating two or three days after a chromospheric flare in the sun. The temperature mounts by as much as 40deg C, and over the North Pole also.

The centres of such hot spots move over considerable distances, at heights of 20 to 30 miles, in both Antarctic and Arctic regions. It is suggested that these heat "explosions" are caused by the concentration of particles thrown out of the sun by the earth's magnetic field. Reactions between the streams of particles and the rarefied air cause the heating.

OCEAN STUDIES

When the Ob sailed for the Antarctic on April 2 after her brief visit to Lyttelton, she had aboard a Soviet scientist who had flown to New Zealand to join her. On the voyage south Professor Anatoly Kriss, of the Academy of Sciences, made microbiological studies on a series of stations between New Zealand and the Antarctic.

Professor Kriss took samples of water from different levels to study microbial life in the depths of the Pacific sector of the Southern Ocean. He has made similar investigations in the Indian and Atlantic sectors. His data will provide information about the distribuiton of micro-organisms (especially bacteria) in the Southern Ocean.

FIXING THE POLE

Five polar-orbiting satellites and a signal receiver used by the United States Navy for ship navigation were employed last season in tests to determine the exact position of the South Pole and other geographical points in the Antarctic. The project is expected to establish with an accuracy of better than 50ft the position of such points as McMurdo Station, White Island, Hallett, and Byrd Stations, and the direction and speed of the ice that covers the Pole.

Topographic engineers and technicians from the United States Geological Survey conducted the tests which could, if successful, revolutionise mapping and navigation in the Antarctic.

ANTARCTIC BOOKSHELF

"ANTARCTIC PINNIPEDIA". VOLUME 18. ANTARCTIC RESEARCH SERIES

Published by the American Geophysical Union, 1971. 230 pp. Illus. Price: US$25.00.

Papers published in this series are directed not only to specialists actively engaged in scientific research work in Antarctica, but also to scientists in related fields and to laymen with some scientific background. However, in "Antarctic Pinnipedia", papers for specialists far outnumber those for the general reader.

The twelve papers in this volume treat such topics as systematics of fur seals, anatomy, blood chemistry and population dynamics of the Weddell seal (*Leptonychotes weddelli*), underwater sounds of the Juan Fernandez fur seal (*Arctocephalus philippi*), and the histology and biochemistry of Weddell seal mummies. The diversity of topics is matched by the unevenness of treatment, with three pages devoted to fur seal underwater sounds and 56 pages to Weddell seal anatomy. The disproportionate amount of attention paid to the Weddell seal in research on Antarctic pinnipeds is reflected in this volume; Weddell seals feature in eight papers, fur seals in three, elephant seals in two, the crabeater in only one, and the leopard and Ross seals not at all.

For the specialist, there are informative accounts of the systematics of fur seals, osteology and myology of Weddell and southern elephant seals, aspects of underwater sound production in fur and Weddell seals, blood chemistry of Weddell, crabeater and elephant seals, and histology and biochemistry of ancient mummified Weddell seals. These papers provide interesting new information and will be useful works of reference.

Of more general interest are papers by Hubbs and Norris on the history and present status of the Juan Fernandez fur seal, by Stirling on Weddell seal population dynamics, and Siniff, Tester and Kuechle on activity patterns of adult female Weddell seals.

Carl Hubbs and Kenneth Morris provide an interesting account of the dramatic history of the Juan Fernandez fur seal. This seal was once harvested by the hundreds of thousands, was then thought to have become extinct only to be rediscovered in 1965, and now is known to occupy most of its original range.

Ian Stirling's study of the population dynamics of the Weddell seal in McMurdo Sound from 1966-1968 is the first of its kind. He presents data on population parameters gained from repeated sightings of some of his 3000 individually-tagged animals and from autopsy of 150 seals shot for dog food, and also discusses possible factors in the natural regulation of numbers, of which competition for space could be the most significant.

Siniff, Tester and Kuechle used radio telemetry to record activity of female Weddell seals with pups. With radio transmitters sewn into the upper backs of the females, the authors were able to determine the approximate haul-out time and duration of dives for seven individuals. No dives of more than ten minutes duration were made by the females in the 14 days following the birth of their pups, and it seems that they may not feed during that time but maintain a careful watch on their pups instead.

"Antarctic Pinnipedia" is a valuable addition to the literature on seals and should provide a useful work of reference for future workers in the field.

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BIOLOGY OF THE ANTARCTIC SEAS IV ANTARCTIC RESEARCH SERIES. VOLUME 17.

Published by the American Geophysical Union. 362 pp. Illus. $US30.

This volume of the Antarctic Research Series presents marine biological papers of very high quality with superb illustrations and micrographs. It is an excellent contribution to the understanding of marine biology in the Antarctic, and in many ways a gift from the taxonomist to the ecologists.

George Llano and Eugene Wallen have brought together an outstanding collection of papers on marine biology in the Southern Ocean. More than half the articles are concerned with the taxonomy and systematics of such varied marine groups as chordates, crustaceans, pycnogonids and mesozoans. Others are concerned with structure, distribution and abundance of foraminiferans, diatoms and zooplankton.

Stewart Springer's article on skates of the Antarctic continental shelf includes the description of one new species and suggests that skates may not be as sparse in Antarctic waters as previously believed.

Patricia Kott's paper on the taxonomy, systematics and distribution of Antarctic ascidians discusses 80 species of ascidians, collected since 1965, by the U.S.N.S. Eltanin, reports on known species not previously recorded from the Antarctic, and describes two new species. The New Zealand fauna is discussed in some detail because of its relation to the Antarctic fauna.

Cephalodiscids are little known animals but John Markham has managed to include much of the known information plus much that was not known to update this group. Although his paper is mainly concerned with the redescription of five previously known Antarctic species, a diagnostic key is presented for all presently recognised species.

In their review of the Antarctic, sub-Antarctic caprellid amphipods, McCain and Gray include descriptions of six new species. A key to the known Antarctic, sub-Antarctic species is included and each species is described or an up-to-date reference given.

Heron and Bowman describe all the copepodid stages in three species of pseudocalanid coppepods. One of these is new to science. Each stage is well described and illustrated.

Louis Kornicker's systematic study of some Antarctic benthic ostracods is based on new collections from the Palmer archipelago and the South Shetland islands, and on specimens on loan from museums housing earlier collections. Five new species are described and 11 previously described species are discussed, thus bringing the Antarctic Cypridinacea up to date.

Hedgpeth and McCain review the pycnogonid genus Pantopipetta. They discuss the taxonomic history of the genus and place it in the emended family Austrodecidae. A new species of Pantopipetta from off the Oregon coast (USA) is described.

Robert Short's paper on mesozoan parasites deals with three new species of Dicyema found in the renal organs of octopodes collected off the Kaikoura Peninsula of New Zealand.

In a very interesting paper El-Sayed reports on a 15,500 square kilometre phytoplankton bloom, one of the largest recorded in the literature. Species composition of the bloom is discussed and it is found that although a number of species was represented, one diatom, Thalassiosira tumida, was the overwhelming dominant.

Heimdal and Fryxell discuss the morphological variability of the biologically important diatom Thalassiosira tumida. This paper uses the light and electron microscope to demonstrate morphological characters which cause the authors to re-valuate the taxonomic position of certain diatom species.

Fryxell and Hasle also use the electron microscope to illustrate the interesting cosmopolitan diatom, Corethron criophilum. This paper and the preceding

one both beautifully illustrate the role the electron microscope can play in taxonomic and morphological studies.

The final paper by Thomas Hopkins deals with zooplankton standing crop in the upper 2000 m of the Pacific sector of the Southern Ocean. Seasonal estimates of standing crop are given and the zooplankton groups which contribute to the standing crop are discussed.

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ENTOMOLOGY OF THE AUCKLANDS AND THE ISLANDS SOUTH OF NEW ZEALAND

Editor: J. L. Gressitt.

Pacific insects, monograph 27: I-IV, 1-340 illust.

This collection of papers is the first of a series dealing with the taxonomy of the Auckland and other sub-Antarctic island insects. In his preface Gressitt reverts to the original usage of the term "sub-Antarctic," including within it and the context of this volume the islands of Auckland, Campbell, Snares, Bounty and Antipodes.

Gressitt and K. J. Wise in their introductory paper give a general history of entomological and other work on these islands but the visits by Hutton and some botanists are not mentioned. Outlines of the topography, geology, soils, climate, flora and fauna are given and a bibliography.

Although this work stems mainly from the 1963 and 1966 expeditions no reference is made at all to the work done by the geologist who accompanied Gressitt on occasions in the field and whose photos (Wright, 1966 et seq.) show the topography of the Aucklands to better advantage than many of those so poorly reproduced in this volume. As well as missing geological references a number of entomological ones are also absent, and are incorrectly cited.

There is one glaring misinterpretation concerning the plant Anisotome acutifolia on the Snares. Gressitt and Wise claim that it is almost extinct on an island which is almost unmodified by man's activities or associated animal pests. None of the botanists who have visited this island has claimed this and Fineran (1969) when discussing the high percentage of Anisotome pollen in the peat sample referred to by Gressitt and Wise, said that "the results suggest that Anisotome was at one time more plentiful on *site* (referring to the single peat sample site). This plant has only been reported in small often very dense clumps and this could well be its normal habit.

The map of the Antipodes Islands is a copy of one published in 1907 and the authors' preference for this over the far more accurate one published in 1958 is hard to understand.

The rest of the volume is taken up by taxonomic works dealing with mayflies, neuropterans, moths, weevils and some other beetles, psychodid flies and a small group of hymenoptera. All papers are of a high standard, giving keys, descriptions and diagnoses to the species and the figures reach the same standard in usefulness and execution. Besides the systematic and nomenclature problems solved by the authors using the material collected by the various expeditions there is a great wealth of biological data especially in the case of immature stages and their habitats or host plants. Such precise taxonomy and biological data represents a major advance in the knowledge of the subantarctic fauna, an advance not even matched by many studies on the New Zealand mainland fauna.

References:

FINERAN, B. 1969. The Flora of the Snares Islands, N.Z. Trans. R. Soc. N.Z. (Bot.) 3(17): 237-70. WRIGHT, J. B. 1966, 1967, 1968, 1970. Contributions to the volcanic succession and petrology of the Auckland Islands, N.Z. Parts 1, 2, 3, 4. Trans. R. Soc. N.Z. (Geol.) 3: 215-29, 5: 71-87, 6: 1-11, 8: 109-115.

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ANTARCTIC SNOW AND ICE STUDIES II
ANTARCTIC RESEARCH SERIES. VOLUME 16

Edited by A. P. Crary.

Published by the American Geophysical Union, 1971. 412 pp. $US24.

This book contains in the main the later results of the extensive United States traverses made between 1957 and 1967. Fifteen papers are provided, and include results of work in geophysics, seismology, gravity observations, electromagnetic wave propagation, and glaciology. The accent is on pure glaciological work, with six papers on snow and ice studies, and one paper on historical glaciology in the dry valleys area.

High quality of writing and great attention to detail are characteristic of all the papers, and the list of contributing authors reads like a list of the leading Antarctic research scientists.

The difficulties of the subject of snow stratigraphy are well illustrated by many capable workers in this field. The various field methods, both old and new, are covered, including the valuable but simple accumulation stake. Without these stakes it is demonstrated that serious errors may have arisen from pit studies alone. Many of the pit studies are impressive, both in detail of results and in the extent of the manual work involved; one pit more than six metres deep was excavated to a length of 15 metres!

In the geophysical papers the problems of measuring the thickness of the ice sheets are well illustrated by the details covered and the diversity of methods employed. Notable is the success of radio-sounding techniques in East Antarctica.

The contrasting but no less difficult problems in deducing the glaciological history in the dry valley area gives another view of the history of the Antarctic ice sheet.

Each monograph is a comprehensive, specific, and detailed study, and no deliberate excursions are made into the problems of the regimen, and conditions of the Antarctic Continent as a whole.

This volume is excellently printed and bound, and is liberally illustrated. Its papers represent a high standard of field work, published for the specialist, scientist or graduate student. It could make tiresome general reading for the layman.

T. J. CHINN

BOOKS RECEIVED

Americans in Antarctica, 1775-1948, by Kenneth J. Bertrand. American Geographical Society. Special publication No. 39. $US25.

This is Antarctica. By Joseph M. Dukert. New and revised. Coward, McCann and Geoghegan, New York. $US5.90.

The Structure and Physical Properties of the Earth's Crust. American Geophysical Union. Geophysical Monograph 14. $US19.

Birds of the Antarctic and Sub-Antarctic. American Geographical Society. Map folio series No. 14. $US10.

Coastal and deep-water benthic fishes of the Antarctic. American Geographical Society. Map folio series No. 15. $6.00.

We hope to print reviews of these publications in our next issue.

SNOW TOADS BUSY

Snow toads, the Antarctic gremlins well known to pilots in the early days of American Antarctic operations, were busy in the March issue of "Antarctic." They produced three errors which escaped notice.

On Page 149 Sir James Clark Ross saw lava erupting from Mount Erebus on January 27, 1841, not 100 years later.

On Page 156 the number of American scientists taking part in last season's operations should have been 200, not 25.

On Page 169 the mishap to the Hercules supplying the French scientific traverse occurred when the party had covered 150 miles, not 1150.

OBITUARY

C. R. Ford, last of the Discovery men

All the men who sailed south with Scott in the Discovery in 1901 are now dead. The last of the Discovery men, Charles Reginald Ford died at his home in Auckland on May 19 at the age of 92. A young writer in the Royal Navy when he was engaged as ship's steward of the Discovery, Ford lived in New Zealand for more than 65 years after the expedition. He became a distinguished architect, designed several notable New Zealand buildings in partnership with William Henry Gummer, and was an authority on old English china.

A Londoner, Ford was serving in H.M.S. Vernon when he read in newspapers of plans for an Antarctic expedition. He was summoned for an interview some months after his application. Scott spoke with him for less than a minute and then said, "You'll be coming with us." He was only 20 and was, with C. H. Hare, assistant steward for the first year, the youngest member of the expedition.

Officially Ford was the ship's steward but his role in the Discovery would today be regarded as that of stores officer and secretary. He was a warrant officer, and in many respects was Scott's right-hand man, doing all the secretarial and accountancy work required.

In "The Voyage of the Discovery" Scott described a ship's steward as a specially important individual in an exploring vessel. He had to keep the most exact account of the stores expended, and of those that remained; he had to see that provisions were properly examined and properly served out, and that everything was stowed below in such a manner that it was forthcoming when required.

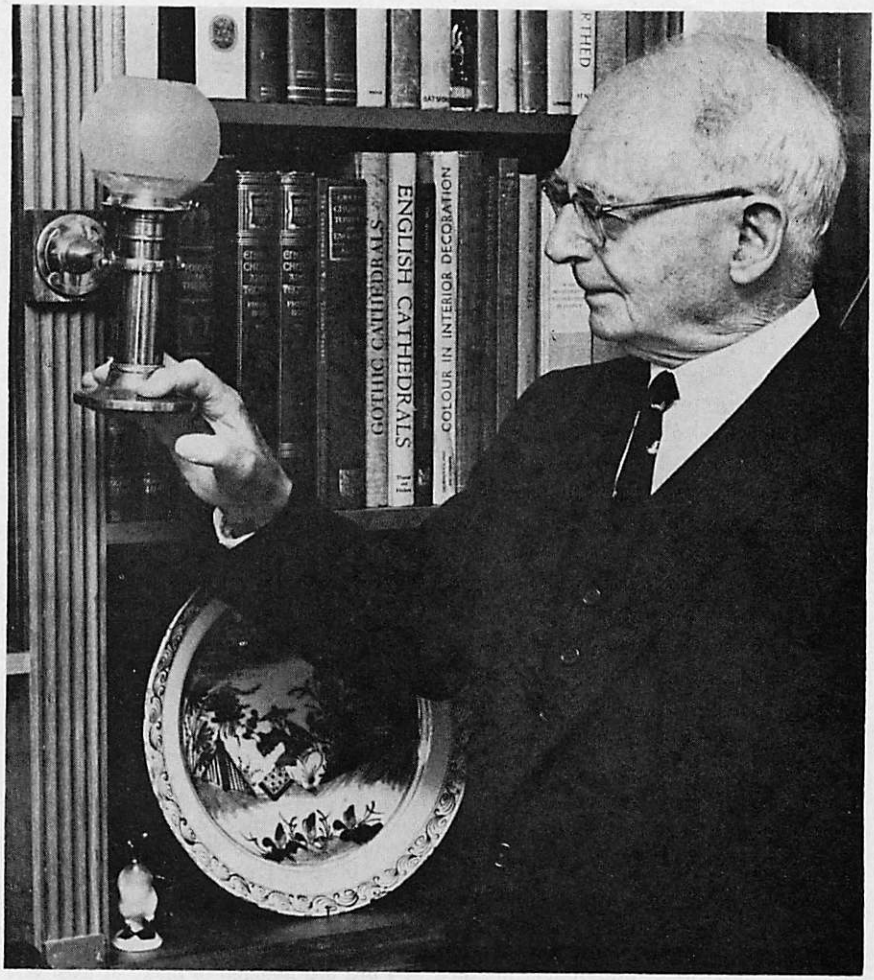
Scott paid warm tribute to the quality and value of Ford's work: "Although a very young man without experience, (he) showed himself to be well fitted for it (the post) in other respects. He soon mastered every detail of our stores, and kept his books with such accuracy that I could rely implicitly on his statements."

Ford's duties kept him tied rather closely to the Discovery while she was locked in the ice of Winter Quarters Bay. But he became a keen skier, and gained the doubtful distinction of becoming the first patient to occupy the ship's small sick berth when he broke his leg while "running" the eastern slope of the Gap in a rather bad light. He was off duty for nearly six weeks.

Despite the onerous demands of his official duties Ford became a valued contributor to the "South Polar Times." He is represented by several paintings (one of the Discovery leaving Lyttelton) and a finely written article on the ships which have borne the name Discovery.

Ford did manage to make at least one sledging journey. In January, 1903, when Scott was far to the south with Wilson and Shackleton, and Armitage was opening up the route to the west, Ford, Dailey and Whitfield sledged a load of provisions as far south as Minna Bluff to form a cache in case Armitage's party should return to the ship that way. They were in the field for nearly three weeks.

Like all the Royal Navy men aboard the Discovery Ford was versatile and resourceful. He earned high praise from Scott for his ability as a cook when most of the ship's company were away



C. R. Ford in the library of his home in Auckland several years ago. The lamp on the left was a treasured memento; it came from the Discovery.

—N.Z. Herald Photo.

at the "sawing camp" making a desperate attempt to free the ship from the ice. "As a result of studying Mrs Beeton's cookery book, he was achieving dishes of a more savoury nature than we had thought possible with the resources at our command."

When the expedition returned to England Ford wound up its financial affairs, including negotiating the sale of the Discovery. He toured England with Scott as his private secretary, and then went to Canada to study, occasionally giving lectures. He then made a successful lecturing tour of Australia.

In 1906 Ford settled in New Zealand, and was briefly a farmer before studying architecture in Christchurch. He moved to Wanganui when qualified, and then in 1923 went to Auckland and

formed a partnership with William Henry Gummer which lasted 38 years, and produced many nationally known buildings. Among them were the Dominion Museum and Art Gallery, the National War Memorial, the Wellington Public Library, and the Auckland railway station.

Ford was one of the first of his profession to recognise the relation between earthquakes and building construction in New Zealand. In 1928 he wrote "Earthquakes and Building Construction," which emphasised the danger of adhering to traditional methods of construction in a country subject to earthquakes. He and his partner were on the first relief train to Napier after the disastrous earthquake of 1931.

A collector of antiques, Ford also became an authority on English ceramics, and wrote a handbook on the subject. Much of his collection is in the Auckland War Memorial Museum of which he was an untiring supporter for many years.

When Leonard Huxley wrote the introduction to Griffith Taylor's story of Scott's last expedition, he referred o the book that Scott might have written if he had lived, and said: "We have not the half of what he could have told us."

Huxley's comment could be applied in a greater degree to Ford. We know little of his Antarctic experiences, perhaps because he seems to have been essentially a modest man. All he wrote was a little booklet of less than 30 pages (much prized by collectors of early Antarctic writings) called "Antarctica," and simply sub-titled "Leaves from a Diary Kept on Board an Exploring Vessel." His impressions of what he called "these wonderful regions" are as clear today as they were 70 years ago.

Although he wrote nothing else about the Antarctic, Ford was most generous with his memories of Discovery days when writers and historians sought his help. New Zealand's Antarctic historian, L. B. Quartermain, whose article in the June, 1966, issue of "Antarctic" has provided the basis of this notice, can testify to this, and the writer also remembers Ford's kindness only a few years ago when he wanted to check some minor incidents in the expedition.

Charles Reginald Ford was always willing to help both young and old. When he died a notice in an Auckland newspaper said: "By his enthusiasm, energy and insight he did much to help the young whenever he could. He will indeed be greatly missed by all young people alike."

J.M.C.

David Stratton, Deputy to Sir Vivian Fuchs

David George Stratton, who served with great distinction as second-in-command to Sir Vivian Fuchs with the British Commonwealth Trans-Antarctic Expedition in 1955-58, died in England last month at the age of 45. He was one of the 12 men who made the first crossing of the Antarctic Continent by way of the South Pole, and was a godson of Lord Mountevans (Teddy Evans, of Scott's last expedition).

Like so many polar explorers and geographers, Stratton was a Cambridge man. He was educated at Harrow, and, after service in the Royal Naval Volunteer Reserve, at Clare College. He was an enthusiastic geographer, took part in a number of expeditions, and spent two years in the field as a surveyor in Graham Land with the Falkland Islands Dependencies Survey. Stratton's active life as an explorer culminated with the Trans-Antarctic Expedition. He was 28 when he was appointed second-in-command, and had the immense task of preparing the stores lists, discussing the expedition's special needs with manufacturers, and co-ordinating the whole

complex of material for packing and shipping.

In 1955 Stratton sailed in the Theron to help set up the advance base, Shackleton, returning in 1956 before the main party set off in the Magga Dan. He was awarded the Polar Medal in 1954 for his work as an assistant surveyor at Hope Bay, and a clasp in 1958. He also received the Royal Geographical Society's Back grant for polar exploration, and served on the council of the society and the Scott Polar Research Institute.

Stratton joined B.P. in 1959, and in the next ten years held appointment as regional marketing manager, Scandinavia, general manager, Belgium, and marketing manager, South Europe and North Africa. In 1970 he contracted poliomyelitis, which left him completely paralysed. But, according to "The Times" obituary notice, he fought this terrible affliction with the same courage and amazing cheerfulness that had stood him in such good stead in his earlier days as an explorer.

"The Crossing of Antarctic" does not reveal much about "Bunny's Boys," as they were called by the Americans. But in his book "Because it is There," George Lowe, who sometimes walked with Stratton when they were probing for crevasses ahead of the vehicles, provides a thumbnail portrait: " . . . David, who was a hard worker, seemed to have been born to lead. His godfather was Lord Mountevans, and he grew up with Antarctica in his veins. 'Ever since I was five years old,' said David with his slightly tired accent, 'I have been patted on the head and told, 'You will go to the Antarctic'."

COMMANDER JEFFREY WAS QUEST'S NAVIGATOR

Another veteran of Shackleton's last expedition in the Quest, Commander Douglas George Jeffrey, died in March this year at Hythe, Kent. He was 86. Jeffrey would have gone south as chief officer of the Endurance but for the outbreak of the First World War. As a Royal Naval Reserve officer he was called up for active service in August, 1914, and was replaced in the Endurance by Lionel Greenstreet, then serving with the New Zealand Shipping Company.

Jeffrey served with distinction in both world wars, holding sea-going commands. He was born in Stonehouse, Lanarkshire, the son of a parish minister in Ulster, and spent his early adult life in Canada. In the First World War he served in the Canadian Navy and commanded a Q ship. He concealed his age to serve again in the Second World War. His decorations included the Distinguished Service Order, the Order of the British Empire, the Croix de Guerre, the White Eagle of Serbia, and the Order of St George of Russia.

When Shackleton appointed him navigating officer of the Quest, Jeffrey was a lieutenant-commander R.N.R. On the expedition he shared a cabin with Commander Frank Worsley, and in his watch aboard the Quest were A.B. Thomas McLeod, who had served in the Terra Nova and the Endurance, Boy Scout James Marr, and James Dell, the boatswain, and a Discovery veteran.

On the expedition Jeffrey and Worsley made a more accurate chart of the Clerke Rocks, South Georgia, and verified the position of Tristan da Cunha. Jeffrey also helped G. V. Douglas, the geologist, with magnetic and other scientific observations. Dr A. H. Macklin, who was in charge of stores and equipment, mentions Jeffrey's ability as a navigator in ice.

After the Second World War Jeffrey had a shadowy period of political activity in Central America. He then became the political agent for Sir Alec Douglas Home, later Prime Minister, and now Foreign Secretary, in Lanark. He played a major part in the return

of Sir Alec Douglas-Home to active politics after his defeat in 1945, and when he retired at the age of 81, he was regarded as the outstanding party political agent in Scotland.

Throughout Lanarkshire and the Conservative Party in Scotland Jeffrey was known as "the Skipper". The nickname was supported by the saltiness of his language and his strict naval bearing.

R. E. ROUND SAILED IN BYRD'S SHIP

One of the 52 New Zealanders who were in the crews of the ships of the two Byrd expeditions between 1928 and 1935 has died in Christchurch. He was R. E. Round, who served in the Jacob Ruppert on her second trip from Dunedin to the Bay of Whales in 1935.

MUSEUM ARCHIVES CONTAIN INTERESTING LETTERS

Original letters by Shackleton and Thomas Whitfield, one of the crew of the Discovery, have been added to the archives of the Canterbury Museum. Shackleton's letter was written aboard the Nimrod on January 21, 1908, and Whitfield's letter was written from South Victoria Land on February 24, 1903.

Whitfield, whose letter has been lent to the museum for exhibition, was a ship's stoker, and twice was a member of the parties which visited the Emperor penguin rookery at Cape Crozier. In his letter, written from winter quarters, presumably Winter Quarters Bay, where the Discovery was locked in the ice, he expressed his doubts whether the ship would be able to clear the ice barrier.

The letter, written for the mail taken back to New Zealand by the Morning on her first relief voyage, voiced the opinion of the lower deck on the situation of the Discovery. The next day Scott wrote in his diary that things were looking serious; the Morning had to go in less than a week, and it now seemed impossible that the Discovery would be free by that time. The Morning sailed on March 2, leaving the Discovery iced in for another winter.

Shackleton's letter, written two days before the Ross Ice Shelf, then the Great Ice Barrier, was sighted from the Nimrod, was to thank Canterbury farmers for the 32 live sheep they had given to the expedition. The recipient, Mr Alexander Boyle, who had to wait for a month for the letter, was a Christchurch partner in a stock and station firm, who had organised the shipment of the sheep.

All the sheep reached the Antarctic Circle, but only ten provided fresh mutton for Shackleton's party at Cape Royds. They were on board the Union Steam Ship Company's vessel Koonya, which towed the Nimrod 1,510 miles south. When the two ships were inside the Antarctic Circle on January 15, 1908, Shackleton asked Captain F. P. Evans, of the Koonya, to have the sheep killed and skinned.

Originally it was intended that the sheep, fresh water, and eight tons of coal, should be ferried to the Nimrod. This could not be done because of a rising sea. Ten carcases were lashed to a line and reached the Nimrod safely. A line carried away when the second batch was being transferred. Then a heaving line was thrown aboard the Nimrod but it broke, and the fresh mutton floated away to provide a meal for the albatrosses.

SOVIET MEDAL PRESENTED

The co-operation between Soviet and New Zealand scientists in the Antarctic was recognised when the supply ship Ob called at Lyttelton in March this year by the presentation of a polar medal to Mr R. B. Thomson, superintendent of the Antarctic Division, Department of Scientific and Industrial Research. Usually, the medal, specially struck to mark the 150th anniversary of Soviet activities in the Antarctic, is not given to foreigners.

Dr Y. Korotkevich, leader of the Soviet Antarctic Expedition, presented the medal to Mr Thomson aboard the Ob at Lyttelton. The medal bears on one side a map of Antarctica and the track of Bellingshausen's voyages. On the other are the heads of Bellingshausen and Lazarev, his second-in-command, and the Mirny and the Vostok.

Five flights by R.N.Z.A.F.

A Royal New Zealand Air Force Hercules transport aircraft made five flights to the Antarctic between December 18 and January 6 in support of the New Zealand and United States Antarctic research programmes. For the first time since the R.N.Z.A.F. began its annual summer airlift five flights were made instead of three.

Four crews took each flight from Christchurch to Williams Field in rotation. New Zealand and American material was carried on the flights, which gave crews valuable training in flying in high latitudes and in extreme cold.

Five new aircraft ordered

The United States Navy will not have its full complement of six ski-equipped Hercules in its Antarctic support role next season, according to Rear-Admiral L. B. McCuddin, commander of the support force. He said in Christchurch that although five new Hercules aircraft had been ordered the first was not likely to take its part in the programme until the summer of 1973-74.

In the last two seasons the Navy's VXE-6 Squadron has lost two of its Hercules aircraft. One was destroyed by fire at Williams Field, McMurdo Sound, on February 15, 1971. The other was written off after it had been badly damaged during a jet-assisted take-off after a supply mission to a French traverse party in Wilkes Land on December 4 last year.

For the remainder of this season the squadron had to make do with only three aircraft. The ski-equipped aircraft have been used in the Antarctic since 1960. They are generally regarded as the hardest worked Hercules aircraft in the United States Navy.

VOICE 1700 MILES AWAY AT DAVIS

A radio conversation between Scott Base and two New Zealand scientists at Arrival Heights, three miles away, was interrupted last month by an Australian voice 1700 miles away. The speaker was the radio operator at Davis on the coast of East Antarctica.

Scott Base was operating on a normal field frequency and speaking to the scientists, who were checking the all-sky camera used to photograph auroral displays. The Australian radio operator picked up the transmission and joined in the conversation. Since then several conversations have taken place between the New Zealanders and the Australians at Davis, and Casey, which is 1300 miles from Scott Base.

THE READER WRITES

Sidelights of Antarctic Research

Letters, preferably not longer than 500 to 600 words, are invited from readers who have observed some little-known facet of Antarctic life or have reached conclusions of interest on some Antarctic problem.—Editor.

GEORGE DOVERS

Acrefield, Deganwy Rd.,
Llandudno,
Caernarvonshire, Wales.

Sir,—In the December issue of "Antarctic" I am glad to note the admirable article concerning my old shipmate and friend, George Dovers. However, there are some inaccuracies and omissions which should be adjusted.

Aged 84 at his death in 1971, George was born in 1887 and, therefore, was 24 at the time of his departure in November, 1911, in the Aurora (or more accurately in the Toroa as far as Macquarie Island). While I am less certain of A. L. Kennedy's precise age, I believe he was nearly 23.

The penultimate paragraph listing survivors of the Australian Antarctic Expedition of 1911-14 omits the important name of A. L. Kennedy who did such an excellent (and lonely) job of the magnetic observations and is still living in Subiaco, Western Australia. I exchanged cards with H. Dyce Murphy in Mornington, Victoria, up to 1969, but, in line with my fellow members, have had no news since; we trust your information is correct.

Neither I, nor my Australian friends, have gleaned any information of P. E. Correll's welfare or whereabouts for many years past. Perhaps the author of your article can help us.

I am, and have been for the past six years, living in Wales; prior to that, some five years in Canada directing the investigation and preliminary design of the 8,000,000 h.p. underground hydro-electric power station at Churchill Falls on the Churchill (formerly Hamilton) River in Labrador which goes into production this year. The latter seems worthy of note in "Antarctic," because the assignment utilised the whole of my previous varied experience of which the Antarctic was by no means the least important. Incidentally, I celebrated my 22nd birthday in Hobart on the eve of departure in Aurora for the south.—Yours, etc.,

ERIC N. WEBB.

(Mr Webb was chief magnetician of the Australian Antarctic Expedition, 1911-14, and one of several New Zealanders who went south with Mawson. Our obituary of George Dovers had to be compiled from inadequate Australian newspaper reports and the literature of the period. We are glad to learn from Mr Webb that Kennedy is still among the survivors. Perhaps an Australian reader may be able to tell Mr Webb what has happened to Murphy and Correll.—Ed.

ICE THICKNESS

Sir,—In the March, 1972, issue of "Antarctic," a short article entitled "Ice Thickness Survey" provides a summary of recent work completed by scientists from the Scott Polar Research Institute. The article suggests that this group found "East Antarctica's ice cap to be considerably thicker than previous information suggested," also reference is made to the discovery of a record ice thickness of 12,150 feet. These statements or assumptions are not correct.

Published results from the ANARE Wilkes-Vostok traverse of 1962-1963

which I led, gave ice thickness figures which began to exceed 10,000ft 250 miles south of Wilkes and from there between 8,000 and nearly 16,000ft thick the remaining 650 miles south to Vostok. From these measurements we calculated average ice thickness of this long section of the East Antarctica ice cap to be 12,060ft. We found the thickest ice to be 15,870ft measured 480 miles south of Wilkes and this I believe to be a record.—Yours, etc.,

R. B. THOMSON.

CONSERVATION TROPHY AWARD

A maintenance officer at Scott Base last summer, Mr J. N. Foster, is the first recipient of the Antarctic conservation trophy presented by the Canterbury branch of the New Zealand Antarctic Society. The award of the trophy—a miniature Emperor penguin carved from African walnut, was announced at the annual meeting of the branch.

Last year a member of the branch, Mr P. I. Voyce, gave the trophy to make people aware of the unspoiled nature of Antarctica, and to encourage them to preserve it for future generations. The trophy is awarded to any person or organisation contributing to the conservation of all buildings of historic significance, flora and fauna on the Antarctic Continent, and all sub-Antarctic islands.

Officers elected at the annual meeting were: President, Mr A. Anderson; vice-presidents, Messrs S. W. M. Smith, J. M. Caffin; secretary, Mrs E. F. Cross; treasurer, Mr J. Cross; committee, Mesdames E. Smith, M. Williams, Messrs G. Hurrell, A. Burton, B. N. Norris, B. George, R. G. McElrea, J. Morrison, V. Wilson, P. I. Voyce, and B. Duffell.

RESEARCH TEAM LEADER

Major P. G. Frazer

The leader of New Zealand's Antarctic research team for 1972-73 will again be an Army officer. He is Major P. G. Frazer, formerly of the headquarters staff of the Field Force Command, Auckland.

Major Frazer, who is 29, has been seconded to the Antarctic Division, Department of Scientific and Industrial Research, and will replace Major J. R. M. Barker. He joined the Army in 1958 at the age of 15, and went from the Regular Force Cadet School at Waiouru to the Officer Cadet School at Portsea, Victoria.

After being commissioned Major Frazer served with a signals company at Linton, and later was an instructor at the School of Signals, Waiouru. He was posted to the 1st Battalion, Royal New Zealand Infantry Regiment, at Burnham Military Camp, and served with the battalion in Malaysia from November, 1967, until February, 1969, when he went to Vietnam for eight months.

On his return to New Zealand he served at Papakura with the 1st Infantry Brigade Group's Signals Squadron.

GROUNDED TOURIST SHIP NOT SERIOUSLY DAMAGED

When the Antarctic tourist ship Lindblad Explorer ran aground in Admiralty Bay, King George Island, South Shetlands, on February 11, there were conflicting newspaper reports from South America about the extent of the damage to the ship, and the passengers' privations. The Lindblad Explorer was said to have been holed in several places and her engine-room flooded; the passengers were supposed to have spent eight hours in freezing temperatures at an old British base on King George Island.

Reports from the owners of the ship and the West German tug which towed her to Buenos Aires tell a different story. And an account from a woman passenger describes the episode as a most unusual and most unexpected adventure.

When the Lindblad Explorer ran into a blizzard she entered Admiralty Bay to await daylight. The water was too deep to anchor so she circled all night, according to the passenger's account. One generator failed, and the ship was blown by the gale on to some uncharted rocks.

At three o'clock in the morning the passengers were told to dress warmly and come to the lounge. They learned that the ship was aground and they were to be taken ashore in boats to huts on the island. But instead passengers and crew bobbed around in the lifeboats in bitter cold and driving snow for about four hours. When it was decided that the Lindblad Explorer would not capsize the passengers were taken back on board.

Early in the afternoon the Chilean Navy transport Piloto Pardo arrived, and lifeboats transferred the passengers. The crew of the Lindblad Explorer spent the daylight hours transferring bedding, steak, whisky and wine, all perishable food, and the passengers' luggage to the Piloto Pardo.

While attempts to refloat the Lindblad Explorer continued other ships arrived. Some of the crew were transferred to give the passengers more room in the crowded transport. A few "lucky number" winners were given trips in a Chilean helicopter over Admiralty Bay and their grounded ship, and two helicopters from the Royal Navy's ice patrol ship Endurance landed on the Piloto Pardo.

Although the passengers had to live for seven days and seven nights in their "rescue wardrobes," they enjoyed their stay aboard the Piloto Pardo. While the West German tug Arctic was on its way from Cape Town to assist the Lindblad Explorer the Piloto Pardo resumed its task of delivering supplies and picking up men at Chilean Antarctic bases. The weather was fine and clear, the scenery was superb, and a brass band greeted the passengers when they reached Punta Arenas. Hot baths and clean clothes awaited them when they were flown to Buenos Aires.

The Arctic reached the Lindblad Explorer on February 23. Only the bottom of the outer hull had been damaged. Pumps were placed on board and cement was used for patching, but the ship failed to come off the rocks.

Then the tug's crew pressurised the double bottoms which were found full for almost the length of the ship, and succeeded in pumping down the level in the engine-room. The ship came off at the second attempt on February 25.

Temporary repairs were made to facilitate a safe passage through the ice, and on the voyage to Buenos Aires the Arctic was able to maintain a speed of more than nine knots with the Lindblad Explorer in tow. She reached port early in March.

"ANTARCTIC"

is published quarterly in March, June, September, and December. It is the only periodical in the world which gives regular up-to-date news of the Antarctic activities of all the nations at work in the far South. It has a world-wide circulation.

Subscription for non-members of the Antarctic Society, NZ$3. Overseas NZ$3.50, includes postage (air mail postage extra). Details of back issues available may be obtained from the Secretary, New Zealand Antarctic Society, P.O. Box 1223, Christchurch, New Zealand.

The New Zealand Antarctic Society

The New Zealand Antarctic Society was formed in 1933. It comprises New Zealanders and overseas friends, many of whom have seen Antarctica for themselves, and all of whom are vitally interested in some phase of Antarctic exploration, development, or research.

The society has taken an active part in restoring and maintaining the historic huts in the Ross Dependency, and plans to co-operate in securing suitable locations as repositories of Polar material of unique interest.

There are two branches of the society and functions are arranged throughout the year.

You are invited to become a member, South Island residents should write to the Canterbury secretary, North Islanders should write to the Wellington secretary, and overseas residents to the secretary of the New Zealand Society. For addresses see below. The membership fee is NZ$2.00 (or equivalent local currency). Subscription to "Antarctic" is a further $2.50.

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Printed at the Raven Press, 241 Cashel Street, Christchurch