

ANTARCTIC

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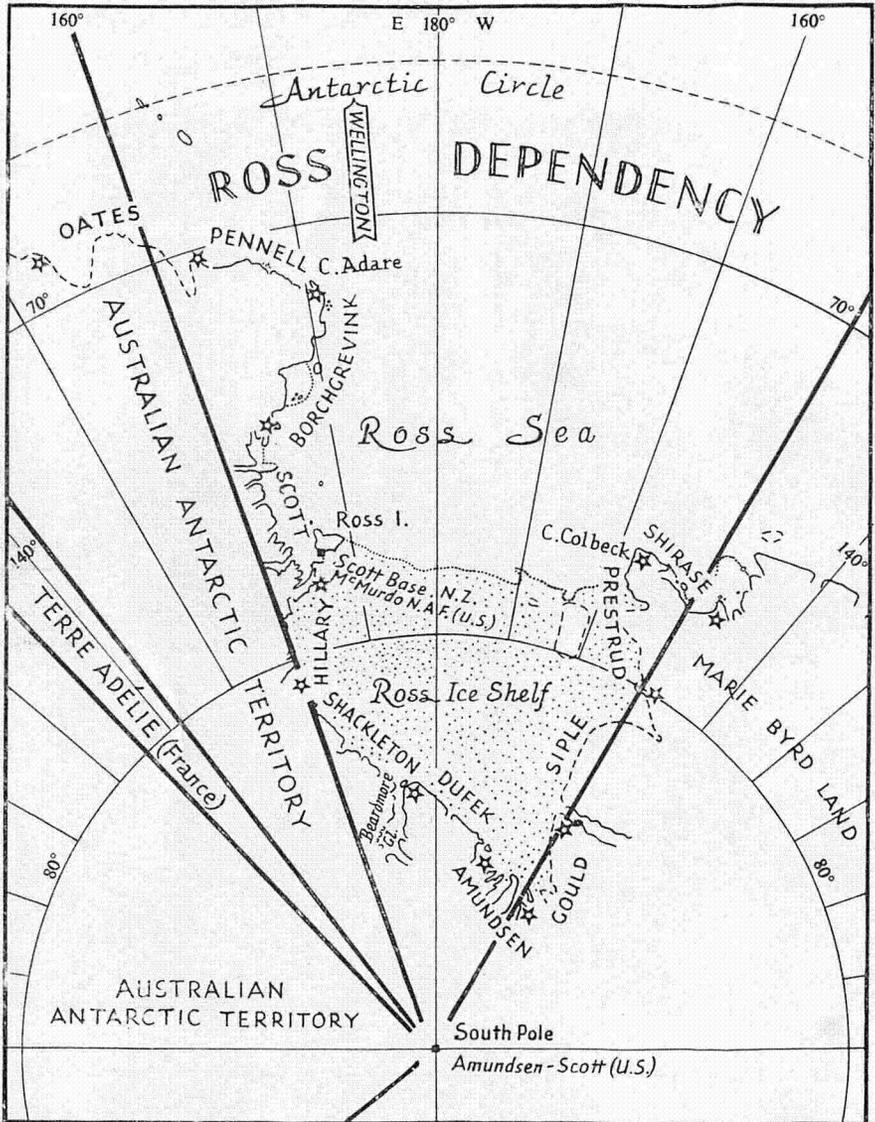


THE SHADOWS FALL

The New Zealand supply ship, H.M.N.Z.S. Endeavour, an Antarctic veteran, has made her last voyage to McMurdo Sound.

R.N.Z.N. Official Photograph

Coasts of the Ross Dependency



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CANBERRA TALKS

An international conference on future activity in the Antarctic will be held in Canberra for two weeks from July 10.

Under the terms of the Antarctic Treaty, which was signed in Washington in 1959, the 12 signatory countries agreed to meet in Canberra within two months after it came into force.

The countries are Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, Soviet Union, the United Kingdom and the United States. The treaty has now come into force.

The Antarctic treaty is designed to reduce international controversy over territorial claims in Antarctica, promote co-operation in scientific investigation, and ensure that the Antarctic is reserved solely for peaceful pursuits.

Representatives of the 12 countries will meet to exchange information, consult on matters of common interest in Antarctica and formulate, consider and recommend to their Governments measures to promote the objectives of the treaty.

The meeting at Canberra will be conducted in English, French, Russian and Spanish. The Department of External Affairs has received 200 applications for the 36 positions as translators and typists at the conference.

SCAR MEETING IN WELLINGTON

The fifth annual meeting of the Committee on Antarctic Research, S.C.A.R., the international parliament of the "Antarctic Countries", is to be held in Wellington, New Zealand, from October 9 to 15 this year.

Meetings will be held in the Victoria University of Wellington. Many of the world's top-ranking men in Antarctic exploration and research are expected to be present.

GOLF HAZARD

New Zealanders on H.M.N.Z.S. "Endeavour" founded an Antarctic Golf Club, using red balls. Two of the balls were lost when a skua gull swooped on them and carried them off. The golfers fervently hope that the gull will spend many uncomfortable and frustrated hours attempting to hatch them.

IT'S COMING

"The Antarctic holds a significant percentage of the world's land surface. Although I agree with Dr. Larry Gould's statement that for the foreseeable future, the principal export from Antarctica will be scientific knowledge, I cannot help but feel that some day practical uses will be found for this barren continent. The time may be closer than we think it to be." — Rear Admiral David M. Tyree speaking to the National Press Club, Washington, on May 9.

NEW ZEALANDERS AT SCOTT BASE PREPARE FOR WINTER

The settling-down period for the 1961 wintering party at Scott Base was this year unusually prolonged and disturbed, owing to the exceptional breaking out of the sea-ice in McMurdo Sound this season.

The early stages of the break-up were outlined in "Antarctic" for March, and "The Story of the Drifting YOGS" will be found elsewhere in this issue. At Scott Base, following the departure of the last of the summer visitors at the end of February, the men of the winter party were anxiously watching the sea-ice to the south of the Base.

Open sea extended in places well to the south of Cape Armitage. On March 10 a new arm of the sea was observed directly between Scott Base and Black Island, and next day this arm extended past Minna Bluff and had begun to creep past the tip of White Island. It had widened too though mainly in the direction away from Scott Base towards Mt. Discovery and Brown Island. The tide-crack near the Base was intermittently groaning and cracking, and sometimes sounded like machine-gun fire.

By the 14th the sea extended along White Island and for safety the dog lines, normally on the sea-ice, were hurriedly shifted to the low ground north of the R.N.Z.A.F. hangar. A United States Otter aircraft was also moved from the sea-ice. On the dogs' first night in their new quarters a span broke and in the morning a tangle of dogs and traces, with blood on the snow, gave evidence of the fight which followed. Two dogs were running loose and finally had to be shot.

On March 20 Herbert and Otway inspected the new ice which had formed between Scott Base and White Island. They found it snow-

covered and apparently firm. The pups ventured on it with impunity. Open water was still visible near Cape Armitage.

The attempts to re-capture the oil-barges, described on page 415, roused hopes of an extra late ship mail in and out, but these hopes did not materialise. However, the evacuation of Soviet scientist Kuperov by air on April 10 did give the Scott Base men an unexpected chance to send letters out — five bag-fulls of them.

WINTER DIVERSIONS

Then at last Scott Base settled down for the winter. Good neighbours at McMurdo provide eight films a week for use with the Scott Base projector, and weekly science seminars have been commenced. The first talk was by Dr. Meyer, scientific leader at McMurdo, on "Microbiology in Antarctica", and the second by Bob Clements, senior scientist at Scott Base, on "Aurorae".

The radio-telephone schedules with Wellington are now introduced, following the usual station announcement, by a howling and barking of huskies. A call on the 20-metre amateur band on March 26 produced an unexpected contact with UP8CN, Deception Island in the Falkland Islands Dependencies. As Wally Herbert at Scott Base is an ex-F.I.D.S. man an interesting conversation ensued.

THE MERCY FLIGHT

Scott Base played its part in the evacuation of Russian Leonid Kuperov from Byrd Station to Christchurch on April 9-10. As the airstrip

on which the Hercules aircraft landed is obscured from McMurdo Station, Bob Cranfield and the Scott Base night-watchmen kept the United States Naval weather-men informed of conditions on the Barrier with weather reports every three hours.

The route from McMurdo to the Barrier airstrip is through the pressure-ridges near Scott Base, and for some time prior to the flight this was a busy highway. Fourteen thousand gallons of aviation fuel had to be transported to the strip, and a procession of tractors, weasels, Nodwell and Pole-cat vehicles threaded past the dog-lines and through the pressure ridges — sometimes having to stop to avoid the fourteen frisking husky pups. Three crevasses which opened up on the route had to be blasted and filled in.

TO KEEP ALIVE

The transfer of the 50,000 gallons of fuel oil, required to keep Scott Base alive for 12 months, from American storage tanks at McMurdo to 44-gallon drums at Scott Base, proved difficult. When the first 2,000-gallon tanker arrived it was found that the gravity feed used filled only one drum each 20 minutes. A pump improvised by Logie and Hare increased this rate considerably but it was 10 p.m. before the first tanker was emptied. The base staff was rostered for day and night emptying of the tankers.

Although there were plenty of empty drums stockpiled, they had become covered with drift and it was difficult to find any that were not securely embedded in ice. Any without bungs, unfortunately a high proportion, had to be discarded as they were filled with ice.

A wire rope being used to drag out a firmly iced-in drum snapped, so the only way to obtain the wanted drums was to prise them free with the blade of a D4 tractor. Although this often damaged them, the recovery of drums became similar to opencast mining.

AUTUMN DAYS

(The following notes are from "News From the South", the monthly news-letter distributed by the Antarctic Division to the next-of-kin of men wintering at Scott Base and Hallett Station.)

The fourteen husky pups at Scott Base apparently find the roofs of the hut the warmest place. First thing in the mornings they have a habit of following the men beneath by the sound of their footsteps. During the procession from dormitories to breakfast, they follow each man from hut to hut.

Herbert and Otway have made a neat, straight, flagged and roped roadway, with Scotch light-reflecting tape on the stakes, from the base to the dog-lines so that feeding them in the dark will be a safe operation.

The weather at Scott Base at the end of May was cold but calm. The lowest daily temperatures have been in the order of 60 degrees of frost, but the strongest wind-gusts have been only 35 knots. It is less windy even than at McMurdo, a couple of miles away. Reports of persistent high winds at Hallett, Wilkes and Mirny suggest that Scott Base is fortunate.

One night when Peter Graham was night-watchman, he heard a commotion and a persistent crying among the pups outside. On investigation he found little Umanak with one foot frozen into the ice where the water from the kitchen sink runs outside. The other bigger pups were worrying him. With an ice-axe, Peter freed the foot, and Umanak will live to pull a sledge in the exploration of the Antarctic.

LUCKY ZSA ZSA

One of the older and friendlier Scott Base huskies, Zsa Zsa, was on the list to be dispatched, but instead, at Ken Fairclough's earnest request, was given to him as a pet. As Ken is the Scott Base cook, Zsa Zsa should be sure of a well-fed winter.

BIOLOGY

Work in continuation of earlier field studies by New Zealand biologists was carried out during the summer by Brian E. Reid, assisted by Dr. Colin Bailey, at Cape Royds, Cape Hallett and Cape Adare. In each case the programme comprised general population studies of skuas and Adelie penguins in breeding colonies.

At Cape Hallett, where Reid wintered in 1959, the wildlife is adjusting itself to permanent human occupation and to the increasing encroachment caused by the expansion of Hallett Station. At Cape Royds, the normally undisturbed life of the Adelie penguins is nowadays frequently interrupted by the arrival of human visitors. At Cape Adare, however, the skuas and penguins are still left undisturbed throughout the year.

If, therefore, the presence of humans has detrimental effects, a study of the three rookeries and skuaries will show how and why, and may indicate methods of ensuring that no permanent damage is done to wild-life.

As the colonies at Cape Royds and Cape Hallett had been subjected to outside influences for two or three seasons before these studies began, there was no easy way of assessing the effects of human intrusion. To do this it was necessary to study a colony that had not been interfered with. Cape Adare is such an area. It has not been molested since the departure of Scott's Northern Party in 1911.

AFTER 50 YEARS?

A further advantage is that Murray Levick, the biologist of that party, carried out a careful study of the rookery and assessed its population. This summer, the population was reassessed and this 50-year interval in an unmolested rookery should provide invaluable evidence concerning the natural stability of the species. The biologists were able also to assess and place in perspective the

natural hazards and mortality factors, so ensuring that these will not be attributed to human domicile at Cape Royds and Cape Hallett. (For an account of the biologists' life at Cape Adare see "Antarctic", March 1961, page 361.)

The work at Cape Royds was a continuation of the studies initiated during 1959-60 by E. C. Young and R. H. Taylor. These studies were similar to those carried out at Cape Hallett during the same period, but the populations were much smaller and were subjected to such violent environmental changes as being undisturbed, and then over-run by excited visitors.

At Cape Hallett general population studies were pursued and various specific projects undertaken. These ranged from colour perception and pebble-stealing patterns to yolk-sac dissections in Adelie penguins, and from growth measurements to banding of skuas.

Some work was also carried out on Emperor penguins, snow petrels and Weddell seals.

PLANS FOR 1961-62

The New Zealand Government has decided to maintain New Zealand's activities in the Antarctic at approximately the present level. This involves the maintenance of the scientific programme at Scott Base, the continued co-operation with the United States of America in the programme at Hallett Station, where New Zealand supplies three scientists or technicians each year, and the continuation of the planned programme of geological and topographical field work.

TO THE BEARDMORE

Next summer it is proposed to send an eight-man expedition to the Beardmore Glacier area. This historic region, surrounding the great glacier which Shackleton discovered

and ascended in 1908, and up which Scott and seven of his men made their way in 1912 on his journey to the Pole, is virtually unknown territory. The New Zealand Alpine Club expedition in 1959-60 worked in the northern portion of the area.

THE UNIVERSITIES

Although the Victoria University of Wellington does not propose to send an expedition into the Ross Dependency in the 1961-62 season, two members of the College staff will carry out a reconnaissance of the area in which it is proposed to work during the following season. The aim is to continue the series of geological investigations which in previous years have been centred in the Dry Valleys of Victoria Land and in the Koettlitz Glacier area.

The University of Canterbury proposes to send a three-man party under Dr. Bernard Stonehouse, formerly a well-known F.I.D.S. biologist, to study the Weddell seal population of McMurdo Sound.

Further work will be carried out at Hallett Station, at Cape Royds and possibly also at Cape Adare, by small parties studying the Adelie penguin and skua colonies in these areas.

Oceanographic surveys will be carried out between New Zealand and the Antarctic if a replacement vessel for H.M.N.Z.S. "Endeavour" has been provided.

SCOTT BASE LEADER

Mr. Athol W. Roberts, of Wellington, has been appointed leader of the New Zealand party at Scott Base for the 1962 season. Mr. Roberts was at Scott Base throughout the 1959-60 summer as Public Relations Officer.

A well-known mountaineer, he led the first all-New Zealand expedition in 1953 to the Nepal Himalaya. He is a member of the Tararua Tramping Club and the Wellington Tramping and Mountaineering Club.

H.M.N.Z.S. ENDEAVOUR

FAREWELL TO THE ICE

New Zealand's Antarctic supply ship H.M.N.Z.S. "Endeavour" has made her last voyage to the Antarctic.

Built in war-time as an American net-layer, she then as the "John Biscoe" gave nine years' service in the Antarctic for the Falkland Islands Dependencies Survey. Bought in 1956 by the New Zealand Government specifically for the supply and transport to McMurdo Sound of the New Zealand section of the Commonwealth Trans-Antarctic Expedition, "Endeavour" returned to New Zealand in 1958 in a blaze of glory, carrying also Sir Vivian Fuchs and the crossing party.

Altogether she made five voyages to the Antarctic for the New Zealand expedition re-supply at Scott Base, carried out oceanographic work, survey work and scientific work, and was used for a variety of purposes during each winter, including the dumping of ammunition for all three Services.

"The 'Endeavour' has done her last Antarctic voyage," Commander Humby told a meeting of the Wellington branch, New Zealand Antarctic Society. "Her heart is in the right place but her bones are weak."

Fitted with an ice-cutting stem, and sheathed in greenheart timber, the "Endeavour" had returned from each summer in the south with her paint stripped from her rounded hull, and great gashes gouged from her hull through work in a variety of ice conditions, said Commander Humby.

"She always looked the part of the Antarctic ship, with her wooden hull, and her tall mast with its crow's nest. She looked right amongst the ice, and she rolled so much out of it that I often wished she could stay there. She was photogenic and people would come for miles across the ice to photograph her."

The 190 ft.-long ship had logged an estimated 40,000 miles with the New Zealand Navy, he said. She had trawled for fish and shellfish on the ocean bed. She had carried out seismic work, surveyed, logged whale numbers, checked all birds seen for the Dominion Museum and taken soundings all the time, as so much of the ocean she covered was unexplored.

FOR ANTARCTIC RESEARCH

The Ross Sea Committee, established in 1955 to organise New Zealand's participation in the 1957-58 Trans-Antarctic Expedition, has voted itself out of existence but has left a legacy to encourage future Antarctic exploration and research.

The committee and its counterpart in London have agreed to establish a Trans-Antarctic Association, to which all remaining funds will be transferred.

Funds available include some £34,000 from royalties on publications, lectures, and the official film of the expedition. This will form the nucleus of a fund to be administered by the association with the aim of encouraging further efforts in the fields of Antarctic exploration, research and education.

New Zealand will be entitled to one-third of the funds available every year, and to the full amount if that is generally agreed. The fund will be administered in three-year cycles. If any part of the money available to New Zealand or the United Kingdom is not taken up at the end of three years it will be returned to the general fund and a new three-year cycle will commence.

Applications approved by an advisory committee will be forwarded to the new association's committee of management in London. The five members of this committee will include two men nominated by the New Zealand committee.

Hallett News

During February "Eastwind" made two visits to Hallett Station, and "Edisto" one visit, both ships bringing mail and limited cargo. The cargo ship "Arneb" with the station re-supplies and additional scientific equipment had been diverted to McMurdo to repair damage suffered in heavy seas, but arrived at Hallett on the last day of the month.

An anemometer unit with an Esterline Angus recorder was placed on a nearby peak with the aid of the "Edisto" helicopter.

Unloading was halted on March 2 and again on March 8, when high winds forced "Arneb", "Eastwind" and "Edisto" to put out to sea. High winds and heavy seas hampered the operation in the ten days that followed, with the ships unable to carry out the usual amphibious operation.

The unloading of essential supplies at Hallett Station was expected to be completed by noon on March 11. Had it not been possible to land sufficient fuel-oil the base would have had to close down this winter. With barges damaged, fuel drums were flown ashore by helicopter, two at a time suspended beneath in cargo nets. Three hundred and ninety drums were thus transported in one day. By March 12 only one helicopter remained serviceable.

When the operation was called off "Arneb" was nearly 70 per cent. off-loaded and had back-loaded 23 short tons. The three ships now left the station. The "Arneb" cargo not dispatched at Hallett was later off-loaded at Lyttelton, New Zealand.

Weather reports on March 21 spoke of 12° of frost and the harbour "half full of brash ice".

The last of the penguins left the station during the third week in March, but several skua fledglings could then still be seen in the area.

ELEVENTH FRENCH EXPEDITION PREPARES TO WINTER

Adelie Land smiled on the summer change-over at Dumont d'Urville Base, when twenty-one of the thirty-one days available were fine — a most unusual occurrence in "The Home of the Blizzard".

"Norsel" arrived at Dumont d'Urville Base on January 3, and disembarkation was in progress from the 5th till the 14th. With clockwork regularity, men of the out-going and in-coming expeditions alike toiled from 9 a.m. till 1.15 p.m. and from 2.30 p.m. till 7.30 p.m. The first helicopter touchdown was on January 5. Everything except the bulk fuel-oil was ashore by the 10th, and two days later the landing point too had been cleared. On January 13 and 14 the oil was pumped ashore, and the unloading was complete by January 15.

THANKS TO THE "CHOPPER"

The Djinn helicopter transported 145 tons in 72 hours flying time. The helicopter team comprised two pilots and two mechanics. Cargo was transported to parts of l'Île des Petrels, on which the base is built, not accessible to land vehicles, by means of a cargo-sling beneath the helicopter, using a special unloading device called a "delesteur" or "unballaster", by which the load could be slackened off from the pilot's seat. As the flights were uninterrupted and quite short, the amateur wharfies had to hook or unhook the cargo-sling every two or three minutes, and at the end of each day were extremely tired.

Owing to the precipitous terrain of l'Île des Petrels, if it had not been for the helicopter a great deal would have had to be back-packed. It was calculated that this would have taken ten men about 200 hours' hard work: the helicopter did it in 52 hours.

SCIENTISTS AT WORK

Tide measurements were recorded throughout the whole time during which the "Norsel" was at the base.

Biologist Prevost carried out the planned programme at the Adelie penguin rookery. Nearly 2,000 temperature readings were made. A census was taken of the birds nesting on l'Île des Petrels. Sixteen Giant Petrel chicks were counted on the Pointe Geologie archipelago compared with 70 in January, 1956. Twenty-three pair of Antarctic fulmars each had a chick: there were 32 such pairs at the same period in 1960. Only the Cape Pigeon population has remained stable. This fall in numbers is attributed to the frequent intrusion of human beings into the nesting colonies, despite the care taken by the expedition members to avoid disturbance of the wild life.

Seismic prospecting was carried out in January in view of the proposed re-siting of the seismological station. A biological laboratory-caravan was set up 40 feet to the north-west of the Digeon shelter.

One hundred and twenty-three fish of four different species were caught, including one new species.

REMEMBERED

On January 7 all members of both expeditions gathered at the cross erected at the northernmost point of the island for a memorial ceremony in honour of Andre Prudhomme, who lost his life while carrying out meteorological work at the station on January 7, 1959. This point will henceforward be known as Pointe Prudhomme.

HOMeward BOUND

"Norsel" left Adelie Land on February 4, reached Hobart on February 10 and Melbourne on February 17. The greater number of the returning men here transferred to the liner "Oronsay". This is "Norsel's" last journey for Expeditions Polaires Francaises. Next summer the "Magga Dan" will carry the twelfth expedition south. "Magga Dan", on charter to the Australian expedition, called in at l'Ile des Petrels on February 28, so that the members of the present wintering party were able to visit the ship which will ensure their return to the homeland in 1962.

LIGHT RELIEF

A radio message from the new team on April 25 suggests that there is an abundance of good humour at Dumont d'Urville Base. "If the absence of vegetation prohibits the fall of autumn leaves, we have noticed all the same a spectacular fall of hair. Thirteen of our number now have skulls like new-laid eggs. But in order to maintain a healthy equilibrium, thirteen chins are becoming adorned with a more or less picturesque growth."

Again: "As is quite fitting, in order to inspire confidence in the rest of the team, Dr. Perrier became his own first patient. Wishing to get down from his bunk — six feet high — without bothering to wake up properly, he found it necessary to have three stitches in his leg.

THE RED CARPET

French scientist Andre Cailleux spent eight weeks in Victoria Land and on Ross Island. He was deeply moved, says the "Bulletin d'Information" of Expeditions Polaires Francaises, by the very warm welcome he received from the New Zealand and American authorities and by the men with whom he associated in the Antarctic. He spent a lengthy period in the Victoria Valley. M. Cailleux' particular study was the sand and shingle of the areas he visited.

STH. AFRICANS' MARCH TREK

The main pre-winter news item from S.A.N.A.E. was the sledge journey by Barry Butt (geologist) and Anton Swanevelder (surveyor). They returned on March 31 after having travelled 320 miles in 51 days. Their farthest point was the western side of the Penck Trough in position 71° 45' S., 0° 50' W. From a depot which had previously been laid by tractor, they also did another short journey to the east.

At 71° 39' S., 1° 00' W. the ice stream was about 12 miles wide and flowing at a speed of about 6 inches per day (during March). Apart from survey and geological work they also did magnetic, glaciological and meteorological observations. The dogs were in excellent shape except for two which had each lost a toenail on the hard ice. The return of the two men was celebrated with champagne and a four-course meal.

Winter has arrived, and quite often aurorae are observed. Recently, Paul van As did an optical theodolite observation for 87 minutes in a temperature of minus 25° C.

Most of the foodstuffs stored outside are in very good condition, but cream and lemonade have gone off.

Snow accumulation over the buildings is ever increasing and in several places additional props had to be put in to keep the ceiling up.

A new shelter for the dogs during the winter was built. It is 14 metres long 5 metres wide and 2 metres high. The sides were built of empty drums, the roof was made of tarred poles and tarpaulins.

During April the temperature varied between minus 44° C. and minus 5° C., averaging minus 21° C. with a mean windspeed of 15 knots. During May the highest and lowest temperatures were minus 2° C. and minus 45° C. respectively with gale force on 12 days.

Blizzards and Breakdowns Bedevil Australian Field Parties

Since the 1961 party took over the Australian National Antarctic Research Expedition station at Mawson early this year the men have had to contend with a succession of fierce blizzards.

Severe blizzards in March delayed the departure of a field party. The party eventually left on March 31 in a tractor train with two D-4 tractors and two Sno-tracs to dump fuel 100 miles inland. This was intended for use on a southern traverse later in the year. The field party was led by Graham Maslen, Officer-in-Charge at Mawson. Other members of the party were Wyers, glaciologist, McDonald, radio officer, Young and Wilkinson, both mechanics.

Travelling on the plateau so late in the season, the men met very severe weather with high winds and low temperatures. When they had reached 56 miles inland, they were held up by blizzards. After being snowed under for four days, they were unable to start the tractors and began to return in a Sno-trac. The Sno-trac, however, was trapped in a crevasse soon afterwards and had to be abandoned. The party then pushed on on foot, hauling a sledge of survival gear and rations.

Members of another party, which had left Mawson by weasel on April 9 to give relief to the first party were themselves stranded with vehicle trouble during a blizzard at Rumdoodle, 12 miles inland from Mawson. The original party reached Rumdoodle after walking 36 miles and have since returned to Mawson.

Another five-man group left Mawson on April 19 to recover these vehicles. They succeeded in starting them and moving them back to Twintop, 35 miles from Mawson.

RESCUERS IN TROUBLE

After leaving Twintop on the return journey, one tractor became

wedged in a large crevasse. There seemed to be little hope of recovering it before spring, because daylight hours were very short and the weather had become severe on the plateau. The party, however, ultimately recovered the crevassed Sno-trac. Unfortunately, the second tractor broke a magneto gear after travelling several miles and, lacking spares, had to be abandoned.

A later message received from Maslen said that both Sno-tracs and the weasel with all sledges and portable gear had been recovered and brought back to Mawson. The men had spent four days attempting to start the stranded tractor. A series of mishaps with the starting engine, the ignition system, the carburettor and the belt drive were successively surmounted by improvisation. Finally, however, their resourcefulness was defeated by the failure of an oil seal in the end of the crankshaft bearing in the starting engine. During this period winds up to 70 miles an hour were experienced.

Plans were being made for a further attempt to recover the tractor by a party from Mawson equipped with the necessary spares and an air heater to help warm the engine.

AT MAWSON

March passed quickly at Mawson. The days were shortening and the average temperature for the month was 15° F. The sea had made several attempts to freeze over but was dispersed by strong winds. Aurorae were seen most clear nights, the colours mainly yellow and green.

Concrete floors were laid in the

garage during a spell of fine weather; a small section froze and had to be done again.

The dog handlers were busy getting seal meat. The work was all onesided, as lack of snow cover on blue ice stopped dog training on the plateau.

The meteorological station at Rumdoodle in the North Masson Range was still manned during March despite staff shortages, blizzards and communication difficulties.

By April daylight hours were rapidly shrinking and the temperatures falling. The lowest temperature was minus 10.2° F. with an average of 8.8°. Twintop showed minus 34°. The maximum wind velocity was 74 m.p.h., with an average of 28. The sea ice was a solid 18 inches thick in the harbour, but there were tide cracks beyond and broken ice five miles to the east. All bird life vanished during the first days of April.

Trail and Weller were at Rumdoodle all the month, continuing geological and meteorological work. They will be glad to return to Mawson.

DAVIS

Davis weathered three strong gales in March, nicely spaced during the first, middle and last days of the month. The last blow was a fair sample of Antarctic winds, with gusts up to 101 m.p.h. Temperatures ranged from plus 32.1° F. to plus 4.6° F.

Meteorological work continued uninterrupted with several balloon flights over 90,000 ft.

The ice consolidated in the bays and fjords up and down the coast. But, adjacent to the station, it was lasting only a few days and then blowing to sea again.

The newcomers were most impressed with the many brilliant aurorae.

Thirty-five seals are stacked on the beach to feed the dogs during the

winter. There were hikes inland to the lakes on which a two-man rubber dinghy was launched.

On March 30 a party headed south in the motor boat. Amongst 550 elephant seal bulls they counted three females.

The local penguin population headed seaward on the first sea ice and now the pups are running loose about the camp.

During April two cold snaps brought the temperature down to minus 1° F. or 33 degrees of frost, which consolidated the sea ice to the horizon. By the 24th it was over ten inches thick and the Davis men were able to start selecting and training a dog team. Mid-month progress of winter was temporarily checked by maximum temperatures up to 28.6° F., but at the same time sufficient snow fell to cover the practice slopes near the camp and winds gusting to 62 m.p.h. packed the snow for perfect skiing. All hands tried skiing and initial lessons were given by Lied.

A spell of rough weather early in the month dispersed the thin sea ice and large waves washed up on the shores numerous marine specimens, which were duly collected by Brown.

Several day-hikes were done during April; to Weddell Arm and to Ellis Fjord.

The caravan for the remote weather station is finished. It is a tradesman's job containing everything from water tank to innerspring mattresses.

The main event of the month was a survey trip by dog sledge to select a site for this remote weather station. After only one training run with a full team, Lied was satisfied that the remainder of the training could be done en route, and April 28 saw the departure of Hay, Lied and Trajer, suitably provisioned with a large biscuit tin full of frozen stew.

After 20 miles sledging, the party entered Long Fjord Basin and

camped below steep rocky cliffs at the edge of the ice cap. They found that the steep, craggy cliffs around Long Fjord provided shelter and nesting sites for hundreds of snow petrels. As the team drove up the fjord, fluttering clouds of these white birds wheeled around the men's heads. Two live snow petrels were brought back to Davis for study by Brown, who wishes that the main camp had been built in Long Fjord Basin.

A fine site was selected at the very

edge of the polar ice cap for the remote weather station, with a wonderful ski slope nearby. The party returned on April 30 after a trouble-free journey, in fine weather.

Mercer was prevented from joining the sledge party by an unfortunate accident. During a free-for-all in the dog lines a few days previously, he resolutely rushed in among the dogs to break up the fighting but received a small gash on his hand. This required suturing and it is now healing nicely.

AUSTRALIANS MAKE DISCOVERIES IN OATES LAND

On "Magga Dan's" return to Melbourne members of the "Anare" team told graphic stories of a determined struggle with rapidly freezing seas and pack ice by Captain Pedersen in pushing through to land men on a new section of the Oates Coast.

On Friday, March 3, in the Southern Ocean the "Magga Dan" met pack ice and began to push south along the meridian of longitude 159° E., continuing during the night using the ship's searchlight to navigate through the ice. On Saturday the Antarctic Continent plateau was visible 50 miles ahead, with many high snow-covered mountain peaks shining in the sun.

Heavy ice stopped the ship at 0700 hours, so pilot Arthurson flew Law by helicopter for a reconnaissance. He found a narrow lead of open water lying along the coast but much ice between it and the ship. Law directed the Captain by devious paths to an area where he had observed a series of pools in the pack leading to the open water but by the time the ship reached the area the pools had closed up. The ship was gripped fast by the ice at 1530 hours and remained immovable overnight.

March 5 brought no improvement, so Law despatched helicopters with pilots Stanwix and Arthurson to fly geologist McLeod and geophysicist

Parkinson, 42 miles across pack ice to land on a mountain ridge 3000 feet high. They made a very rough landing on difficult terrain, tearing two holes in one helicopter's floats on jagged rocks. They stayed three hours and made geomagnetic observations and geological collections.

Meanwhile, at noon, the ice grip on the ship slackened and she again pushed slowly south through it. The helicopters brought the scientists safely back as the ship was proceeding and "Magga Dan" reached the open water near the coast in Davies Bay close to Cape Kinsey at 1600 hours. Here preparations were immediately made for flights by helicopters and the Beaver aircraft but rising wind and poor visibility prevented their departure.

ASHORE

On March 6, high winds, fog and snow showers made flying impossible. At 1015 hours the mists cleared somewhat to reveal the lower slopes of mountainous black rock bluffs frowning out of surrounding ice cliffs. Nearby, four small rocky

islands nestled close to a large glacier tongue of ice extending from the mountains for some miles out to sea. Captain Pedersen brought the ship to anchor half a mile off the most southerly island and Law took a scientific party ashore in the motor launch against a 30 knot wind and snow showers. McLeod examined the geology of the four islands, while Parkinson again made successful magnetic observations. However, bad visibility prevented Cook from carrying out his survey work.

Early on March 7, the weather cleared temporarily to reveal an interesting coastline of steep mountains, ice cliffs and glaciers, while inland, to the East, some magnificent snow-clad mountain peaks were estimated to rise to more than 8,000 feet. However, before the aircraft could be launched the weather closed in again. Bad weather continued without respite all day. At 1600 hours, Law and Captain Pedersen decided that, with no prospects of any immediate useful work and with the surface of the sea freezing up rapidly all around, a longer stay would not be advisable. So "Magga Dan" headed north into the heavy pack ice.

ONE LAST ATTEMPT

Reasonable progress was made until 1900 hours when pressure suddenly built up in the ice and immobilised the ship. Next morning a temporary loosening allowed a couple more hours of progress before the ship was again beset. At noon on Wednesday, the coastal cloud cleared sufficiently to reveal the mountains again, so Law decided on one last attempt at survey work and sent the helicopters 40 miles back to the coast with Cook and McLeod to attempt further survey work.

The planes landed on a rock ridge 2000 feet up on the side of a high mountain just behind Davies Bay. Weather then began to close in, with snow storms sweeping in from the south east, and Cook was lucky to be able to complete his survey observations before all was again obscur-

ed by fog. The helicopters raced for the ship and arrived back in time for Law to make a quick ice reconnaissance before the onset of darkness and storm.

He found heavy unbroken ice extending for at least 50 miles ahead of the ship with little prospect of the ship forcing through. However, eight miles to the east a stretch of open water promised a way out if the ship could reach it.

Captain Pedersen had spent a worrying day as the ice defied all his attempts to move the ship. Large pressure ridges had banked up where the ice floes were pressed against each other and the floes were upended by the pressure all down the ship's sides.

ON TO THE EAST

Fortunately, at 2200 hours that night, the pressure suddenly eased and the Captain, using searchlights, seized the opportunity to attempt to reach the open lead to the east. Through newly frozen ice and old heavy floes the ship strained at full power to creep at snail's pace, gradually winning its way towards the easier ice. With lights scanning the ice ahead the ship worked on through the darkness and at 0100 hours on Thursday began to move freely. By dawn the ice was fairly open and this lead took the ship through to open ocean to the north of the Ross Sea. The ship set course for Macquarie Island.

At Oates Land, the most inaccessible part of Australian Antarctic Territory, three new landings had been made on a coast never before visited and some 40 miles of this coast had been mapped. Many new mountain ranges had been discovered.

Since 29th November, 1960, "Magga Dan" has travelled 15,700 miles and hundreds of miles of new ocean depth soundings were obtained along the Antarctic coast. Geological collections, magnetic observations and survey data were obtained at various landings in Wilkes Land and Oates Land.

Wilkes Men Face Violent Storms On Late Field Trips

The 19 Australians and five Americans at the American-built, Australian operated Wilkes Station mounted a succession of field journeys during March and April which demonstrated the hazards of autumn travelling in the Antarctic.

Early in March a seven-man party led by Captain N. R. Smethurst penetrated a distance of 170 miles into the continent. This four-week expedition is the forerunner of a major seismic traverse of over 700 miles planned for next summer.

The party left Wilkes on February 28 in a train of four D4 tractors and two living-caravans. The train hauled sledge loads of 23 tons of scientific equipment, food and fuel. Following the route flagged by last year's party, the team carried out seismic soundings to determine the thickness of the ice cap as well as other glaciological studies of snow drift and ice accumulation. Routine weather observations were also part of the exercise. A dump of seven tons of oil fuel was left for the operations next summer. The ice-depth equipment which was being tested worked well.

Travel was particularly difficult in temperatures of minus 30° and strong winds which lifted surface snow and reduced the visibility to 200 yards. A permanent disability of travel in this area is the presence of large sastrugi, troughs and waves in the surface of the snow, made by the prevailing winds. The sastrugi on this traverse were frequently four feet high.

The party returned on the eve of Good Friday, after almost five weeks in the field battling against bad weather, with winds of over 60 m.p.h. with the accompanying drift and temperatures down to minus 30° F.

In one stretch of bad weather it took 17 days to cover 97 miles. By contrast, when the weather was fine the men travelled 73 miles in only two days. After threading their way through "Wilkes City Limits" and the "Slow Down" signs they were given a welcome home party.

Much valuable data was obtained on traverse on ice thickness, snow accumulation and weather.

SLEDGE PARTY BATTERED

A dog sledging party comprising Budd, Paish and Torckler which set out from Wilkes on April 7 to make glaciological observations on the Vanderford Glacier 50 miles to the south-west, returned safely after a gruelling journey which was expected to last about a week.

From April 12 to 15 they were battered by a 100 m.p.h. blizzard which ripped open their polar pyramid tent. The men huddled fully dressed in their sleeping bags. When the wind abated for a short period they dug a pit in the snow and erected a small blanchard tent, but this was immediately crushed to the ice when the hurricane bent its metal poles.

After the blizzard abated the men repaired their tent and continued their journey. The lowest temperature experienced was 48 degrees below freezing point.

The men located a food dump placed by a 1958 Wilkes field party. They carried out their glaciological work in severe weather conditions. They had to cope with severe crevas-

sing and pressure ridges of ice 30 feet high and up to one and a half miles long. Paish helped the party to negotiate the dangerous areas by skiing ahead of the dog team but attached to the dog-sledge by rope. The lead-dog and a following dog broke through a crevasse but were rescued.

MARCH NOTES

Two successful days of fishing were accomplished before the launch "Octane" broke loose from the mooring during a severe storm. The launch was taken out of the water for the winter.

Ardery Island was visited for banding of silver-grey petrels but a proposed visit to Nellie Island was postponed. Adelie penguin chicks departed from the rookery rather suddenly before an opportunity was available for banding them. Forty unbanded Adelie penguins remained for four weeks near the hydrographic shack but departed by the end of March.

During March there was much drifting of snow, periodically filling all ramps and requiring considerable clearing efforts.

Hemphill has installed a directional aerial on America for use by "ham" enthusiasts.

In his March report Captain Smethurst sounded quite worried: "Lofty" Maines, he said, was losing weight: he was barely nineteen stone. Maines blamed the "Sunday cooks", Torckler, for serving seal steak, and Saunders who served a super-salted corned-beef stew.

OTHER FIELD TRIPS

On March 17 Orton, Stansfield, Breckenridge and White left by tractor and weasel for the remote weather station S2, fifty miles inland. They arrived back just before Anzac Day.

Field work in April included a three weeks' seismic trip by four other men to the remote weather station, taking two D4 tractors, caravan, ice-drill and weasel.

The general scientific programme was reported at the end of April to be progressing smoothly. The meteorological section were sending twice daily balloons to an average height of 80,000 feet.

ANZAC DAY

A partly-frozen flag was raised slowly to a mast in the snow on April 25 as the men at Wilkes remembered Anzac Day.

Nineteen Australians and five Americans took part in the ceremony — which had to be postponed until late in the morning because of the 10-degrees-below cold.

Eight of the 19 Australians at Wilkes are ex-servicemen.

Restless observers at the remembrance were several teams of huskies, which growled and barked 50 yards from where the men stood with heads bowed.

The service was followed by a buffet dinner.

HURRICANE STRIKES

On May 4 the base experienced the strongest winds of its four years' existence. The peak velocity was 136 m.p.h., while the barometer dropped to a record low of 27.76 inches. For one hour before and after the maximum the wind speed did not fall below 104 m.p.h.

A new magazine just completed for housing explosives was totally destroyed. No trace of the roof was found and the complete floor assembly blew over a hill 400 yards away. One radio aerial mast, one glaciology mast and some transmission lines were blown down and the flues from the mess hut roof were carried away. "However," concludes the message, "the rest of the station is in good order."

In view of such weather the proposed seismic traverse was cancelled. Instead, Jewell and McGhee spent six days on the plateau completing local work.

WORLD TRIBUTE TO MAWSON

A gathering of people at the University of Adelaide on April 15 heard the world of science and polar exploration pay tribute to the memory of one of the greatest of Australians, Sir Douglas Mawson.

The occasion was the inauguration, by the Prime Minister (Mr. Menzies), of the Mawson Institute of Antarctic Research, housed at present in a corner of the geological museum in the Mawson Laboratories at the university.

Among those present who heard Mr. Menzies and other speakers commend the aims of the institute were several Australians who accompanied Mawson on his pioneer expeditions to the Antarctic years ago, or who have been closely associated with recent polar exploration.

Present also was Lady Mawson, widow of the explorer, and relatives, old colleagues and friends at the university at whose instigation the institute has been inaugurated.

Among the many messages of goodwill and congratulation from British and foreign scientific bodies read to the gathering was one from the Scott Polar Research Institute, Cambridge University, and one from the Soviet Academy of Science, U.S.S.R.

MAWSON'S LIBRARY

The splendid private Antarctic library of the late Sir Douglas Mawson is to be presented to the Institute by Lady Mawson.

The library consists of several hundred books and many letters written to Sir Douglas Mawson by such famous fellow Antarctic explorers as Amundsen, Drygalsky, Greeley and Shackleton.

It is believed to be the most complete record of Antarctic exploration in the Commonwealth.

AUSTRALIAN POLAR SOCIETY

We welcome the news of the founding in Canberra on May 10 of an Australian Polar Society. Officers will be elected at a general meeting on June 19. Among the enthusiasts behind the new move is Dr. John Cumpston, who, when attached to the Australian High Commissioner's Office in Wellington, was a very keen member of the New Zealand Antarctic Society.

It is proposed to issue a review, initially half-yearly. The new publication will be complementary to "Antarctic", being not a news bulletin but a vehicle for the dissemination of ideas.

BOOK TO WATCH FOR

Mr. R. A. Swan of Melbourne has written an important book entitled "Australia in the Antarctic" on which he has been working for several years. It describes Australia's participation in Antarctic exploration and deals as well with the men who were responsible for Australia's interest in the Antarctic, the support given by Australians to expeditions leaving from Australia or New Zealand, and the question of territorial claims in the Antarctic.

The book, which is expected to be on sale early in July, will be well illustrated and special maps have been drawn by the Australian Division of National Mapping.

"GRIF" TAYLOR HONOURED

Professor Griffith Taylor of Seaford, New South Wales, has been awarded the medal of the Royal Society of N.S.W. Professor Taylor led the western parties of Scott's Last Expedition: in January-March 1911 to the Ferrar and Koettlitz Glaciers, and in November 1911-February 1912 to the Granite Harbour region. He was Professor of Geography at Sydney University 1920-28 and at the University of Toronto 1935-51. He is 80 years of age.

Final Days at Base Roi Baudouin

Readers who have followed the fortunes of the successive Belgian expeditions at Roi Baudouin Base since its establishment in January 1958 will read with some sadness this further account of the events immediately preceding the closing down of this Base. (See "Antarctic", March 1961.)

After the arrival of "Erika Dan" on January 10 at Leopold III Bay the various scientific activities of the 1960-61 summer, the disembarkation and re-embarkation, as well as the greatest possible salvaging of equipment and stores, were all characterised by the remarkable spirit of devotion and co-operation shown by all hands.

The photogrammetric team of four under geographer Jamblinje was unable to carry out the planned programme as the Otter aircraft could not be used, but a modified programme was carried out, using the Cessna, so as to ensure a full glaciological coverage by aerial photography.

Two days after the arrival, the drilling team had erected a new building to house a six-foot derrick, and the following day drilling began. Various technical difficulties were overcome by the ingenuity and untiring will to succeed of the men, who worked in relays day and night, helped by members of the wintering team, who at the same time were carrying out the laborious task of packing up the expedition equipment prior to the return to Belgium.

THE SHIP LEAVES

After the exciting few hours on January 31 described in our last issue, when a break-up of ice caused the loss of considerable equipment, "Erika Dan" made for the open sea, but re-entered the bay on February 1. It was now evident that the sea ice had completely disintegrated. The equipment left on the ice was drifting out to sea on thick floes. The ship was brought alongside the floe on which the Cessna was afloat and it was hoisted on board.

The captain now considered that the strong wind did not justify any further attempt to retrieve vehicles or sledges and as evening fell "Erika Dan" again made for the open sea. It then became apparent that the abandoned equipment and stores were over 500 yards within the ice which was packing up towards the west side of the bay, but gave the impression of not being firm enough to be crossed safely on foot. So the captain decided to make to the north to await more favourable conditions.

After a long wait it was evident that the necessary conditions were so unlikely to ensue that further hesitation would be a waste of time. So at two in the morning the ship left for Capetown. In less than twelve hours' sailing in very light pack the ship reached open water and arrived at Capetown a week later.

Looking back on the period from "Erika Dan's" departure from Antwerp on November 22, 1959, with the 1960 expedition on board, the members were able to feel that they had given their best to ensure the success of the expedition, and were taking back with them valuable data in every department of its scientific and technical programme.

TEAM'S FAREWELL

A final radio message concluded: "In signing this last news telegram all the members of the 1960 Expedition join in an expression of deep gratitude to their families, friends and all those whose splendid co-operation and tokens of interest have made possible the success of their Antarctic mission."

Base Roi Baudouin has now been closed.

INLAND JOURNEYS COMPLETED FROM SOVIET STATIONS

In this issue we are able, through the courtesy of the Soviet Committee on Antarctic Research, to record the successful completion of several traverses inland from the Russian coastal stations, the early stages of which were reported in our March issue.

MIRNY-VOSTOK

On February 8 a tractor train, which had left Mirny three and a half months previously (see "Antarctic", March, p. 372), arrived at Vostok with fuel, provisions and equipment. In three caterpillar tractors over 1,600 kilometres were covered from the shore of the Indian Ocean into the heart of Antarctica. Part of the route lay through an unexplored region. The seven-man party was led by V. Krasnikov, and included American observer Dewart. There were 40° frosts, and at an altitude of over 9,800 feet they lacked oxygen.

The explorers carried out work in meteorology, gravimetry, terrestrial magnetism and glaciology and investigated the thickness of the ice.

MIRNY-KOMSOMOLSKAYA

On the evening of February 20, almost a month after leaving the coast of the Indian Ocean on January 24 on their tractor-train trek, a team of Soviet geodesists under G. Lazarev arrived at the inland auxiliary station, Komsomolskaya, with two tractors and one sledge. Owing to the difficult conditions, the other sledges were left thirty miles from Komsomolskaya, to be brought in later by the cross-country vehicle. The team had covered 540 miles from Mirny. They delivered large quantities of fuel and various items of equipment to the station for the coming scientific research trek to the central region of East Antarctica.

The route to Komsomolskaya was difficult. The tractors travelled nearly 300 miles in the first eighteen days.

But after the train reached the plateau from the littoral it had to overcome a zone of crevasses and large stretches of friable snow, into which the tractors sank to a depth of over two feet. There were strong winds and blizzards. The team encountered high sastrugi covered with ice, and frosts of 40° to 46° C.

Taking part in the trek were experienced specialists and veteran polar explorers. En route they conducted scientific observations. Magnetologist N. Medvedev, who has been to the Antarctic twice previously, carried out detailed investigations from the Pionerskaya region as far as the 250th mile of the northern variation of the magnetic anomaly. It was planned to continue the trek on a triangular course, Komsomolskaya-Vostok-Sovietskaya-Komsomolskaya.

The "Penguin" cross-country vehicles stationed at Komsomolskaya are fully prepared for the forthcoming gravimetric and geodetic work. A group which had arrived before the train by aircraft from Mirny were already preparing vehicles and scientific equipment.

MORE EMPERORS

Soviet Antarctic expeditions have found eleven colonies of Emperor penguins numbering about 150,000, thus disproving the previously-held theory that these birds lived only in isolated colonies, Tass said on May 13.

Expedition leader Yevgeny Korotkevich said the colonies had been found scattered over 3,000 miles of the Antarctic coastline.

Members of the Mirny base expedition also caught sea birds ringed by the Australian Antarctic expedition at Wilkes.

It was reported on May 14 that the Soviet expedition is preparing to instal an automatic magnetic station 500 miles east of Mirny.

AT NEW LAZAREV

Tass reported on February 25 that the Soviet expedition d/e vessel "OB" had for the second time this season reached the shores of Princess Astrid Coast, near which the new Soviet station New Lazarev recently began operating.

The vessel completed the journey to New Lazarev in twenty-three days, reports the ship's captain, N. Sviridov. During this time the expeditionary group on board under E. Korotkevich completed a series of scientific observations in the south of the Indian Ocean. Of particular interest were the observations of the shelf glaciers.

At Princess Astrid Coast the ship took on board the men who have been constructing "Novolazarevskaya" (New Lazarev), personnel from Lazarev Station, and scientists who, during the Antarctic summer period, have been exploring the eastern part of Queen Maud Land. After this the vessel again set off for Mirny. When the ship left the coastal station, Lazarev was sealed up. The scientific operations which have been conducted there for two years will be continued at Novolazarevskaya (70° 45' S., 11° 58' E.), where twelve scientists are wintering. New Lazarev will serve as the base for geological and geographic research in Queen Maud Land.

"OB" AT CAPETOWN

On March 28, the "OB" arrived at Capetown with the returning Fifth Soviet Antarctic Expedition. Here the vessel was to anchor for three days, taking on board fuel, water and large quantities of fresh fruit and vegetables. A precautionary check of the machinery was also to be carried out prior to the tropical voyage.

SEVENTH EXPEDITION

On March 22 the Scientific Council of the Arctic and Antarctic Institute discussed preliminary plans for the 7th Expedition, and these were announced by the Deputy Director of the Institute, Dr. M. M. Somov.

Scientific work will be carried out at Mirny, Vostok and Novolazarevskaya, and during the summer Kom-somolskaya will also be active.

In contrast to previous expeditions it is proposed to extend summer work from the coastal areas of the continent to those in the interior of Eastern Antarctica, which have remained almost unstudied. It is intended to carry out geological, geographical and glaciological research. In particular, it is intended to measure the thickness of the ice-cap in those regions and investigate the bed-rock relief concealed beneath the ice. As on previous occasions, magnetic and gravimetric research will be carried out.

Part of the work will be done in the course of caterpillar sledge-tractor train treks into the interior of Antarctica.

ANTARCTIC ATLAS

The Presidium of the Soviet Academy of Sciences has decided to publish a first Soviet Atlas of Antarctica. The atlas will comprise the research results carried out by expeditions from many countries. A detailed account will be given of the work of the Russian explorers, Bellingshausen and Lazarev, and of the important discoveries made by Soviet research workers in recent years. The atlas will include approximately 250 maps and graphs dealing with all branches of study of Antarctica.

There will be maps of the climatic regions of Antarctica, the mean air pressure over many years on the level of the water, the mean air temperatures over a number of years, mean annual rainfall, and thermal equilibrium charts; also

charts of ice in the Indian Ocean, and of the ebb and flow variations in the sea level.

It is proposed to publish the atlas in 2 volumes. The first will comprise the cartographical section, the second the text.

The intended publication date is 1964.

CLEARING POLAR ICE

At one-sixtieth the cost of using an icebreaker to clear channels into ice-clogged harbours, Soviet scientists have devised a means of melting large masses of ice and snow in the U.S.S.R.'s Arctic regions, according to a report issued by the U.S. Department of Commerce.

The Russians have been concerned with this problem for decades. In recent years, the Soviet government's Arctic Scientific Research Institute has done much basic research on the problems of artificially accelerating the thawing of frozen areas.

The major emphasis in this report is on Soviet experiments to increase the length of the navigational season. The Russians have been seeking more efficient and economical methods of removing ice along the Northern Sea Route with media other than icebreakers and explosives. One of the cheapest and most effective methods involved aerial spraying of several materials.

This recent technique is described by Soviet scientists as the "physical-chemical method" of accelerating the thawing of ice and snow. It is this system which the Russians claim accomplishes thawing at one-sixtieth the cost of using an icebreaker to do a comparable ice-removing job.

About one month before flood time the ice surface is treated by aerial spraying of salvaged foundry sand followed by waste diesel oil. The sand is heated by the sun's rays and the oily liquid retards evaporation of the melting water. This latter step hastens the melting action.

SELF HELP FOR HIS APPENDIX

A Soviet surgeon at the remote Antarctic station of New Lazarev saved his life by removing his own appendix, with the aid of a mirror, said the Soviet news agency Tass on May 8. The 26-year-old surgeon, Leonid Rogozov, is now recovering from the two-hour operation and is up and walking.

A meteorologist and a mechanic serving at the same station helped him during the operation. Rogozov was in great pain, and found when he removed his appendix that he had operated just in time — a day later would have been fatal. A severe storm had made it impossible for a rescue plane to fly in from the main Soviet base at Mirny.

* * *

NEWS OF "SVEN"

The many American and New Zealand friends of "Sven" Evteev, Russian guest scientist at McMurdo throughout last year, will be interested to hear news of him. On March 23 "Leningradskaya Pravda" published the following note:

The Moscow glaciologist S. A. Evteev, a scientist from the Geographical Institute of the Soviet Academy of Sciences, who wintered for more than one year at the main U.S. Antarctic base of McMurdo, yesterday reported on his work at a meeting of the Scientific Council. S. A. Evteev was stationed at McMurdo in accordance with an agreement between the Soviet and U.S. parties. An American scientist wintered at Mirny. In particular, S. A. Evteev, together with the Americans, accomplished a number of flights over Antarctica and took part in a trek from McMurdo to the South Pole.

NEW LIGHT ON THE ICE COVER

In an article in the Soviet Antarctic Information Bulletin No. 19, Mr. A. P. Kapica reports on his preliminary findings based upon measurements made during the 1,100-mile trek from Komsomolskaya via Vostok to the South Pole in the 1959-60 summer, during which he was in charge of the seismic sounding programme.

Twelve measurements by the seismic sounding method were made along the route as well as twenty-eight gravity determinations. These results have been linked with measurements previously made by Soviet and American scientists at Komsomolskaya, Vostok and the South Pole and checked by Mr. Kapica's team.

The measurements show that the profile of the subglacial relief is comparatively level. The maximum altitude above sea level is 200 metres (654 feet), at 243 miles from Komsomolskaya. The lowest part of the profile is 980 feet below sea level, in the region of Vostok.

From Komsomolskaya to the 285th mile the level of the subglacial relief is above sea level. From here to the 1,000-mile mark the subglacial relief lies on or below sea level. From here to the Pole the subglacial relief again rises to approximately 300 feet.

The average thickness of the ice along the profile is 10,750 feet. As the average height of the ice above sea level is 10,390 feet it would appear that the subglacial relief is approximately at sea level.

NEW NAMES

Names of eighteen geographical features discovered by the 1958 Soviet Expedition in Eastern Antarctica were approved by the Soviet Academy of Sciences on December 7.

A cape in 70° S., 163° E., on the coast of Oates Land has been named

Cape Lunik. The Russian, Czech and East German scientists who lost their lives in the fire at Mirny last August, eight in all, have been honoured by having their names placed on the map.

CONTINENT OF FRIENDSHIP

In Moscow on January 26 Russian scientists and Antarctic explorers met with representatives of the other nations engaged in Antarctic research at a gathering which had for its keynote "Antarctica, the continent of peace and friendship."

The Australian Ambassador Extraordinary to the Soviet Union, J. K. Waller, said, "I think that scientists generally find a common tongue more readily than diplomats. As far as Antarctica is concerned they have achieved complete mutual understanding."

In all the rooms of the House of Friendship for the evening were stands displaying maps, photographs, equipment used by polar explorers, and books by Soviet and overseas authors on the subject of Antarctica. Addresses were given by leading Russian Antarctic explorers.

SOUTH POLE VETERAN

Olav Bjaaland, the last survivor of the Norwegians left by Amundsen who were the first men to reach the South Pole, 50 years ago next December, died in Norway on June 7. He was 88.

NEW LAND

PHOTOGRAPHS OPPOSITE — Upper: The newly-discovered Starshot Glacier, which cuts through the main mountain range just north of Mt. Nares, 81° 32'S., 157° 25'E. Lower: New Zealand explorers camped on the Starshot Glacier January, 1961.

Photos by Capt. Peter Hunt

With the southern party of the New Zealand Geological and Survey Expedition,
1960-61.



THE HINTERLAND OF THE SHACKLETON COAST



NEW ZEALANDERS ON THE STARSHOT GLACIER.

JAPAN'S FOUR YEARS' WORK AT SHOWA BASE

(We are deeply indebted to Mr. M. Murayama, leader of the 1959 expedition and of the party at present wintering at Showa, for the following account of the work carried out by the previous four Japanese expeditions which have occupied the base. Mr. Murayama's letter was radio-ed to Japan especially for "Antarctic" readers.—Ed.)

The Japanese Antarctic Station named Showa Base (69° 00' 22" S., 39° 35' 24" E.) was manned by the first wintering team of eleven men under the leadership of Dr. Nishibori from February 15, 1957. The station was scheduled to be occupied by the second wintering team to carry out the I.G.Y. scientific programme. However, the function of the station was suspended from February 17, 1958, owing to the impossibility of approaching the base by our expedition ship M/s "Soya", which was only able to pick up the first team by air.

1959 WINTER

After a break of one year in 1958, the reopening of the station was carried out by two Sikorsky 58 helicopters. Air transport was effected over a distance of approximately 150km., from M/S "Soya". The station facilities, including four main huts, diesel electric generators, radio and snow-cars were intact and came into operation upon the arrival of the first plane. To our astonishment we were welcomed by two dogs at the unmanned base. They had survived alone in excellent health after wintering over. These were two of the fifteen dogs that the unsuccessful expedition was obliged to leave behind because of being unable to rescue them before the winter closed in. Materials which were brought into the base included a snow car and amounted to some sixty tons.

During 1959 Showa Base was occupied by the third wintering team of fourteen men led by M. Murayama. The following new scien-

tific equipment was installed in 1959: an ionospheric sounder, an all sky camera, a spectrograph for auroral work, photo theodolites for parallax photography of the aurora, a scintillation counter, an electro magnetograph and a low sensitivity magnetograph, an induction magnetometer, a proto-precision magnetometer, equipment for measuring earth current, equipment for measuring atmospheric electricity and an electro-magnetic seismograph. All scientific observations had begun by February 15, 1959, and programmes of glaciological work and seismic depth determination were introduced as occasion offered.

Those activities were successfully carried out through the year. But the field work had to be confined owing to the fuel to be used for vehicles in comparison with the scientific observations at the base. However, several survey trips on the sea ice to the south and west were carried out during the year.

But the main journey was an inland survey trip to the southeast from the base. A trail party left for the area known as ANARE mountains (1956), where we hoped to be close to the mountain range. In four weeks' reconnaissance over 350km. of new area was covered. However, there was no mountain or even a nunatak to be seen. The party returned to the base after the execution of seismic sounding of ice depth along the route up to the point 70° 24' S., 46° 50' E.

1960 WINTER

The third wintering team was re-

placed by Dr. T. Torii's team of fifteen men which successfully landed from the "Soya" by five diesel snow cars besides reinforcement by air supply amounting to some 150 tons. New scientific equipment installed at Showa in 1960 were a rawin set and a neutron monitor. An ionosphere observation hut and a garage were built. The field party activities of this team which included three physical geographical scientists, took on greater importance during 1960 as compared with the previous years. The main survey trip was to the Yamato mountain range, the locality of which is $71^{\circ} 15' S.$ to $71^{\circ} 40' S.$, $35^{\circ} 00' E.$ Long.

They named Mt. Fukushima, the highest peak, 2700m. above sea level, after their colleague, Shin Fukushima, who lost his young life while carrying out observations in a blizzard on October 10, 1960.

1961 TEAM

In January, 1961, the fifth wintering team arrived. The team of sixteen men led by M. Murayama has taken over Showa and began its work on January 26, 1961.

The replacement was carried out entirely by air transport, using two Sikorsky-58 helicopters which put 120 tons ashore. During 1961 a programme of aerological observation and the study of biology are scheduled especially, while the scientific activities of aeronomy in the base camp continue. At the same time, it is hoped that an inland traverse for the south passing through the Yamato mountains will be effected this summer.

We enjoy the Antarctic life at Showa and to work alongside all the nations engaged in the Antarctic world. On this occasion, I wish to express my hearty thanks for much kind co-operation given by New Zealanders and sincerely wish them a happy and successful wintering.

—Masayoshi Murayama,
Showa Base.

The following further details are available from Japanese sources.

The 1960-61 wintering team returned to Tokyo by air on March 31. Dr. Torii and his thirteen companions were in excellent health, but the homecoming was shadowed for many because of the tragic loss of Mr. S. Fukushima in October, 1960.

The team reported that from the beginning of May, 1960, normal routine observations had been made from the two new observatory huts which, with a garage and storeroom, had been erected during the previous February. In May a journey was made as far as the most southerly part of Lutzow-Holm Bukt for the study of the sea-ice. An automatic meteorological observing tower was established on the ice. This was dismantled at the end of September.

INLAND TREK

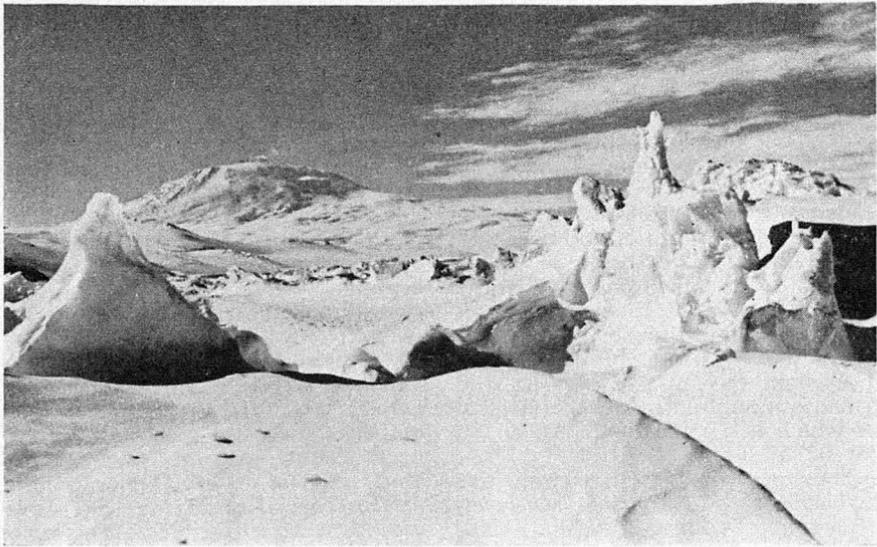
Preparations for an inland survey trip were commenced in August. A reconnoitering party of four men established a depot of oil and food near the head of Shirase Glacier, about 130 miles south-west of Showa Station. The main party, comprising the station leader Dr. Torii and six men, left on November 1, and reached the north-eastern end of "1937 Range" after a run of 290 miles. They carried out surveys and geological observations for three weeks and six of seven mountain groups extending thirty miles from north to south were climbed.

The highest peak, some 8,820 feet above sea-level, was named Fukushima-dake (peak).

The party was able to obtain a distant view of nunataks to the east and south of this point before returning to Showa Station on December 15.

"SOYA'S" RETURN

The "Soya", after the relief of Showa Station and the withdrawal of the 1960 wintering team with seven dogs, engaged in oceanograph-



CREEPING CLOSER?

The Pressure Ridges near Scott Base. One of the main "tourist attractions" of the McMurdo Sound area.

ic and geodetic work along the coast between 30° E. and 50° E. During this period a bare rock area of thirty square kilometres was discovered at 67° 57' S., 44° 29' E., on the Crown Prince Olaf Coast. Mr. Y. Morita, chief scientist, and Captain Akita reported, "The area named Shin-Nan-Rogan ("newly-found south rock area") is one of the Antarctic oases and is a more suitable site for a station than the Ongul Islands (on which Showa is built), as it has a very easy approach.

WELCOME HOME

"Soya" left the ice-edge on March 3 and returned to Tokyo on May 4 after an absence of 174 days, travelling via Capetown, Port Louis (Mauritius) and Singapore. A warm reception was accorded to Mr. Morita and the eighteen expedition members, and to Captain Akita and his crew of ninety-three. An even more vociferous welcome was given to the fourteen dogs, especially Taro, one of the two dogs which survived the compulsory wintering by the dogs in 1958. Taro was presented with a gold medal from the Society for the Prevention of Cruelty to Animals

and with many "flower rings".

The dogs were immediately taken to Haneda Airport and returned by chartered plane to their home island of Hokkaido in the north of Japan.

NEW NAMES

Four new place names have been officially approved by J.A.R.E.: Shirase Glacier (named after Lieut. Shirase, leader of the Japanese Antarctic Expedition of 1911-12), Mizuho Plain (mizuho means ripe ears of rice, the Japanese staple food), Yamato Range (Yamato is the ancient name of Japan), and Fukushima peak.

The Japanese Science Council decided on April 27 to advise the Government to establish a Polar Research Institute. The Institute would be attached to the National Museum of Sciences and have a staff of twenty to safeguard and study the many samples and data brought back to Japan by the Japanese Antarctic Research Expeditions and by other organisations. The project has, however, been suspended meanwhile because of preoccupation with the "Upper Mantle Project" of I.C.S.U.

CHILEAN RESEARCH

The Pedro Aguirre Cerda Base of the F.A.Ch. has been transferred to the University of Chile, whose Institute of Geophysics and Seismology will carry out programmes in meteorology, glaciology, seismology, auro-
ra, luminescence and terrestrial magnetism.

The base will be under the command of Captain Luis Rojas Flores.

Meteorological data will be supplied to the Chilean Meteorological Office for its aviation information service. The University will install a radio sounding station with Askania and Albin-Springer equipment.

Glaciological research trips will be made around the base and along the coasts.

In seismology, routine work similar to that of the continental stations will commence. Special emphasis will be laid on the study of the earth's crust in the Antarctic.

The programme for the study of the earth's magnetism will be linked with the studies being carried out at other bases on the Antarctic continent.

Working with the 1961 Chilean expedition will be English meteorologist Michael Gimmer, who has worked on meteorological analysis by statistical methods and the solving of mathematical problems connected with meteorology by the means of computers.

Peter Welkner, a member of the Institute, will be in charge of the compiling and interpretation of seismological data in the Antarctic. There will also be two students, a doctor and four Air Force technical personnel.

OTHER BASES

Gravimetric measurements begun during 1959-60 at Deception Island and the South Shetlands will be completed by Mr. Lautara Ponce, the Institute's research engineer. A geological survey of the Shetlands and

O'Higgins Land (Graham Land) areas will be carried out in conjunction with the U.S. Antarctic Research Programme of the National Science Foundation. U.S. geologists M. Holpern and D. A. Link of the University of Wisconsin will be engaged on this work.

Also in co-operation with the National Science Foundation, entomologists R. E. and T. E. Leech of the Bernice F. Bishop Museum, Honolulu, will assist in the study of insects.

The vessels engaged in Chilean Antarctic activity comprise—

"Piloto Pardo", a transport of 1,882 tons, constructed in 1959. Has a crew of fourteen officers and eighty-two men. Carries two Bell helicopters.

"Yelcho", a sea-going tug of 1,235 tons, constructed in 1943. Complement: eight officers and seventy-one men.

"Lientur", a sea-going tug of 760 tons, constructed in 1941. Complement: five officers and forty-nine men.

PLANS FOR 1960-61

Auroral work by a scientific group from the University of Chile at Gabriel Gonzalez Videla.

A general reconnaissance of the glaciology surrounding Gabriel Gonzalez Videla.

A detailed gravimetric survey of Deception Island. Gravimetric survey of the Shetland Arch.

A geological survey of the Shetland Islands and Tierra de O'Higgins (Graham Land) zone.

A study of the magnetic field at the Videla Base.

Basic research in meteorology at Videla.

Collection and study of insects.

A wide programme of work in oceanography and seismology.

The Armed Forces personnel assigned to the bases are charged with scientific work as follows:

Army: glaciology and seismology.

Navy: observation of co-ordinates and seas. Collection and dissection of species of fauna and flora.

Air Force: meteorology.

All three services will conduct glaciological observations.

U.S.-CHILEAN CO-OPERATION

The United States National Science Foundation has announced some details of the co-operative programme of Antarctic research to be undertaken by the United States and Chilean Governments, mentioned in "Antarctic", June 1960.

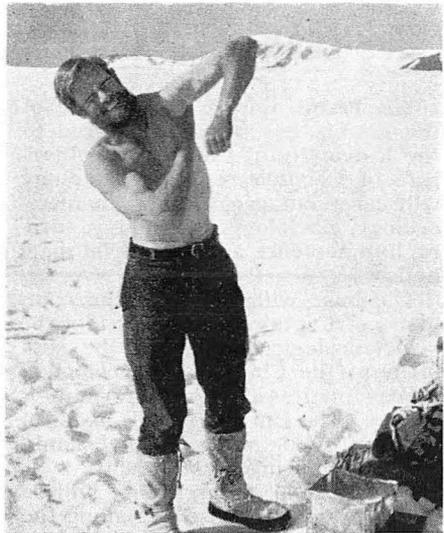
The United States, it is reported, agreed to provide Chile with geomagnetic equipment for Presidente Gabriel Gonzalez Videla station. Chile in return agreed to assist a United States research expedition on the Palmer Peninsula (Graham Land) by providing transport and helicopter support throughout the Antarctic summer.

Among the U.S. projects slated were a concentrated search for evidence that would establish a link between the Andes Mountains in South America and the Ellsworth Highland in Antarctica; and an intense study of the insect-animal life on the Pacific Coast side of the Palmer Peninsula, where there is some snow-free terrain.

Scientists from Great Britain, Argentina, the United States and Chile have independently conducted considerable geological research in the area, but there has been little attempt to co-ordinate their studies or to correlate their findings.

CHRISTMAS AT CHILEAN BASES

On Christmas Eve, the officers and men of the Arturo Prat, Gabriel Gonzalez Videla, General O'Higgins and Pedro Aguirre Cerda Bases met together at one table as if in their own homes. On the table the lights of a small Christmas tree wavered and winked, while the members took off small parcels which they gave to one another.



After two months in the field, Captain Peter Hunt, leader of a New Zealand party exploring the hinterland of the Shackleton Coast in the Ross Dependency, thinks it is time for a wash.

TRANS-ANTARCTIC EXPEDITION

A history of New Zealand's part in the Commonwealth Trans-Antarctic Expedition is being written by Mr. J. H. (Bob) Miller, Deputy-leader of the Expedition, and Mr. A. S. Helm, Secretary of the Ross Sea Committee. The book, which is nearing completion, will be produced by the Government Printer.

NOW FOR SALE

The Supplement to the Ross Dependency Gazetteer is now offered for sale — price 5/-. Apply: Surveyor-General, Lands and Survey Department, Government Buildings, Wellington.

THANKS, JACK!

Among the cargo which reached Scott Base during the summer was a stock of True Adventure Magazines from Mr. Jack Syme, of Napier, who described himself as "just a pensioner". He said he thought the men wintering over might appreciate some "hot jungle" reading for a change. They will.

TEN F.I.D.S. BASES OCCUPIED BY 93 MEN

The annual relief of the Falkland Islands Dependencies Survey bases has been satisfactorily completed, and the men at the bases are ready for the long Antarctic night.

Sea ice conditions remained generally favourable throughout the summer and the summer programme was completed in most areas without difficulty. The one exception was the relief of the subsidiary base at View Point, Duse Bay, which the ships were unable to reach owing to the persistence of heavy pack ice in Antarctic Sound (east and south of Hope Bay). The base was later re-stocked by sledge parties from Hope Bay.

As reported in March, two new bases were established during the season, the Adelaide Island base (T) on February 3 and the Fossil Bluff advance base a few weeks later. In addition, a new hut was constructed at Stonington Island (Base E), and the hut at the Argentine Islands (Base F) was extended to accommodate the Port Lockroy (Base A) ionospheric equipment next year.

The King George Island base (G) was closed on January 19, work on the island having been completed. The men were taken off by the R.R.S. "John Biscoe" on the 19th, and R.R.S. "Shackleton" called to pick up remaining stores on the 20th.

Eight main bases and two subsidiary bases are open at present, and are manned by a total wintering party of 93.

SHIPS' MOVEMENTS

As reported in the March issue, stores were flown south by Otter aircraft from Adelaide Island to Fos-

sil Bluff in George VI Sound at the beginning of February. The construction of the small Fossil Bluff hut was completed in the middle of the month, and it is now occupied by a wintering party of three men.

"JOHN BISCOE"

The "Biscoe" sailed from the new base on Adelaide Island on February 28, and the next day started to unload supplies for Base E on to the fast ice at a point about five miles south-west of Stonington Island. Four days later the ice started to break up and the ship was able to anchor within one mile of base, but gales then held up work for ten days.

Having completed the relief, the "Biscoe" sailed from the base on the 17th to collect seals for dog-food, and finally left the area on the 23rd. The three west coast bases were revisited on the way north and a week was then spent at Deception Island (Base B), together with the "Shackleton", assisting in the construction of an aircraft hangar and workshops. The "Biscoe" left Deception on March 4 and sailed for the Falklands via South Georgia and Signy Island, arriving there on the 17th. She sailed for home on March 28 and was due at Southampton on May 29.

"SHACKLETON"

Meanwhile, the "Shackleton" visited the Loubet Coast to pick up stores from Base W, which had been closed in 1959, and then continued the gravity survey, visiting a number of bases before returning to the Falklands on February 11. She left the

Falklands again on February 20 with eleven F.I.D.S. men on board, and after a very rough crossing to South Georgia sailed for South Africa via Tristan da Cunha.

She arrived at Cape Town on March 7 and a week later was handed over to the South African Government on charter, for the second year in succession, to re-visit Tristan and relieve the meteorological station on Marion Island. The ship arrived at Marion Island on March 19 and then returned to Cape Town before re-visiting Tristan. The F.I.D.S. men, meanwhile, made the most of their holiday in South Africa before being re-embarked. The ship arrived at Southampton on May 10.

The "Kista Dan" arrived at Southampton on March 19. There were seven F.I.D.S. men on board, five men — including the American observer — having returned home by air from Montevideo.

NEWS FROM THE BASES (December, 1960, to March, 1961)

At Deception Island (Base B) the second Otter aircraft, which had been taken south on the "Kista Dan" was unloaded and assembled in mid-January. As already reported, the two aircraft were flown south to Adelaide Island in February and were used to ferry stores to the site of the new advance base at Fossil Bluff. They then returned to Deception, and after one or two depot-laying flights south of Hope Bay, were laid up for the winter at Deception. Routine work continued at Deception, and field-work included an investigation into the possibility of using the island as an aerial for radio research.

Hope Bay continues to be a F.I.D.S. main sledging base and, as usual, a number of survey parties were in the field simultaneously, working both north and south of base. The topographical and magnetic surveys were extended to Cape Ducorps overlooking Bransfield Strait. The full base complement were together at base for the first time in several

years, when field parties returned at the beginning of February; there is usually at least one party in the field, and often more.

SLEDGING SOUTH

At Marguerite Bay, two men from Stonington Island (Base E) visited Horseshoe Island (Base Y) in December, to collect additional sledging equipment in preparation for a journey south-east to the Weddell Sea. The main party of three men left base in mid-December, and in the course of the next five weeks travelled south to latitude 69° 12' S, on the coast of the Weddell Sea, carrying out topographical and geological survey on the way. The one man left at base seemed to survive his isolation quite happily, being well-occupied with radio communications and routine maintenance of the base.

At the Argentine Islands, the local triangulation was completed and a geological and survey party then worked on the Anagram Islands.

At Signy Island (Base H), glaciological measurements were commenced on Orwell Glacier and observations on seals and birds continued.

At Adelaide Island, the new Base T hut was completed in February, and a 2-ton stores depot was laid 30 miles north-east of base in preparation for future field-work.

Short sledge journeys were also undertaken at Halley Bay (Base Z), both for physiological studies and an extension of the magnetic survey. The local glaciological survey was completed, and work commenced in March on the survey of the Dawson-Lambton Glacier area, but no route has yet been found up on to the inland ice. Radio echo studies have been re-started and will be continued for two years.

All bases continued routine activities, a full geophysical programme being maintained at the Argentine Islands and Halley Bay.

COSMIC DUST?

When the "Kista Dan" arrived back on March 19 from the Antarctic with plastic bottles of melted ice among her cargo, Sir Vivian Fuchs, who met the ship, said the melted ice would be tested for cosmic dust.

"We hope to obtain from the samples information on the amount of cosmic dust which is falling all the time from outer space through the earth's atmosphere," he said.

Sir Vivian plans to return to the Antarctic later this year.

"I hope to fly out to Montevideo and join the 'Kista Dan' or another of our vessels there for the rest of the voyage," he said. "I am looking forward to going back."

FOUR FIRSTS

The British research ship "Shackleton", commanded by New Zealand born Capt. David Turnbull, has scored four Antarctic "firsts".

During the voyage, F.I.D.S. men (1) took the first-ever geological samples from Clerke Rocks, near South Georgia; (2) went ashore on three volcanic islands in the South Sandwich group, making what are believed to have been the first landings ever; (3) made what was believed to be the first recorded landing by boat on Visokoi Island; (4) made the first-ever landings on Leskov Island in the same group.

R.G.S. AWARD TO SOVIET SCIENTIST

The Deputy-Director of the Arctic and Antarctic Research Institute in Leningrad, Dr. Mikhail Somov, has been awarded the Patron's Medal of the Royal Geographical Society in London. Dr. Somov spent more than 20 years in the Arctic. He led the first Soviet expedition to Antarctica five years ago.

AT ELLSWORTH

This year a large section of the shelf-ice, approximately ten miles by thirty miles in size has broken away from the main shelf on the western side of Gould Bay. This large section has been named Bahia Chica and was separated from the main shelf by a crevassed valley. In March it was moving gradually north into the Weddell Sea.

An estimated 4,500 to 5,000 Emperor penguins were noted on the western edge of Gould Bay at a site among stranded icebergs. The chicks were more numerous than the adults.

Ellsworth Station is built on the Ice Shelf. A determination of the co-ordinates of the station in January gave the latitude as 77° 39.9' S. This represents a northern movement of about 1.4 kilometres per year when compared with the observations of June, 1957.

A traverse party left in January for the Belgrano Base and Moltke Nunatak to re-measure the triangulation network made in 1957-59, and to continue this network as far as Ellsworth.

ANCIENT WATER

A New Zealand scientist has discovered water more than 2500 years old in the Antarctic. He is Mr. Don York of Wellington, who is working on oceanography with the United States Navy.

Mr. York said at Sydney on January 20 that the discovery of the water was a "scientific advancement" in determining the currents of the world.

In the four weeks he has been aboard the "Wilhoite" Mr. York has studied temperature layers and the sea bed in the Antarctic region.

Information he has gathered is to be sent to the Scientific Council and the Department of Scientific and Industrial Research, New Zealand.

It is his third trip with the U.S. Navy.

U.S. MERCY MISSION IN APRIL MAKES ANTARCTIC HISTORY

Another Antarctic barrier was broken when a United States VX-6 Hercules skiplane accomplished a Mercy Mission to Byrd Station in April. This was the first time a flight had ever been made to the Continent after the month of March.

On April 21 Rear Admiral Tyree, Commander of the United States Naval Support Force in Antarctica, ordered two Hercules aircraft to fly from the Naval Air Station at Quonset, Rhode Island, for the evacuation of Leonid Kuperov, a Soviet exchange scientist, from Byrd Station. Mr. Kuperov had been on the sick list since March 19 and it had finally been decided that his return to civilization was advisable. At the same time U.S.S. "Staten Island" was diverted from Lyttelton, where she was undergoing repairs, to stand by as a halfway ship for weather recordings at the Ocean Station, where she remained for the following ten days, while Seabees at the Naval Air Facility, McMurdo Sound, and the party at Byrd Station readied for the planned arrival and departure of the skiplane.

TO BYRD AND BACK

The two aircraft reached Harewood on April 3 and 4, where one stood by and the other, commanded by Commander L. E. Newcomer, veteran already of two unique Antarctic flights, made three unsuccessful attempts to leave for McMurdo, where bad weather continued to prevent the flight. Finally on April 8 the aircraft left Harewood.

Eight hours later it reached McMurdo, the first aircraft ever to have broken through the winter ice curtain of Antarctica. Here it refuelled and again awaited weather conditions before taking off, in the dark, and flying for three and a half hours

to reach Byrd Station, nine hundred and seventeen miles away. Forty-five minutes later it left again, carrying Mr. Kuperov, and again landed at McMurdo.

It was by now April 10. After refuelling and collecting some mail Cdr. Newcomer's aircraft attempted to take off from the snow strip, already three foot deep in soft snow.

TO NEW ZEALAND

Even with the assistance of JATO the aircraft could not get free of the snow, so it was taxied up and down the strip to compact the surface. Finally, at 4.55 a.m. on April 10 Cdr. Newcomer got his aircraft off the ground, to land at Harewood eight hours later, having flown 6300 miles from Christchurch to McMurdo, to Byrd and back again in 48 hours 20 minutes.

"Perhaps we are a step closer to breaking the winter ice-curtain," said Cdr. Newcomer, after having added another "first" to his Antarctic flying record. In his previous mercy flight, to an Australian at Wilkes Station, he had flown a route never before attempted; and his supply flight earlier this year from McMurdo to the Eights Coast, a 1400-miles flight, was also a first.

HEAT WAVE

For the third successive month new weather records were set at Byrd Station, with the maximum March temperature — 12° F. — being higher than any previous March maximum and the average wind-speed — 13.6 knots — lower.

Round-up of Summer Activities At American Bases

AMUNDSEN SEA STILL INVIOULATE

After being blocked in the Bellinghousen Sea by ice floes from 15 to 30 feet thick, the United States ice-breakers "Staten Island" and "Glacier", attempting to penetrate into the Amundsen Sea, were able to take advantage of a temporary thaw to reach Cape Evans and steam on towards their goal. While "Glacier" searched for a route northward, however, she became stuck on March 7 in a heavy floe only 500 yards from a large lead, and was only able to free herself at the expense of her starboard propeller blades, one of which was almost completely broken off. So severe was her damage that both ships had to abandon the idea of penetrating the Amundsen Sea and both headed back for open water. "Glacier" planned to sail for the Palmer Peninsula while "Staten Island" continued her oceanographic work en route to South America.

"Staten Island" now had a chequered career. Ordered to rush to McMurdo to assist in mooring an errant YOG she suffered such heavy damage that she was ordered back to Lyttelton. After serving as weather ship for the unexpected late C-130 flight, she returned via Wellington to Pearl Harbour.

"Glacier" meanwhile visited Doumer Island, Chile's Gabriel Gonzalea Videla Station) and Penguin Island (16-18 March), arriving at Montevideo on March 29.

LARGE BEAR BY SMALL TAIL

Two YOGS — oil storage vessels — which broke away from their six-year-old moorings in the ice off Hut Point, McMurdo Sound, during bad weather in early March resisted all attempts to re-moor them and are

still on the loose.

Navy airmen at McMurdo kept YOG 34, which was filled with aviation fuel, under observation until bad weather interrupted flying and contact was lost. With the sun barely rising above the mountains, frequent blizzards and temperatures down to 60 degrees of frost, contact could not be re-established.

Both the "Edisto" and the "Staten Island", United States ice-breakers, were diverted from their courses to attempt re-mooring these rogue vessels, and both failed.

"Staten Island" was soon out of the hunt (see above). "Edisto", after operating for two months as "The Lower McMurdo Sound Tug and Barge Company" (reconditioning one of the YOGs among numerous other tasks) was sent back to Lyttelton to load a helicopter for transfer to the United States, only to be ordered back again to McMurdo when a YOG broke loose. Very heavy weather kept "Edisto's" speed down to less than five knots and when she did finally reach McMurdo, YOG refused to co-operate either, inspiring "Edisto" to report on March 28 that "'Edisto' has large bear by small tail." April 3 saw the attempt to recover the YOG abandoned and "Edisto" made for Lyttelton.

Her troubles were not yet over. On April 4, operating in 40- to 60-foot seas with winds up to 90 knots, "Edisto" reported that she had lost her starboard propeller. Ice and wind had carried away some antennas and her rigging. Eight feet of her port side had received frame damage. Five days later she arrived in Lyttelton.

The loss of the aviation fuel in the YOG's tanks may restrict flying operations in the spring.

OPERATION THAW

The successful testing of an ice-melting device in Antarctica this summer may prove the answer to ice-bound shipping all over the world.

A five-man team from the Future Products Research Company of Chicago spent one month in McMurdo Sound testing a method of ice erosion, working by forcing water to circulate beneath the pack ice.

Mr. G. E. Gross, president of the Company, said that the device tested, known as Aqua-Therm, could melt ice anywhere in the world, since it had proved successful in Antarctica where conditions were the "worst possible". This meant that channel sections or turning basins could be cut in frozen dock areas, so saving millions of pounds to shipping.

In Antarctica itself, this new operation could provide many aids to life and work. It could ensure a constant fresh water supply by keeping fresh water areas clear, constant sea-water for fire-fighting purposes, a permanent disposal unit for trash and garbage through a hole in the ice, and it could assist ships caught in the ice by preventing them from crushing or tilting.

It was unlikely that the equipment could ever replace the ice-breaker, but it could be used in conjunction with it.

FIRST BIRTH . . .

Pandora, a golden hamster, made sure of her claim to another Antarctic "first" when she was not only the first mother to give recorded birth at the South Pole but also produced twins.

Twenty-one hamsters were taken south late last year by American biologist Dr. K. C. Hamner — not Hamster — who was conducting experiments on animal reaction to Polar conditions.

15-FOOT BALLOON

Reaching a height of almost 23 miles, a fifteen-foot scientific balloon was launched from McMurdo Sound on December 21 by Dr. J. A. Brown and Mr. E. J. Pybus of the United States Army Ballistic Research Laboratories.

This is the first time a balloon-launched instrument for measuring stratospheric water vapour has been launched in the Southern Hemisphere, say its launchers.

This study of stratospheric water vapour should contribute to the glaciological and geophysical data being gathered on the extent and growth or ablation of the Antarctic ice cap.

ANTARCTIC INSECTS AT HIGH ALTITUDES

Insects have been found in the Antarctic at 6000 ft. above sea level, about 90 miles from McMurdo Sound.

This is believed the highest altitude at which insect life has been encountered in the Antarctic.

The insects were found by Mr. K. U. J. Wise, a New Zealander working for the Bernice P. Bishop Museum in Honolulu. He is one of four of the museum's scientists currently studying the distribution and dispersal of airborne and ground organisms, primarily insects, in the Antarctic.

At the head of the Mackay Glacier with other scientists, Mr. Wise set up camp 1000 ft. above the glacier and about 6000 ft. above sea level. There, under loose rocks lying on the snow-free surface of the plateau, he came across about two dozen collembola, or "springtails," an order of primitive wingless insects.

He also found about a dozen free-living, non-parasitic mites in the same area.

Mr. Wise and his associate, Mr. Josef Sedlacek, have been collecting specimens in the McMurdo Sound-Ross Sea area by several different techniques.

LANDBASED OCEANOGRAPHER

One oceanographer in Antarctica who is not working on the ocean is Dr. W. L. Tressler, who has spent every Antarctic summer since 1954 and one winter too lowering and raising instruments through a hole in the floor of his hut, some three miles from McMurdo Camp. With these instruments Dr. Tressler measures water temperature for about 1900 feet — “surprisingly constant” — collects water samples, determines currents, their velocity and direction and takes samples of the bottom of McMurdo Sound, carrying samples because the ice of the Sound moves northward about a foot a day. Bottom sediments consist of volcanic debris, ash, cinders and scoria.

CHIEF SCIENTISTS

Scientific leaders at American bases this year will be:

McMurdo: Dr. G. H. Meyer, bacteriologist.

Byrd: N. S. Benes, meteorologist.

South Pole: B. W. Harlin, meteorologist.

FROM HAWAII

Thirty Hawaiian men, communications workers for Pearl Harbour Industrial Management, were flown from their Oahu homes to the bitter cold of the Antarctic continent to instal an elaborate communications network for the scientific support programme of the United States Navy's Operation Deep Freeze.

Many of them saw snow and ice for the first time as they waddled across the runway, wrapped in 30 pounds of cold weather clothing, to the vehicles that would take them to camp.

Industrial Management is to transform U.S. Antarctic communications from the temporary facilities installed for I.G.Y. into those of a modern Naval shore installation.

THE NEW BYRD

Showers, a gymnasium, a laundry and a 1000-watt nuclear power plant will be built under the snow in the new Byrd station at present under construction.

Two 20-ton Swiss snow machines, known as snow millers, are now carving trenches from the snow. These will be roofed, and insulated buildings of light construction will be erected inside.

GREENLAND MODEL

In building the new station to replace that at present being crushed by snow, the Navy decided on a design similar that of the Army's Century camp in Greenland. By use of this design the problems posed by snow drifts are avoided by moving the entire camp underground.

The snow millers in use were flown to Christchurch from France, dismantled, and flown by Globemaster and Hercules to the inland station through the American base at McMurdo.

Re-assembled, they were set to work, and began chewing with four-foot by eight-foot bites into the snow surface.

READY FOR 1963

Completion of the new station has been scheduled for 1963. By the end of this season most of the trenches will have been cut and covered. The temporary housing and equipment at present in use will be stored in the trenches for the winter.

During the 1961-62 season the snow millers will finish their job and the station workshops, laboratories and living facilities will be erected. By March, 1963, a 1000-watt nuclear reactor will be in place.

Fifty scientists and Navy support men will be comfortably quartered throughout the year at the new station, and there will be room for up to 100 during the four months of summer activity.

As there will be no surface obstructions, heavy drifts of snow will not accumulate. All that will be needed to keep the natural surroundings of the underground camp in their desired condition year after year will be an annual shaving of the snow walls.

ARGONAUTS

The U.S. oceanographic research ship "Argo", a converted sea-going tug crammed with scientific equipment from the Scripps Institute of Oceanography, California, refuelled at Dunedin on February 23 after some weeks in Antarctic waters. The 20 scientists on board report many interesting discoveries including submerged "islands" south of New Zealand. Expedition members believe that there are "vast mineral resources" in Antarctic waters which warrant investigation of their potential.

The National Science Foundation is planning research cruises in Antarctic waters by a sea-going scientific laboratory. The ship, a cargo craft strengthened with double hull construction, is the "Eltanin", operated by the Military Sea Transportation Services. "Eltanin" will be refitted with laboratories and quarters for scientists, who will study weather, upper atmospheric conditions, sea and land life, oceanic conditions, under-water rocks and magnetism and the seas adjacent to Antarctica.

Cruises of from one to several months each will begin in the late autumn. The ship will work in Antarctic waters for a total of ten months in the year.

NORTHERLY ICE

En route to the Amundsen Sea U.S.S. "Staten Island" sighted two icebergs, some 4 degrees further north than any previous recorded sightings by Deep Freeze vessels.

ONE CONTINENT

In an article in The Polar Record for January 1961 Mr. Edward C. Thiel, an American professor of Geophysics who has himself played a considerable part in the "traverses" which have figured so largely in recent years in the gradual unveiling of Antarctica, tackles the thorny question, "Antarctica, one Continent or two?" This is his conclusion:

"There is no broad depression in the rock flow between the Ross Sea and the Weddell Sea. Antarctica is one continent although the area of the continent is not as large as a map of the ice sheet would suggest. Several mountainous areas at present connected with the mainland by ice would become islands were the ice to melt."

ANTARCTIC MONOGRAPHS

The United States Antarctic Research Programme is considering publishing a series of Antarctic monographs dealing with the scientific results of research in Antarctica and surrounding areas. Two or three could, it is expected, be published each year, each dealing with allied subjects or areas. Thus, one volume could be all biology, one geology, etc. These would not compete with scientific journals but could provide a medium for articles too lengthy for, or not pertinent to, other journals. Comments and suggestions would be welcomed.

TOURISTS AT THE POLE?

It was announced in Stockholm on February 1 that the Swedish Transair Company is planning a round-the-world air cruise during which the plane will land near the Pole. The company is said to be negotiating with the United States Navy for landing and refuelling facilities at McMurdo. The proposed 31-day cruise, which would begin and end in Sweden, would include in the itinerary Turkey, Pakistan, New Guinea, Australia, New Zealand, McMurdo Sound and Brazil.

ON THE ANTARCTIC FRINGE

News from the Islands

SOUTH GEORGIA (United Kingdom)

Antarctic explorer and broadcaster Duncan Carse has been put ashore from H.M.S. "Owen" — at his own wish — on South Georgia, where he plans to spend eighteen months completely alone, carrying out geological and meteorological research.

KERGUELEN (France)

The relief ship "Gallieni" left France in November and carried out the operation without incident. All the men relieved were back home in time for the New Year festivities. Preparations for the next relief have already begun and recruitment of new men is under way.

The Australian Antarctic ship "Thala Dan" called at Port-aux-Francais, Kerguelen, on March 7, but no personnel were disembarked until the 9th owing to extremely bad weather. Visits were then paid to the camp and to the seismological station at Pointe Molloy. That evening the visiting Australians had to be accommodated ashore, again because of the weather. Next day some of the Kerguelen staff dined on board "Thala Dan", which then sailed for Melbourne.

About the same time the lobster-vessel "Sapmer" left the waters of New Amsterdam for Reunion after a successful three months' fishing. A sharp earthquake shock was felt at New Amsterdam on the night of January 31.

Telephonic communications have been difficult but radio amateurs have been very active. At Kerguelen excellent communication has been established with a trapper in Alaska.

ILES CROZET (France)

The French National Committee for Antarctic Research (C.N.F.R.A.) includes the following paragraph in its programme "Previsions pour 1962":

"**Iles Crozet**": It would be highly desirable to set up a station on the Crozet archipelago at least for a period of some months. It is recalled that a British ship of low tonnage has just spent two months in this archipelago.

CAMPBELL ISLAND (New Zealand)

Since the issue of the March bulletin, the new power-house has been completed and the new Lister engines and generators installed and coupled up — altogether a fine effort by the Carpenter, Mechanic/Handyman, Leader and other expedition members as they could be spared from their other duties.

Good progress has also been made on the new two-bedroom annexe to the main hostel, and this when completed will allow two Army huts to be demolished. These huts had previously had to be used for sleeping accommodation, but were a fire risk and never really satisfactory.

The next work of a semi-urgent nature to be started shortly will be a boat-house for the new launch sent down at the last servicing. The previous launch was lost when it broke adrift from its moorings in a gale and it is not intended that the present launch should suffer a similar fate.

The bill of health has been excellent and all members seem to be happy with their lot.

AUCKLAND ISLANDS

GOLD

(New Zealand)

The Auckland Islands, 50° 50' S., 160° E., 290 miles south of Bluff, New Zealand, are in the news again.

The group consists of one large island about 27 miles by 15 and a number of adjoining islets, the total area being about 234 square miles. Many ships were wrecked on the rugged west coast between 1864 and 1907, among them the "General Grant" in 1866. Only fifteen reached shore of the eighty-three on board, and only ten of these, one a woman, survived to be picked up after 547 days of privation.

Rumour has it that the vessel, bound from Melbourne to London in the days of Victorian gold-mining, had £1,000,000 worth of gold on board. Some later estimates have reduced this to 2,470 ounces of gold and nine tons of spelter which could have contained some gold extractable by a difficult chemical process.

Whatever the truth, it is certain that at least nine expeditions have tried to locate the gold, all without success. In some cases lives have been lost. The ship is reported to have run into the face of towering 1,000-foot cliffs on the western side of the island and to have become lodged in a cave. Dr. R. A. Falla, who has made determined efforts, during several visits to the island, to locate the cave, says that the coast in the vicinity of the site is undergoing continual erosion and that the cave is almost certainly not now visible.

However, a Southland children's paper published the story again in January, and it was reproduced in British, European and American newspapers. As a result, in one week the Invercargill office of the Lands and Survey Department, which administers this uninhabited area, received twenty-eight applications for the necessary permit to occupy

the land adjacent to the site in order to prosecute a search. To salvage the remains of the wreck, if any were found, permission would have to be obtained from the Marine Department.

In any case, all the applications have been refused.

MARION ISLAND

(South Africa)

The South African Government has been unsuccessful in a series of attempts to acclimatise Merino sheep on Marion Island, some 1,000 miles south of Port Elizabeth. Experiments have been made since 1948 to make the island self-supporting for fresh meat, but all have failed. Not only the cold weather but the continual dampness proved too much for the animals. The wool of the Merinos grew over their eyes and this resulted in their becoming bogged in the mud or falling over the escarpments.

So intense is the cold on the plateau that the eleven members of the weather-station staff were unable to dry the skins of the sheep slaughtered.

A later experiment with Dorset sheep (a cross between the Dorset Horn and the German Merino) also failed. It seems impossible for a lamb to remain alive.

On her last visit to the island the frigate "Natal" took a few dozen fowls and some trout, but nothing has been reported of their fate. A small herd of Swiss goats is doing well, except that the hooves have spread on account of the soft ground which is covered with volcanic ash.

Every precaution was taken to ensure that animals sent to the station were free from any sickness. There is sufficient plant life to sustain the sheep and goats without the need for additional feeding.

The 1961 relief took place on March 19-21 when the R.R.S. "Shackleton" visited Marion Island. The members of the 1960 team are P. A. le Roux

(Meteorological Assistant), Leader; B. P. Booyens (Meteorological Assistant); C. M. N. Wolfaardt (Meteorological Assistant); W. L. de Beer (Medical Orderly); D. T. Mynhardt (Radio Operator); C. G. Snyman (Seismography); G. Norval (Radio Technician).

For the first time the men will have a pet dog, a real mongrel.

The tinned food will be supplemented by 48 chickens and 23 sheep.

Already during April temperatures dropped below freezing and snow was a common sight. For most of the members it was the first time that they could build snowmen (or snow women?) and throw snowballs around. Unfortunately Marion Island, being very muddy, claimed several victims in its bogs during these snowball fights.

There are lots of fresh fish but they do not provide any angling sport as they are very easy to catch and very unsportive.

GOUGH ISLAND

(South Africa)

The relief by the R.R.S. "Shackleton" was done on April 6-8, 1961; actually all the off-loading was done in one afternoon.

The members of the new team are: J. Labuschagne (Assistant Meteorologist), Leader; A. van Wyk (Assistant Meteorologist); W. Sciocatti (Assistant Meteorologist); J. Harper (Assistant Meteorologist); H. Basson (Medical Orderly); J. Visagie (Radio Operator).

They also have 22 sheep and a number of chickens, all of which are doing very well.

The men have built a new bridge across the river to enable them to get to the balloon hut.

MACQUARIE ISLAND

(Australia)

April was a month of several startling discoveries — tractors don't float, surfing is strictly for seals, wild cats have claws, and it is a long rugged trek around the island!

Herrington and Edward were on their way to Sandy Bay to repair the "weekender" there, loaded with everything and sundry to do the job. The O.I.C. supplied tractor transport along the beach as far as terrain would permit. A freak wave suddenly reared up out of an otherwise fairly calm surf, taking tractor and occupants back with it. All managed to get clear. After much wallowing in the water, the tractor was made fast with a steel line. After a long cold wait Edward had just cleared the tractor from the heavier surf when the dozer threw a track. Hours of work in blizzard conditions finally got the track back on and the tractor was towed back to camp.

The same two men set out to circumnavigate the island, making biological observations and effecting hut repairs. The last five miles of coastline presented so much difficulty that they had to return via the plateau.

Watson has been exterminating wild cats, which have been moving into the camp area to escape the vicious winter of the plateau. Two badly mauled fingers are evidence of the ferocity of these beasts. He has managed to tame one and it performs every night in the library.

Macquarie weather: Average wind speed: March 20 knots, April 18 knots. Minimum temperature: March 31° F., April 30° F. March: Rain, sleet or snow on 25 days, fog "our constant companion". April: Rain on 26 days, fog and overcast constant.

In May the maximum temperature was 45° and the minimum 28°. It rained on 27 days in the month, and there were seven days of snow.

MURRAY ROBB

We record with deep regret the death in a motor accident near Rakaia on March 31 of Murray Robb.

Murray was a mechanical engineer whose home town was Timaru. Born at Fairlie and educated at the local District High School and at Timaru Technical College, he worked for five years for Downer and Company in Southland before himself operating a carrying business in Timaru for two years.

In 1957 he sold his business and went to the Antarctic as maintenance officer with the New Zealand expedition which wintered at Scott Base during 1958. In October 1959 he returned to the Antarctic as leader of the Sno-cat team which formed part of the New Zealand Geological and Survey expedition in the 1959-60 summer. After the accident in which Lieutenant Tom Couzens lost his life, Murray Robb became Leader of the expedition, now comprising three dog teams, exploring the area between the Nimrod and Asquith Glaciers. He then, with Don Goldschmidt, undertook the dangerous task of extricating the undamaged second Sno-cat from the crevassed area and driving it back to Scott Base.

Returning to New Zealand in March 1960, he became part-owner of a Timaru fishing vessel.

A memorial service was held at Scott Base on April 1. The thirteen men assembled at the Base flag-pole — in a temperature of 16° F. After a minute's silence prayer was offered, the New Zealand flag was lowered and Ray Logie played "Taps".

Murray Robb was held in very high regard by all New Zealand Antarctic men. Mr. D. R. Goldschmidt, who was so closely associated with him in what was perhaps his finest hour, has put into the following words what all who knew and loved Murray Robb would wish to say.

A Tribute

Murray Robb. The name meant so much to all who had the fortune of knowing him.

For those who knew him in the Antarctic his name stood primarily for leadership. He was a natural, confident, unruffled leader who had the confidence of his men. We respected him for his competence that gave a sense of dependability: a competence not only with Sno-cats, weasels and generators with which he excelled but in his thousand and one other tasks at which he would work indefatigably. No job was too much trouble for Murray and on it he concentrated with all his care; and on completion one could depend on its thoroughness and perfection.

Murray's wry humour, dynamic personality and unusual fluency with the spoken word made him the most popular member at Scott Base. He would talk in exactly the same manner to anyone whatever their status.

And those in the field with him enjoyed also his close companionship. It was here that with his high ideals and faultless character he outshone the rest of us.

His tragic death was a great shock to his many friends and the Antarctic has lost a well-known personality.—D.R.G.

BIOGRAPHY

Lady Mawson has now almost completed the manuscript of the biography of her husband which she has been writing since his death.

As soon as she has checked through it with her two daughters and obtained their comments, she will send it to her publishers.

The biography will contain much information about Sir Douglas Mawson never previously published.

VICTORIA LAND COASTS

Names have been allotted to sections of the 2,500-mile coast-line of Victoria Land, from the junction of the Ross Dependency and Australian Antarctic Territory, 160° E., to the extreme eastern boundary of the Dependency in 150° W.

With the exception of the Oates Coast, the eastern portion only of which is within the Dependency, the names given commemorate in each case an expedition leader or other prominent expedition member who has played a prominent part in the exploration of the area. (See map inside front cover.)

OATES COAST

154° 10' E.-163° E.

The Ross Dependency section of the coast is from the 160° meridian of E. longitude to the Lillie Glacier Tongue. Previously known as Oates Land. Named after Captain Lawrence E. G. Oates, who died in 1912, during the return of Scott's party from the Pole.

PENNELL COAST

163° E.-170° 15' E.

From the Lillie Glacier Tongue to Cape Adare. Named after Lieutenant H. L. L. Pennell, R.N., Commander of the "Terra Nova", 1910-13, who sailed along this coast in February 1911.

BORCHGREVINK COAST

71° 17' S., 170° 15' E.-74° 42' S.

From Cape Adare southwards to Cape Washington. Named after Carstens E. Borchgrevink, a member of Bull's "Antarctic" expedition of 1894-95, and leader of the "Southern Cross" expedition 1898-1900, the first to winter on the Antarctic Continent, at Cape Adare.

SCOTT COAST

74° 42' S.-78° 40' S.

From Cape Washington to Minna Bluff. Scott and various members of his first ("Discovery") expedition carried out the first exploration of this area, which includes the western shore of McMurdo Sound.

HILLARY COAST

78° 40' S.-80° 20' S.

From Minna Bluff to Cape Selborne. Sir Edmund Hillary and members of the New Zealand expedition under his command pioneered the route up the Skelton Glacier to the plateau, and carried out detailed surveys of many portions of this area.

SHACKLETON COAST

80° 20' S.-83° 30' S., 175° E.

From Cape Selborne to the eastern side of the Beardmore Glacier. Shackleton led the first party to sight this portion of the Victoria Land coast and ascended the Beardmore Glacier to the plateau.

DUFEK COAST

175° E.-167° 30' W.

From the eastern side of the Beardmore Glacier to the eastern side of the Liv Glacier. Named after Rear Admiral George J. Dufek, U.S.N., Commander of the U.S. Naval Support Force, Antarctica, from 1954 to 1959. Under his command the American base McMurdo was established and a great deal of photographic reconnaissance from the air carried out.

AMUNDSEN COAST

167° 30' W.-152° 30' W.

From the eastern side of the Liv Glacier to the western side of the Robert Scott Glacier Roald Amundsen and his Norwegian team ascended the Axel Heiberg Glacier in the area to become the first men to reach the South Pole.

GOULD COAST

85° 30' S., 152° 30' W.-154° W.

83° 30' S.

The southern part of the eastern coast of the Ross Ice Shelf. Named after Dr. Lawrence M. Gould, second in command of Byrd's first expedition, 1928-30. Dr. Gould led the geological party which sledged south from Little America and explored a great deal of this area.

SIPLE COAST

83° 30' S.-80° 10' S.

The middle part of this still ill-defined coast. Dr. Paul Siple was in

charge of the West Base of the U.S. Antarctic Service Expedition 1939-41, during which a flight was made (in which Siple participated) along this coast and some of the major features were sighted.

PRESTRUD COAST

80° 10' S.-77° 05' S.

The northern part of the Ross Ice Shelf west coast, terminating in Cape Colbeck. Named after Lieutenant K. Prestrud of Amundsen's expedition, who in November-December 1912 sledged from the Bay of Whales south to 80°, east to 158° E. and then north to the edge of the Ice Shelf and across King Edward VII Land to the Scott Nunataks.

SHIRASE COAST

77° 05' S., 158° 15' W.-147° 30' W.

From Cape Colbeck to the eastern boundary of the Ross Dependency and two and a half degrees beyond. Lieutenant C. Shirase was leader of the Japanese expedition whose ship "Kainan Maru" in January 1912 sailed along this coast as far as 151° 20' E.

HONOURED NAMES

The New Zealand Geographic Board has recently approved over one hundred new place-names in the Ross Dependency. Among those whose names have been honoured by inclusion on the map of the Dependency is Lieutenant Tom Couzens, who lost his life when a New Zealand Expedition Sno-cat plunged into a crevasse off Cape Selborne in November 1959.

The name of Mr. J. H. Lowery, who suffered severe injuries in the crash, involving the loss of a foot, and is still incapacitated, has also been honoured.

Couzens Bay is a wide and deep bay immediately south of Cape Selborne, in 80° 28' S., 160° E.

Lowery Glacier is a 40-mile glacier, enclosed by the Queen Elizabeth Range and the coastal mountains, which joins the Nimrod Glacier 20 miles from Cape Lyttelton.

Other new place names of special interest are:

Robb Glacier, named after Murray Robb, leader of the New Zealand field party, 1959-60, which traversed this 15-mile glacier, which flows east between Mount Christchurch and Longstaff to meet the Ross Ice Shelf at Cape Goldie. Mr. Robb's tragic death is reported elsewhere in this issue.

Cape Hodgson, which commemorates Thomas V. Hodgson, the biologist of Captain Scott's first expedition, 1901-4. His name has been given to the northern cape of Black Island. He was a member of the first party to visit the island.

Several members of the ill-fated Ross Sea section of Shackleton's abortive Trans-Antarctic Expedition, 1914-17, have been honoured.

Cape Spencer-Smith, 76° 02' S., 162° 30' E., is the northern cape of White Island. The Rev. Arnold Patrick Spencer-Smith, B.A., was stricken with scurvy during the journey south to lay a depot at Mt. Hope, and died on March 9, 1916.

Mt. Hayward, 76° 08' S., 167° 22' E., on White Island, is named after V. G. Hayward, who lost his life between Hut Point and Cape Evans after returning from the southern depot-laying journey.

Richards Inlet, 83° 20' S., 168° E., is a prominent inlet about 20 miles deep and 12 miles wide, 15 miles north of the Beardmore Glacier. R. W. Richards was the "strong man" of the depot-laying party and by his spirit and endurance was largely responsible for the return to Hut Point of all but Spencer-Smith.

Two leaders of New Zealand expeditions wintering at Scott Base have been remembered.

Hewitt Glacier flows into Richards Inlet on the north side of Mt.

Asquith in 83° 28' S. (L. R. Hewitt, 1959.)

Lennox-King Glacier is the corresponding one on the south side of Mt. Asquith in 83° 33' S. (Lt.-Cdr. J. Lennox-King, R.N.Z.N., 1960.)

Bridge Pass, which leads from the Nimrod Glacier to Beaumont Bay, commemorates Captain L. D. Bridge, who was leader at Scott Base November 1960–February 1961, and would have wintered over had not urgent domestic obligations compelled him to return to New Zealand.

A number of explorers of the "heroic age" have been commemorated

Adams Glacier (78° 08' S, 163° 45' E.). J. B. Adams in 1908 accompanied Shackleton to within 97 miles of the Pole.

Borchgrevink Glacier (73° 04' S, 168° 20' E.). C. E. Borchgrevink was leader of the "Southern Cross" Expedition 1899-1900.

Evans Piedmont Glacier (76° 45' S, 162° 45' E.). P. O. Edgar Evans, R.N., died on Beardmore Glacier when returning with Scott in 1912.

Joyce Glacier (78° 02' S, 163° 50' E.). Ernest Joyce was a member of British Antarctic Expeditions 1901-04, 1907-09 and 1914-17.

Marshall Valley (78° 05' S, 164° 10' E.). Dr. Eric Marshall accompanied Shackleton on his furthest south journey in 1908.

Mt. Feather (77° 58' S., 160° 22' E.). Thomas A. Feather, R.N., was boatswain on "Discovery" 1901-04.

Paton Peak (76° 58' S, 167° 04' E.). on Beaufort Island. James Paton, a seaman, made at least six voyages to the Ross Dependency area, the first on the relief ship "Morning" in 1901-04.

WHALING NEWS

The 9,495-ton Japanese whaling factory ship "Kyo Kurei Maru" which berthed at Fremantle from the Antarctic on April 5 lost four of her crew members at sea.

The four men were swept from the after deck by big seas in the Antarctic on February 19.

The "Kyo Kurei Maru" is on her way back to Japan with 7,000 tons of whale meat, and 200 tons of whale products.

SAVING THE WHALES

The Scientific Committee of the International Whaling Commission met in Rome on April 25 behind closed doors in an effort to protect the Antarctic whale population from excessive catches and to increase the sustainable yield. The conference was expected to last until May 6.

The nations represented were Australia, New Zealand, the Netherlands, Norway, Japan, the Soviet Union, and Britain. They discussed methods of research into the biology of whales, their distribution, and numbers, and how these methods can be improved to assist the regulation of whale catches.

Last year the International Whaling Commission suspended catch limits for the 1960-61 and 1961-62 Antarctic whaling seasons. This was caused by the withdrawal by Norway and the Netherlands from the International Whaling Convention because Antarctic whale fishing outside the convention had not been rationalised. Norway has since rejoined the convention but the Netherlands has not yet done so.

The meeting will convey its findings to the International Whaling Commission, which has already expressed its intention to bring the Antarctic catch limit for whales into line with scientific findings before July 31, 1964.

New Zealand was represented at the

conference by the director of fisheries research, Mr. K. R. Allen. Among the Australian representatives was Mr. W. H. Dawbin, senior lecturer in zoology at Sydney University, formerly of Victoria University of Wellington.

The Norwegian Whaling Gazette for February gives some figures which indicate the importance of the Antarctic whaling industry. In the 1960-61 catching season twenty-one floating factories from five nations (Norway, Japan, the Netherlands, the United Kingdom and the Soviet Union), with 264 chasers, 16 refrigerating ships and 27 cold storage carriers, took part. This represents one more factory ship (the Russian "Juri Dolgorukij") than in the previous season, and 23 more chasers.

The number of men employed increased from 17,929 to 19,496. This increase was in the Japanese (1,580) and Russian (approximately 900) crews. Norwegians, on the other hand, decreased by 775 and Britons by 110. The increase in Japanese and decrease in Norwegian whalers is largely due to the sale of the British "Balaena" expedition to Japan.

THESE RUSSIANS

Clifford Dewart, the American scientist who spent almost fifteen months, including the 1960 winter, with the Russian Antarctic team at Mirny, says that Russian men are "just like any kind of men anywhere" — and they like pictures of pin-up girls. "I found them to be very fine hosts," he said on his return to Washington. "I liked them very much. . . . They were polite and friendly. . . . I found them to be surprisingly like Americans."

After close contact with more than a hundred Russians in a land of close confinement, rough cold weather and often dangerous exploration work, he ought to know. Ideological differ-

ences? "The Russians seemed more interested in talking about sports than politics," he said.

Surprisingly like New Zealanders, too?

FIFTY YEARS AGO

It was on December 14, 1911, that five Norwegians, Roald Amundsen, Helmer Hanssen, Oscar Wisting, Sverre Hassel and Olav Bjaaland became the first men to stand at the South Pole. Considerable interest is being taken in various reported plans to commemorate the fiftieth anniversary of this historic event.

On December 14, 1961, Norway will issue two special Amundsen stamps, and plans are being considered for sending a Norwegian Air Force plane to the South Pole some time during the late autumn.

Approximately a month later Scott, Wilson, Bowers, Oates and P.O. Evans also stood at the Pole. New Zealanders working near the Beardmore Glacier, over which these men passed on their journey to and from the Pole, are expected to commemorate the occasion by some special ceremony. It is to be hoped that the various plans can be co-ordinated so that Norwegians, Americans and men of the British Commonwealth can combine in doing honour to these two great teams of explorers.

MAYBE

A hovercraft may be used by Australian Antarctic explorers within the next two or three years. This is the opinion of Mr. P. G. Law, Director of the Antarctic Division, Australian Department of External Affairs. "It would be the answer to a lot of our transport problems", he is reported as saying. A hovercraft flies only a few inches or feet from the surface of the land or sea on a cushion of air blasted downwards by either a jet engine or propellers.

THE READER WRITES

Sidelights of Antarctic Research

(Letters of approximately 500-600 words are invited from readers who have observed some little-known facet of Antarctic life or who have reached conclusions on some Antarctic problem of interest to the informed layman.—Ed.)

AMUNDSEN JUBILEE

Sir,—The 50th anniversary of Roald Amundsen's expedition to the South Pole, which occurs next December, should not be ignored by those interested in Antarctica.

Thus, it would be a fitting idea if some commemoration could be arranged for the 14th of that month, which was the day that the Norwegian and his party actually reached the Pole. It would be particularly fitting if Amundsen's journey could be remembered at the South Pole station itself—the one which now partially bears his name; perhaps a plaque recalling Amundsen's achievement could be unveiled there. It would also be a good idea if all other Antarctic bases could co-operate in some way in remembering the historic first expedition to reach the Pole.

On a more ambitious scale, it might be possible to make a direct broadcast from Antarctica to outside radio networks such as the BBC, NBC and the Australian and New Zealand systems, recalling Amundsen's achievement and comparing life at the Pole today, and the means of travel and facilities available, with those that he endured.

It might be that something is already arranged for the 50th anniversary of the Norwegian expedition, but this writer has not heard of any plans. Likewise, it could be equally fitting to recall Scott's tragic expedition in 1962—either in January on the 50th anniversary of the first British expedition to reach the Pole, or on the date of his death on the Barrier. However, in this letter, I prefer to limit my suggestion to the Amundsen anniversary, for the first man to stand

at the South Pole marked one of the last great achievements in the exploration of this earth.

The Norwegian Government might well be interested in co-operating with any plan to remember Amundsen in the Antarctic this year. If funds are needed to erect a plaque I am sure many of us would be willing to subscribe the necessary money. Exhibitions of a combined historic and modern nature might also be possible to commemorate the event in city stores, museums or universities. Members of Operation Deep Freeze might be able to supply some elaborate way of remembering Roald Amundsen, his men and his faithful dogs—and Fram.

DAVID BURKE,

*C/o Sydney Morning Herald,
Sydney, Australia.*

DOUBLE DATE

Just over a year ago, Squadron Leader Jim Saundercock, back from the Antarctic, was taken by ambulance to a Victoria hospital, suffering from poliomyelitis.

On May 4 in the morning he received the O.B.E. at Government House for his work as leader of the 1958-59 Antarctic Flight. In the afternoon he was married.

Dr. Olav Tiestol, A Norwegian glaciologist, spent eight weeks in the Antarctic this summer as the guest of the American authorities. On November 29 he arrived at the South Pole aboard a United States Navy Hercules aircraft, and spent a few days working with American scientists at the Pole Station. He is the first Norwegian to reach the Pole since Amundsen's party, the first to do so, on December 14, 1911.

BOOKSHELF

NO LATITUDE FOR ERROR, by Sir Edmund Hillary: London, Hodder and Stoughton; 255 pages, ill., N.Z. price 25/-.

Hillary's own account of the Commonwealth Trans-Antarctic Expedition makes no pretence of being a history of the expedition. It is a purely personal story, and judged as a personal story it is an excellently told one. Unassumingly, informally but effectively written, it grips and holds the attention. The straightforward narrative of the crossing of the crevassed areas north of Depot 700, for instance, keeps the reader tense throughout.

It is a very human story this, a story of plain men carrying through a difficult and often dangerous task, more difficult and dangerous than most of us have realised. Hillary is at times critical of others, particularly of those who were directing the whole project from their office desks back in civilisation. But it is clean, honest criticism, not in the least bitter or petulant; and the author criticises himself at least as much as he does anybody else. This self-criticism is a frequently recurring note: "I had . . . misinterpreted the message", "It was all my fault . . . my laziness", "for my mistakes I have only myself to blame". He gives clear and, one feels, honest reasons for various controversial decisions: he also gives the arguments advanced against them.

Hillary certainly has his faults — impatience of delay, impatience of restraint, over optimism among them. But he is refreshingly honest about them all. There is honest elation at his successes, honest acknowledgment of his failures, honest admission of his dislike of crevasses. . . .

The dash for the Pole? To do it, he turned a Nelsonian blind eye to

some instructions, and relegated one or two really more important tasks to a secondary place. But the simple fact remains: he was given a job to do: he did it; and then "We felt it was better to push on rather than sit around doing nothing." Being Hillary — and Ellis and Mulgrew and Wright and Bates — they pushed on and won their deserved reward.—L.B.Q.

SCIENCE IN ANTARCTICA. A Report by the (U.S.) Committee on Polar Research: Part I, *The Life Sciences*, 162 pages; Part II, *The Physical Sciences*, 131 pages. National Academy of Sciences — National Research Council, Washington. (Obtainable a "a nominal charge".)

In these two volumes the United States Committee on Polar Research, under the chairmanship of Dr. Laurence M. Gould, provides a preliminary assessment of the scope and results of the work carried out in the various sciences studied in the Antarctic during the I.G.Y. and immediate post-I.G.Y. years. Consideration is also given to the avenues of research in each discipline which are considered to be most necessary and promising for work during the next few years.

The authors, all specialists, have followed a fairly uniform pattern: (1) an historical outline of what has been done to date with greater or less comment on the significance of the findings and full check-lists where appropriate; (2) suggestions for future work; and (3) references. The field covered is so extensive that authors have necessarily assumed considerable prior knowledge of the subject. The style, too, in the main, is that of the scientific "paper", and there are no illustrations to sugar the pill. So these volumes are more likely to be consulted selectively by workers in the various fields than to be read with interest by the

intelligent layman. Surprisingly, the volume on the Physical Sciences is more "readable" than that on the Life Sciences despite the more intractable material.

Difficult, however, as the task has been, it is one which needed doing, and it has been done well. We now have an indispensable reference work within a reasonable compass for all who want a concise summing-up of the present state of knowledge in any particular field of Antarctic research.

INTRODUCTION TO ANTARCTICA.

United States Antarctic Projects Officer, Washington. 46 pages, ill. (Limited number of copies available on application to Information Officer, Antarctic Division, D.S.I.R., Wellington.)

This attractive booklet has been prepared by the United States Antarctic Projects Officer especially for high-school pupils. It admirably serves its purpose. Simply but not childishly written, well illustrated and "mapped", it covers concisely but quite adequately for the purpose the general nature, history, wild-life and weather of the Antarctic, and provides interesting chapters on such topics as "Why men go to the Antarctic", living conditions, and the future of the Antarctic. An ideal compendium for the intelligent youngster who wants to become more knowledgeable about the seventh continent.

NATURE IN THE ANTARCTIC.

A less ambitious 11-page publication which describes simply and clearly the principal birds and animals found in Antarctica. A very useful handbook for the uninformed but not unintelligent visitor.

"ECOLOGIE DU MANCHOT ADELIE": J. Sapin-Jaloustre. Paris, Hermann, 208 pages, ill. Published by Expeditions Polaires Francaises.

Here is a detailed, authoritative and well documented account of the life history of the Adelie penguin,

written by the biologist of the French Adelie Land expeditions in 1948-49 and 1949-51. This is by no means just another "interesting book about penguins." M. Sapin-Jaloustre has made an intimate study of the Adelie and of what has previously been written about him. He describes clearly and fully what he has observed and the conclusions to which he has come (for example, concerning the significance of the various displays and postures so characteristic of the species). The 32 photographs are not merely attractive (they are), but admirably illustrative of the text.

PUBLISHED IN NEW ZEALAND

A SKETCH HISTORY OF ICHTHYOLOGICAL INVESTIGATIONS OF THE ROSS SEA. R. G. Miller. In N.Z. Sc. Review., Vol. 19, No. 1, 1961.

NEW ZEALAND OCEANOGRAPHIC INSTITUTE INVESTIGATIONS IN THE SOUTHERN OCEAN. R. W. Burling. In N.Z. Sc. Review, 18:2, 1960.

A NOTE ON FISHES FROM THE ROSS SEA, ANTARCTICA. J. Resek. In N.Z. Jnl. Sc., 4:1, March 1961.

CAPE HALLETT BIRD BANDING AND NEST MARKING REPORT, Jan. 1959-Jan. 1960. Brian E. Reid. Antarctic Division, D.S.I.R.

MAP

Part of Victoria Land. Provisional ed. Wellington, Dept. of Lands and Survey. 1:250,000, 2 sheets. (N.Z.M.S.17). 6/- per set.

ANTARCTIC CALENDAR 1962

Following the success of the 1961 Calendar, the New Zealand Antarctic Society proposes to issue a "bigger and better" Antarctic Calendar for next year.

Publication is planned for October, and full details will be given in our September issue.

GOOD COAL IN THE ANTARCTIC

Beds of good-quality coal, and logs of petrified wood, have been discovered in the Antarctic near the head of the Mackay glacier, about 100 miles from the American base in McMurdo Sound.

The discoveries were made by Mr. John Mulligan, of the United States Department of the Interior's Bureau of Mines, who is in the Antarctic to investigate methods of mineral exploration, and to evaluate the mineral potential of the continent.

The discovery of coal and petrified wood in the Antarctic is not new, but the significance of Mr. Mulligan's find is that it seems to indicate that the quality of the coal to be found there is better than generally believed.

Ten coal beds were found, ranging in thickness from a few inches to 8ft., and separated by layers of shale and sandstone from 20ft. to 40ft. thick. The coal in the thicker beds appeared to be "good, clean anthracite or semi-anthracite," Mr. Mulligan said.

The coal was found in the Beacon Sandstone sediments on one of two unnamed mountains forming the rim of the polar plateau south of the head of the Mackay glacier. The best exposures were on a cliff on the east face of the mountain at about 6800ft.

PETRIFIED WOOD

Fragments of coal-like material were also found in a conglomerate about 900ft. above the highest coal beds. In addition, a sandstone with abundant fragments and logs of sili-cified, petrified wood outcrops was seen, about 1200ft. above the coal beds. The largest single specimen was a log 17ft. long and 15in. in diameter.

Mr. Mulligan brought back to the Ross Island base about 30 samples. Besides coal, they included pieces of petrified wood, many plant fossils,

and several associated rocks, notably sandstones and shales.

The petrified wood had been sili-cified, that is, turned to a hard, opalescent silica that retained the graininess of wood. It was not petrified by being carbonised.

Most coal finds in the Antarctic have been reported of a low quality, such as lignite and sub-bituminous coal. The exact grade and rank of coal found by Mr. Mulligan can be determined only after samples have been taken back to the United States and analysed. He feels sure, however, that the coal is of a high rank.

Coal grades are complex values, having to do with their ash content and fitness for specific uses. Coal rank, on the other hand, pertains to the amount of carbon found in the particular coal.

Coal attains a higher rank as it becomes more metamorphosed by age and compression. Thus, peat, lignite, and bituminous coal are lower-rank coals than anthracite.

AUSTRALIA TO ICE CAP — IN MAY

On May 2 an American pilot looked over the Antarctic ice cap from a U2 jet plane which had flown from East Sale R.A.A.F. base in Victoria earlier in the day. The flight was the first in the new series by United States Air Force planes to the south of Australia to test air at high altitudes for radio-activity.

The pilot, Lieut.-Colonel Hayden C. Curry, commanding officer of the American unit at East Sale, weary after eight hours, 15 minutes in the cramped cockpit, said that the flight was "real fine". He flew 4000 miles on his round trip, mostly at 70,000ft. He reached pack ice and could see the ice cap of the Antarctic continent.

Lieut.-Colonel Curry said his air-sampling equipment worked successfully, and he believed he had gained valuable information for the C.S.I.R.O. on meteorite dust which, its scientists believe, causes rain.

ANTARCTIC SOCIETY NEWS

Our many readers beyond the shores of New Zealand may be interested to hear something of the activities of the New Zealand Antarctic Society, which publishes this journal.

The Annual Report of the New Zealand Antarctic Society, presented to the Annual Meeting of Council on May 4 last, revealed the present strong position of the organisation. Membership had increased during the year by 58 to a new record total of 366 members. In consequence of this increase and additional overseas subscribers the circulation of "Antarctic" has increased by 84 to a new total of 686.

The Society participated in the Huts Restoration Programme by selecting and supporting three of its members as officially unpaid volunteers. The scrolls which were framed and attached in each of the huts were prepared at the instigation of the Society.

The project of the production and sale of "Antarctic" calendars was a most successful one, so much so that the number for 1962 might well be increased from 500 to 1,000 and will in future be available in time for overseas posting of Christmas mails.

The report contained a short account of the successful rally of 120 members of the Society in Wellington in October 1960. The weekend rally contained a symposium of educational talks, a social function, a special general meeting, a film showing and a church parade.

FROM THE REPORT

"With good reason it might be said that the function of the New Zealand Antarctic Society has expanded during the past few years as a result of New Zealand's active participation in Antarctic research in its widest sense. Prior to the recent upsurge of activity in the Southern Regions involving many nations, one of the foremost aims of the Society, in addition to

fostering interest and the publication of information, was to press for New Zealand's participation in Antarctic activity. That milestone has now been passed and the continued activity is creating a large annual harvest of men with Polar experience and many more who, as a result of brief visits, are fired with enthusiasm for and interest in Antarctic affairs. The Society, it is felt, has made and should be making efforts to meet this situation. The increased membership of some branches is attributable to steps taken to make the Antarctic Society the one body representative of those with Antarctic interests."

ANTARCTIC WEEK

Plans for an Antarctic Week in Christchurch from September 18 to September 24 were discussed at the annual meeting of the Christchurch branch of the Society.

The programme will probably start with an "Antarctic Weekend", similar to the successful weekend held in Wellington last year. The council located in Wellington is in full accord with the proposal and is willing to arrange for speakers to attend.

The rest of the week will feature window displays, films, talks to local organisations, and an Operation Deep Freeze open day at Harewood.

IMPORTANT BOOK COMING

The Council of the New Zealand Antarctic Society has considered the desirability of publishing a new book as an up-to-the-minute successor to "The Antarctic Today", published by the Society in 1952. This matter was raised at the recent annual meeting of the Society by the President, Mr. J. H. Miller, who pointed out that

because so much progress had been made in many sciences during the past six years, and so many entirely new fields of study and areas of new ground trodden in the period, a leveling off or consolidating period was approaching; so the time was ripe for a new literary work on Antarctica.

There was unanimous accord in favour of the project. A subcommittee was set up to consider the matter, consisting of Drs. T. Hatherton (convener) and R. A. Falla, Messrs. L. H. Pollock and A. S. Helm. The target publication date is August 1962.

FISH STORY

On November 14, David Darby, a member of a U.S. 4-man glaciological party from the University of Michigan under Dr. W. M. Swithinbank, came across the partially decomposed remains of several fish near the Dailley Islands in McMurdo Sound.

The fish were of the genera nototheniidae (the commonest Antarctic fish group) and the largest was 65 inches in length. Some detached heads appeared to have come from still larger fish. There were also deep-water invertebrates, including gastropods, brachiopods and siliceous sponges in or near the ice surface.

Bone samples of the fish, Carbon-14 dated in New Zealand, were found to be about 1100 years old. This provides strong evidence in favour of Prof. Frank Debenham's hypothesis that the marine deposits occasionally discovered on the ice by earlier expeditions had become entangled in the bottom ice and had ultimately reached the surface because of "the decrease by thaw from above and increase by freezing from below."

(Prof. Debenham discusses his hypothesis in his recently-published "Antarctica" pp. 212 ff.)

DIVERS UNDER ICE

Two American professional divers, J. Thorne and D. H. Johnson, swam for 28 minutes below eight feet of bay ice in McMurdo Sound early in January. The purpose was to photograph the results of an ice-melting device being tested.

So chilled were the divers, who wore two sets of waffle-weave underwear and several pairs of socks under rubber and fabric diving suits, that when they emerged their arms had to be supported while they drank hot coffee.

Though killer whales were known to be in the area it was thought they would not swim any great distance under the ice. But Mr. Thorn photographed one swimming in the ice-free area created by the melting equipment. "There was no more diving after I took that photograph," he said.

The divers could see no plankton on the underside of the ice.

NO WARSHIPS HERE!

On November 25, Britain, Argentina and Chile once again renewed the pact, first agreed upon in 1949, to restrict movements of their warships in the Antarctic. The three Governments pledge themselves not to send warships south of 60° apart from movements customary for a number of years.

UNUSUAL CONDITIONS

A radio black-out of unusual length completely disrupted communications between Scott Base and New Zealand from November 12 to November 24. It necessitated the grounding of aircraft in the whole McMurdo area. There was no contact between Scott Base and the northern field party for a week.

The New Zealand Antarctic Society

is a group of New Zealanders, some of whom have seen Antarctica for themselves, but all vitally interested in some phase of Antarctic exploration, development or research.

You are invited to become a member.

BRANCH SECRETARIES

Wellington: Miss H. R. Burr, Box 2100, Wellington.

Christchurch:

Dunedin: J. H. McGhie, Box 34, Dunedin.

" THE ANTARCTIC TODAY "

This volume is out of print, but a limited number of the following **separate sections** is available, the stapling slightly rusted:

Ionosphere Research (J. W. Beagley).

Meteorology (A. R. Martin).

Marine Biology (R. K. Dell).

Aurora Australis (I. L. Thomsen).

The Nations in the Antarctic (recent Australian, South African, French, etc., exploration by leading experts in the countries concerned).

These separates are available at a cost of four shillings each from the Secretary, N.Z. Antarctic Society.

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Of our predecessor, the "ANTARCTIC NEWS BULLETIN", only the following numbers are available:

5-6, 8-10, 12-20.

Price: 4/- per issue.

