ANTARCTIC

A NEWS BULLETIN
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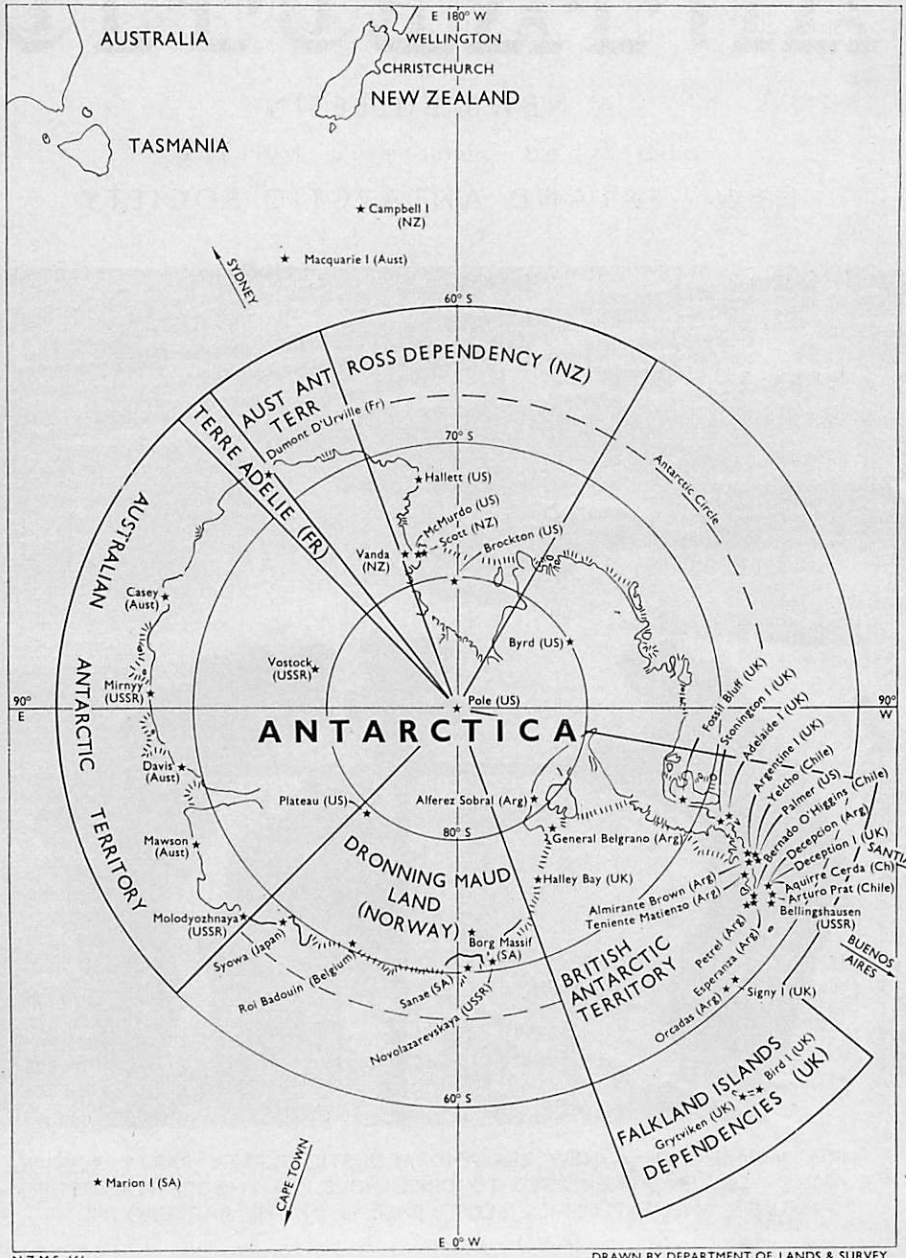
NEW ZEALAND ANTARCTIC SOCIETY

THREE MEMBERS OF A NEW ZEALAND ACOUSTIC SURVEY PARTY TESTING A MOTOR DRIVEN AUGER USED TO DRILL HOLES IN THE ICE FOR HYDROPHONES AND EXPLOSIVES. SCOTT BASE IS IN THE BACKGROUND.

Vol. 6, No. 1 **MARCH 1971**



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EDITORIAL

In past issues of Antarctic we devoted space to "The Reader Writes", in which letters, preferably not longer than 500-600 words, were invited from readers who had observed some little-known facet of Antarctic life or who had reached conclusions of interest on some Antarctic problem.

We are desirous of reviving this feature in each issue and would welcome letters from readers everywhere.

We would also be glad to consider articles, preferably accompanied by photographs, dealing with Antarctic history, travel or exploration.

Contributions should be from 1000-1500 words, typed in double spacing, on one side of the paper only. Photographs should have the captions lightly written on the back.

Report from Scott Base

SUCCESSFUL SUMMER SEASON

After fielding fourteen separate scientific projects in remote areas, co-operating with three other nations involved in polar research, and sustaining only one injury to personnel during the whole season, this year's summer research by New Zealand in the Ross Dependency has been very successful, the Scott Base leader, Mr Brian Porter reports.

The field expeditions have returned valuable results in more than ten sciences, and some of the results, particularly the fossil discoveries in the Skelton Nevé area, will have important practical applications even now. The Victoria University of Wellington Antarctic expedition has been one of the most successful parties in the field this year, although their deputy leader (Mr Barry Kohn) fell down a rock bluff and injured his shoulder early in the season, the group went on to discover the richest known site of fossil fish remains ever found on the Antarctic Continent. And Barry later returned to take part in the final stages of the university programme.

FIELD PARTIES

The field parties included the University of Canterbury team at Cape Bird, who undertook marine biology, using a trimaran for the first time ever on the continent, and several other branches of biological research. The Department of Scientific and Industrial Research glaciology and hydrology party worked for three months in the dry valleys, and the D.S.I.R. geology party worked in the Koettlitz Glacier, and their results help support existing theories on rock formation.

The University of Waikato team spent about a month in the Taylor Valley researching into the microscopic animal life in the fresh water lakes, and the University of Auckland carried out a very successful programme of submarine acoustics, a method of locating submarine volcanic activity. In addition New Zealand co-operated with JARE (the Japanese Antarctic Research Expedition). Three Japanese scientists worked at Lake Vanda in the Wright Valley, along with a Russian scientist, and at Scott Base, New Zealand scientists worked closely with American scientists on several programmes.

LOGISTIC SUPPORT

It needed carefully arranged logistic support from U.S. Navy Hercules and helicopter units to put a party in the field and maintain constant resupply. Fourteen parties made a big call on American air support, and the men of VXE-6 squadron, particularly the pilots, deserve the highest praise for their work, and their skill in polar flying.

In addition to a hectic programme of summer field activity, the Scott Base scientific programme has continued, and a lot of maintenance has been carried out around the base by summer support staff. Base personnel are now settling down for the winter, and it is expected all of the summer staff will have been withdrawn from the ice by the end of February, leaving twelve people to winter over. One of the last big jobs undertaken by base staff was the unloading of H.M.N.Z.S. Endeavour the resupply ship. Forty-three tons of miscellaneous cargo and a quantity of fuel was aboard for us, Mr Porter said. Yet the ship was turned around in just a few hours. She departed on Sunday the 14th of February, and was expected to arrive in Lyttelton on February 28th.

WOMEN SCIENTISTS

Another success this summer has been the inclusion of three women in the team. They were Miss Rosemary Askin, a 21 year old Wellington science

graduate, Mrs Barbara Spurr, wife of the leader of the Canterbury University party, and Dr Ann Chapman, leader of the Waikato University programme. The women were accommodated in separate facilities during their short stay at base in transit between the field and home, and their stay imposed no difficulty whatever. In fact Miss Askin deserves the highest praise for her geological work, and for sheer fortitude as a young woman working in the sub-zero rigours of polar conditions. She has gained the respect and admiration of all the men of the 1970-71 New Zealand Antarctic Research Programme and set a high standard for future women who may be involved in research in Antarctica, traditionally a man's world only, said Mr Porter.

James Caird Model For Dulwich

A scale model, about 3ft long, of the James Caird, has been presented to Dulwich College by Rear Admiral P. W. Brock, a trustee of the National Maritime Museum. The model was made by the museum's craftsmen.

The original James Caird was the 22½ft whaleboat which Shackleton, Worsley, Crean, McNeish, Vincent, and McCarty sailed 800 miles across some of the stormiest seas in the world from Elephant Island to South Georgia.

Named after Sir James Caird, the Dundee jute magnate, who was one of the principal benefactors of the Endurance expedition, the boat was brought back to England. When Shackleton's affairs were wound up after his death the James Caird became the property of the late John Quiller Rowett, his backer for the Quest expedition.

In 1924 Rowett presented the boat to Dulwich College (his and Shackleton's old school). It remained there until 1968 when the governors of the college presented it on long loan to the National Maritime Museum.

U.S. Treaty Observers Inspect Stations

Six United States observers under the Antarctic Treaty will complete their circumnavigation of Antarctica aboard the Coast Guard icebreaker Staten Island late this month. Since they left McMurdo Station in January they have inspected research stations along the Antarctic coast—a right given to all the Antarctic Treaty nations.

Argentina, Australia, New Zealand and Britain have also made inspections of Antarctic stations. All have included American stations in their itineraries. This year's inspection is the third made by the United States. American observers were in Antarctica in 1964 and 1967.

The observers were led by Mr K. Kerst, of the Department of State. With him were Mr C. Roberts, of the Weather Bureau; Dr C. Jones, of the Fish and Wildlife Service; Captain R. Garvey U.S.N., who is on detached duty with the Arms Control and Disarmament Agency; Mr F. Mahncke, of the Arms Control and Disarmament Agency; and Mr V. Hammond, of the Department of Defence.

TAKING ANTARCTICA'S TEMPERATURE

Soviet scientists have been probing the Antarctic ice shield and have found that at a depth of 1,600 feet the temperature is minus 53deg C.

They are using a thermal drill of Soviet design at the Vostok station at the Pole of Cold, and still have a long way to drill!

The ice there is estimated to be some two miles thick.

The experiment will help to check the theory that temperatures would rise sharply in the lower layers of ice, because of heat coming from the bedrock base beneath Antartica's ice-shield.—Soviet News.

SURVEYS AND SCIENCE

N.Z. Parties Work in Dry Valleys

"Beautiful and spectacular" is how a Nelson (N.Z.) surveyor describes the scenery in Antarctica's dry valleys. Mr A. R. Eskrick is one of a team of New Zealanders who have been carrying out a programme which has included surveying hydrology, glaciology and microbiology in the dry valley area some eighty miles north-west of Scott Base.

As a result of the levels survey completed by Mr Eskrick, the height above sea level of Lake Vanda, location of Vanda Station, the second major polar outpost of the New Zealand Antarctic research programme, has been established as 307ft. above sea level. This is 163ft. lower than was previously thought. The difference occurred because previous heights were obtained by barometric methods, and as a result were not reliable because of uneven pressure systems. The survey to determine the height of the lake took about a month. "We started from Vanda Station on the 7th of January, and used a Fergusson tractor to transport our equipment and supplies over the rugged rock-strewn wasteland of the dry valley floor." Our party consisted of myself, Mr Ken Gousmett of Auckland, and Mr Gordon Baker. Crossing the Onyx River (which flows for a brief period each summer into Lake Vanda) was tricky because the river was high in flood and the water was just above freezing point. We wanted to carry out the levels survey of Lake Vanda above sea level. Vanda Station is an important link in a chain of polar weather stations, and the exact height of the area was needed for meteorological purposes. The information will also be used to correlate old sea levels and morraines. We reached the Wilson-Piedmont Glacier on January 20th and from there we shifted our campsite by U.S. Navy helicopter to the centre of the glacier.

WARM SUMMER

This year's warm summer had created large melt pools in the glacier. The snow was so soft that we had to use skis to safely cross the crevasses. At times we were waist deep in snow, and the skis proved the only method of negotiating the glacier. We carried out our task at the rate of three miles a day, completing the work on February 3rd.

"Unlike the rest of the Antarctic, the dry valleys have no snow, and glaciers tumble down off the mountains on each side to come to curious, abrupt halts."

Ice Axes and Gumboots!

Mr Trevor Chinn, leader of the D.S.I.R. glaciology and hydrology team, takes up the story:

"Our work was to measure the continuous flow of the Onyx River, and make continuous measurements of the level of Lake Vanda," said Mr Chinn. "The work will contribute toward a fuller understanding of climatic trends on the Antarctic continent, which is part of the world's weather cycle," he said. Ice axes and skis formed an important part of the equipment used by the party, who had to ascend glaciers on the sides of the Wright Valley, eighty miles north-west of Scott Base where the party was working. Glaciology measurements were taken on four glaciers in the area. "This year's melt caused exceptionally high river flows in the dry valley and gumboots, an unusual addition to a polar kit, were essential," he said.

"The Onyx River, which flows briefly during the summer, this year

flowed ten times above its normal rate. The river, which rises from the melt waters of coastal glaciers, flows to the inland lake, called Lake Vanda, named after a sledge dog. Lake Vanda is the location of Vanda Station, the second major polar outpost of the New Zealand Antarctic research programme. Lake Vanda has no outlet, and its level is a balance between the inflow from the river and evaporation and sublimation from the lake ice. We had some problems with melt and the high river flows," said Mr Chinn.

"With ten times last year's maximum discharge the water level recording weir (constructed last year) was overtopped and in danger of being swept away. Hasty rock work controlled the flow, but because the weir was overtopped we had to remeasure the flow at different heights. In addition we had to build a bridge out of old boxwood and scraps to cross the river and serve as a platform from which to make current metre flow gaugings. Meanwhile the lake began rising, and within the first few weeks of this summer the melt exceeded the total rise of last year. The lake water level recorder had to be removed twice to keep pace with the rising lake water level. The Onyx River is the largest known river on the Antarctic continent, and this year's level of Lake Vanda is the highest ever observed. Although we lived in the field for three months with only two showers, the only problem encountered was the cold during the recording of time-consuming measurements. Being in a desert area (rainfall equivalent under a quarter of an inch per annum), we had almost continuous fine weather, apart from the consistent, biting cold winds. Mass balance measurements were made at the beginning and the end of the season to gain an indication of the loss of mass on the glaciers during the summer period. The combined programmes gave us a lot of work, but the summer was enjoyable and profitable," he said.

During their stay in the Asgard Ranges the party became known as the "Asgard liberation front", which caused hilarity during radio schedules and provided a lighthearted side to their trip. The staff of Vanda Station took up the game and called themselves "The Vanda Republican Army", which added a sense of challenge whenever the "Asgard liberation front" visited Vanda Station.

Microbe Hunting

The senior lecturer in microbiology-genetics (Dr J. T. Brown) has returned to Massey University (Palmerston North, New Zealand) after a month in Antarctica.

While on the ice Dr Brown acted as microbiologist for a six-man Waikato University team studying the dry valley areas and in particular the Taylor Valley.

Although many theories have been put forward to explain the phenomena, no one has been able to satisfactorily explain why the valley contains no snow or ice, except in the lakes.

While in the region members of the party were interestd in seals mummified by slow decomposition, and it was found that some were as old as 2000 years.

The Waikato members studied lake productivity in terms of the number of organisms and the rate of nutrient use while Dr Brown concentrated on lake and soil microbiology, with emphasis on bacteria and protozoa.

The lakes often contain fifteen feet of ice, which had to be drilled in to collect samples, and are of interest because they contain the organisms while the surrounding areas are incredibly dry.

DRY ATMOSPHERE

"The area is so dry that it dries ones skin, clothing, boots, etc., and caused the party to drink gallons of water," said Dr Brown. "The area in fact is one of the nearest to moon conditions anywhere on earth, which has prompted the United States NASA to finance research parties to the area," he added.

Dr Brown has returned to Massey with nearly three hundred samples and now has a culture and identification

programme under way in the laboratory. This research, on a part-time basis, will probably take twelve months and is full of interest.

"Micro-organisms which live under such extreme conditions as this are interesting in the way they have adapted to their environment," says Dr Brown. He hopes to identify, from among the samples, some types of organisms similar to those which may have been present early in the history of the earth.

Mr R. Wyburn, veterinary clinical sciences (who visited Antarctica about the same time as Dr Brown, but with a different party) and Dr Brown are the first two Massey staff members to go to Antarctica. That they were invited to participate in these expeditions points up the fact that Massey University has facilities and academic interests in the field of veterinary science and environmental microbiology which other universities do not. These are proving helpful in solving many of the riddles of science.

* * *

Penguin for sale

A white penguin has remained near the South Pole since January 23 last year. Nobody wants it. White Penguin is the Piper Aztec aircraft in which the American solo pilot, Mr Max Conrad, crashed soon after taking off on his 2700-mile flight to Punta Arenas, Chile. (Refer Antarctic, Dec., 1969, p. 355.)

No interest has been shown by anyone in salvaging the White Penguin from which all possible equipment was removed by Mr Conrad after the crash. The aircraft is now the property of Lloyd's Insurance, to which any prospective salvagers would have to apply.

The White Penguin had an insurance value of $40,000. But to fly it from the South Pole to New Zealand would cost up to $9000, and repairs would probably cost another $15,000.

"It looks as if it will be there for good." That is the view of an aviation industry spokesman.

FLYING DUSTMEN

United States helicopter pilots have been doing a new job in the Antarctic. They have been acting as flying dustmen to help New Zealanders at Vanda Station cope with their rubbish disposal problem.

Rubbish is always a problem in the Antarctic, particularly in the summer when temperatures are higher. At Scott Base the rubbish can be taken out on sea ice in McMurdo Sound. When the ice goes out the rubbish goes with it.

But the five men at Vanda Station can't put out the rubbish tins and wait for the ice to go out. They live 80 miles west of Scott Base, near Lake Vanda, in the Wright Dry Valley, and are a long way from McMurdo Sound.

The station leader (Mr P. F. Dyer) describes how the problem was solved last month in his regular report to Mr R. B. Thomson, superintendent of the Antarctic Division of the Department of Scientific and Industrial Research.

There were nine helicopter flights to the station from McMurdo Station in December. "Advantage was taken of these flights to backload rubbish whenever possible," says Mr Dyer.

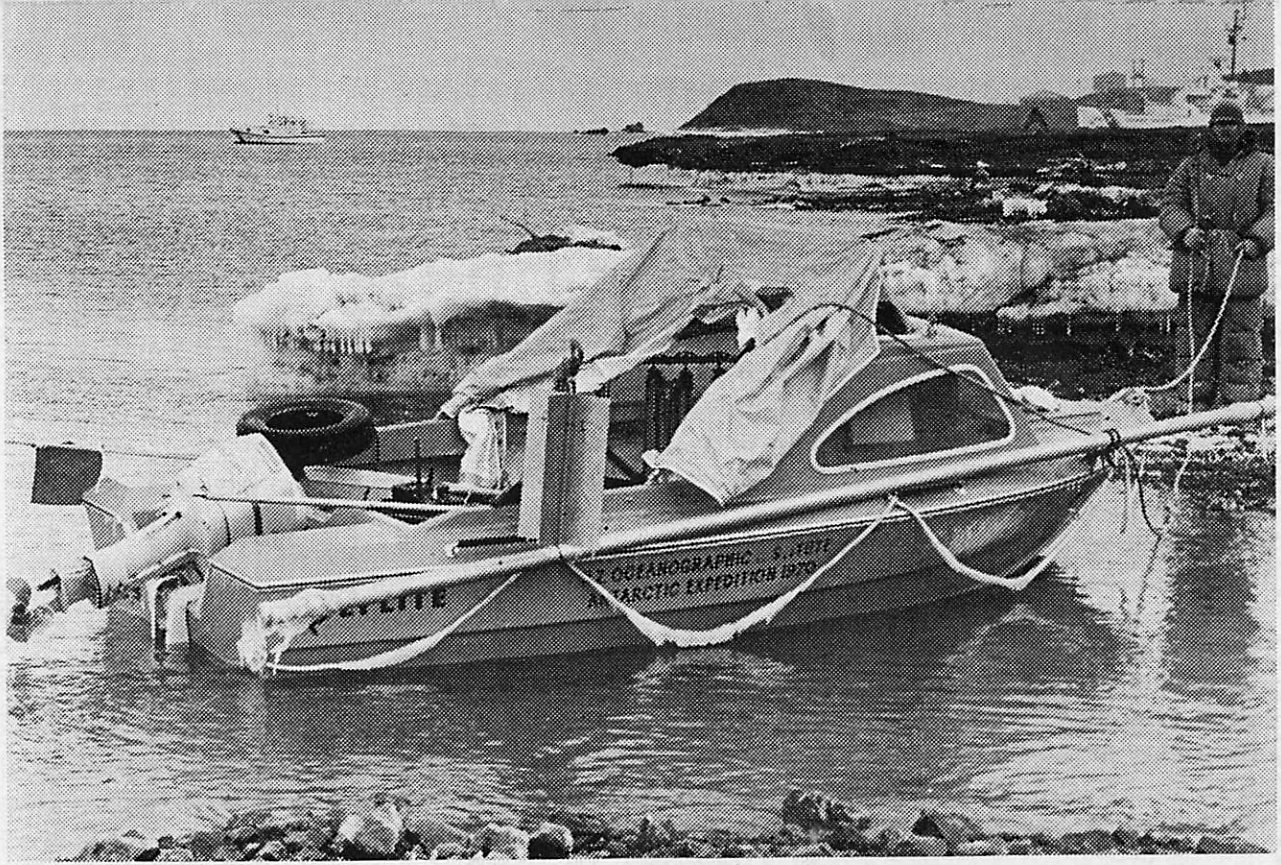
* * *

Coals to Newcastle?

A refrigerator may be installed soon at Vanda Station in the Antarctic.

Higher summer temperatures have thawed out food which had to be disposed of as rubbish. Small amounts of frozen food are being sent from Scott Base, 70 miles away, and these are being supplemented to an increasing degree by tinned meats and vegetables.

The station leader, Mr P. F. Dyer, says that a kerosene refrigerator would ensure fresher foods on the station during the summer. It would undoubtedly result in more economical use of perishable foodstuffs, he says in a report.



One of the smallest boats ever to sail in McMurdo Sound put to sea during late January and early February. The 15 foot runabout was being used by the New Zealand Oceanographic Institute Antarctic Expendition. It carried members to the edge of the ice around McMurdo Sound so they could make water measurements. The cold water in McMurdo is demonstrated by the ice forming on the side of the boat.

IMPORTANT FOSSIL DISCOVERIES BY UNIVERSITY EXPEDITION

With some outstanding scientific discoveries to their credit, four members of the Victoria University of Wellington Antarctic expedition have returned to Scott Base after two months and a half of intensive study in the Skelton Neve and Upper Wright Valley.

The group recently discovered the richest known sites for fossil fish remains in Antarctica; excavated some of the most scientifically startling fossils ever found in the Antarctic, and has collected a wealth of other fossils.

The specimens will allow the scientists to reconstruct a picture of some of the animal life in Antarctica in the Devonian period (350 million years ago) and plant-life of later periods.

Those who returned are the leader of the party, Dr P. J. Barrett, of Victoria University; Dr A. Ritchie, curator of fossils at the Australian Museum; Mr G. Young, assistant curator at the Bureau of Mineral Resources in Canberra, and 21-year-old science graduate from Victoria University, Miss Rosemary Askin.

Dr Ritchie said on his return that in the latter stages of the expedition fossils were found on Portal Mountain, Mt Fleming and in the Lashly Mountains area, 120 miles west of Scott Base.

Complete Fish

"It is rare to find complete fish in the Devonian rocks of Antarctica, but on Portal Mountain we collected complete specimens of a ray-finned palaeoniseid and a spiny-finned acanthodian," said Dr Ritchie. 'Primitive armoured fish were also among the finds."

The party then sledged 20 miles to the site of the first Devonian fish fossil discovery in Antarctica. It was made by the New Zealanders Messrs B. M. Gunn and G. Warren, during the Commonwealth Trans-Antarctic Expedition in 1956-1958.

In a prepared dispatch, Dr Ritchie reported:

"The actual site was on a rather formidable bluff to the south of Mt Crean, which also looked most difficult of access. However, a reconnaissance revealed a reasonably safe fissure in the cliffs.

"Having climbed this route, the fish-hunting members of the team, myself, and Mr Young, found abundant evidence of fossiliferous material in the shale above the sandstone cliffs. A large quantity of material, including some extremely fine individual specimens, was excavated and brought down to the camp on the glacier below.

"Mr Young discovered a layer in a shale horizon which was almost completely covered in parts of the armoured fish known as bothriolepis, of which he is planning to make a special study on his return to Australia.

Crossopterygia

"Miss Askin and I found very fine specimens of the lower jaws of lobe-finned crossopterygian fishes, the group which has a close ancestry of amphibians and all higher vertebrates. Both jaws are preserved in sandstone blocks and the larger, about six inches in length, is preserved as a very detailed natural mould.

"All the original bone having been weathered away by centuries of exposure to the elements, the details of every tooth from the largest tusk, to the most minute denticle were revealed. The most important discovery from this (or any other) site was of another specimen of a crossopterygian fish, except that instead of a single isolated bone this specimen must have originally been a rather large and absolutely complete fish.

"Half of the specimen, fortunately the tail and the rear portion of the

trunk, had been weathered away, but the remainder, comprising the entire head and front part of the body and fins, still remained in the rock.

"The locality was too precipitous to enable us to carry in our power-driven jack-hammer, so the specimen had to be dug out of the rock by the old-fashioned method of hammer and chisel. The head of the fish, flattened in the rock and seen from above, is spread out almost like a figure in a textbook.

"It should be possible in the laboratory to expose the entire undersurface of the head, in addition to the top surface already exposed—a rather rare event in one fossil fish.

Fossil Plants

"Apart from the fish fossil discoveries, fossilised plants were discovered by Dr Barrett, and they too represent some of the best specimens found in Antarctica.

"There are two kinds of plant fossils in them; one is a simple structured leaf type from the Permian period (250 million years ago) and they show the details of the leaf perfectly, the other kind is fern-like in structure, and the leaves are more complicated. They come from the Triassic period (200 million years ago)."

* * *

Fire destroys plane in Antarctic

A United States Navy ski-equipped Hercules caught fire and was destroyed while taxi-ing for take-off from the ice shelf skiway at Williams Field, McMurdo Sound on February 15.

The fire broke out on the starboard side of the aircraft and spread rapidly throughout much of the fuselage.

Crash crews were hampered by strong winds and a snowstorm in their attempts to control the blaze.

Antarctic Support Force officers at McMurdo Station reported that the plane's crew of nine and one passenger escaped unharmed.

Macquarie Island Fatality

A 21-year-old South Australian meteorological observer with the ANARE expedition on Macquarie Island fell to his death from a cliff at Tottan Head on January 2. He was Mr Brenton Sellick, of Murray Bridge, who had completed his training with the Meteorological Bureau and was attached to the Department of Supply.

Tottan Head is close to the ANARE station at the north end of Macquarie Island. Mr Sellick was walking with another officer when the accident occurred about 6 p.m. His body was brought back to Melbourne by the Thala Dan.

* * *

ICEBREAKER HITS UNCHARTED ROCK

Early in March the 5250-ton United States Coast Guard icebreaker Staten Island, with 222 men aboard, struck an uncharted pinnacle off Antarctica but was reported to be in no danger.

The icebreaker was making for Australia's Mawson Station when it hit the rock.

Captain Stanley G. Putzke radioed that the "ship and crew were in no danger and did not require assistance."

On board were 195 crew, 21 officers and six men who are making an inspection tour of the vast continent, circumnavigating the land from Winter Quarters Bay, McMurdo Sound.

A spokesman for Operation Deep Freeze, Christchurch, said that the ice breaker would not continue its voyage, but would proceed to Melbourne for repairs. The ship was due at Melbourne about March 15, and was expected to remain there about five days. The ice breaker suffered severe cracking which caused flooding in some forward compartments.

A WOMAN IN THE ANTARCTIC

Scientist Gives Her Impressions

Glaciers which ended sharply in sheer 100ft high cliffs, dazzling white against the dun-coloured earth of the valley, clear blue sky, and every now and then the discovery of a small mummified penguin or seal which had made its way inland instead of to the sea, 3000 years ago . . . these are just some of the mental pictures brought back from Antarctica by Dr Ann Chapman. (See Antarctic, September, 1970, p. 449.)

Dr Chapman, originally a graduate of the University of Otago, studied for her doctorate in Glasgow from 1962 to 1966.

Then she returned to New Zealand to take up a position at Auckland University. She is now senior lecturer in biological science at the University of Waikato, where a school of science was started at the beginning of the year.

"This is the second Waikato University expedition to go to the Antarctic, and we hope it is part of a continuing series," Dr Chapman said after her return.

The first party was a geological and geochemical group. Dr Chapman's party which left New Zealand on November 24 for a month's field work, was a biological one, making studies of frozen lakes and also the soil in the valley.

Only Woman

There were six members in the party. Dr Chapman was the only woman, as well as being the leader, and she had the added responsibility of months of preparation and buying necessary equipment.

"Not many women have been down," she said. "Pam Young, from Canterbury University, was the first New Zealand woman to go. She went with her husband who was on the university staff, and worked with him as a technician. That was in 1969.

"There have been a few American female scientists and a few women journalists, American and New Zealand. I suppose there would have been about a dozen altogether."

There were three staff members in the group and three students, including two first-year students, aged 18 and 20. Altogether, about 20 research students had been interested in going.

"When we have graduate students we hope they'll be able to do thesis work there," Dr Chapman said. "It's a fascinating place. We flew down in a Constellation from Christchurch in 10½ hours and came back in a Hercules in 7½ hours. We had a 90-knot tail wind to blow us back.

"They're bare, austere military planes. It was interesting to see what they were like inside. We left in the evening before it was dark and flew into daylight, so it was never dark. It was exciting to see pack ice beneath us for the first time."

By Helicopter

The party spent two days at Scott Base checking equipment and then were flown out to Taylor Dry Valley by helicopter. Taylor Valley and its neighbours, Victoria Valley and Wright Valley, have both been studied quite extensively.

"It was surprisingly pleasant to live there," Dr Chapman said. "The valley was beautiful, wtih completely dry, bare ground. The soil is soft with almost no biological activity. There are half a dozen frozen lakes in the bed of the valley and various glaciers flowing down its sides. They are very clean with very few stones on them, unlike New Zealand glaciers.

"We camped in polar tents and had D.S.I.R. food boxes—a high-calorie diet. There were a lot of things to drink and we found we drank an incredible amount

—Ovaltine, coffee, tea, beef tea, and lemon crystals."

Each member of the group adjusted quickly to the surroundings.

"None of us had been there before, but most had had climbing and tramping experience, and one had been to Greenland," she said.

Training Course

We had all gone to the August training course at Tekapo, which is compulsory for people going to the Antarctic. We had training there in first aid, glacier and snow work and so on.

"We had normal heavy woollen clothing, with special windproof clothing on top. We could work with our fingers much more than we'd expected. The tents were very cosy and we found that if we were out for more than a minute we had to tog up.

"Each of us wore several hundred dollars worth of clothing. The fully kitted-out Antartic explorer is a valuable thing."

They found that they kept to conventional timing when it came to working hours. Everything was a rush, because time was precious, and there was so much to do. Sometimes Dr Chapman's work would take her until 3 o'clock in the morning.

"It was calm then," she said, "and I used to go for a walk. The lighting effects in the sky, with the sun so low, were very beautiful."

Life in Lakes

Her own work was primarily concerned with life in the frozen lakes, which were often as deep as 100ft with 15ft of ice on top.

"We'd drill a hole through the ice and pump up water samples," she explained. "We took a sledge on the ice with us and pitched a tent beside the hole and set up the sampling gear.

"We had to wear crampons on the ice and we broke five out of seven pairs and went through our spare supplies as well. We used small field microscopes, but the organisms were so small that they need a really good light source.

"I wanted to see how many things and what sort of things were living there and how they coped with the peculiar conditions."

The samples have been brought back and months of hard work lie ahead for Dr Chapman.

ONE CONTINENT THEORY

New evidence discovered

In "Antarctic", Vol. 5, No. 6, June, 1969, we printed an article on "The Gondwanaland Theory", the widely-held view that at one time there was only one continent. Now an Australian scientist has unearthed evidence supporting the belief that Australia and Antarctica were once joined.

Dr Alex Ritchie, curator of fossils at the Australian Museum, has flown back to Sydney following a two-month expedition to the Antarctic.

He said his team discovered thousands of fish fossils, up to 350,000,000 years old, under the ice.

They ranged in size from a fraction of an inch, to more than eight feet, and proved the area was once a temperate zone, like Australia, with fresh water lakes and streams.

Dr Ritchie said similar fossils had been found in Australia and the discoveries tended to confirm the widely-accepted theory that the two continents were once one.

"About 2000lb of rocks, containing the fossils, are being shipped to Sydney and should go on display at the museum soon," he said.

NEWS FROM VANDA

Lake Vanda in the Wright Valley—a so-called Antarctic dry valley —rose by 8ft this summer when the Onyx River, which originates in the Lower Wright Glacier, was "in flood" for a month in December, said the leader of the summer party at Vanda Station (Mr P. F. Dyer).

It was a fairly substantial amount of water and was quite unexpected. Until December the lake was frozen but with the melt period, which began about the middle of the month, it created a moat round the lake's edge which grew to a width of 100 yards, said Mr Dyer.

He said that the ice at the centre of the lake remained 11ft thick throughout the summer. In order to obtain access to a meteorological screen near the centre, a raft made from oil drums had to be used to get across the moat.

"Under normal conditions, when the moat is about 30ft wide, there is a rope between the land and the ice by which we can pull ourselves across on the raft; but with this 100yd moat we lost the raft on several occasions. The Japanese scientists who were working in the valley originally made a bridge out of bamboo and packing cases but with the early melt and the widening moat this sank."

Skindiving Under Ice

Mr Dyer said that from a scientific point of view it had been a successful summer.

An underwater radiometer was left under the ice of Lake Vanda to try to determine how much radiation penetrated the ice from the sun. It was placed by the senior meteorologist, Mr V. Sussmilch, who went skindiving under the ice.

The swollen Onyx River caused the lake water to be muddy and this in turn created navigational problems for Mr Sussmilch.

"We drilled holes through the 11ft ice in the centre and with the aid of a portable generator dropped down an electric bulb on a cord so that he could find his place underneath," said Mr Dyer.

Visits From Helicopters

The season's biggest surprise at Vanda Station was when, without warning, a United States Navy helicopter landed with intermediate gearbox trouble.

"The pilot made for our station so as to be in communication with McMurdo Station. The helicopter crew remained at the base overnight, and another helicopter arrived with a maintenance crew. After six hours they had the fault repaired and the machine airborne," Mr Dyer said.

Relations between the New Zealanders at Vanda Station and the VXE6 helicopter pilots were excellent, said Mr Dyer.

"One day we had a helicopter delivery of fresh lettuce, and punnets of fresh strawberries, raspberries and a bottle of cream."

The Japanese party which was camped three miles away often dined with the New Zealanders on Saturdays, and occasionally they prepared Japanese foods.

Survey Parties

Glaciological and hydrological surveys were carried out in the Wright Valley by a three-man party camped at the Asgaard Range hut. "They conducted a survey from Vanda Station to the coast. This took three weeks. Hitherto the height above sea level of the station had been measured by barometric method. The survey revealed that this method was about 8ft out," he said.

The Japanese party spent the summer studying the heat balance of the lake. Mr K. Moriwaki said there was

argument as to whether the lake was heated from thermal activity below or by radiation from the sun.

Mr Moriwaki found the temperature of the bottom of the lake to be slightly lower than the last few feet immediately above. The bottom of the lake contained a salty composition which was responsible for the heat storage, said Mr Dyer.

The Japanese party will return to the valley next summer.

ICE BREAKS OUT EARLY

The five to nine foot thick annual sea ice covering two or three hundred square miles in McMurdo Sound has broken out this year several weeks earlier than usual. This austral summer has been one of the warmest for many years," said the Scott Base leader, Brian Porter, at the end of January.

"The ice goes when summer warmth has been enough to weaken it, and when strong winds occur to blow it out to sea, and when the icebreakers cut it up."

Cape Bird, on the northern tip of Ross Island was clear before Christmas allowing the Canterbury University biological party to launch their trimaran to collect samples from the ocean bottom.

The United States coast guard icebreakers Burton Island and Staten Island have been assisting the breakout while breaking a channel through the ice for shipping to reach McMurdo with new supplies for the polar stations. Recent strong winds were taken advantage of by the 6000 ton icebreakers, which kept punching the ice free. Last year the ice did not break out until March, and at that time it broke out further into the ice shelf than it had done for many years previously. As only one year's winter accumulation of ice covers the area to last year's breakout line, there is a god chance it will go back to the same point this year.

LADIES MOVE IN!

The South Pole visitor list now includes a petite Japanese woman, Miss Kaoru (Rose) Kanetaka, the first Japanese woman to set foot at the South Pole.

Miss Kanetaka visited the Antarctic from January 21 to 26, as a guest of the U.S. Information Agency which annually sponsors four visitors to the continent. She said in Christchurch that her purpose was to see the Antarctic and to gather material for her Tokyo Broadcasting System television series "Hopping Around the World"—the longest running TV programme in Japan.

Travelling has been a great part of Miss Kanetaka's career and in the six months each year she spends away from home she says she has visited all the world's major countries except Red China.

During her six months in Tokyo, she is putting together material which will be shown on her Sunday morning TV programme.

Miss Kanetaka, who was educated in the United States at City College in Los Angeles, California, describes the world as "an open book".

FIRST LATIN AMERICAN

Miss Myriam Luz, the New York based correspondent for "El Espectador", South America's national newspaper, has become the first Latin American born woman journalist to visit Antarctica.

Having started in Journalism as a general reporter some 20 years ago, Miss Luz has also conducted radio programs for Latin American immigrants, and a syndicated column, the only one of its kind in the Latin American countries of Ecuador, Peru, Venezuela, and the Dominican Republic.

After six-days on the Antarctic Continent the people of Latin America can look forward to the pictures and stories Miss Luz will turn out from her New York headquarters.

RELIEF OF ANARE BASES

Two ships, the Nella Dan and the Thala Dan, chartered by the Australian Government for Antarctic summer operations have been busy transporting men and supplies to and from mainland bases and the sub-Antarctic islands. Activities have been hindered by an errand of mercy to Heard Island and heavy pack ice.

The Nella Dan sailed from Melbourne on December 11th with men, aircraft and equipment for Davis, Mawson and the Northern Prince Charles Mountains where summer geological and survey programmes are being continued 250 to 350 miles inland from Mawson.

On December 28th the fixed-wing Pilatus Porter aircraft and the three helicopters aboard Nella Dan were assembled to unload men and equipment for Mawson from a point at the fast ice 43 miles away.

During the Pilatus Porter assembly on the sea ice, the ice cracked alongside the ship and 18 men, the aircraft and some tools and spares began to drift away from the main ice field.

The captain manoeuvred the ship to nudge the floe temporarily into the ice field, and 12 men towed the aircraft across the gap to the main ice field while the ship rescued the remainder from the floe.

It took some 52 flying hours to land 24 men and about 17,000 lb. of equipment and stores at Mawson.

In addition, four men and 400 lb. of stores were flown to Moore Pyramid in the Prince Charles Mountains, about 190 miles south of Mawson, to take part in a detailed geological, glaciological and cartographic survey of the area.

DAVIS PARTY RELIEVED

From Mawson the Nella Dan was worked through 360 miles of scattered pack ice and 150 miles of open water to relieve the 1970 party at Davis where Mr John Stalker's 10-man party had spent a year carrying out programmes in glaciology, upper-atmosphere physics and meteorology.

The Army amphibious detchment, under Captain V. R. Andrae, played a prominent part in unloading the ship and helping to erect the new hospital.

On the way back to Fremantle, the expedition members reconnoitred the McDonald Islands and visited the old sub-Antarctic station on Heard Island where a party of French and Australian scientists will spend six weeks this summer conducting programmes in ionospheric physics, glaciology and biology.

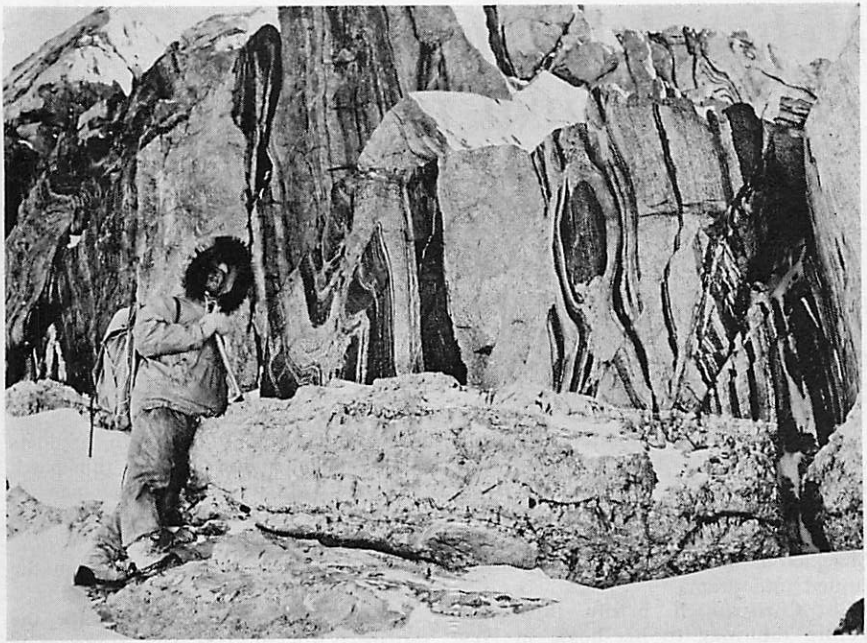
An Army amphibious Larc took four men 15 miles through rough seas around the island's glacier tongues to lay a depot of food for the Australian party at Spit Bay.

The Nella Dan reached Fremantle on January 29th and sailed again on February 2nd with the remaining 14 members of the Mawson party to relieve the station and to recover the Prince Charles Mountains party and a physicist from Davis.

INJURED MAN RESCUED

The ship had not long reached the Antarctic coast when she received an urgent message from Antarctic Division in Melbourne to proceed at all speed to Heard Island, in lat. 53° S long. 75° E where an Australian meteorological base had been established late in 1947. A young Australian engineer was lying injured on the Gotley Glacier near the southern coast of the island and it was necessary to evacuate him by helicopter.

The rescue was successfully accomplished and Nella Dan returned to Mawson. She was expected back in Melbourne about the middle of March with members of the 1970 Mawson party and the Prince Charles Mountains summer exploration team.



Geologist at Bewsher in the Prince Charles Mountains during an ANARE summer expedition near Mawson, Antarctica. Here the gneiss is strongly folded, faulted and cut by a one metre thick dyke of pegmetite.

ANARE photo by J. Bain.

The Thala Dan sailed from Melbourne on January 15th with 26 expedition members to relieve the Australian station at Casey.

Lord Casey, after whom the station was named, farewelled the expedition and presented an autographed photograph to the officer in charge of the 1971 party, Mr Jeff Walter.

Casey Station was established in 1969 to replace Wilkes which was becoming buried in ice and snow. The new station was built on a raised platform to avoid a recurrence of this problem.

An amphibious Army detachment of four men, under Lt. R. J. Brooks, assisted with unloading and loading operations, using DUKW's and LARC's provided by the Army. It is the first time that the latter vehicle has been used for Australian Antarctic operations.

Heavy pack ice, averaging six feet in thickness, but up to thirty feet thick at pressure ridges, held the ship captive north of Casey for twelve days. At one stage it was thought that assistance in freeing her would be needed from the ice-breaker Staten Island, which had been directed to sail from McMurdo Sound to her assistance.

However, wind and tidal action lessened the ice pressure and she eventually freed herself and proceeded to Casey.

A rapid changeover enabled the vessel to return to Hobart on February 23.

After loading supplies and taking on some French personnel at Hobart, the Thala Dan will sail for the French base at Dumont D'Urville.

On her return journey she will call at Macquarie Island to pick up six Australian scientists who have spent the summer there.

Helicopter Crash Drama Survival in the Antarctic

A Russian-born writer who survived a helicopter crash in the Antarctic tells how he and three companions fought to stay alive for 12 hours in 30deg-below temperatures.

The four men were in a United States Coast Guard helicopter which ploughed into the summit of 12,450ft Mt Erebus on January 6.

It was flying the writer, Mr Charles Neider, and three crew from the United States base at McMurdo Sound to a proposed camp site near Cape Bird, about 40 miles north.

Mr Neider was in Antarctica to carry out research for his book on Ross Island.

His determination to get a realistic impression of the way explorers Shackleton and Scott lived—suddenly turned into drama.

In Christchurch briefly this week before returning to his home in New Jersey, Mr Neider described how the helicopter was flying close to the summit of Mt Erebus—when the crash occurred.

With him were Lieutenant J. L. Cornerly (the pilot) and two crewmen, R. M. Vanderpool and S. E. Rawley.

The pilot had lost contact with the base ship, the Staten Island, when the helicopter hit the mountain at 1.43 p.m.

"I was in the cockpit at the time," recalled Mr Neider.

"The pilot shouted that we were caught in a down-draught and the helicopter was thrown forward into the snow. It was an unnatural force which carried us. It felt like taking off in a jet."

Lieutenant Cornerly's "Mayday" signals were not received by the Staten Island or radio stations, though crew members on a transport aircraft later told Mr Neider that they may have heard a "garbled" form of them.

Impact

The light craft flipped and skidded on impact, but its mangled wheels and undercarriage helped it to stop in soft snow.

Mt Erebus is littered with boulders and Mr Neider described the thin patch of snow which allowed the men to survive as "the first link in a chain of survival".

All four men walked away from the crash unhurt.

But in spite of their lucky escape, the prospects for survival were slim.

The temperature was 30deg below zero—equivalent to 62deg of frost—and the men were poorly equipped.

"I was alarmed to find that the only survival kit among the four of us was my own," said Mr Neider.

"This naturally became common property, and we set out to survive if at all possible.'

A layer of dense cloud obscured them from rescue aircraft and the helicopter's radio equipment was dependent on the motion of its turbine engine.

"The pilot made several attempts to start it, but every time we smelt smoke and a 'fire' signal showed on the dashboard."

Turbine engines require more oxygen than was available at the altitude.

Two of the men were only lightly clothed.

Below the crash site was 12,000ft of ice, rock and hidden glaciers.

"It would have been almost impossible for even an experienced climber to make the descent 'et alone tenderfoots like ourselves," Mr Neider said.

The men had enough heavy clothing

for two—a tent, two Antarctic-style mattresses, a Verey pistol and insulation they managed to rip from the helicopter.

Frozen

"The metallic cab would have served as a heat drain and we would have frozen to death inside it," said Mr Neider.

They abandoned the helicopter and set about making the tent as warm as possible.

"Relations between us were both friendly and amiable, although there were vast silences," said Mr Neider.

A small quantity of plums and peaches, intended as a gift for the New Zealanders at Cape Bird, had been recovered from the helicopter.

"They were so hard we could have smashed them with a hammer," Mr Neider said.

Efforts to thaw the fruit were unsuccessful, but Mr Neider said dehydration was more of a problem at that stage than lack of food.

The snow was so cold it would have been dangerous to attempt to melt it in their mouths.

At 11.59 p.m.—more than nine hours after the crash—Mr Rawley saw a Hercules transport aircraft descend below a slightly thinned cloud barrier.

He shouted: "They see us" and fired the Verey pistol.

The Hercules dropped survival kits and climbed into the air again.

"Mosquito nets had been included in the kits and we were as a loss to know what to do with them," Mr Neider said.

Rescue

The aircraft spent the next 2¼ hours circling the area.

"It could not land, of course, but it was a great morale booster to have it there. We knew it would have radioed for further help."

They selected a suitable landing place for a helicopter and marked out a triangle with pieces of coloured wreckage.

At 2.30 a.m. on Sunday, a 7-hour air search ended when two helicopters flew down the side of Mt Erebus.

One craft descended almost immediately and Lieutenant Cornerly and Mr Rawley climbed aboard without assistance.

The crew put out vivid smoke and dye markers and flew off, leaving the second helicopter to lift Mr Neider and Mr Vanderpool off the mountain.

ORDEAL OF INJURED MAN

A young engineer was rescued late February after lying alone on a glacier on remote Heard Island in the Antarctic for eight days.

Mr Ian Holmes, 24, of Melbourne, was reported to be in good condition after being flown by helicopter to the Antarctic supply ship, Nella Dan.

A radio report from the ship said his leg had been placed in plaster and he was cheerful and comfortable after his ordeal.

Mr Holmes's leg was broken while he was traversing Gotley Glacier with two other Australians, Dr G. M. Budd, and Mr I. C. Dillon.

Dr Budd set the leg and Mr Holmes was left in a tent with a stove and food for two weeks while his two companions trekked 40 miles back to their base camp to summon help.

The Nella Dan, with two helicopters aboard, set out from the Antartic continent 900 miles to the south for the rescue.

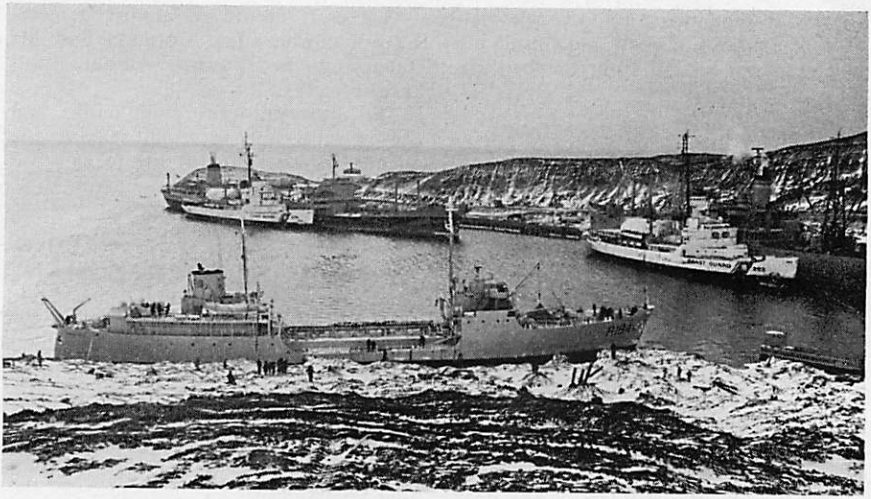
One helicopter from the ship yesterday lowered Dr Budd to the injured man, who was winched on a stretcher 300 yards across the ice to a second helicopter waiting on the ground.

The operation took just over an hour.

NO RADIO

Mr Holmes had no radio in his outpost on the ice, and until the arrival of the helicopters did not know whether his companions had reached the base safely.

The three are among five Australians taking part in a French expedition to the island.



A CROWDED BAY

Winter Quarters Bay, McMurdo Sound, was filled by no less than five ships during early February.

The harbour was ringed by two United States Coast Guard icebreakers, Staten Island and Burton Island; the Royal New Zealand Navy's supply ship Endeavour; the cargo vessel USNS Wyandot; and the American super tanker USNS Maumee.

The five ships set a record for the number of vessels in the bay at one time, and they brought in a record tonnage of annual supplies for distribution to the men who remain on the Antarctic continent for the six months of darkness and winter which sets in about March 1st.

Winter Quarters Bay, situated on the east side of the Hut Point Peninsula, in latitude 77° 51′ S, longitude 166° 37′ E, was discovered by the National Antarctic Expedition under Captain R. F. Scott, 1901-1904, and was so named by them because their expedition ship Discovery was moored in the bay and frozen in during the winters of 1902 and 1903.

SNOWCAT FOR MUSEUM

The command vehicle used by Sir Vivian Fuchs on the 2158-mile trans-Antarctic journey of 1957-58 will be brought to Christchurch from Scott Base in H.M.N.Z.S. Endeavour early this month. The snocat, which is in good condition, is expected to be placed in the Antarctic hall of Canterbury Museum. The decision to bring it back to New Zealand was made by the superintendent of the Antarctic division of the D.S.I.R. (Mr R. B. Thomson) during a visit to Scott Base. The vehicle had been replaced by two large wagons for work round Scott Base.

BYRD MEMORIALS

There are now two memorials to Rear-Admiral Richard E. Byrd in Antarctica. A bronze bust by the American sculptor, Felix de Weldon, is located at McMurdo Station, and a plaster replica was unveiled in the dining hall at Byrd Station towards the end of last year.

The bust at Byrd Station was given by Mr de Weldon. He was present at the unveiling ceremony which was performed by Rear Admiral D. F. Welch, the United States naval support force commander.

Navy Official Visits Antarctica

The logistic task carried out by the United States Navy in the Antarctic was most impressive, said the Under-Secretary of the Navy (Mr J. W. Warner) in Christchurch on his return from a short fact finding mission. One did not appreciate the accomplishment of the pioneer explorers—such as Scott, Amundsen, and Byrd—until one had seen the vast continent, he said.

So enthusiastic was he about what he had seen, said Mr Warner, that he intended to speak on the subject when he returned home.

He also intended to take a very active part in working out the details of the transition of responsibility for the American research programme by the National Science Foundation.

Previously, the programme was financed and managed by the foundation, the Department of Defence, and the Department of Transportation.

Asked how he viewed the occasional criticism that the United States was the only major treaty nation supported by a branch of its armed forces, Mr Warner said that when the United States went into the Antarctic it seemed logical for the Navy to carry out the task.

"Historically, the Navy has been the exploring branch of our military," said Mr Warner. "There is no military aspect to the Navy being down there in a support role. The only thing the Navy does benefit from is the experience," he said.

Mr Warner said he had found his visit to the Russian Vostok Station most interesting. "It was made at my request, in order to see what sort of scientific research they are undertaking and also to let the Russians see us," he said.

There was a similiarity in all Antarctic science, mainly because of the characteristics of the continent.

He did not feel the United States Government should become involved in Antarctic tourism, Mr Warner said. "Congress appropriates funds for our scientific effort only, and when we seek these funds no mention is made of tourism; neither may we divert funds for tourist ventures, nor for their support," he said.

Operation deep freeze in its eleventh year

This is the 11th year that the U.S. Navy has manned the almost 15,000 mile supply lifeline from the United States to McMurdo Station for Operation DEEP FREEZE.

About 98 per cent of the tonnage goes by ship to the Antarctic where some 2,000 men from the Navy, Coast Guard, Army, Air Force and Marine Corps, and members of more than a dozen specialized units assemble to take advantage of the relatively favourable weather conditions of the Antarctic summer from October to March.

This complex logistics support by the U.S. Navy consists of housing, feeding, supplying and transporting U.S. civilian scientists engaged in various projects on the cold continent.

CAMPBELL ISLAND REPORT:

HARD WORK AND PLAY DO MIX

From Derek Laws:

After fours months on Campbell Island, I think I can say without exception we are all working hard but also enjoying ourselves as well. The change over in October went off extremely smoothly, though there were a few incidents to brighten the proceedings. A railway wagon loaded with four full drums of diesel oil parted company with the winch cable and took off down the track, the wagon finishing up against the side of the paint shop, and the drums scattered all over the wharf.

This year we were very lucky in having four of last year's team staying over, one for four months, two for five months, and one for the whole year. This of course helped the new members to find their feet during the first few weeks. All of us who arrived in October had small problems with equipment and duties but these were very soon overcome and the expedition settled down into a comfortable routine.

The first operation was to unpack all the equipment and spare parts received at servicing to find out what we had and what we didn't have. It was fairly common during those first few weeks to hear somebody say, "I've seen such and such an item but I'm not sure where". Ultimately these items all turned up and on the whole we were satisfied with what we got.

No major tasks have been undertaken as yet, though a few jobs that the previous party couldn't finish for lack of materials were put in hand and quickly finished off, namely the laying of hardwood timbers on the wharf. Other work carried out to date includes the erection of some new street lights, the dropping of several masts to replace halyards, stays and terminating resistors, erecting a roof over the garden area, quite a lot of general repairs to the buildings and the laying of a new carpet in the hostel lounge. On the engineering side our mechanic has been very busy building cupboards and shelving so that all of his spare parts and equipment can be housed under the one roof.

Socially there have been a number of highlights, the most significant being our Christmas and New Year celebrations. Our Christmas day dinner was delayed until Sunday the 27th December because of ships visiting. It was a masterful effort by our cook and thoroughly enjoyed by all. The after-dinner celebration also was very enjoyable, proved by the fact that most people moved around very slowly the following morning.

The first boat we saw in Perseverance Harbour was the yacht 'Awahnee' en-route from Bluff to sail around the world in latitude 60 degrees south. The Awahnee arrived on Christmas Day morning and eventually stayed until Boxing Day evening. The crew of six came ashore and the party we had on Christmas night will be remembered for a long time.

The United States Coast Guard Cutter 'Staten Island' steamed up the harbour at 0500 hours on Boxing Day morning bringing us supplies and mail, which were quickly unloaded and the Staten Island got under way at about 1000 hours. It was a very pleasant sight to see two ships in the harbour together, which is something that doesn't happen often on Campbell Island.

The next ship that arrived on the 30th January was H.M.N.Z.S. Endeavour on its way to Scott Base. Endeavour brought us mail and a small quantity of stores. Two days after the Endeavour we welcomed the M/S 'Lindblad Explorer' on the 2nd February carrying 75 passengers. The passengers wanted to see the wild life on Campbell and were conducted on tours into the hills surrounding the Camp by members

of the Island's staff, their main interest being the Royal Albatross. The staff and crew of the Lindblad Explorer laid on a barbecue ashore for lunch, and being blessed by exceptionally fine weather the barbecue was a great success. About 100 people were ashore and I think this must be an all time record for the number of people on Campbell Island at any one time.

After further trips up the hills and tours around the harbour during the afternoon the tourists returned to the ship at about 5 p.m.

All Campbell Island staff were invited on board by Mr Lars-Eric Lindblad for cocktails and dinner at 6 p.m. This was very much appreciated by the Campbell Islanders and a wonderful time was had by all on this very nice and somewhat remarkable ship.

The Lindblad Explorer sailed from Campbell Island just after 8 o'clock that evening, and we look forward to its next visit on the 7th February.

New Japanese Base

Japan plans to establish another base in the Antarctic. It will be a small inland station 250 to 300 miles from the present Syowa Station on Ongul Island off the Prince Olav Coast. The station is expected to be built next year.

The leader of a party of three Japanese scientists, Mr Y. Yoshida, gave the information about the new station when he passed through Christchurch on his way to the Antarctic at the end of last year. A geomorphologist, Mr Yoshida, and Messrs Y. Yusa and K. Moriwaki, spent several weeks at Vanda Station studying the heat balance of Lake Vanda and the movement of the lake water.

Five New Zealanders and the Japanese celebrated Christmas together at Vanda Station. The New Zealanders had a slightly different Christmas dinner. It included Japanese dishes devised and cooked by the visiting scientists.

SUMMER PROGRAMMES

MACQUARIE ISLAND

The summer programme at Macquarie Island included a continuation of the 1970 expedition programme on the ecology and physiology of albatrosses and on the behaviour of elephant seals. There was also an examination of the progress of rabbit-control experiments based on the use of the European rabbit flea as a vector for myxomatosis. Botanists studied the effects of rabbit-grazing at Green Gorge and re-examined tree seedlings.

PRINCE CHARLES MOUNTAINS

The Prince Charles Mountains summer party consisted of 26 men of whom three were surveyors, four geologists and two physicists. Based on Moore Pyramid, this team was led by Dr D. F. Lugg, the Division's senior medical officer. They were supported by an aircraft crew of seven who manned the three Hughes 500 helicopters and the Pilatus Turbo-Porter fixed-wing aircraft, four technical engineering staff, three radio operators, a weather observer and a cook. This summer party completed a regional geological survey of the northern Prince Charles Mountains. The topographical survey was extended from Fisher Massif, Clements Massif, Mawson Escarpment, Mounts Stinear, Johns, Willing, Woinarski, Bewsher and Forecast, Corry Massif, Mount Wishart, Stinear Nunataks and Depot Peak.

The 1971 relief parties left at the ANARE stations were: Mawson 23, Davis 12, Casey 26, and Macquarie Island 16—total 77 men.

BRITISH ANTARCTIC SURVEY

We regret that due to the British postal strike, we are unable to supply any news in this issue of British Antarctic survey activities.

ISLAND OF DESOLATION

By A. G. E. Jones

Ever since their first discovery the Kerguelens have conjured up visions of lonely islands far from the haunts of men. In this article A. G. E. Jones, the authority on early whalers and sealers, tells of the discovery of the islands and their subsequent history.

Kerguelen is a place which no one would visit without a compelling reason. Lying in latitude 50° S., longitude 70° E., in the path of violent westerly winds, with poor visibility for much of the year, with many charted and uncharted dangers, it was an area to be avoided by sailing ships, and even today steamers keep well to the north, though a great circle course would save them five hundred miles. The eighteenth century name, Island of Desolation, adequately described the impression that Kerguelen gave to those who first went there and mapped this lonely archipelago.

The maze of islands, large and small, the mountainous and desolate interior, the steep-sided valleys, the glaciers that come down to the sea, the cloud which hides the sun for two-thirds of the time, the cold, damp climate, the high, squally and deafening winds all discourage men from settling there for any length of time. It was the prospect of a quick profit from fur seals that took men there in the eighteenth century. In the nineteenth and twentieth centuries scientific research was the motive that brought them to Kerguelen.[1]

French Explorers

Like so many islands in the southern ocean, Kerguelen was discovered almost by accident. Yves Joseph de Kerguelen-Tremarec sailed from St Malo in 1771 with two flutes*, the *Fortune* and the *Gros-Ventre* to search for the supposed southern continent, and on 12 February, 1772, he sighted land, anchoring in the Anse du Gros Ventre on the south coast. He did not stay long, but returned to Brest in July to prepare another expedition. On his second visit he learned that he had discovered not a continent but an island. He reached Kerguelen on 14 December, 1772, with three ships and spent over a month off the coast, producing a simple outline map.[2]

*Fast types of naval vessel.

Captain James Cook

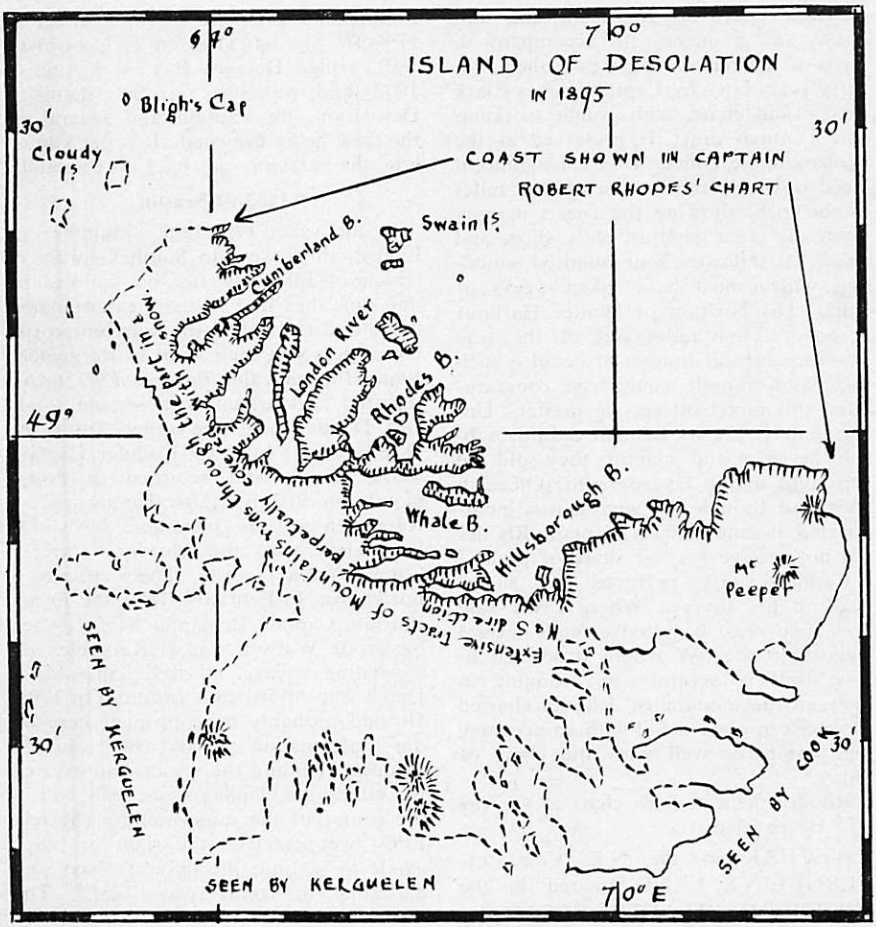
The next visitor to Kerguelen was James Cook on his last voyage. He sighted land on 24 December, 1776, and next day anchored in Christmas Harbour, at the north of the island. A few days later he made a running survey of the north and east coasts, leaving a number of interesting English names on the main features, adding ". . . which from its sterility I shall call the Island of Desolation." Of the natural history he wrote, "The most considerable [animals] are seals . . . but they are not very numerous."[3]

Fur Seals

Arctocephalus tropicalis tropicalis, or the Kerguelen fur seal, and the sea elephant, mirounga leonina, next brought ships to the Island of Desolation. The fur seal was sought for its skin, which brought a good price in the Chinese market at Canton and which later found a ready market in Europe once a means of de-hairing the skins had been found and it became possible to use the fur for hats and clothes. The elephant seal was sought for the oil it produced. In time the sealers exhausted the herds in the Falkland Islands and South Georgia and in the late 1790's came to Kerguelen in search of seals.[4]

American Sealers

So far as we know, the first sealers came from Nantucket, the home of the New England whaling trade. Captains



A map of the island of Desolation (Kerguelen Islands) in 1895, showing the coastline discovered by Kerguelen, Cook and Rhodes.

Bartlett Coffin, Elijah Coffin and Simon Starbuck. who were all from very well-known families in the trade, visited Kerguelen in 1791 in the *Alliance*, the *Asia* and the *Hunter*, and Bartlett Coffin died there in February, 1793. Captain Swain, of New Bedford, visited Kerguelen in the *Nancy* in 1798.[5]

Captain Robert Rhodes

The next man to call at Kerguelen was Captain Rhodes, master of the *Hillsborough*, a ship of 782 tons, owned by Daniel Bennett, a London oil merchant who was fast becoming the leading owner in the South Seas trade. He sailed from Gravesend for Botany Bay under William Hingston with 250 convicts on 28 October, 1798, arriving on 28 July, 1799. The *Hillsborough* left for England under Rhodes in October, 1799, and eventually reached Gravesend on 15 April, 1801. He came back to New South Wales in 1802-03 as master of the whaler *Alexander*.[6]

He spent eight months at the Island of Desolation during which time he pre-

pared a chart of the north and east coasts and a memoir to accompany it. Parts of this memoir were published over forty years later by Captain James Clark Ross. The chart, with rough workings and a rough draft, is preserved at the Hydrographic Office. It is a magnificent piece of work, on a scale of two miles to the inch, showing the coasts in grey wash and great detail of cliffs, shore and rivers. It indicates four hundred soundings which must have taken weeks of work. His position of Winter Harbour is only a few miles out of the true position and the amount of detail is such that Cook himself would have congratulated this merchant service master. Unfortunately, Messrs Bennett did not publish the chart and memoir; they sold the copyright to the Hydrographic Office in 1808 and though the survey was incorporated in later charts Captain Rhodes did not receive his fair share of praise.[7]

Captain Cook, perforce, was superficial in his survey. Where Cook said ". . one great bay that extends several leagues to the SW where it seemed to lose itself in several arms running in between the mountains,' Rhodes charted the coast in great detail with an accuracy that compares well with the chart of today.[8]

Rhodes dedicated his chart to George III. He entitled it:

A CHART/of the N.E. Coast of/ KERGULIN'S LAND/Situated in the SOUTHERN ATLANTIC OCEAN, including the great S Bay/extending from HOWE'S FORELAND to CAPE DIGBY (so named by Captn Cook) SURVEYED in 1799 by Captn ROBT RHODES, late Commander of the HILSBOROUGH employed in the Southern Whale Fishery.

Even though it was not published, the chart of Kerguelen at the beginning of the present century was largely as laid down by Rhodes.

Wrecked on Kerguelen

The *Astrea* was a London whaling ship of 244 tons, long employed in the South Seas trade by Messrs Marson. The master, Captain William Cowen, had commanded a Bristol South Seaman in 1796-97. She left Deal on 28 December, 1801, visited Delagoa Bay on 8 August, 1802, and was lost on the Island of Desolation, the captain and several of the crew being drowned. It is not known how the survivors got back to England.[9]

1803-04 Season

In the years 1759-1802 a number of English ships went to South Georgia in search of fur seals, but by the end of that time they had virtually exterminated them, and in 1804-05 the more enterprising owners sent their ships to Kerguelen. John Hill sent the *Bellona* (243 tons) repaired and armed with sixteen 9-pdr and 18-pdr guns; she sailed from the Downs on 20 July, 1803, under Captain Mark Munro and returned to Portsmouth on 9 July, 1804, having visited Kerguelen in the meantime. Also at Kerguelen was the *Patriot*, Captain Connen from Oporto. Their success is not known. In February, 1804, the *Brook Watson*, Captain Benjamin Swift, owned by Brook Watson, was at Kerguelen on a whaling voyage, all well. She was a Dutch ship of 501 tons captured in 1798. He had probably been brought here by the information given by Captain Rhodes, "I found the season had expired for killing sea elephants and seals, but in the course of the same months (March, 1799) we perceived the right or black whale to set into the different bays and harbours in great quantities." The *Betsey*, Captain Watson, owned by Daniel Bennett, left Portsmouth in the latter half of 1803 and returned to the river on 10 August, 1804, having been at Kerguelen at the same time as the *Brook Watson*.[10]

1804-05 Season

In 1805 there were seven English ships at the Island of Desolation. They were reported in "Lloyds List: The *Seringapatam, Active, African, Diamond, Recovery, Ganges,* and *Kingston* of London, were all well at the Island of Desolation, the 25th of February."

Four ships belonged to Daniel Bennett, the *Active,* 400 tons, Captain Lewis Blair, the *African,* 615 tons, Captain Ranson Jones, and the *Recovery,* 526

tons, Captain William Beacon. John Hill sent the *Diamond*, 443 tons, Mark Munro master. The *Seringapatam*, 357 tons, Captain John Bird, was owned by William Mellish, then well known in London in the South Seas trade. There were two lesser owners, Messrs Gibbons and Swain with the *Kingston*, 300 tons, Matthew Swain commander, and Messrs Milman and Herbert with the *Ganges*, a French prize, of 243 tons, Captain Obed Folger.

Folger and Swain came from New England whaling families. Mark Munro and Lewis Blair belonged to the generation of Scots who were taking the trade over from the Americans. William Beacon, long forgotten, was a master in this trade, employed by Daniel Bennett and Messrs Enderby, much of the time in command of the *Recovery*, which was employed in the whaling and sealing trade for over thirty years.[11]

Although the voyages have not been recorded, American ships must have been engaged until the fishery ceased to be profitable.

Revival of Sealing

It was not until 1816 that Daniel Bennett dispatched the *Kingston*, James Young master, which returned to Cape Town from Desolation Island on 20 February, 1817. Much about the same time Messrs Birnie and Co. sent the *Eagle*, Captain J. Carnall, which reached St Helena from Kerguelen on 6 June, 1817, and England on 4 August. To judge by the imports of fur seal skins into England, the voyages could not have been profitable.[12]

Further Voyages

In 1819 Messrs Daniel and William Bennett and other owners sent seven ships to Kerguelen. Messrs Bennett dispatched the *Recovery* again under William Beacon, the *Vansittart*, 279 tons, J. D. Bennett master, the *Lune*, 345 tons, Captain W. Coffin and the *Favourite*, 450 tons, Captain Joseph Darney. Messrs Enderby, who had been leaders in the trade in the eighteenth century but who were now quite unimportant, sent the *Cumberland*, 266 tons, Captain J. C. Gooch. Messrs Milman again sent the *Ganges*. Christopher Nockells, who dispatched the *Monmouth*, 290 tons, W. Stewart master, aroused interest a few years later by announcing the discovery of Emerald Island by Captain William Elliott, master of the *Emerald* *

These ships were reported at Desolation Island by Captain Beacon, who left there on 3 March, 1819, and reached the river in May, 1819. The *Vansittart* brought back 400 casks of oil and 750 seal skins; the *Monmouth*, 500 casks; and the *Cumberland*, 150 casks.[13]

The Last Season

The *Favourite* went out again in 1819-20, Captain Joseph Darney, putting in to the Cape of Good Hope on 17 March, 1820, returning to the river on 16 May, 1820, with 650 casks and 700 seal skins.

But by this time attention had been diverted to the newly discovered South Shetlands where a rich harvest of skins was taken in a very short time. Except for the occasional visits by vessels like the *Magnet*, Captain Peter Kemp who discovered Kemp Land for Messrs Bennett in 1833, Kerguelen was left alone until the 1840's when it was visited by numerous New London sealers; in 1843, it is said, there were at least five or six hundred whalers off the coasts and men lived there for three years at a time.[14]

Scientific Research

Kerguelen was visited by its first scientific expedition between 6 May and 20 July, 1840, by the *Erebus* and *Terror*, commanded by Captain Sir James Clark Ross and Commander F. R. M. Crozier During their stay they surveyed the coast between Baie de l'Ooiseau and Howe Island. Ross and Crozier made magnetic observations, Dr R. McCormick investigated the geology and Dr J. Hooker studied the botany.[15]

Later History

From this time onwards, visits to Kerguelen are better recorded and its

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*Emerald Island, after many subsequent searches for it, must now be considered "non-existent".—Editor.

subsequent history cannot be recounted in a short article. The *Challenger*, Captain G. S. Nares, spent some time at Kerguelen in 1874 during the course of its important scientific voyage. American sealers were there in the 1850's, 1860's, 1870's and 1880's, but with diminishing frequency as the take of seals decimated the herds and made the voyages unprofitable. Fortunately parts of the islands are now a national park and the fur seals are growing in numbers again.[16]

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12 Lloyds List, 6 May, 1817, 29 July, 1817.

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14 Lloyds List, 9 May, 1820.
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16 Brian Roberts, pp. 118-132.
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STAMP NEWS

Some Russian Issues

The 130th anniversary of Bellingshausen's voyage round Antarctica in 1819-21 was marked by the issue, in October, 1950, of a pair of stamps (SG 1647-8), designed by V. Zavyalov and printed by photogravure on light blue paper. The 40 kopeck, scarlet, has portraits of Bellingshausen, who commanded the *Vostok*, and M. P. Lazarev, who commanded the *Mirny*. The 1 rouble, dull violet, shows the two ships.

In October, 1956, another stamp marked the Soviet Antarctic expedition of that year. Designed by Y. Gundobin and lithographed, 40 kopecks, multicoloured (SG 2026), it shows a map of the continent with flags for the three first Soviet stations. Mirny, Oasis and Pioneer, and emperor penguins gazing curiously at the Soviet vessels.

The penguin on the 40 kopeck, violet and red, stamp of 1959 has even more cause to look surprised at the launching of a meteorological sounding balloon! This stamp (SG 2373) is one of a set of four, photogravure, designed by I. Levin, for International Geophysical Year.

A set of four (SG 2886-9) was issued in September, 1963, and is inscribed: Antarctica—Continent of Peace. The silhouete is that of the diesel ship, *Ob*, with icebergs and the aurora in the background. The stamps were designed by Y. Aniskin and are printed in photogravure.

The latest Antarctic stamps are the unusual "triangulars" issued in 1966, consisting of three 10k. stamps and a partly perforated label continuing the design of the map.

Designed by Y. Ruakhovsky and printed by photogravure, these stamps have part of the design picked out in silver—a feature frequently used in Soviet stamps.

—"Soviet News."

A tractor at Mawson, which has just been unloaded from the supply ship Nella Dan, seen here at moorings.

ANARE photo by P. Fawcett.

First Landing On McDonald Island

A French helicopter has landed two Australian scientists on McDonald Island in the Southern Ocean, in the first known landing on one of Australia's most remote possessions.

McDonald Island is the largest of a small group of the same name 26 miles west of Heard Island, which is approximately half-way between Australia and South Africa and 900 miles north of the Antarctic continent.

The landing was made on January 27 by Mr H. Thelander of the Antarctic Division of the Department of Supply and Dr G. M. Budd of the School of Public Health and Tropical Medicine, University of Sydney.

They were landed by the helicopter from the French ship Gallieni on its way to nearby Heard Island where Australia established a base in 1948. The Heard Island base was closed in 1955 but has been occupied intermittently since.

Five Australians, who boarded the Gallieni in Mauritius, have joined a French group which obtained the permission of the Australian Government to carry out scientific investigations at Heard Island during the current summer.

The expedition is another example of International co-operation in scientific work directly related to investigations being made on the Antarctic continent and sub-Antarctic Islands.

The Australian interest in Heard Island is centred on upper atmosphere physics, glaciology and biological studies of wild life on the island.

The landing on McDonald Island was made a week after an initial reconnaisance by the Danish ship Nella Dan, which is on charter to the Australian Government for resupply of bases in the Antarctic.

A small boat from the Nella Dan approached to within 50 yards of a "pocket handkerchief" sized beach among precipitous cliffs on the eastern side of the island, but did not land.

The French helicopter, piloted by Mr M. Metzger with Mr H. Mongin as engineer, landed Mr Thelander and Dr Budd near the 600ft summit of the island where they carried out biological and glaciological observations.

ABUNDANT BIRD LIFE

They found that the island teemed with bird life, and estimated that one giant macaroni penguin rookery contains a quarter of a million birds.

Other nesting birds include giant petrels, skua gulls and diving petrels.

McDonald Island was discovered by Captain McDonald of the British ship Samarang in 1854.

Subsequently the islands in the McDonald group and Heard Island were frequently sighted by passing ships, but there are no records of any landing having been made in the McDonald group.

The discovery of Heard Island is usually attributed to Captain John J. Heard of the American barque Oriental in 1853, but later evidence shows it was first sighted by the British sealer Peter Kemp in 1833.

The first landing was made in about 1856 and there have been many since. Sealers and whalers are known to have used Heard Island occasionally from 1857 until the 1930s.

H.M.S. Challenger in 1874 and the British ship Wakefield in 1910 examined the coast of McDonald Island from a distance.

There are no records of any sealing having been carried out in the McDonald group.

JAPANESE PROGRAMME DELAYED

Supply Ship Trapped in Ice

The Japanese supply ship Fuji was trapped in the ice on January 3 while carrying men and material for JARE 12.

After being held fast for a month, during which a call was made to the United States base at McMurdo Sound for ice-breaker assistance in freeing the ship the Fuji finally broke free and continued her voyage towards the Japanese Syowa Station.

A report on March 3 stated that the ship was then nearing her base, breaking through fast ice.

Most of the cargo was transported ashore by shuttle flights of Sikorsky 61-A helicopters. Heavy construction material remains in the ship's hold.

The 12th JARE led by Professor Takasi Oguti is now at the station. The wintered over 11th Jare will fly back to Japan via Cape Town.

Because of the ice delay summer operations at Syowa Base will be put back by about one month.

* * *

U.S. Navy Wins Annual Ice Bowl Contest

Seven million cubic miles of ice serves as the turf for the annual Ice Bowl Gridiron classic between the civilian scientists (USARIS) and the American sailors at Byrd Station in the Antarctic.

This football game is without doubt played under the most demanding and rigorous conditions of all the world's New Year's Day Bowl games.

A playing surface covered with 7000 feet of ice and snow, temperatures ranging from –20 to 10° above zero, and winds of between twenty-five and thirty miles per hour make the Antarctic the coldest and windiest continent in the world. These hazardous conditions still do not keep the game from being played.

The contest this year was a "must win" for the Navy, and the sailors came through, winning 12-0 for the first Navy victory in four years.

This gave the ten-year-old series a 4-4-3 record—two games resulting in ties back in 1961.

* * *

ELEPHANT ISLAND EXPEDITION

The Joint Services Expedition to Elephant Island left England by air on 15 November 1970 under the leadership of Commander Malcolm Burley, R.N. The other members are Lt.-Commander J. R. Furse, Lieut. A. Rackham, Lieut. J. F. Hunt, C.P.O. D. M. Burkitt, Llt.-Lt. H. N. Patrick, Flt.-Lt. G. H. Jacobs, Flt.-Sgt. G. Bruce, Lieut. F. C. Walshaw, Captain J. Elder, Lieut. R. V. Roxburgh, Lieut. R. M. O'Brien and Mr J. S. Alison, their botanist.

An R.A.F. Hercules took them to Buenos Aires to join the "Endurance" which conveyed them to the Falkland Islands and Elephant Island.

Discovered a century and a half ago, Elephant Island has little to recommend it. No matter the direction, winds are strong and there is no safe anchorage. The ice-covered plateau is surrounded by uninviting cliffs or glacier faces, except for two narrow beaches used by Shackleton's men, Cape Valentine and Cape Wild. The party have been surprised by the amount of green vegetation in the lower parts of the island, the result of the melting snow and poor drainage in places. They are due to leave the island in March this year. By that time they should have mapped the island for the first time.

Dr. Peter Baker and Ian McReath, geologists from Leeds University, should be the first people to visit Deception Island since the volcanic eruption. The Argentine navy vessel which is taking them there is to stand offshore as an overnight base.

BY SNOW TRAIN TO VOSTOK

In the following article Mr G. Gerbovich describes the early part of a "sled train" journey from Mirny Station to Vostok Station (78° 30′ S. 106° 50′ E) about 1500 kilometres inland on the ice plateau. He also gives details of the relief of personnel at other Soviet Antarctic stations.

On December 6th a sled "train" left Mirny on the long journey to Vostok Station carrying fuel and equipment—supplies that were necessary for the coming 16th Expedition. The new expedition is already "knocking at our door", of which more later.

The sled train carrying supplies is the biggest one we have yet used. Twelve 25-ton "towmobiles" were towing the sleds which were carrying 25 to 30 tons of supplies. Fifteen of our comrades will be travelling 1500 kilometres to Vostok Station and back again through the icy wastes. Most of the route is 3000 metres above sea level where the temperature is constantly low. The journey will take about 2½ months to complete. Only the radio operator, the guide and the cook are not driving "towmobiles.". Everyone else is, including the doctor.

Polar explorers know the complexities of these journeys. For that reason we have a saying—"He who hasn't travelled in Antarctica cannot know Antarctica". The staff at Mirny Station gave their comrades a warm farewell when they left. Many warm wishes for their welfare were given in a short get-together as the expedition began. The head of the expedition, Mr O. Ovechkin, returned thanks and then gave the order to leave. The heavy machines roared into action and slowly pulled out of Mirny.

SNOWSTORMS AND ILLNESS

The troubles began the very next day. Thirty kilometres from Mirny a heavy snowstorm began—visibility was reduced to zero—and the expedition had to stop. The Antarctic summer is short and if the schedule of miles per day was not strictly adhered to one could be stranded until autumn. But the snowstorm brought temperatures of 60 degrees below zero and the machines could not move.

On the next day visibility was better and the expedition decided to try to move on. All precautions were taken. Some members of the group walked in front of the leading machine showing the way. In this fashion 100 kilometres were covered.

Then they had another unexpected stop. On the night of December 13th and 140 kilometres from Mirny the engineer, Mr Ishuk, became ill with acute appendicitis. He had to be transferred immediately back to Mirny—but how was this to be done?

The aircraft attached to the sixteenth expedition had not yet arrived—they were still on the deck of the ship "Ob" which was sailing in the region of Molodozhnaya Station—so help from the aviators was not possible. And the weather was so bad that the planes could not have landed near the expedition anyway. When the news was received at Mirny we rapidly prepared a special fast-moving vehicle that was used in emergencies. This took an hour and a half. Travelling in this vehicle were the radio engineer, Mr Afenyasev, a guide, Mr Yevsayev, and myself. It just so happened that Mr Afenyasev had also been preparing to travel to Vostok Station and had been on the reserve list for this expedition. We decided that he would replace Mr Ishuk.

Despite the storm our vehicle was able to travel quickly across the ice in

the tracks of the expedition. On the afternoon of December 14th we met the head "towmobile" which had been travelling back towards Mirny. Mr Afenyasev joined the expedition, and we took Mr Ishuk. We arrived back at Mirny by nightfall and Mr Ishuk received immediate medical treatment.

Now the expedition continues steadily towards Vostok. Snowstorms and poor visibility continue to hinder their progress, but we are all sure that by January 20th our comrades will have arrived at Vostok.

CHANGE OF PERSONNEL

Big changes are taking place on Molodozhnaya Station. The ships of the sixteenth Antarctic expedition, the "Ob" and the "Professor Zubov", have arrived in the region and are now about 100 kilometres from Molodozhnaya Station. The planes are being assembled to take people and supplies to the station. Shortly members of the 15th and 16th expeditions will be meeting. At the beginning of January both ships will arrive at the observatory at Mirny. The planes will then take new teams to Novolavzarevskaya and Vostok Stations for the coming winter. Soon our 15th expedition will return home. We expect to be in Leningrad by the end of February. Meanwhile our days are very busy carrying out our programme and preparing for the take-over by the new team.

The Soviet scientist, L. Govoroha, has gone to the Island of Deception on an Argentinian ship. A geographer, he will participate in a complex expedition around the island where a volcano has recently erupted.

Playful Seals Pose Problem

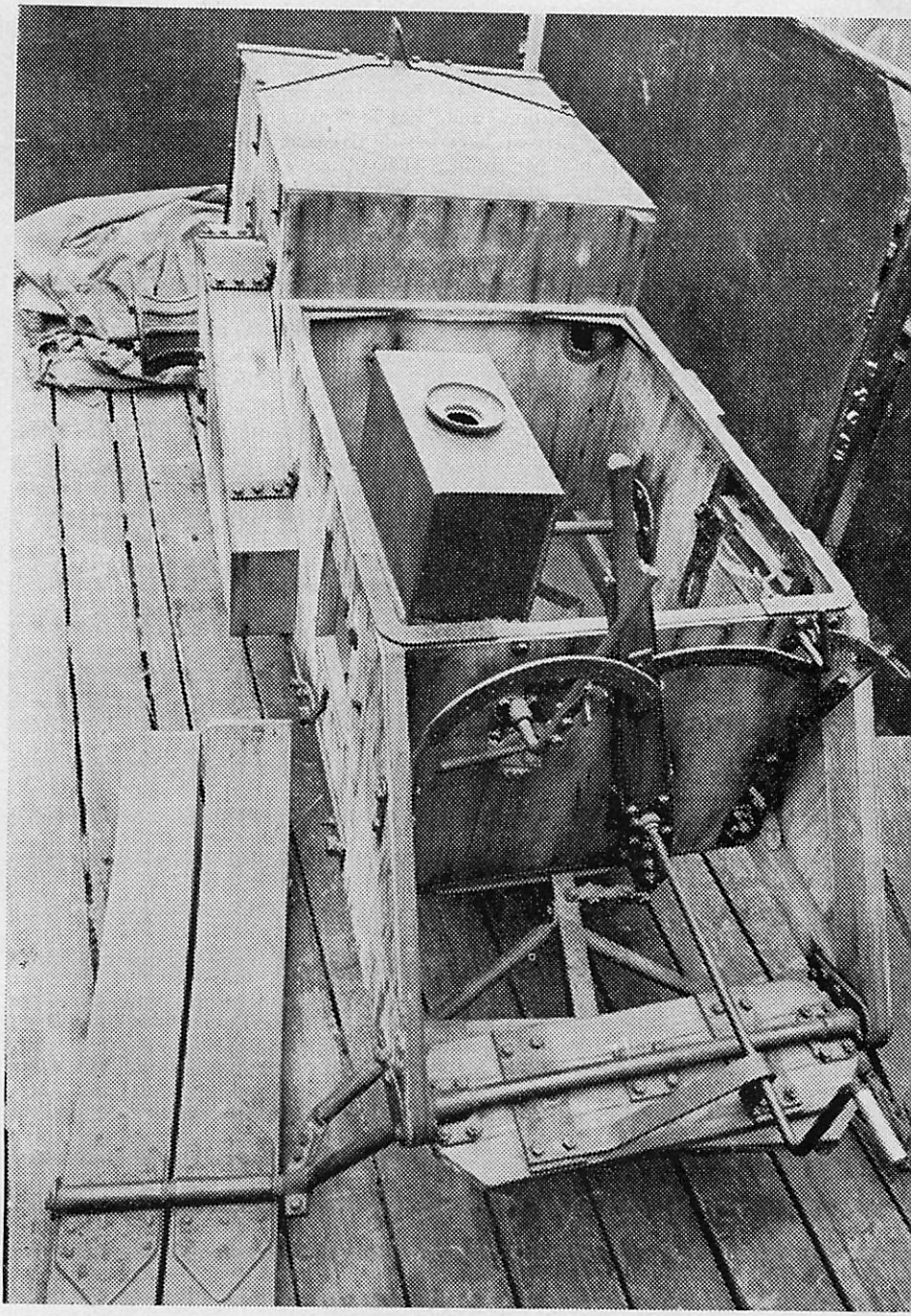
Weddell seals, together with penguins, are two of the major tourist attractions near Scott Base, but this summer, the seals have been hindering the work of New Zealand oceanographers.

Half a dozen Weddell seals have been using the ice hole dug to measure sea currents. "They're always in the hole fiddling around," said Mr Ron Health, one of the oceanographers. "We dug it a fortnight ago so that we could lower our instruments into the water through the nine foot thick ice. But ever since then the seals have been using the hole as an access to the top of the ice, where they lie about sunbathing. We have to chase them away before we can start work," he said, "and even then they play with the wire used to lower the current meters and think the whole thing is plenty of fun."

The seals have become quite friendly with Scott Base staff, who walk over to the the ice hole to see them and take photographs. "In fact we can even scratch their tummies with long sticks," said the base engineer Mr Jim Rankin, "they dive down into the water, disappear, and then re-appear blowing bubbles from quite a depth," he said.

The ice hole is about a mile out from Scott Base on the sea ice, which is expected to break out after the ice breakers, now operating in the McMurdo Sound area, have cut a channel through it.

In the pressure ridges on the sea ice just out in front of Scott Base there are several large melt pools, and as many as sixty-five seals have been counted sunbathing on the ice. Most of the work to be done by the oceanographers at the ice hole has already been done, however, and they now have moved on to make further tests round the Ross Ice shelf—annual sea ice junction.



Antarctic Sledge for Museum

One of the early, and unsuccessful, motor-sledges used in the Antartic—the one used on the 1914-17 Shackleton expedition—arrived at Lyttelton recently on board the Holmlea.

The sledge, minus its four-stroke Simplex engine, was brought from the Antarctic in 1957 in H.M.N.Z. Endeavour, and was placed in the Dominion Museum, Wellington. With the Canterbury Museum now the national Antarctic centre the sledge has been transferred to Christchurch.

The sledge was designed by Sir Ernest Shackleton, and was built by the firm that produced the Arrol Johnston car that Shackleton used with little success on his first expedition in 1907-1909.

The sledge was shipped from England to Australia in 1913, and became part of the equipment of the Ross Sea party for Shackleton's Imperial Trans-Antarctic Expedition of 1914-1917.

"LAST GREAT JOURNEY"

The expedition was referred to as the last great journey in the world, and the Ross Sea party arrived at Cape Evans on January 16, 1915, having sailed from Hobart in the Aurora. The sledge was landed, with a few supplies, while preparations were made to freeze the ship into the ice for the winter.

The main party, meanwhile, lived aboard the ship.

The Aurora was blown out to sea in a gale on May 6, 1915, when sledging parties were away laying depots in readiness for Shackleton's expected approach from the other side of the continent.

Ten men were left stranded, and the Aurora drifted north and did not break clear of the ice until February 13, 1916.

THREE DEATHS

The Aurora reached Port Chalmers on April 3, 1916, and sailed again for the Antarctic later that year. She reached McMurdo Sound on January 1, 1917, and picked up the stranded men a few days later. By this time, three of the men had died.

The motor-sledge did not prove a success: it was eventually abandoned at Cape Evans after having travelled only a few miles under its own power. It was from Cape Evans that the sledge was eventually recovered by a party from the Endeavour. Its engine is now in the Scott Hut at Cape Evans.

The director of the Canterbury Museum (Dr R. S. Duff) said yesterday that the commander of the United States Navy's Antarctic support force (Rear-Admiral D. F. Welch) had offered to re-unite the Simplex engine with the sledge, provided the engine could be obtained and shipped this Antarctic season.

Before the Aurora was blown out to sea, the sledge was used to tow a light load to Hut Point. On September 15, 1916, the stranded men hauled the broken-down sledge back to Cape Evans, the journey taking seven hours and a half compared with the three hours and a half normally taken by a dog-sledge party.

When the sledge was used, its clutch kept burning out, and efforts by R. W. Richards and J. L. Gaze to repair it with home-made tools were not successful.

The unreliability of the device extended to bolt and rivet failures caused by vibration, and even the paddle-wheel type mechanism used to provide propulsion started to break up under the strain. Not surprisingly, the machine was not popular with the men: one member of the party, Ernest Joyce, described it as a useless toy.

ANTARCTIC BOOKSHELF

SUBANTARCTIC ENTOMOLOGY, PARTICULARLY OF SOUTH GEORGIA AND HEARD ISLAND

Edited by J. Linsley Gressitt.

Pacific Insects Monograph Vol. 23: I-IV, 1-374 published by Bernice P. Bishop Museum, Honolulu. September, 1970.

Gressitt and his 32 collaborators have produced a volume which covers the taxonomy and biology of much, if not most, of the fauna of the islands of South Georgia and Heard. By definition these islands are substantarctic, not cold temperate like the islands south of New Zealand, and their inhospitable nature is reflected in the paucity of the fauna. But many man-days have been spent collecting the specimens and data and all the authors write with an authority not matched by any previous works on this fauna. The specialist taxonomic section describing and reviewing the species and their relations forms the bulk of the book. Most descriptions and keys are concise and sufficient for a non-specialist working on the islands' fauna to recognise species without any other literature. The figures however are of variable standard; for example, several authors have worked on sections of the mite fauna (Acarina): Hunter, Wilson, Strandtmann and Wallwork have presented clear, ample drawings of whole animals and of important taxonomic details. Those of Hughes are similar but his close, heavy labels are a detraction. But Atyeo and Peterson have relied largely on drawings of whole animals, some being poor reproductions of those of other authors. There are no detailed figures of taxonomic points which I am sure a non-specialist would need.

As the mites form the greatest part of the fauna a key to the families present would have been useful.

A few typographical mistakes were noticed—the spelling of one author's name in the Contents, the one lapse in the use of a hyphen in a species name and a mis-spelt generic name on a figure were perhaps the most important. An original mistake by Jeannel is repeated by Gressitt (p. 354 and fig. 14) in stating that **Temnostega (T. rangitotoensis)** is to be found in Cook Strait, rather than the Hauraki Gulf (type locality, Rangitoto Island), New Zealand, and an explanation for its distribution between there and Crozet Islands is now even more difficult to find.

From a general reader's point of view the introductory chapters on the history of biological investigation on these islands, the description of climate, morphology and flora are interesting. And the collation of the taxonomic and distributional data into an extensive review of the biogeography of these and other subantarctic islands is an account that will quickly become part of the basic literature on the subject.

P. M. Johns,
Department of Zoology,
University of Canterbury.

"NEW ZEALAND AND THE ANTARCTIC"

As we go to press we acknowledge receipt of a copy of Mr L. B. Quartermain's new book.

This volume, as its title implies, is an account of the part played by New Zealand in the discovery of Antarctica and the unveiling of its secrets. It embodies all the scholarship for which Mr Quartermain is famous.

A full review will appear in June "Antarctic".

NEW BOOK ON ANTARCTIC

He had encountered a great deal of ignorance about the Antarctic among so-called educated people in the United States, said an American author, Charles Neider, of New Jersey.

This, he said, was one of the reasons why he is writing a book about Ross Island. One of the main attractions in writing about the Antarctic, Mr Neider said, was that it remained a virtually virgin land, and still a part of the earth not greatly written about.

Another reason for his book was that with the world today in a severe ecological crisis, which had upset the younger generation, he believed people would be excited by vicariously visiting such a part of the world.

"What I am trying to say, or what the unspoken theme will convey, is that man working down on that continent is behaving in a way that is an example for all—co-operative basic research among scientists of many nations, the use of the military to support basic scientific research, and the greater dedication and esprit de corps than is usually found in most other parts of the world," Mr Neider said.

His book will be published by Doubledays—one of the leading book publishers in the United States.

MAWSON IN RUSSIAN

Three years ago the Soviet magazine "Thought," published "The Home of the Blizzard," by Sir Douglas Mawson.

Mawson's book, which deals with the Australasian Antarctic Expedition of 1911-1914, was first published in two volumes by William Heinemann, London, in 1915. The first volume deals with the expedition's stay in Adelie Land, 1912-13, and this is the story which was published by "Thought."

Now the same magazine has brought out Mawson's second volume under the title "Land of Storm and Mist" (this is the heading of one of the chapters dealing with life at the base on Macquarie Island by the leader of the party, G. F. Ainsworth).

As the name indicates, this second book covers the work on Macquarie and that of Mawson's second party on the Shackleton ice shelf in Queen Mary Land.

The books were translated by A. Pavlova and the introduction and explanatory notes were provided by the geographer, E. Suzumova.

THE POLAR TIMES

We recommend to readers a sister publication, "The Polar Times", published in New York twice a year (June and December). The subscription is one dollar U.S. per year and remittances should be sent to the Editor—Mr August Howard, 98-20 62nd Drive (Apt 7H) Rego Park 74, New York.

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SANAE NEWS

Members of the South African Antarctic Expedition will spend fifteen months at SANAE Base on the Princess Martha Coast of Queen Maud Land. Five men will proceed to Borga Base in the mountainous regions about 211 miles from SANAE Base. They will remain there for the whole fifteen-month period.

DISCOVERY VETERAN PASSES

The death is announced from England, at an advanced age, of Frank Plumley, R.N., who served as a leading stoker with the Discovery Expedition 1901-04.

The death of Plumley leaves only one surviving "Discovery" man, Mr Reginald Ford.

We hope to publish a full obituary of Plumley in our next issue.

Tourists find new frontier

Two tourist cruises were made to McMurdo Sound, in the Ross Sea, during the 1971 Antarctic summer. They were promoted by Lindblad Travel of New York, a spokesman for whom said, "There is enormous tourist interest in Antarctica."

This is borne out by the fact that 75 people all with an interest in one field or another of the scientific world left Hobart, Tasmania, for Antarctica on 14 January. They were aboard a newly constructed tourist ship, the Lindblad Explorer.

Besides the expedition leader, Lars-Eric Lindblad, the staff comprised Captain Edwin MacDonald, USN (retired), one of the world's leading ice-breaker captains and an authority on ice navigation; Dr Roy L. Sexton, medical director; Dr Roger Tory Peterson, author, artist, scientist, photographer and lecturer whose books on birds have created world-wide interest.

As if these people were not enough they also included Peter Scott, the son of the Antarctic explorer Captain Robert Falcon Scott, and his wife Phillipa and their daughter. Peter Scott is famed for his work as a naturalist, ornithologist, lecturer, broadcaster, painter and author, some of his books being written in collaboration with his wife. Both Mr and Mrs Scott had previously visited the Antarctic.

All the tourists paid something like 4000 dollars for the privilege of making a brief visit to the white continent, but none would have felt that their money had not been well spent.

Their itinerary after departure from Hobart was as set out below and was reversed for the second tour. The first stop was at Macquarrie Island where an Australian research team collects data and carries out research in geophysics, biology and meteorology. From there on to the Balleny Islands, which are approximately 160 miles within the Antarctic Circle and a full day visit was planned for these islands. The ship then entered the Ross Sea on 22 January and arrived at the Ross Ice Shelf on 24 January. Following this, two full days were spent at McMurdo so that the passengers could disembark and visit McMurdo Station and Scott Base. On leaving McMurdo, the ship sailed along the coast to visit the historic huts at Capes Evans and Royds. From there they cruised as close to Victoria Land as possible and called at Hallett Station, the joint American-New Zealand Research Base which is shared with the largest colony of Adelie Penguins on the Continent. From Hallett to Campbell Islands for a full day visit to view the Royal Albatross colony and to have the scientists on board ship for dinner. On leaving Campbell Island, the ship headed for Enderby in the Auckland Islands, and then for Port Bluff in the South Island of New Zealand. On the arrival of the ship at Bluff it was evident that the initial enthusiasm had not worn off, so much so, that five or six tourists returned with the second party, which left Bluff on 5 February.

While both parties were in New Zealand they were entertained to dinner by the Canterbury branch of the New Zealand Antarctic Society and all were made members of the branch. They were also flown to Mount Cook, in New Zealand's South Island alpine region, and all were thrilled by the magnificent scenery.

This is the second time that Lindblad Travel has made tourist trips to the Ross Sea, two cruises having been made in the 1968 summer.

"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$2.50, Overseas NZ$3.00, includes postage. Details of back issues available may be obtained from the Secretary, New Zealand Antarctic Society, P.O. Box 404, 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 $2.00.

New Zealand Secretary

Miss J. Garraway, P.O. Box 404, Christchurch.

Branch Secretaries

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Wellington: Mr P. Wilson, P.O. Box 2110, Wellington.

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