

# ANTARCTIC

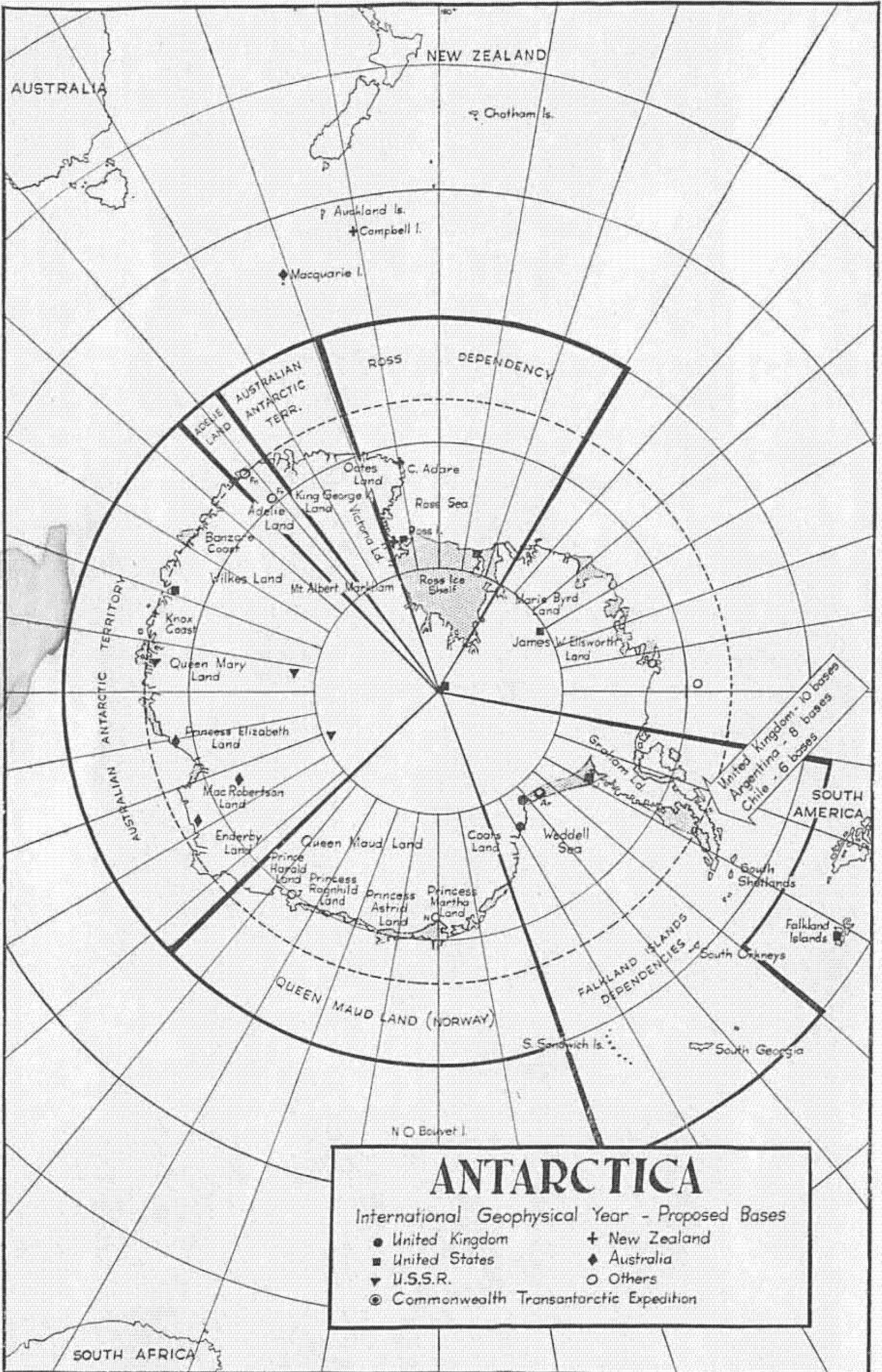
A NEWS BULLETIN

published quarterly by the

NEW ZEALAND ANTARCTIC SOCIETY



Mt. Harmsworth Climbed.



# ANTARCTICA

International Geophysical Year - Proposed Bases

- United Kingdom
- United States
- ▼ U.S.S.R.
- ⊙ Commonwealth Transantarctic Expedition
- + New Zealand
- ◆ Australia
- Others

# "ANTARCTIC"

(Successor to "Antarctic News Bulletin")

VOL. I. No. 6.

JUNE 1957

Editor:

L. B. Quartermain, M.A., 1 Ariki Road, Wellington, E.2, New Zealand.

Business Communications, Subscriptions, etc., to:

Secretary, New Zealand Antarctic Society, P.O. Box 2110, Wellington, N.Z.

Annual Subscription, 15/- - Single Copy 4/-

## Mt. Harmsworth Climb Highlight Of Scott Base Work

Possibly the outstanding feature of all the work done so far by the New Zealand expedition is the climb of Mt. Harmsworth by Bernie Gunn, Guy Warren and Arnold Heine, who formed the southern geological party. Their feat represents the first time that a major peak on the Antarctic continent has been climbed.

At the beginning of February the three were flown in from Scott Base to the foot of the Skelton Glacier (78°50 mins. S. 161°45 mins. E.) to make the first geological survey of this area. Using manhauling sledges, they made some notable geological discoveries, and in the course of climbing a snow ridge some 3,000 feet high they saw what appeared to be a practicable route to the summit of Mt. Harmsworth, the highest peak in the Worcester Range.

They decided to attempt the climb and so two days later on Sunday, February 10, they set off at 12.30 p.m., carrying only light packs. They took with them crampons, a primus, a little food, spare clothing, pitons, a geological hammer high altitude boots and ice axes. They expected to be away little more than a few hours.

The initial climbing was mainly over loose rock, and after some 2,700 ft. was reached they roped up

and started to climb again, having by this time decided on a different route from the one seen. They stopped for food at 6.30 p.m. and

### Cover Picture

#### MT. HARMSWORTH CLIMBED

On February 10, Bernie Gunn, Arnold Heine and Guy Warren, all New Zealanders, made the first ascent of Mt. Harmsworth in the Worcester Range, west of the Ross Ice Shelf.

This photograph by Heine shows Gunn (on left with pack) and Warren on the summit. The view is looking west to unnamed peaks between the Mulock Glacier and the Skelton Glacier. Depot 270, established by the New Zealand expedition, lies well to the right. The route to be followed south by Hillary's party lies beyond these mountains. Below is the Skelton Glacier.

(Trans - Antarctic Expedition —  
World Copyright Reserved.)

then continued, alternating with crampons and without, as they crossed rock and ice and snow faces. Much of the time was spent in cutting steps, and as they came to the final summit ridge heavy fog came in from the polar plateau, blown by a strong wind. Although it was midnight there was full light and they were able to carefully watch each others' faces for frost-bite.

It was not until 3.15 a.m. that they saw ahead the final ridge, which appeared to be several miles away, and they spent the next hour travelling over frozen snow along a broad ridge 9,000 ft. above the glacier.

They reached the summit at 4.40 a.m. on the Monday, where their aneroid barometer indicated a height of about 9,500 ft. above their camp. There, in a clear brilliant morning sun they enjoyed the most spectacular view, and after taking several panoramic photos, began the descent.

It was already 18 hours since they had started and they were becoming a little tired. At 7.45 they stopped for food and a short rest, and then continued the long climb down. Not until 26 hours had elapsed from the time they had left it did they reach their camp again on the Skelton Glacier, having achieved with comparative ease a climb that will add much to the notable events in the long South Polar saga.

#### WHITE ISLAND TRIP

On April 4th Lieut. Cmdr. Richard Brook, the dog expert and surveyor, and Bernie Gunn set out from Scott Base for White Island on a geological trip. The dogs behaved splendidly, doing 22 miles in one day, and in the six days they were away, they covered 70 miles. The average temperature during this period was about 30° below zero and their tent iced up consi-

derably during the night, but they said that at no time were they uncomfortably cold. A number of ice pits were dug at intervals across the ice shelf, and these will be used for geological studies next spring.

#### INCREASED WORK

The new Zealand party's part in the British Trans-Antarctic Expedition has been increased with the news that Dr. Fuchs has asked Sir Edmund Hillary to lay depots farther south than was originally intended. This will mean added work for the New Zealand party, but it will be done in the knowledge that the added contribution they are making will be vital to the success of the British party. The added supplies for the new depots will be carried by Beaver aircraft, by tractors and by dog teams and sledges.

It had been found by the British party that the anticipated rate of progress could not be maintained in the face of some of the difficult country which the expedition had to cross, and the request was therefore made to the Ross Sea Committee and passed on to Sir Edmund by the Hon. C. M. Bowden.

#### TWO BLIZZARDS

Full blizzard conditions have been experienced so far on two occasions at Scott Base. In one, the wind-driven snow beat against the base in gusts up to 56 miles an hour, but the other one did not restrict outside activities to any great extent. Both of these blizzards lasted about 12 hours. They are merely a foretaste of what the base can expect throughout the long Polar night, which began officially on April 14 when the last rim of the sun peeped over Mt. Erebus for a few moments in a watery fashion. There are of course a number of days in which there is still light or twilight.

Arrangements have been completed for the base to be completely

self-contained for the winter period, and no one need go more than 200 yards from the main block of buildings, although there will be winter visits to the tide gauges, fish traps and current meters installed in ice holes.

#### EXPERT OPINION

The decision made some time ago to locate Scott Base at Pram Point has earned the commendation of Sir Douglas Mawson, to whom the area is, of course, extremely familiar, and he said in a recent letter to the Ross Sea Committee that he had no doubt that Sir Edmund's party will be enabled, from their new site, to carry out their part of the Trans-Continental programme "in fine style".

#### PLANE "COCOONED"

The Beaver aircraft, which has done such yeoman service throughout the summer, has been dismantled and its main parts crated, while the fuselage has been "cocooned". Since mid-January it has flown nearly 150 hours, and been responsible for much valuable photographic, reconnaissance and transport work. The Auster will be kept operational during the winter. It will be flown when possible during moonlight periods, and it is hoped to obtain much data on the difficulties of aircraft maintenance and winter flying.

#### LITTLE SNOW

The surprisingly little snow that has fallen on the base has been the subject of comment by Sir Edmund. Up till the end of April he had reported to the Ross Sea Committee that apart from a few light falls there had been practically no snow, although the weather had been consistently cold. The opportunity was taken after the completion of the preparations for winter to repaint the mess hut at the base and this will be done in bright colours ready for winter.

#### CAPE EVANS VISITORS

Captain Scott's winter quarters at Cape Evans have been visited by three separate parties, altogether 12 of the expedition making the trip. Cape Evans is only about 15 miles north of the Scott Base at Pram Point.

It was at Cape Evans that Captain Scott in 1911 erected the winter quarters of his Terra Nova expedition. From these quarters also the polar party and supports set out on the last ill-fated journey.

Peter Mulgrew and Murray Ellis manhauled a light sledge to the Cape, and were away for a little more than two days, and the pilots John Claydon and Bill Cranfield, who wished to simulate the conditions of a march from a forced-down aircraft, manhauled to Cape Evans and back, equipped with only the gear they would have had had they crashed. They struck poor visibility and drifting snow, but managed Cape Evans and back in the week.

The main party of four dog teams, driven by George Marsh, Harry Ayres, Roy Carlyon and Bob Miller, with Sir Edmund, Guy Warren, Murray Douglas and Bernie Gunn as fellow-travellers spent their first two days battling against strong winds in blinding drift. They were forced to camp on the northern side of Glacier Tongue, where they met the two airmen.

They, and the others who visited the camp did much to clean up the surroundings, and portion of the hut, and returned to base within the week, coming back along the edge of the Ross Barrier, always an inspiring trip.

#### JAPANESE PLANS

Japan is sending seven whaling expeditions to the Antarctic during the 1957-58 season. This is two more than in the past season.

## WINTER ENFOLDS BASE AT MAWSON

With the coming of April to Mawson base heavy snow drifts among the huts, and the harbour is sheathed in sea ice. Three Emperor penguins stand huddled outside the aircraft hangar.

The feathered colony has dwindled to a few moulting scraggy Adelie youngsters, the occasional Emperors that come ashore from the open water beyond the harbour, and a very small flock of skuas. Dr. Willing has been trapping and banding the skuas as part of a long-range programme to learn more about their migration habits. He also visited Flatoy and Welch Islands, near Mawson, to inspect their penguin rookeries.

It was on this trip, while we were leaving harbour in the dinghy, that a whale entered. Fortunately he took less notice of us than we did of him, although we might have felt more at ease if the outboard engine had not stopped every half mile.

In spite of a general deterioration in the weather and falling temperatures, a great deal was accomplished here in March.

### PLANE HOIST RIGGED

Peter Clemence and his R.A.A.F. team rigged their aircraft hoist alongside the hangar, and now the Beaver can be fitted with floats or skis as required. Neville Collins, working a caterpillar tractor in shallow water off-shore from the hangar, cleared the area of boulders. The tractors have also been used to clear a road to the ice plateau, giving safer access for heavy vehicles than the old route across a frozen lake.

David Johns brought his neutron monitor into operation in record time, an achievement which at least doubles the value of our cosmic ray programme.

Jim Goodspeed has his elaborate gear for measuring ice thickness in working order, and now awaits our

first sortie inland with the tractors. Malcolm Mellor and Pat Lee took one of the weasels 35 miles inland along the southern route, but after breaking through several crevasses south of Mt. Henderson they explored alternative routes, and claim to have established a safe course somewhere eastwards of the old route.

### UNCERTAIN BEGINNING

Bernie Shaw's new aerial mast, 90 feet high, was erected after an uncertain beginning. The mast is part of a new aerial system which has already given Mawson better communication with Australia and other Antarctic bases. One of the most interesting and important aspects of our work this year is communication with other bases. Mawson Station is on the air 15 hours a day in 30 radio schedules. Sandy Sandilands, Roy Arnel and Peter King, operators, between them send or receive 70,000 words a month.

The bulk of the traffic is to and from Australia via Perth Radio, but we have regular schedules with the French in Adelie Land and Kerguelen and Amsterdam Islands, with South Africa and Marion Island, the Japanese on the Prince Harold Coast, the Norwegian base, the Russian base Mirny, and their ships the "Lena" and "Ob", and, of course with our own subsidiary station of Davis, 350 miles eastwards.

In the absence of the editor, this edition was produced by a colleague and the treatment of the material supplied is of circumstance lacking detailed presentation.

## TWO AUSTRALIAN BASES LINKED BY AIR

The R.A.A.F. Antarctic Flight with the Australian National Antarctic Research Expedition has just completed the first flight from Mawson Station to Davis Station, 400 miles to the east.

On May 1 one of the expedition's Beaver aircraft, piloted by Flight Lieutenant Peter Clemence, took off on skis from the sea-ice outside Mawson. The crew included Roy Arnel, radio operator, and Morris Fisher, surveyor. Fisher and the Davis geologist, Bruce Stinear, will carry out a survey of the coast of Princess Elizabeth Land.

The Beaver completed the flight in four hours, touching down on the sea-ice outside Davis without mishap, and making the return journey to Mawson the following day.

This flight inaugurates an air service which, until the sea-ice breaks up in summer, will link Australia's two southern bases.

A more accurate determination of the position of Davis now shows it to be at 68°34.6'S., 77°58.6'E.

### FRESH WATER SUPPLY

The Davis winter's fresh water supply has been assured by the introduction of a large snow drift between the auroral observatory and the community site. Twenty-four Weddell seals were killed for fresh meat, the brains, liver and choicest steaks being reserved for human consumption, and the remainder piled with 24 slaughtered elephant seals for dog meat. Except for one liver abstainer the Davis residents find the seal meat palatable.

Following the killing of the seals, the local bird population increased considerably with skuas, giant petrels, Wilson's storm petrels and Cape pigeons feeding on and off the shore.

The bird-banding activities have been abandoned in favour of other

priority tasks.

Moulting Adelie penguins are frequent visitors in station area, with one Emperor seen during mid-March. A maximum count of over 400 elephant seals occurred on the 6th during one of Stinear's geological reconnaissances.

### ALL MEMBERS COOK

All members participate in cooking and baking duties one week in five. The meals range from the simple to the indefinable. Lucas was voted most enterprising cook of the month.

A total coverage of fast ice occurred on the 22nd March, the average thickness in the vicinity of the shoreline being five inches, increasing to 11 on the 31st.

The Nimrod Station dinghy has been beached and secured for the winter. Lied began dog training in preparation for the forthcoming field programme. Stinear's geological activities have been limited by snow conditions, but a reconnaissance of the area of Broad Peninsula was made during the first half of the month. The outside work has been just about completed.

In April Stinear and Lied made a three-day journey along the coast to the north-eastern extremity of the Vestfold Hills, successfully completing a coastal reconnaissance and establishing a depot at their destination in preparation for the continuation of geological and survey work in that area.

### VISITS TO LAKES

Hawker and Lucas visited Magnetic Island and the coastal approaches to Ellis Fjord, Stinear and Dingle visited three large salt-water lakes running parallel to and

south of Long Fiord. It was assumed that footprints found between the second and third lake and on the shoreline of both were made by a member of a Russian party which visited the area sometime early in 1956.

From Mawson came news of the base when they were within six weeks of midwinter. Keith Mather says that "in spite of this the tempo of activity at Mawson has quickened, especially for the airmen. The office hut resembles the control tower of an airport rather than a quiet locale in the remote Antarctic.

"Transmitters and receivers for communication with our aircraft are located at one end of the hut where Bernie Shaw sits conducting a three-way conversation with Doug Johnston by radio telephone and Peter Clemence by morse. Doug in the Auster is five minutes out on the return flight from Bretangen, 50 miles west of Mawson after ferrying first Dick Willing and then Sandy Sandilands to the Emperor penguin rookery.

#### AIR OPERATIONS

"Air operations for 1957 commenced with the Auster about mid-April when the sea ice over Horseshoe Harbour was 17 inches thick. By the 25th the De Havilland Beaver was able to enter the field also, and since then the roar of engines overhead has become a familiar sound.

"After ground tests and local flights to familiarize the pilots in handling planes on ice, radio communication was tested on flights further afield. On the last day of April Doug and the Beaver, with Willing and Arnel aboard, were headed for King Edward VIII Gulf, 160 miles west. They completed a four-hour reconnaissance on coastal ice, noted that the Emperors had come ashore to breed at Taylor Rookery and Foldoya, then spent 20 minutes at the Gulf looking for

new rookeries.

#### ASSORTED PASSENGERS

"The following day Pete took off for Davis with an assortment of passengers, Arnel, Wombat the dog and Morris Fisher.

"Keeping track of the earth's magnetic field and its earthquakes is the duty of John Pinn, and along with setting up new apparatus, it keeps him busy about 70 hours a week. He has recorded four earthquakes since their arrival, along with numerous local shocks resulting from falls every few days from the adjacent ice cliffs.

"April was a tough month for our weather men, Frank Hannan and his observers Bernie Izabelle and Graeme Wheeler. To fit in with I.G.Y. activities, their 9 a.m. radio-sonde balloon flights were shifted forward to 5 a.m."

#### ANOTHER BEAVER

Australia is to buy a third Canadian de Havilland Beaver aircraft for use in the Antarctic. This will enable Australia always to have two Beaver aircraft at Mawson, while a third is overhauled each year in Australia.

These sturdy aircraft, which can take off either from wheels, floats or skis, have been a very great help in Australia's Antarctic operations. For example, in 1956, 350,000 square miles of territory and 1200 miles of coastline were photographed from one Beaver aircraft, in 500 flying hours.

#### "GOLD SEEKER" SUNK

The expedition ship "Gold Seeker" which hoped to locate the gold reputed to have been sunk last century in the General Grant at the Auckland Islands ran aground on the south coast of Portuguese Timor, and was lost with all its equipment, though the captain and crew were saved. The captain has stated that he will make another attempt as soon as another boat is available.

## Americans Make Aviation History With Antarctic Air Drop

Aviation history was made in the Antarctic with the air dropping by Globemasters of their 1,000th ton of cargo to forward bases before winter settled down on the white continent.

This last trip brought Air Force participation in Operation Deepfreeze II to an end. The drops had been rushed forward to beat the breaking up of the weather, and more than 100 tons of cargo was dropped by the four Globemasters at the South Pole and Marie Byrd scientific stations in one day.

Each plane made two flights, and included in the final drop at the Pole was 100 lbs. of sterile earth for scientific experiments, a "hi-fi" radio, barbells, recreational supplies and correspondence courses. Altogether only 40 flying days had been used to drop the 1,000 tons, and without this co-operation it is doubtful whether some of the scientific stations could have been built.

The Globemasters left for Donaldson Air Force base in March, having completed, under the world's worst conditions, a magnificent air operation.

Drops at the South Pole involved a 1700-mile round trip flight over uncharted land and mountains up to 18,000 ft. high, and the Pole drop was made at 12,000 ft. To the station at Marie Byrd Land the flights involved particularly difficult navigational problems over unexplored areas of featureless ice and snow. Both the Pole and Marie Byrd stations will be re-supplied by air dropping when Deepfreeze III begins in October this year.

A total of more than half a million miles was flown by U.S.A.F. planes, and this included 34 round trip flights from Christchurch to McMurdo Sound.

### FIRE STRIKES BASE

One of the most feared enemies

in the Antarctic—fire—struck at the United States base at McMurdo Sound on April 28. Although the fire was restricted to the garage and toolshop of the Williams Air Operating Facility, a D-8 tractor and a considerable quantity of valuable tools was destroyed. This means that vehicle maintenance will be handicapped somewhat, but Admiral Dufek said in Washington: "The fire and its losses will not affect the accomplishment of our mission for the I.G.Y. in any way."

Sir Edmund Hillary immediately offered any assistance possible from the New Zealand party's resources and manpower. The fire took four and a half hours to bring under control.

### POLAR NEWSPAPERS

Newspapers of a sort have always blossomed in the expeditions which have explored the Polar continent, and there are at present two very lively ones, at McMurdo Sound and "Penguin Post" is the Little America publication—a weekly. Its columns contain a varied round-up, and it usually consists of eight pages, with their contents edited by U.S. Navy personnel and I.G.Y. scientists.

### STATION BUILDING

Building has been continued at all bases whenever weather permitted, and when conditions were adverse the base hut interiors have been improved. Little America now boasts a gymnasium, a temporary garage has been erected to replace the one burned down at McMurdo, and at the South Pole they have built—apparently inappropriately—a glaciology cold laboratory. At Wilkes Station one

of the weasels has been modified for use as a fire engine, and it is equipped with large ladders and fire fighting gear—although a siren does not appear to have been installed. Also a large wooden shelter has been erected for photo and general storage.

### FRIENDLY HAMS

"Hams" are playing a big part in keeping open communications with all the Antarctic stations, and not the least with the American. Some "hams" are acting as "foreign correspondents" for the Penguin Post, and many of them in the States pass on family messages, or when convenient, bring the family to the microphone, giving the polar men a very real link with home. At Little America an experienced ex-Marine Corps ham Carl O. Wyman, an I.G.Y. ionospheric physicist, has started classes for beginners desiring to become amateur radio operators, and he will carry them through for their operator's licenses. Ham operators have been of immense assistance in raising morale at all stations, and KC4USK, or Wilkes Station, is one of the busiest of the Polar ham bases. Carl Eklund, the station scientific leader, holds the distance record for transmission, as his wife lives in Santiago, Chile. He spoke to her through a station in Memphis, which phone-patched with another more powerful station in Memphis, and then to another station in Santiago, approximately 15,000 miles.

### DOMESTIC NEWS

Much of the news from all the Antarctic bases, apart from the purely scientific reports, is of a domestic nature, and the U.S. base at McMurdo Sound is no exception. There, the principal topic of conversation is the excellence of the food which is being served. The cooks specialise in "feature" dishes, and on one occasion a magnificent Italian dinner was served to a

background of appropriate Italian music. The only complaint coming from the station is that all the men are putting on weight in an alarming fashion.

Ellsworth station reports that most of its activity is directed at present to care and maintenance of the Navy's three De Havilland Otter airplanes and the helicopter. These planes are designed for I.G.Y. programme support, but during the winter it is not intended that any flying will be carried out. Routine maintenance is continued, and at least once a week a fatigue party clears drifted snow and formed ice off the planes. As soon as practicable in the spring the planes will be brought into operational readiness, and they will be used to supply caches for the I.G.Y. traverse party which it is intended will start out in September.

### STORM BATTERS BASE

The almost continually present companion in the Antarctic—wind—battered Little America on May 15, when gusts up to 75 miles per hour lashed the buildings for six days. Wind driven snow filled every open area, engulfed everything unsheltered, and created mammoth drifts which threatened many of the structures with collapse. An unseasonably high temperature kept the snow moist, so that it packed more densely and many of the buildings had to be shored up.

So heavy was the drift that although heaters were turned on full in the huts so that the stacks would be sufficiently hot to melt the accumulating snow, one chimney actually became filled. The Little America snow-melter fatigue were able to relax for once as the wind filled the melter's hopper for them. The normal emphasis on water conservation was not necessary and everyone was urged to use as much water as possible. Finally the water had to be pumped out to prevent flooding. Men

venturing outside for essential tasks could only do so by paying out a lifeline attached round their waists and to the building.

### NEW TRANSPORT

When not talking to ham operators all over the world, the men at Wilkes Station have been busy with the task of shuttling men and equipment to the second glaciological satellite camp on top of the Wilkes ice cap. D-4 bulldozers were tested to see whether they could negotiate the steep, slippery ice of a ramp leading from the rocky terminal moraine area at the base of the ice cap.

The light weasels had been doing the carrying previously, but when two broke down a D-4 was sent to rescue them and the sledges they were towing. It came back, with sundry uncomfortable adventures in its descent of the ice slide, towing the entire train, and proved that with little modification that D-4's could do the job. Their first trip up after fitting cleats to the tracks was made, after many delays, on the 9th April, and although at one time the dozer began slipping when halfway up an ice slope, the difficulties were finally overcome, and under incredibly adverse conditions the men had proved that the D-4 dozer could go practically anywhere and make the job of re-supplying the ice cap depots much easier.

### "ENJOYING" WINTER

The 39 Navy personnel and scientists wintering at Ellsworth Station are now, except for a few hours of unnatural twilight every day, "enjoying" their taste of winter, where temperatures are running to  $-55^{\circ}$  and winds are normal at 50 miles per hour. The base buildings are completely buried under snow, but the interiors are almost luxurious, and except for scientific reasons, there is little need for the men to venture outside. All of them have some handicraft project, and

there is ample room, and the facilities, for recreation, including a "change-every-night" film programme.

There is a complete weather programme on the way, with round-the-clock upper-air soundings, aurora and air glow observations, and glaciology, seismology and geomagnetism, so that the personnel feel that they will be too busy to worry about the unnatural conditions.

## ENDEAVOUR TO TRAIN NAVY IN SOUTH

The Antarctic ship "Endeavour" would become a training ship for the R.N.Z. Navy when it was no longer required in the Ross Sea area, the Chief of the Naval Staff (Rear-Admiral J. E. H. McBeath) has announced.

The "Endeavour" would operate from Auckland, and would visit New Zealand ports on training cruises. Captain H. Kirkwood, the present commanding officer, would retain command.

Admiral McBeath said the Navy aimed to train its officers in ice work. Two Antarctic cruises would probably be made next season, one a resupply trip to Scott Base early in the summer, and the other to pick up the trans-Antarctic expedition.

"No doubt about it," was Admiral McBeath's comment, when asked whether he thought the "Endeavour" was a suitable ship for the Antarctic, especially if the Dominion's commitment in the Ross Dependency continued after the end of the I.G.Y. programme. "Rear-Admiral Dufek, commander of the American Naval task force, has had much experience in ice, and he told me the "Endeavour" is an ideal ship, and Captain Kirkwood one of the best ice captains he had ever met."

## Fur Seals Return To Macquarie

In a despatch from Macquarie Island, dated April 7, Harry Black reported as follows:—

A record number of rare fur seals were counted at Macquarie Island this year, after their complete absence for many decades following virtual extermination by sealers over a century ago. The census recorded over 300 on North Head Rocks, the highest for 130 years.

A message bearing New Year greetings was discovered by Stefan Csordas in a bottle dropped overboard by a Japanese whaler on January 6 this year at latitude 50°19'S., longitude 132°07'E. It had drifted nearly 2,000 miles in five weeks.

Neil Brice and John Steuart are burning the midnight oil overhauling the ionosonde, which sends pulses into the upper atmosphere and records the returns signals, the information being of use in long-range radio prediction.

Hurd Point Station was manned in March by the auroral physicist, John Denholm, and Colin McKenzie, Alan Flett, Stefan Csordas and Bill Kellas. Stefan was about to step on a large rock in the dark on the way to the station when his rock reared up and slid away, being a four-ton sea elephant.

### UNUSUAL VISITORS

Some Sclater penguins were captured, being unusual visitors from the islands off New Zealand. The baby albatrosses, Clarry and Alf, are now fully fledged, with six foot wingspans, and they are still weighed weekly by Mike Hines and Harry Black, who are proud of their god-children.

The weather has been very windy, reaching 81 m.p.h., the first autumn snow-storm covered the whole island in white. The daylight hours are dwindling.

Everyone enthusiastically participated in the Macquarie billiards tournament, in which the winner was

John Cleary, followed by Alan Flett and Bob Hill. The highest break of 31 was made by Bob Hill.

The "met" huts cat, Buttons, has three kittens. The expected names are Sonde, Sowin and Rawin. The "Cosray" cat Mumsy also has three kittens, the likely names being Proton, Meson and Neutron. It is suspected all must agree to become neutrons if they are allowed to survive.

## WINTER PREPARATION AT SHACKLETON

All activity at Shackleton, the base of the British Antarctic Expedition, had ceased for the winter, the leader, Dr. V. E. Fuchs, told the leader of the New Zealand expedition, Sir Edmund Hillary, by wireless.

Dr. Fuchs said that the party had dug holes in the snow to shelter the dogs from the wind. The Otter aircraft had been put away for the winter.

South Ice was reported on March 2 as completed. It was occupied on February 22 by four men. Three men will winter in the little aluminium and plywood hut, which has been built in a five feet deep hole in the snow, and will soon be entirely snow-covered. The party comprises Jon Stephenson, an Australian geologist, Ken Blacklock and Hal Lister.

Dr. Fuchs stated that two members of the expedition were in hospital at Shackleton after wandering in a snowstorm for twelve days. They had lost their way on March 3 about 30 miles north of South Ice. Rescuers had to wait until a blizzard died down before sending out a search plane. Both men had their faces, arms and legs frost-bitten.

## Great Activity At French Base

Some details of the 1956-57 relief of the Adelie Land expedition were given in Hobart on February 20, when "Norsel" arrived there from the Antarctic.

The base now consists of two similar cabins connected by a small bridge. The base has been built on the top of a hill to give a wide view of the surroundings. The cabins contain a common-room with gramophones, library, kitchen, and meteorological and radio room.

In Adelie Land during the last summer there was great activity. The three men who will live all the winter at Charcot Station arrived at this station on January 30th and found an excellent barrack carried and built by Captain Guillard's team. Then weasels and sno-cats came back to d'Urville Station for a major overhaul this winter. A few depots of material and gasoline are made on the Charcot route for the next year.

In six weeks a helicopter Bell 47 G2 flew 167 hours with winds from 0 to 20 m/s, and carried 21 tons between Petrels Island and the coastline without incident.

The M/S Norsel left d'Urville on February 12th at 12 p.m. and the second French Antarctic Expedition of the International Geophysical Year will be alone until the end of this year. After making scale charts (1/20,000 and 1/50,000) around Pointe Geologie Archipelago, the Norsel covered six hydrologic stations between parallels 64S and 61S, measuring ocean currents before landing at Hobart. Via Fremantle, Cape Town and Dakar, the Norsel arrived finally at Le Havre on April 30th.

### D'URVILLE STATION

Immediately after unloading the ship the scientific apparatus was mounted and it was ready on March 15th. Then the observations

began. The first records are reported with the following apparatus: 1 magnetograph Lacour. 3 magnetic variometer (components XYZ). 2 seismograph Galitzine-Wilip (North South and East West). 1 heliograph Pers.

Ionospheric soundings begun with the first expedition, and, with the synoptic observations are continuing. The first meteorological radiosounding was made on March 30th. One radiosounding and one radiowind were made every day. Twice there was a ground wind of 30 m/s.

A few meteoric echoes were obtained with the auroral radar (76 Mc/s) and an interesting spectrographic work was possible during five beautiful nights on the two first weeks on April.

### STATION CHARCOT

After two months the three men have dug 38 meters of passage, and places for magnetic apparatus. Synoptic observations were made but bad weather made actinometric records slow. During March and April communications were difficult between the two stations. The barracks are comfortable, and food is various and plentiful.

### U.S. ESTIMATES

Experts of the U.S. Department of Agriculture estimate that in spite of cuts in Antarctic whaling quotas, world production of whale and sperm whale oils will rise. Although there was a slight increase in the Antarctic production in the season now closed, most of the increased output came in other areas.

In a recent Gallup poll in Australia, nine out of ten men and seven out of ten women had "heard of" the Australian Antarctic weather stations. Asked if they considered them a worthwhile project, 79 per cent. said "Yes", only 12 per cent. said "No" and nine per cent. had no opinion to offer.

## F.I.D.S. FIELD ACTIVITIES

A number of journeys have been undertaken from several of the bases for the purpose of doing survey and geological work.

From Hope Bay parties have visited View Point, and the hut was occupied during November and December. From Base H, parties have been working on Coronation Island on the north coast and on the south coast in the vicinity of Shingle Bay. A naval hydrographic survey party from H.M.S. "Protector" spent five weeks in the area around Port Lockroy and then crossed to Anvers Island, while several members of Base N (Anvers Island) visited Port Lockroy before visiting Copper Peak, and climbing Mount Francais via the Borgen Glacier.

From Base O, geological survey trips were made in November to Ronge Island and the mainland, and a base line measured for the local survey. Wilhelmina Bay was reconnoitred by the "Shackleton" in December, and a refuge hut was constructed at Cape Recluse. (See last bulletin.)

From Base W, a survey party visited Avery Plateau on the mainland. Geological work was continued in Hanusse Bay, but was unfortunately held up for a month, when the geologists were stranded on Roux Island by the unusually early break-up of the sea ice. The party was eventually taken off by helicopter from H.M.S. "Protector" and returned to base on November 10th. From Base Y, parties have surveyed the east coast of Horse-shoe Island and Lagotellerie Island.

**GLACIOLOGY.** — Glaciologists have commenced work on King George Island and South Georgia, in preparation for the work which is to be done during the I.G.Y. The F.I.D.S. sea-ice investigator accompanied the Trans-Antarctic Expedition on board "Magga Dan", and is now continuing his researches at

the Scott Polar Research Institute in Cambridge.

**RADIO-SONDE.** — Daily ascents have been maintained at Base F, and a height of 79,000 feet was reached in November.

**SEAL-COUNT.**—A seal-count has been made in South Georgia for the F.I.D.S. Sealing Officer stationed at King Edward Point. The Sealing Officer has also continued his work on reindeer.

**VETERINARY WORK.** — The Medical Officer at Base W is testing a new type of dog-pemmican which has been manufactured as a result of the work done by the dog-physiologist at Hope Bay during 1954 and 1955. Reports so far indicate that the new pemmican is a great improvement on the old.

**F.I.D.S. AERO-SURVEY EXPEDITION.** — F.I.D.A.S.E. personnel arrived at Deception Island on 26th November, on board m.v. "Oluf Sven" and have had a very successful season. It is reported that 35,000 square miles of vertical cover have been obtained from 12,000 feet. This includes the west coast of Graham Land north of 68° South and the South Shetlands. The vertical cover is supplemented by a considerable number of oblique photographs.

### "JOHN BISCOE" RETURNS

The Royal Research Ship "John Biscoe" arrived at Southampton on June 4 after a 2,500-mile maiden voyage to the Antarctic and back. She sailed in November, taking relief staff, stores and equipment to bases of the Falkland Islands Dependencies Survey.

Captain William Johnston said the "John Biscoe" had given a very good performance. Some ice damage below the water-line will be

repaired at Southampton.

The ship brought home 21 members of the survey who have finished their tours of duty. One of them, 27-year-old Frank Ryan, a meteorological assistant, came ashore on crutches. During a two-man expedition he slithered 50 feet down an icy slope and broke a leg. With the temperature at freezing point he lay 10 hours while his companion went five miles back to base for a sledge.

"Cargo" in the "John Biscoe" included two skuas, two kelp geese and four flightless steamer ducks. The ducks and geese will go to a British wild fowl trust sanctuary and the skuas will be released for homing experiments.

Other members of the survey were being brought home in the "John Biscoe's" sister vessel, the "Shackleton", which was due to dock the following day.

## DESIGN OF SCOTT BASE PRAISED

"I believe I have never seen a more compact or a more comfortable arrangement than you have devised for Scott base," said the director of the American International Geophysical Year Antarctic programme (Mr. L. M. Gould) in a recent letter to the New Zealand Minister of Works (Mr. Goosman).

"To separate the base into a number of units as you have done is, first of all, highly desirable. I am sure the men will be more comfortable and I am sure the scientific programme will be carried out more easily and more effectively. One of the most attractive aspects of your housing units is the manner in which you have preserved privacy for the individual without sacrificing space.

"I do want to congratulate you and the members of your staff who were responsible for the buildings at Scott Base. This, I know, is one

of the most significant contributions to the success of the programme."

## Japanese Ready For Winter

The Japanese expedition ship "Soya Maru", after the battering it received on its way home, will be strengthened before its voyage south next season, to enable it to cope better with battering at ice floes or pack. This was announced on its arrival in Singapore, from where it went to Japan, arriving on April 24.

Tokyo reported on March 26 that big reserve supplies of fuel, food, dynamite and sledges stored at the foot of an iceberg were lost in a blizzard. The iceberg was washed away. The base is, however, stocked with sufficient food and fuel to last until the main expedition arrives next year.

The position of "Syowa", the base on East Ongul Island—it was discovered that the island is in reality two—has been astro-fined at Lat. 69°00'29" S. ± 10", Long. 39°35'10" E. ± 20", and is at a height of about 29 metres.

Regular twice daily meteorological observations have been carried out by the wintering party since March 1, and during April 18-23, a six-man party in two weasels made a short journey to the main continent. Wind velocity in March (mean) was noted as 9.7 metres a second.

Footnote: The name "Syowa" is the name of the present era in Japan, and can be traced back to a Chinese phrase meaning happiness, harmony, peace.

Surgeon-Commander Dalgliesh reports that British scientists at the Royal Society's base played golf with black balls on a nine-hole course on the ice, which had to be re-charted every morning.

## Science Aided by Observations Made at Halley Bay

Many successful scientific observations were made at Halley Bay in 1956. Most of the other IGY expeditions were primarily concerned with their building programmes during that period and were not able to devote so much time to observations.

The southern auroral zone contains the south-eastern coast of the Weddell Sea, and the expedition leader was instructed to set up the base south of 75°S. or return home to the United Kingdom. As it was possible to do this, valuable visual observations of the aurora australis have been made by Dr. S. Evans, who also set up one of the first Antarctic all-sky cameras, by which 15 second exposures of 35 mm. film resulted in pictures of the whole sky being obtained at frequent intervals. These observations will enable comparison to be made with the simultaneous visual observations made in Great Britain by members of the Auroral Survey, to see if there is any correlation between the phenomena occurring in both hemispheres.

Halley Bay should end the IGY with the most complete records of aurora ever kept within the auroral zone of either hemisphere, the day-and-night radar record augmented during darkness by two further types of observation. The radar can also provide auroral data during stormy nights when displays are shrouded from the eye of observer and camera by clouded or drifting snow.

The all-sky camera used is automatic in operation, and consists of a 16 mm. cine-cinema which photographs a mirror in which the whole sky is reflected, at regular intervals. The instrument was produced in the United States and the exposure time in use by the designers is 1 minute. Dr. Evans succeeded in reducing the exposure time to 15 seconds which gives

greatly improved results for large rapidly changing displays. Even so the rays that spring up from the arcs in a display are not registered, as Dr. Evans himself points out, and he has suggested that his successor should cut the exposure to 5secs.

### IONOSPHERE STUDY

The ionospheric programme has been initiated by the regular observations of atmospheric noise which have been made by Major G. E. Watson. The surface meteorological observations of wind pressure, temperature etc., have been made at regular intervals by D. W. S. Limbert, who has also made glaciological observations. Dr. Evans has also installed a Dobson ozone spectrophotometer for the determination of the amount of ozone present in the high atmosphere. This instrument was one of the first to be set up on the Antarctic mainland. It normally uses light from the sun, but during the winter observations were made with the aid of moonlight. Dr. Dalglish succeeded in growing marigolds and other plants indoors.

The main party of 21 men will make both upper air and surface meteorological observations, set up a geomagnetic observatory, continue the auroral and glaciological work and install important ionospheric equipment and apparatus for the detection of waves from distant earthquakes. In March they were already operating the new electrical generators and wireless transmitter whereby telegraphic messages are now sent direct to

the United Kingdom.

By February 12, the shell of the geomagnetic hut had been erected, more than a dozen of the piles which support the magnetic instruments had been sunk to a depth of 20 feet in the ice, the shell of the generator hut was all in place, and work had commenced on the balloon hut and the radio-echo huts.

### SIGNS OF WINTER

As the days passed, and signs of winter showed, a new transmitter was installed and eight new aerials set up. Telegraphic messages were first sent direct to the United Kingdom on February 27 and direct speech messages were first received on March 13.

Radio contact has been made with other bases at Shackleton, South Ice, Port Lockroy, the U.S.S.R. base at Mirny, the U.S. base at the South Pole, the Australian Davis base in the Vestfold Hills, the French base in Terre Adelie, the Norwegian base in Queen Maud Land, and the Japanese Syowa base. Many amateur wireless enthusiasts in the United Kingdom and U.S. have reported talks with Halley Bay.

The weather slowly deteriorated. The greater range of maximum and minimum temperatures in one month was in March, as follows: 6.3° C. (max.), -31.4° (min.), 4 gale days. In April -33.7° (was reached) and on May 1 a gust of 67 knots was recorded.

The first wind-finding ascent of a meteorological balloon, which is tracked by radar, was made on April 1. The average height of the ascents is 82,000 feet but one ascent went as high as 92,500 feet. The first auroral display was seen on March 15, while on April 6 the first Emperor penguins returned to the nearby Emperor Bay and by April 23 over 10,000 of them were estimated to be assembled there.

The health of all at the base is reported to be excellent.

## Historic Relics Found

Few journeys have captured popular imagination to the extent of that written of by Cherry-Garrard in "The Worst Journey in the World" in which he, Dr. Wilson and Lieut Bowers undertook in midwinter a journey from Cape Evans to Cape Crozier to investigate an Emperor penguin rookery.

Captain Scott in his diary says, "that men should wander forth in the depth of a polar night to face the most dismal cold and the fiercest gales in darkness is something new; that they should have persisted in this effort in spite of every adversity for five full weeks is heroic". The three men were forced to jettison some of their equipment to get back to Cape Evans alive, although they did bring back with them the object of their search—three penguin eggs.

This gallant journey was headlined in March by a journey undertaken along the same route by Sir Edmund Hillary, Murray Ellis, Jim Bates and Peter Mulgrew with the object of testing motor transport and field radio equipment under conditions of low temperatures and soft snow. Both Ellis and Bates worked long hours before the trip servicing the tractors and fitting them with canopies to protect the drivers.

After two days, following as closely as possible the route used by the early explorers, and having considerable difficulty with deep snow conditions, they arrived on Thursday evening (March 21) at the Knoll, having been able at times to travel up to six miles an hour. Peter Mulgrew had with him a copy of "The Worst Journey in the World" and with this for reference they began a search for the stone igloo left by Dr. Wilson's party. Two square miles were searched in

vain on Friday in a high wind and  $-20^{\circ}\text{F}$ . temperatures.

They had almost given up when, only 500 yards from their own camp site they came across the remains of the igloo—still with a ring of green tent canvas held firmly between the rocks. Inside they found the 9-ft. man-hauling sledge—a masterpiece of workmanship. In one corner were some Emperor penguin carcasses and a pickaxe, although no trace of the message which had been tied to the handle was found. Around the igloo was a scientific case of Dr. Wilson's, containing sketching pencils and preserving fluids, there were rolls of film, a thermos flask, thermometers, tins of pemmican tea and many other souvenirs of the heroic venture.

News of the find was relayed by radio to Scott Base, New Zealand and the world, and the thrill which the party had on finding these objects can be readily imagined. Sir Edmund and his party returned to Scott Base, carrying with them everything of interest, and did the journey in 12 hours, with only one minor breakdown. The tractors had behaved splendidly and the slight modifications necessary could easily be made at the base.

### Expedition Film

Already making the rounds of New Zealand theatres is the first film of the New Zealand expedition, "Antarctic Venture", taken by Derek Wright the official cameraman with the polar party, who is on the staff of the National Film Unit. Starting with farewell scenes in New Zealand and covering such incidents as the unloading of stores, the construction and completion of Scott Base and facets of the life there, it is an excellent record of the expedition. Some 10,000 feet of film were shot to produce the 2,000 feet in the final edition.

### CAMPBELL ISLAND

Mr. G. P. Hape reports that on February 28, a white heron was sighted in Perseverance Harbour and since then it has been definitely ascertained that a pair are in residence on the island. On April 8 a white-faced heron was also seen on the harbour shore and it is equally certain that a pair of these beautiful birds exist this far south. The albatross chickens have almost completely shed their down and the distinctive wing markings are forming.

To date only one whale sighting has been made and this was of four mammals in Northwest Bay.

An unusual and amusing experience was the lot of met. observer Bill Stern while photographing a parent bird in flight and attempting to follow its movements in the air. He realized the bird was becoming uncomfortably large for the viewfinder, and upon removing the camera from his eye, he received the full force of the bird's wing in his face. Both fell to the ground with Stern easily winning the race for equilibrium.

On May 17, the "Endeavour" called with some urgent supplies and seven new additions to the staff. These included Brien O'Neill, plumber; John Warren, cook; Doug Herkt, carpenter; Geoff Worger, carpenter; Ian Stewart, mechanic/handyman; Neville Bonnington, electrician; and a dog-Flash Augustus Campbell who is now a companion to Hans Sebastian Campbell.

The hospitality of the "Endeavour's" crew, in particular that of Captain Kirkwood, was very much appreciated.

Radio-sonde flights commenced on May 25, and the men have erected the ionosphere mast on the new site and it is hoped that observations will commence in the near future.

## Belgium Prepares

The proposed site for the Belgian Antarctic Expedition 1957-58 is at Breidvika (Broad Bay) on the Princess Ragnhild Coast, 70°30'S., 23°E. No landing has ever been made here previously.

One hundred and fifty kilometres inland is a mountain range named Sor-Rondane which has never been explored. Aerial photographs taken by the Norwegians in 1937 and by the Americans in 1947 have been studied by the Belgian authorities, and there appears to have been no significant change in the ice-shelf over that time. It is proposed to explore the mountains with tracked vehicles and dog-sledges.

Seventeen scientists and technicians will comprise the expedition. Of these 11 had already been appointed at the time of the Expedition's second report (March). The Belgian Government is providing 40 million of the budget of 48 million francs, and an appeal is being made to scientific bodies, provinces and cities, and to industry. The expedition's new ship, the "Polarhav", is on its first seal-hunting cruise and will arrive at Antwerp in early November.

The buildings planned are of the American "Clements hut" type, so arranged that each man will have a private cubicle.

The leader, Commander de Gerlache, accompanied the French expedition to Adelle Land this year. His experiences included a 15-day depot-laying journey on the plateau and also a journey with tracked vehicles. He left on his return to Belgium on February 13. Another Giot, has been in Greenland since member of the Expedition, Jacques the beginning of February. He spent three months at Holsteinsborg to gain experience in the care and handling of huskies.

## N.Z. I.G.Y. WORK

Much of the equipment for I.G.Y. observations is already in full working order at Scott Base under the overall responsibility of Dr. Trevor Hatherton.

He himself will make auroral observations, and a gravimetric survey of as wide an area as possible around Scott Base. He has already made several trips by aircraft to the Skelton Glacier and Ross Ice Shelf, and his observations should eventually give valuable data on the earth's crust and the geological formations below the ice.

Magnetic observations under Vern Gerard are well under way, and three flux gate magnetometers of his own design are being tried for the first time. Herb. Orr, the seismologist, Neil Sandford and Peter Macdonald are all busy in their respective spheres of I.G.Y. activity, and Peter's sunshine recorder is of great interest to the team, as it was used by Captain Scott in his 1901-04 "Discovery" expedition.

## New Children's Game

Just before Easter, the British Petroleum Company produced "Polaroute", a new game for children. This is based on the "snakes and ladders" principle, and has the South Pole for the goal. They have produced approximately 150,000 copies of this game, which will be distributed through service stations selling B.P. products.

The game is based on a map of Antarctica, and various forms of transport are mentioned. The hazards encountered are similar to those which Sir Edmund and his party will meet on their depot-laying trips.

## Death of Noted Polar Pioneer

Since the last issue of *Antarctic* another Antarctic pioneer explorer has died, at his home in Boston, Mass. The first man to fly over the North and South Poles, Rear Admiral Richard E. Byrd, U.S.N., was a pioneer of air exploration over the icy continent; he led five American expeditions to the Antarctic and was instrumental in accurately charting some previously unseen 2,000,000 square miles.

Apart from his memorable services to Antarctic exploration, Rear Admiral Byrd will always be remembered in this country, on which his expeditions were based, as the man who, perhaps more than any other, had worked to promote and cement good relations between New Zealand and the United States. Apart from his own personality and the glamour which surrounded his new approach to Antarctic exploration his obvious hero-worship of the British polar pioneers would have endeared him to New Zealanders.

Among his many feats, he spent several months alone in a hut on the ice barrier to carry out meteorological observations during mid-winter. He first flew over the South Pole in 1928 when planes were still an unreliable novelty, and in subsequent flights discovered Marie Byrd Land, five mountain ranges and charted some 700 miles of hitherto unknown coastline.

He served under Admiral King, of the United States Navy Office, and carried out missions in the Pacific in World War II, and again went south in 1946 on the U.S. Navy expedition. He was appointed head of the organisation of Operation Deepfreeze and made his fifth visit to the Antarctic with that expedition. On this last occasion he again flew over the Pole.

Admiral Byrd formed many

genuine friendships in New Zealand on his trips here, and his passing was deeply regretted by all who had known the tough, sprightly, friendly little Admiral.

## AUSTRALIAN EXPLORER'S CAIRN FOUND

The Australian Minister for External Affairs, Mr. R. G. Casey, announced that Australian explorers at Davis base had discovered a message and an Australian flag left by the well-known Australian explorer, Sir Hubert Wilkins, 18 years ago.

The message and flag, in a white enamel container, were found beneath a boulder surmounted by a cairn of small rocks.

The party which found Sir Hubert's message comprised Bruce Stinear (geologist), Morris Fisher (surveyor) and Nils Lied (radio operator). They left Davis by dog-sledge on 8th May to carry out a survey and geological examination of the Vestfold Hills, and they found Sir Hubert's cairn at the northernmost extremity of the Vestfold Hills.

Sir Hubert Wilkins, who pioneered the use of aircraft in the Antarctic in 1928, accompanied the American explorer Lincoln Ellsworth as adviser on his fourth Antarctic expedition in 1938. On 11th January, 1939, while Ellsworth flew south into the interior of Princess Elizabeth Land, Wilkins went ashore at the Vestfold Hills, hoisted the Australian flag and left a message recording his visit.

The flag and the message were those which the Australian explorers had found.

### ERRATA

"Antarctic" Vol. 1, No. 5, March 1957: Page 126, line 3, for Carl R. Elslund read Carl R. Eklund. Page 123, for Japanese base name, read Syowa.

## BOOKSHELF

"Quest for a Continent", Walter Sullivan: New York, McGraw Hill Book Company, Inc., 357 pages, ill., published price \$5.50.

Here at last is a reliable, well-balanced and un-biased account of Antarctic exploration from the earliest days till the beginning of the current series of I.G.Y. expeditions. The author, Walter Sullivan, himself accompanied three expeditions to the Antarctic as correspondent for the New York Times. He is an experienced worker who knows the Antarctic and has taken great pains to get his facts right. The result is a first-rate book, attractively written, which is not unworthy to stand beside "The Siege of the South Pole" and "The Conquest of the South Pole" by Mill and Hayes respectively.

The book begins with an excellent 18-page descriptive account of the Antarctic. Mr. Sullivan disclaims any intention of writing "a definitive history" of Antarctic exploration and apologies for the omission of many names. Nevertheless, he does justice to the work of practically all the exploring expeditions and the men who led them, with the exception of John Biscoe, who surely at least deserves mention for his discovery of the main mass of the Continent. The relatively little-publicised expeditions of de Gerlache and Nordenskjold are deliberately and justifiably given special attention, but the better known explorations of the 1840's and "the heroic age" are ably if relatively more briefly covered.

Two thirds of the book are devoted to the expeditions of the "air-age". Naturally, disproportionate attention is given to the American expeditions in which the author participated, but such other 20th century exploits as the Australian establishment of Mawson, the

Norwegian-British-Swedish expedition of 1950-52, and the French work in Adelie Land are well-covered. The 10 pages of illustrations are helpfully selected and there is a satisfactory index.

This is a job well done.—L.B.Q.

"Huskies", Robert Dovers: London, G. Bell and Sons, Ltd., 219 pages, ill., N.Z. price 21/-.

Although this is the third book we have reviewed which deals with the French 1951-52 expedition in Adelie Land, it is one which all readers of Antarctic books will enjoy. Dovers, now a veteran explorer, was Australian observer with the six Frenchmen at Pointe Geologie Emperor penguin rookery after the disastrous Port Martin fire. He was in charge of the dogs, and his story deals primarily with the huskies he trained and, in the main, loved. Never before have Antarctic dogs with their individual virtues and vices been so revealingly described.

But Dovers gives a clear picture of the men too, and of the penguins; and his account of the weasel journey in the depth of winter, largely under blizzard conditions for some fifty miles across thin sea-ice to Port Martin and back, is exciting narration. "The other two left the weasel, crawling on all fours together. Vincent had one hand on Duhamel's ankle. The first we knew of this was when Duhamel arrived in the hut doorway frostbitten, near exhausted and alone. He had lost Vincent in that little distance between hut and weasel" (thirty yards).

Dovers modestly calls his story a "yarn". There is abundant humour in it and a sense of beauty. But no one after reading it could go on thinking that difficult and dangerous journeys in the Antarctic are a thing of the past.

## CHILEAN POLAR TOURIST TRIP

A DC-6B of the Chilean Airline "Linea Aerea Nacional", carrying 66 passengers and a crew of 7, flew in December from Santiago to the Chilean bases in the Antarctic on a tourist trip. Although the passengers were unable to see land because of heavy fog the trip was enjoyed, and on their return their approval pointed the way to a possible commercial air venture over the Antarctic.

Interest has been shown in an airport the Chileans are completing at Punta Arenas, and there is a possibility that there may be South Polar great circle flights from Europe and South America to Australia and New Zealand.

The Chilean plane flew about 5,000 miles altogether, and it is hoped to arrange another trip in December of this year.

## WHALING SEASON 1956-57

The pelagic catch of fin whales began on January 7, and the blue whale catch on February 1 (January 21 last year). Preliminary reports in the Norwegian Whaling Gazette indicate a considerable reduction in whale oil production as compared with previous years.

The nine Norwegian expeditions produced 305,275 barrels as compared with 325,145 barrels for the corresponding period last season. The Japanese production was 121,917 barrels, as compared with 122,130 in 1955-56, but this season two additional Japanese expeditions were operating. "Southern Harvester", "Southern Venturer", "Balaena" and "Abraham Larsen", the only other expeditions from which reports are available, between them produced 174,694 barrels as against 206,480 in 1955-56.

## BOUVET RECONNAISSANCE

At the end of this Antarctic season the Russians are carrying out a ship and helicopter reconnaissance of Bouvet Island, the forbidding sub-Antarctic island which lies S.S.W. of Cape Town, and belongs to Norway.

It was agreed at last August's Antarctic conference that it was desirable to operate an I.G.Y. station on Bouvet, if this was at all possible. The Russians thereupon offered their services. If a favourable report results from the Soviet reconnaissance a joint Soviet-Norwegian expedition may be established on Bouvet next season, probably from one of the Soviet Antarctic relief ships.

This season's visit will be made from the ice-transport "Lena" (sister-ship of the "Ob") on her return voyage to the Soviet Union from the Antarctic.

Last season the South African naval frigate "Transvaal" sailed round the island and loosed off some salvos from her 4-inch guns to see if the ice that tops the island's precipitous cliffs dislodged easily. It didn't.

Moscow radio reported on March 14 that the "Lena", while tied up to an ice-floe which was being used as air-field, was hemmed in by 15 miles of drifting ice which packed around the ship. "Lena" took three days to work through to the open sea.

The Moscow radio correspondent said on March 21 that Soviet explorers there are finding much more ice in the South Polar region than they had expected.

He reported the discovery of an ice-covered mountain range encircling the eastern Antarctic coast. The frozen snow-crust over the range was more than 300 feet deep.

The Russians have not retained the record for the lowest Antarctic

temperature long. It was established with a reading  $-66^{\circ}\text{C}$ . ( $-88^{\circ}\text{F}$ .) last September at the Soviet inland sub-station, Pionerskaya. On April 2nd (1957), the new American station at the South Pole recorded a reading of  $-89^{\circ}\text{F}$ ., and then on May 11 100.4 below was experienced, the lowest ever recorded by man, beating ( $-90^{\circ}\text{F}$ .) recorded on Centigrade in north-eastern Siberia in February 1933.

## OVER SNOW TRAVERSES

### WORK OF U.S. BASES

In connection with the United States I.G.Y. programme, a series of over-snow traverses is to be made from three of the U.S. bases. From Little America V a team will traverse the Ross Ice Shelf. From Byrd Station a party will cross portion of the Marie Byrd Land ice cap. From Ellsworth Station on the Weddell Sea coast teams will traverse the Filchner Ice Shelf and part of the Edith Ronne Land ice cap.

These traverses are planned for the periods October 1957, March 1958 and October 1958, March 1959. Each will cover from 1000 to 1500 miles. Each team will have three vehicles, sno-cats, and will aim to travel fifteen or twenty miles a day. Some weasels will be used to augment the sno-cats. After each day's trek the team will spend a day making seismographic and glaciological observations and taking gravity measurements. A contour map will be prepared en route showing the thickness of the ice and the underlying rock-surface elevations.

There will be five or six men to a party, comprising a seismologist and his assistant, a glaciologist and his assistant, a mechanic and possibly a surveyor. The glaciologists will study the nature and extent of the ice, the rate of accumulation or wastage and the

character of the sub-glacial floor.

### FUEL LIMITATIONS

The range of operation will depend upon the amount of fuel the unit can carry but will approximate 400 miles. The main traverses will be closed ones. Each unit will be as far as possible self-sufficient, will be radio-equipped and will carry survival gear. Each will have with it men who can drive the vehicles, maintain them, navigate, operate and repair the radio equipment and maintain a camp.

The preliminary traverse team left Little America for Byrd Station on January 28 this year. It comprised three sno-cats. The men were headed by Verne Anderson, glaciologist and Charles Bentley, seismologist. Each sno-cat carried a ton of food and equipment as well as three 50 gallon-drums of fuel. The distance was too great for the team to be able to go the whole way on the fuel carried, so use was made of fuel caches previously laid down. Sno-cat petrol consumption is one mile to the gallon and the speed approximately eight miles per hour.

### POLAR CLAIMS

There has been considerable agitation to promote the international control of Antarctica, and the British Government is being urged to back this scheme as quickly as possible, as Commonwealth territorial claims in the Antarctic are being ignored by other countries.

Both the United States and the Soviet Union are in the south to stay, and possible claims by these countries would undoubtedly conflict with those of Britain, France, New Zealand, Australia and Norway, who recognise each other's claims, and Chile and the Argentine, who do not. It has been suggested that the I.G.Y. Committee in Brussels should be kept in being as a means of international co-ordination.

## ANTARCTIC MISCELLANY

Gardening is becoming quite the rage in the Antarctic. It is not yet known whether Sir Edmund Hillary has installed the greenhouse he took with him, but he already has some horticultural rivals among the members of other expeditions.

Dr. David Dalgleish, of the Royal Society's advance party, succeeded in getting some marigolds that he took with him as seed, to flower. These were grown in the base hut and were helped on with artificial light. The Norwegians recently included in their Antarctic bulletin from Dronning Maud Land the news that the hyacinths imported into the expedition were in flower.

Mr. A. S. Helm, the New Zealand secretary of the Ross Sea Committee, who was in Antarctica during the past season intends to try and grow plants outside during the next summer season. He returned to New Zealand this year with a 4-gallon tin filled with soil collected from near Scott Base free from contamination by the oil from the considerable traffic that has been plying in this area this summer. The sample will be analysed for soil deficiencies and any chemicals necessary will be flown in next Antarctic spring in the first U.S. Globemaster to leave New Zealand, together with hardy plants which might prove suitable for South-polar conditions.

Two of the grains of maize from a pocketful that an American officer collected from the pony fodder remaining after 49 years in Shackleton's Cape Royds hut, have sprouted. Some of the seed was planted in New Zealand and some in the United States. The latter produced a cob or two but was rather stunted.

## WEATHER STATION

The weather station at Campbell Island will increase its value to the

scientific world when the new station is completed there in July.

It will consist of an ultra-modern hostel, extremely well-equipped, and modern observation buildings with the most up to date meteorological equipment. There will be a radio-telephone system, and a sky camera for photographing auroral disturbances.

A garden is thriving on the station, and cabbage, silver beet, lettuce and rhubarb are making a welcome change to the normal diet of tinned foods.

A number of visits have been made to the island by passing ships, including the Operation Deepfreeze ship "Greenville Victory", which distributed Christmas gifts.

## RECORDING SEISMIC ACTIVITY

New Zealand scientists, manning a chain of recording stations from the Antarctic to the Equator, at Scott Base, Cape Adare, Roxburgh, Wellington, the Kermadec Islands and Apia in Samoa, will soon have a long-awaited opportunity to observe seismic activity along the Circum-Pacific seismic belt. Associated seismological stations at the South Pole itself, Little America and Adelie Land will complete the chain. These observations may record whether or not the Antarctic land mass is a single continent or whether the Pacific fault line, starting in the Aleutians, sweeping down past Japan, the Solomons and on to New Zealand, extends into the Ross Sea cleft and through almost to the South Pole and possibly beyond. A tele-seismic system has been installed at Scott Base which is ideally suited for observation, and from July 1 scientists will be observing the movements of the fault, hoping to unlock the biggest mystery of the frozen continent.

## Report On Polar Temperatures

The results of the first temperature soundings of the temperature at the 10,000 foot high I.G.Y. Amundsen-Scott South Pole Station have been announced by Dr. Joseph Kaplan, Chairman of the U.S. National Committee for the International Geophysical Year.

Temperatures of 71 degrees below zero F. at the surface, 38 degrees below zero F. at 3,300 feet, and 62 below zero F. at 11,500 feet above the surface were reported on March 27. The temperatures were taken by a thermometer attached to a balloon sent aloft with a radiosonde.

As late March roughly corresponds to September in the Northern Hemisphere, temperatures are expected to drop further as their mid-winter approaches. Station Scientific Leader Dr. Paul Siple has estimated that the temperatures may go down to 120 degrees below zero.

Work at the station, which is 10,000 feet above the sea level, continues despite the low temperatures and the biting winds of 15 to 20 miles per hour that swirl about the station almost constantly. Scientific observations and some camp duties must be carried on outdoors throughout the long polar night. Meteorological observations are an essential factor in the scientific studies now being conducted in the Antarctic as one part of the worldwide I.G.Y. programme.

The study of temperatures and the circulation of air in the Antarctic will yield essential knowledge of the polar ice cap and its effect on the world's weather, and over a longer period of time, world climate. Comparison of the relatively clean air of the Antarctic with the atmosphere of coal and oil-consuming regions is expected to give data on the suspected "green-

house" effect caused by the release of large amounts of carbon dioxide. Meteorological data from all the I.G.Y. Antarctic Stations are relayed to the Weather Central at the I.G.Y. Little America Station, where for the first time in history twice-daily weather maps of the Antarctic are being prepared.

## WEATHER-RECORDING DEVICE

The Australian Minister for the Interior has announced in Canberra that a French-built automatic weather-reporting device, actuated by an electro-mechanical "brain", will be installed on the Windmill Islands, Knox Coast, next year. It will be, it is stated, the first "station" to operate unattended for periods of nine to 12 months. It is designed to withstand winds of up to 120 m.p.h.

The "brain" turns on power and prepares the radio-transmitter, meteorological instruments and a coding-device ten minutes before each broadcast. At the appropriate time, it switches on full power, activates the controls and begins to transmit.

Electric power for the "station" will be stored in batteries which can be charged by a wind-driven generator. Excess power can be used to operate small heaters to prevent the batteries freezing. The "station" will broadcast barometric pressures, temperatures and wind speeds.

## COST OF BUILDING BASES

Admiral Dufek said in Christchurch on his return from the Antarctic that the United States had spent £20 million building, manning and supplying her seven Antarctic bases, in addition to the normal operating costs of the ships and aircraft involved. Next season's re-supply of the bases is expected to cost £5 million.

## EARTH SCIENCES IN POLAR REGIONS

(Notes of an address by Albert P. Crary, Deputy Chief Scientist, U.S. Antarctic Programme, and Station Scientific Leader at Little America).

**GLACIOLOGY.** The first purpose is to determine the nature of the Antarctic: its elevation, the thickness of the ice and the type of rocks underneath. The chief method used is the seismograph. The depth of the ice is measured by timing an explosion echo to two or three ten thousandths of a second. By making use of several seismic detectors at measured intervals it should be possible to estimate also the dip of the reflecting bed. Gravimeters and magnetometers are also used.

Is the Antarctic in general shrinking or building-up? This may be found from knowledge of accumulation, movement and depth. The accumulation and movement of the ice cover is more difficult to measure than the thickness, especially on the trail. Movement is determined most accurately by survey poles examined at lengthy periods of years. Among the methods used for estimating annual accumulation are:—

- (1) The digging by hand of pits. It is not so easy to detect annual ice layers in the Antarctic as in the Arctic because there is no summer melting.
- (2) Tritium studies of ice samples at various depths, whereby an idea of the age of the ice can be gained, up to 30 or 40 years.
- (3) A study of the oxygen isotope ratios may give an indication of annual accumulation, since the ratios are related to temperatures at the time of the snow formation.
- (4) A dust layer may be found

from, say, the Krakatoa eruption of 1883.

The Ross Ice Shelf presents a special problem because there may also be accumulation or ablation from the under side of the ice. Measurements will determine the thickness of the ice and the depth of the water below it.

**History of Antarctica.** A deep drill-hole at Byrd Station should tell something of the history back, perhaps, over two thousand years. It may be possible to estimate changes in temperature and in accumulation over that time. The study of lichens on exposed rock surfaces may give information on the duration of the exposures. Glacial geological studies will give indications of the past history of the ice. Any carbon (from bones, drift-wood, etc.) would give indications of age by the analysis of carbon 14 concentration. Attempts will be made to determine what might happen to the Antarctic ice under certain eventualities, e.g. atmospheric dust from another "Krakatoa" or a rise in water temperatures. A special study will be made of the deformation of the Ross Ice Shelf.

**SEISMOLOGY.** Little is known of the seismicity of the Antarctic, but it is not very active. There are seismic stations at the South Pole, Byrd Station, Adare Station and Wilkes Station (Knox Coast).

**GRAVITY.** Gravitational values will be made at many Antarctic stations. Earth tides may also be tested.

**OCEANOGRAPHY.** The subjects suggested for study are related to glaciology. Old moraines on the sea-bed should provide useful information, and a deep-sea core would also be useful. Ocean tides will be studied, as well as ablation or accumulation under the Ross Ice Shelf.

# 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.

As well as bringing together men and women who are keen about Antarctic matters, the Society is active in urging that New Zealand should face up to its duty as the country responsible for the administration of the Ross Dependency. By becoming a member of the Society you can add your voice to this call to action, which is vital and urgent in view of the activity of other countries in the Ross Sea area.

There are branches in Auckland, Wellington, Christchurch and Dunedin.

The membership fee entitles you to attend all meetings, lectures, film-screenings, etc., to make use of the extensive library of current publications, and also to receive "Antarctic" FREE.

All enquiries to the Secretary, P.O. Box 2110, Wellington.

---

WE REGRET THAT THE SOCIETY'S BOOK  
"THE ANTARCTIC TODAY"  
IS NOW COMPLETELY OUT OF PRINT

---

## "ANTARCTIC"

Copies of previous issues of "ANTARCTIC" may be obtained from the Secretary of the Society, P.O. Box 2110, Wellington, at a cost of 4/- per copy.

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

5, 6, 7, 8, 9, 12, 13, 15, 16, 17, 18, 19, 20.

In most cases only a few copies are in stock.

These may be obtained at a cost of 2/6 each.

Annual Subscription, 15/-      -      Single Copy 4/-

Printed by  
UNIVERSAL PRINTERS LTD.,  
22-26 Blair Street, Wellington.