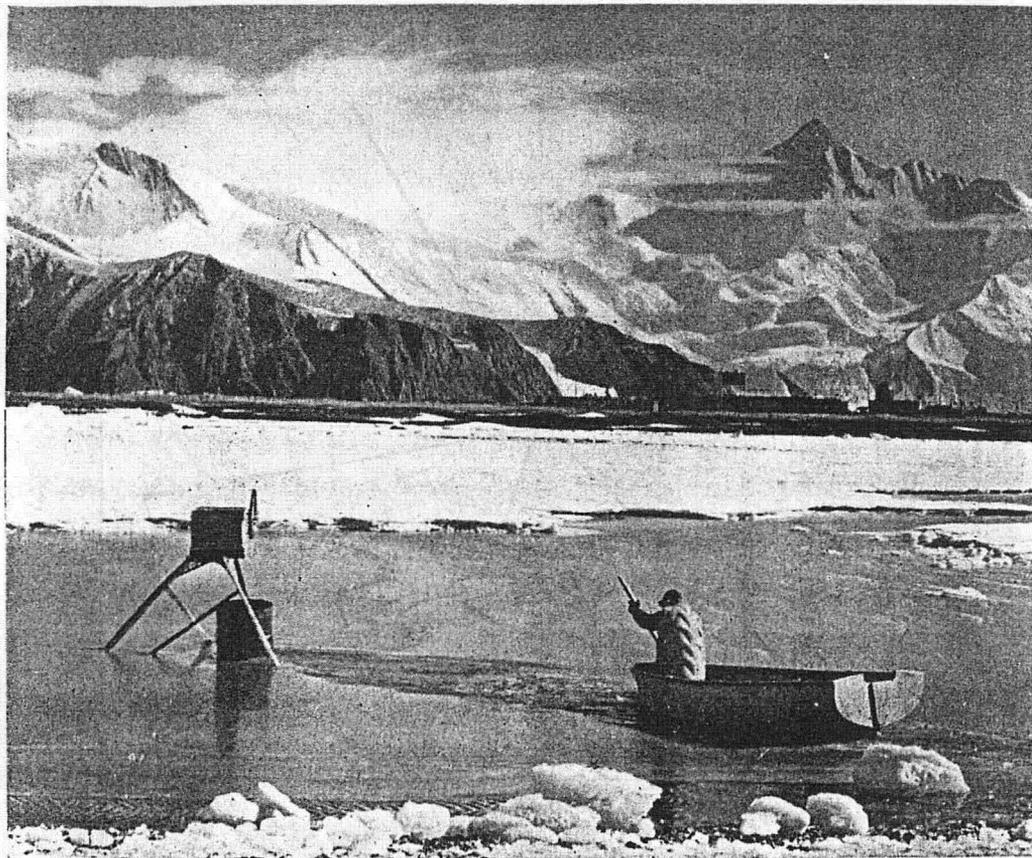


ANTARCTIC

A NEWS BULLETIN

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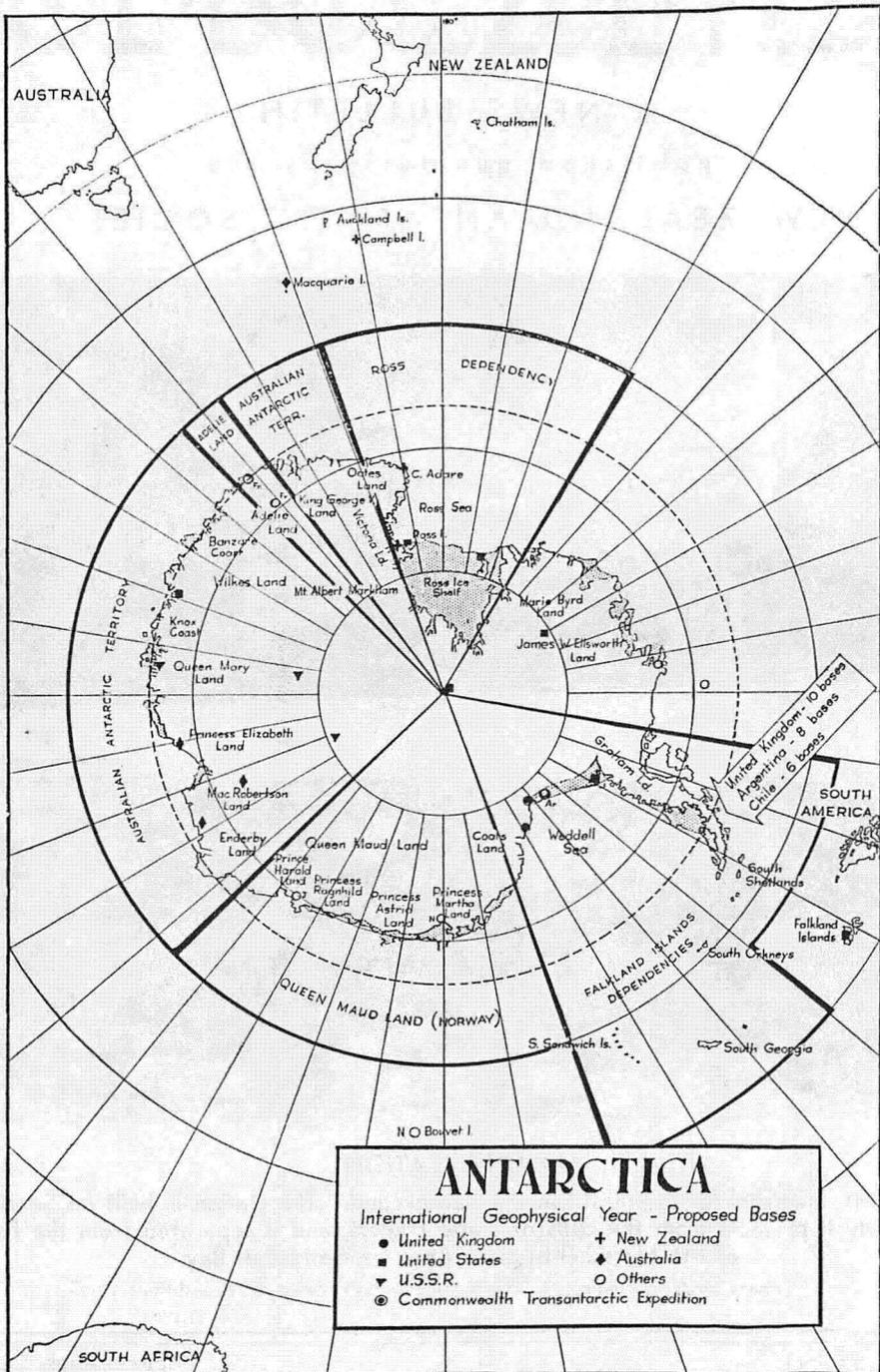
NEW ZEALAND ANTARCTIC SOCIETY



HALLETT STATION

With Mt. Herschel (c. 11,400 ft.) in the background. The station is built on Seabee Spit, which projects from the cliffs of Cape Hallett, and is separated from the foot of Mt. Herschel by the six miles wide Hallett Bay.

(Photo by A. J. Heine—N.Z. Geological Survey Antarctic Expedition)



"ANTARCTIC"

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COLD WINTER AT SCOTT BASE

Scott Base, crowded last winter with the sixteen men of the New Zealand support party for the Trans-Antarctic Expedition as well as Dr. Trevor Hatherton's small team of five scientists, this year houses only an enlarged group of eleven scientists and support personnel, under Mr. L. H. (Lin) Martin.

Weather during May was cold and clear with only one day of blizzard. June was cold and cloudy with much cirrus cloud. The average temperature was five degrees lower than in June 1957. July was very cold with clear skies and light wind. The mean daily minimum temperature in July was -46° F. and the actual minimum of -62.5° F. was the coldest ever recorded in the Ross Island area. The average temperature for the month (-31° F.) was equal to the mean daily minimum over the same period last year.

SPECTACULAR AURORAS

Strong aurora displays occurred on June 17, 19 and 22, but other June displays were weak and transitory. In July the exceptionally clear weather permitted continuous observations from the 2nd to the 26th. Intense and spectacular displays occurring on the 7th and 8th lasted for 23 hours. That on the 8th was the most spectacular ever seen at Scott Base. The heavens were filled with brilliant green and white draperies, mysteriously moving as if waved by a giant hand.

Seismic data has been exchanged since June with Hallett Station, Mirny, D'Urville and Halley Bay. This inter-

change is proving most valuable. Generally the same earthquakes are reported, but Scott Base records slightly more than each of the other stations. In July arrangements were also made for an interchange of seismic data with Byrd Station. 29 earthquakes were recorded in May, 47 in June and 53 in July.

It was not found possible to receive Australasian broadcast stations at Scott Base during June, although both Hallett and Little America reported very good reception of these stations.

WHISTLERS

A strong and surprising correlation was discovered between whistlers and seismic activity but this is probably coincidental, as on two days of moderate whistler activity (June 14 and 21) no seismic activity was recorded, and Martin comments "Antarctic whistlers are more probably echoes of the mating cries of Emperor Penguins than connected with earthquakes in any way!" Whistlers are also being received at Byrd Station and the results are comparable, though Byrd receives weak dawn chorus which has not been heard at Scott Base.

A clock stoppage in the tide gauge during a cold snap early in May necessitated the re-installation of the original less-elaborate clock. A hurricane-lamp fitted with a large fuel tank is now used inside the box to raise the temperature and results have been most satisfactory. No records were lost in June and only one, not due to clock failure, in July. A pressure ridge developed under the box, causing it to shift slightly.

The prevailing low temperatures in July increased greatly the difficulties of maintaining the Base, particularly the heating and mechanical equipment. The diesel fuel supplied for this year solidified at -36° F., whereas the fuel supplied for the 1957 winter was still usable at -46° F. The locating of some 30 drums of the original fuel buried under drift alleviated the situation.

Martin reports that the morale and general spirits of the men have been very good and that all continue to do excellent work.

Lin Martin had an unexpected phone call during July. A Tasmanian housewife, Mrs. M. G. Eastick, made use of the recently established Australian post office service to Scott Base to make the call. After seven attempts over a period of nearly a week Mrs. Eastick got through to the greatly surprised base leader who exclaimed "How marvellous to hear a woman's voice!"

RUN FOR DOGS

Men and dogs had an outing from Scott Base on the last day of August. In sunny weather two dog teams were taken for a 16-mile run across the sea ice.

The first team was taken by Robb and Thompson, the second by Henderson and Gibson. The dogs performed well after their long winter rest. With some slight changes in the relative positions of the dogs in the traces the men are confident of two excellent teams.

MIDWINTER DAY

Midwinter's eve saw a lively party at the base. In the gaily-decorated

mess-room New Zealanders and their guests from the nearby United States base sang and danced to the music of the Scott Base skiffle group, consisting of a harmonica attached to a guitar, three washboards, a flute, an accordion, and a form of bass fiddle manufactured from a tea-chest.

Greetings were received from all over the world, including a much-appreciated message from Sir Vivian Fuchs.

A highlight of the day was a superb dinner prepared by the cook, Maurice Speary. The menu was puree of pea soup, roast lamb and mint sauce, roast turkey, baked and boiled potatoes, green peas, cauliflower and white sauce, steamed ginger pudding, fruit salad, jelly and cream, ice cream, coffee and liquors.

GEOLOGISTS WORKING

Back in New Zealand geologists Gunn and Warren are now hard at work on their geological report. They are working in a room in the new Museum building in Christchurch, and hundreds of their specimens are set out, classified according to location and type. There is still a great deal of work to be done before the report can be completed and published as a geological bulletin.

The specimens that they brought back with them from their field trips together with those collected by Carlyon and Ayres working in the Darwin Glacier area, and by Miller and Marsh in the Mt. Markham area, total about 500 lbs. They have now about 1,000 petrological specimens and 400 fossil specimens. From their discoveries, several hundred slides for microscopic examination are being prepared in Wellington.

A U.S. Neptune arrived at Whenuapai carrying as well as its crew a wax dressmaker's model in a red bathing suit to "cheer up the boys down south".

U.S. AND N.Z. CO-OPERATION AT HALLETT STATION

Three New Zealand scientists, including one biologist, will replace the present party led by Mr. K. J. Salmon at Hallett station, which is manned jointly by New Zealand and the United States.

Hallett Station, latitude 72° 18' S., longitude 170° 18' E., is situated to the south of Moubray Bay, some 70 miles south of Cape Adare, on the nearest portion of the Antarctic Continent to New Zealand. The station rests on a sea-level spit sheltered by the towering cliffs of five thousand foot Cape Hallett. The surface spit is actually a series of undulating ridges of period hillocks six to twelve feet high which are composed of moraine and penguin guano. The area is covered in spring and summer by hundreds of thousands of Adelie penguins.

The station lies directly on the flight path from Christchurch, New Zealand, to the U.S. Naval Air Facility in McMurdo Sound. An emergency landing strip and refueling facilities are available at Hallett.

The cargo ship U.S.S. "Arneb" is scheduled to arrive at Hallett with an icebreaker escort on January 7 to exchange personnel and off-load supplies. The present 16-man wintering-over party will travel on "Arneb" to McMurdo and thence to New Zealand, from where the American component will be flown to the United States.

Again, three New Zealand scientists or technicians will spend the year at Hallett Station. This time it is intended that one shall be a biologist or have had biological training.

There are good scientific grounds for maintaining an interest in this area in the fields of geology, biology and the physical sciences. Hallett Station also provides access to the largest land area in the Ross Dependency, where a D.S.I.R. geological expedition led by Dr. H. J. Harrington operated successfully last summer.

The station programme includes observation and investigation in the fields of ionospherics, geomagnetism, seismology and auroral physics. The biologist will undertake studies of animal, bird and plant life during the summer months and will participate in the normal station programme during the winter.

REPORTS FROM HALLETT

New Zealanders joined with Americans on July 4 to celebrate Independence Day in "the Banana Belt of the Antarctic". The names of seven men whose birthdays occurred within a few weeks of the Fourth of July had pride of place on top of a giant 100 lb. cake, 14 inches high, 18 inches wide and two feet long, iced with red, white and blue trimmings. The menu included roast turkey and cranberry sauce, pumpkin pie and—ice cream.

Evening entertainments included a movie show and home-made fireworks, which consisted of hydrogen-filled balloons carrying oil-soaked rags and a fuse. After several attempts these were successful and made a great show over the snow-covered landscape.

A crate of Rhode Island loam left "somewhere about there" last autumn and long since covered by snow was located with the help of a tractor, and a vegetable garden is now flourishing in the rawin dome.

Hallett was the first Antarctic station to see the sun rise. New Zealander Salmon and American Benes each calculated a different time and position for the first appearance, but three days' overcast left the wager in doubt.

The official Hallett cheer is "Hip Hip Aurora!"

The Navy support men have built a covered stairway from the science building to the aurora tower, providing comfort as well as safety.

The bay was completely frozen over by May 3. The sun was last seen on May 14.

Auroras were seen on 15 nights in June. All the auroras were greenish white. In July auroras were observed on 21 nights, with intense displays on July 8 and 21, when red glows were observed.

Intense storms in the middle and at the end of June produced peak gusts of 80 knots and sustained wind speeds of 60 knots.

Health and morale continue excellent, reports the station scientific leader, Ken Salmon.

PENGUIN PIONEER

A penguin corpse dug from the bottom of a four-foot deep layer of Adelle penguin corpses under the penguin rookery on which the Cape Hallett station is built has been radiocarbon dated by tests carried out in Wellington. The purpose was to determine the date of the first arrival of penguins in the area.

The tests showed, reports Dr. H. J. Harrington, that the penguin died 1,250 years ago, about 700 A.D., when the Vikings were raiding Britain.

Do you wish to complete your set of "Antarctic"?

The New Zealand Antarctic Society warns readers that supplies of the early numbers of "Antarctic" are almost exhausted. Anyone wishing to ensure that his set will not be incomplete is advised to make early application for the numbers required.

Cost of single copy: 4 shillings.

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New Zealand.

ROSS SEA COMMITTEE

The Ross Sea Committee, which was constituted specifically to organise and maintain the New Zealand component of the Commonwealth Trans-Antarctic Expedition, has ceased its activities. Formed in May 1955 under the chairmanship of the Hon. C. M. Bowden with Mr. A. S. Helm (Secretary of the New Zealand Antarctic Society) as Secretary, the Ross Sea Committee carried through to a successful conclusion New Zealand's effort in support of the British crossing party. The New Zealand Antarctic Society was represented on the Committee by Dr. R. A. Falla, Director of the Dominion Museum and a veteran of Sir Douglas Mawson's Expedition of 1929-30.

"Antarctic" joins with many others in acknowledging the courtesy and helpfulness of the Committee's office staff, and the excellence of the "Ross Sea Newsletter" produced monthly under Mr. Helm's editorship. The last issue, number 29, was published on July 1.

VETERAN'S PRAISE

In a letter to the Chairman of the Ross Sea Committee, Professor Frank Debenham, a prominent member of Scott's Last Expedition and first Director of the Scott Polar Research Institute, says:

"In common with other Scott and Shackleton survivors I have been amazed at the ground covered by your section of the Trans-Antarctic Expedition and the skilful techniques employed by them.

"The success of Ed. Hillary and the tractor party speaks for itself and I do not think he will mind my saying that for the real business of mapping and observing details the dog parties have made history."

He concludes, "the New Zealand contingent has been successful in every department of its work, and I hope you will not mind my adding my personal meed of praise to the general chorus."

New Zealand Plans Further Work in Ross Dependency

Plans for the continued occupation of Scott Base "for the next two years at least", and preliminary details of a comprehensive programme of research and exploration to be undertaken in the Ross Dependency, have been announced by the Minister in Charge of the Department of Scientific and Industrial Research, Mr. P. N. Holloway.

Mr. J. Holmes ("Bob") Miller, deputy-leader of Sir Edmund Hillary's Trans-Antarctic Expedition party, has been appointed Antarctic Executive Officer. With his wide experience in all aspects of Antarctic work, Mr. Miller has joined the Department of Scientific and Industrial Research to organise overall activities in collaboration with New Zealand's chief Antarctic scientist, Dr. Trevor Hatherton.

Scott Base will continue to be occupied by New Zealand scientists and others, who will carry out a modified programme related to IGY activities, plus special research on matters of particular interest to New Zealand. United States hospitality and co-operation during IGY will in some measure be repaid by having as New Zealand guests at Scott Base four American scientists who will participate in the scientific programme during 1959.

Further geological surveys and exploration in the Victoria Land coastal area will be carried out during the next two summers.

Further close co-operation with the United States will include the continued joint occupation of the IGY station at Cape Hallett by New Zealand and American scientists.

H.M.N.Z.S. "Endeavour" will be used both as a supply ship for the expeditions and for oceanographic research during the 1958-59 season.

Dog teams will be built up at Scott Base to provide sled transport for field parties in the summer of 1959-60.

"The committee has prepared a scientific programme designed to make

the most effective use of facilities established in the Ross Dependency during the last two years," said Mr. Holloway. "Much of the work to be done will be a logical extension of current IGY research and the field work of special geological survey and mapping teams last summer." These activities will conform generally with S.C.A.R. recommendations.

The Department of Scientific and Industrial Research Geophysics Division will be responsible for putting the programme into effect.

PERSONNEL

Some 31 men will be required, 19 for the summer months only and 12 for the whole of 1959.

For Scott Base, September 1958 to March 1960, applications have been called for a Scientific Leader, four scientific officers or technicians, a radio operator, a cook, and two maintenance officers charged with the duty of operating and maintaining diesel generating plant, tractors, etc.

For the summer period November 1958 to March 1959, a scientific officer is to be appointed "to study animal, bird and plant life in the McMurdo Sound area."

During the same period, oceanographers of the Oceanographic Division, D.S.I.R., will undertake surveys between New Zealand and Antarctica and in the Ross Sea, on H.M.N.Z.S. "Endeavour".

For the positions at Scott Base, and Hallett Station and in the Victoria Land Expedition, over 300 applications were received by the Executive Officer, Mr. J. H. Miller.

SCIENTIFIC PROGRAMME

Following the withdrawal of Mr. L. H. Martin's I.G.Y. team in February or March, Scott Base will be manned throughout 1959 by nine New Zealanders who will continue observations and research in many fields of science. The purely routine work carried out during the IGY period will be modified and reduced, but two new research projects will begin.

One will be a study of the lower regions of the ionosphere, which affects radio communications by absorbing certain lower radio frequencies. New Zealand leads the world in this field of radio research through work done at Canterbury University under Dr. J. B. Gregory, a senior lecturer in physics. Dr. Gregory will spend the summer months at Scott Base installing special equipment and training the wintering-over staff in its use. The equipment is now being designed and built at the University's Industrial Development Department with the aid of Government finance.

TRACKING THE WHISTLER

Another new project will be a special study of "whistlers", radio waves from lightning flashes which appear to travel along the earth's lines of magnetic force, thousands of miles from the earth's surface. Until recently it was believed that these could not be received much further south than New Zealand or the equivalent latitude in the northern hemisphere. Doubts about this theory have been raised, however, since I.G.Y. staff heard "whistlers" at Scott Base. The Dominion Physical Laboratory is designing and building special equipment which will be installed at Scott Base to record them next year.

Four American scientists will be the New Zealanders' guests at Scott Base during the year. They will study earthquakes, glaciers and the aurora, using radar equipment which is to be transferred from the United States IGY station at Little America.

Dog teams at Scott Base will be increased by breeding and by taking further huskies back from New Zealand next summer. The aim is to increase their number to about 40, which should provide enough teams for a major programme of field work by New Zealanders in the 1959-60 summer.

Biologists will study plants, animals and birds in the McMurdo Sound area during the next two summers. Dr. R. A. Falla, Director of the Dominion Museum, will organise this activity.

OCEANOGRAPHY

Toward the end of this year, New Zealand scientists from the D.S.I.R. Oceanographic Institute working from a United States ship and the "Endeavour" will continue oceanographic surveys of the water, marine life and ocean bed between New Zealand and the pack ice. For the first time, a traverse is to be made of the convergence of Antarctic waters with sub-antarctic waters from east to west along a latitude of about 60 degrees south. This convergence was plotted accurately for the first time by New Zealand scientists working from H.M.N.Z.S. "Pukaki" and "Endeavour" during the last two summers, but so far only crossings have been made.

Major oceanographic research will be done in the Ross Sea this summer, when the "Endeavour" will make the first fullscale survey from a grid of sea stations 60 miles apart. Observations will be made from the surface to bottom and samples of marine life and the sea bed will be taken.

"The Committee has been limited in the scope of its planning by the need to keep expenditure to a minimum during our present financial difficulties," said Mr. Holloway. "At the same time, however, the Government is convinced that New Zealand simply cannot afford to neglect her interests in the Antarctic.

"There are too many immediate and long-term benefits to be gained, which might be lost if the programme were postponed or delayed in any way."

Geological and Survey Expedition to Victoria Land

Two New Zealand parties, each of six men, will be flown into Victoria Land by helicopter from an American icebreaker next summer to explore and map 300 miles of the unknown coast and hinterland midway between McMurdo Sound and Cape Hallett, the area of Wood Bay (74° S.) and Terra Nova Bay (75° S.).

This will fill the gap between the work done by Dr. Harrington's party in the north and by Trans-Antarctic Expedition members in the south, last season.

Each party will consist of one geologist, one surveyor and four members with alpine experience for support. These general assistants will be selected primarily on their experience and knowledge of snow and ice techniques. Some of the appointees will attend courses on radio and first aid. One will be responsible for radio communications and will require to have skill and experience of radio operation and repair under cold field conditions.

UNKNOWN COUNTRY

"It is likely", says the N.Z. Alpine Club Bulletin, "that six men will be landed at Terra Nova Bay, and another six men at Wood Bay, 70 miles to the north. The general pattern of the great glaciers flowing to Terra Nova Bay is known, and one of them was ascended by David's three-man party on their way to the Magnetic Pole" (in 1908-09). "Nevertheless the Terra Nova Bay party will quickly get into unknown territory.

"At Wood Bay conditions are quite unknown. It can be expected that a major valley will extend inland from the head of the bay, but we do not know . . .

"The region is probably the biggest single piece of really mountainous and unexplored country that is left—not only in Antarctica but anywhere in the world."

The party will leave New Zealand some time between late November and

mid-December. To give the greatest possible coverage of territory in the short summer season it is planned to have the two parties flown about 80 miles inland. They will spend about three weeks making their way to the coast down glaciers, mapping and taking geological samples as they go, and the process will be repeated until they are withdrawn toward the end of February.

These expeditions will be organised by the D.S.I.R. Geological Survey and the Lands and Survey Department.

Depending on the results achieved by these parties, further field parties will probably work south from Scott Base in the summer of 1959-60. This would probably involve a number of two-man parties travelling with dog teams and supported by the R.N.Z.A.F. Beaver aircraft, which will be brought back to New Zealand this summer for overhaul.

ALPINE CLUB CO-OPERATES

The Minister in Charge of the D.S.I.R. has expressed thanks for the understanding attitude shown in negotiations by the New Zealand Alpine Club, which has foregone its plans for an Antarctic expedition of its own next summer and instead has offered full co-operation to the Government. This was greatly appreciated, said Mr. Holloway, and he was sure that the experience of alpine club members would be welcomed among the supporting personnel.

Prior to the announcement of the postponement of the Alpine Club's Expedition the annual meeting of the Ross Sea Committee granted permis-

sion for the eight-man expedition to use supplies of food and fuel left by Sir Edmund Hillary at Butter Point.

The expedition will now probably take place in 18 months time.

In applying for permission for the club, Sir Edmund Hillary said he had arranged for Rear-Admiral Dufek to transport the party to and from Antarctica, but the basic problem for such a small expedition with limited finance was food.

"The food is of no value at all to the Ross Sea Committee and I put it at Butter Point with the view that another expedition might use it," said Sir Edmund.

British Venture

The Royal Geographical Society and the Everest Trust Fund have given financial assistance to a British party, comprising Dr. Jon Stephenson, Australian geologist, Mr. Ken Blaiklock, British surveyor, both of the Commonwealth Trans-Antarctic Crossing team, and two others.

The expedition expects to spend the summer months working in the Horlick Mountains at the southern end of the Ross Ice Shelf, about 300 miles from the Pole. The use of two dog teams and other facilities at Scott Base has been offered to the party, which also hopes to use American air support.

Stop Press.—This expedition will not take place this year.

NEW ZEALAND PRIME MINISTER MAY VISIT ANTARCTICA

Admiral Dufek has invited the New Zealand Prime Minister, Mr. Nash, to fly to the Antarctic this spring.

A well-kept secret was the fact that Mr. Nash had planned to visit Scott Base last year. He announced this in June when accepting the gift of an Antarctic painting from Peter McIntyre. The gift, "H.M.N.Z.S. Endeavour Entering Pack Ice", will hang in the

Prime Minister's office in Parliament Buildings.

Had it not been for the thaw setting in and the break-up of the American air-strip near Scott Base, Mr. Nash would have probably been on hand to welcome Sir Vivian and Sir Edmund when they reached Scott Base. Not only this, but he would have made history by being the first Prime Minister ever to set foot on the Antarctic Continent. He may still do so.

IN ADELIE LAND

Paul-Emile Victor, Director of Expeditions Polaires Francaises, said in New York in May that France would not be able to continue manning the satellite Charcot station after the close of the International Geophysical Year, because of lack of funds.

July at D'Urville was much less cold on the average than in previous years. In the first week there was almost continuous blizzard with gusts above 110 miles per hour. The constant roar of the wind tended at last to get on the men's nerves.

The middle of the month brought a fine spell, but during the last ten days there were heavy snow falls and thick blizzard, followed at the end of the month by a Scotch mist. The temperature rose to 30° F., there was rain and the doors were kept open. But next day the thermometer registered —20° F., all around were enormous snow-drifts and the rocks were covered in ice.

On July 8 an aurora was observed of exceptional size, intensity and changing colours.

Up till July 20 the sea-ice surface was excellent: hard and without snow-cover, and of an average thickness of 31 inches. Nine weasel journeys were made. At Point Ebba morainic deposits gave the impression from a distance of unknown islets.

The French National Day, July 14, was celebrated with a football match on the sea ice, followed by a gala dinner.

WILKES STATION TRANSFERRED TO AUSTRALIANS

When A.N.A.R.E. takes over Wilkes Station (66° 15' S., 110° 31' E.) from the United States in January, the Australians will acquire equipment worth one million dollars, said Mr. P. G. Law on his return to Australia on June 24 after consultations with the U.S. authorities.

This equipment will include weasels, sno-cats, diesel generators, elaborate workshop facilities, radio installations, hospital, surgery and a photo laboratory, as well as stores, fuel and such scientific spares as weather balloons.

Wilkes is closer to Australia than either Mawson or Davis, and the first Australian party of 20 men propose to investigate the possibility of establishing an air-base on the ice, late in January.

Weather information from Wilkes has already proved extremely valuable to Australian weather forecasters.

Early in January an ice-breaker in the Ross Sea will be detailed to make the trip to Wilkes. Weather permitting, it will rendezvous with an Australian ship outside the Vincennes Bay ice pack and lead it in. Australian personnel and two or three American scientists will relieve the 28 Navy and IGY men now wintering-over there.

THE WILKES NEWS

New low temperatures were recorded at Wilkes Station in June. At the main camp the temperature fell to -21° F. and at the satellite station to -39° F. Later a new "low" of -35° F. was recorded at Wilkes. The average temperature for June was six degrees below the 1957 average of 0° F. The ice thickness offshore was 14 inches. By mid-June roads were clear of snow and the men were again able to use melt-water from a pond instead of having to melt snow.

Two glaciologists returned from the satellite station (66° 28' S., 112° 17' E.) in June after a month's stay there, leaving it temporarily unoccupied.

Travel to the satellite station was hindered by short hours of daylight and by snow on the trail, making it almost a two-day trip.

When three seals were killed for dog-food each seal was found to be of a different type: a Ross seal, a Crab-eater, and a Weddell.

Several clear nights in late June permitted good observation of the aurora.

A homing light was mounted on the hill just to the east of the camp to help direct anyone out in the increasing hours of darkness. In mid-June the sun could still be seen just above the horizon at midday.

Midwinter's Day brought a thaw with the temperature up to 27° above zero. Rain mixed with snow fell for a short time.

Late in August five men left on a one-day trip to the Cape Folger area to set up markers for ice-movement studies and the investigation of the glaciology of the area.

SIGNS OF SPRING

Four men surprised the rest of the camp by returning from a seal-hunting expedition with a live young 250 lb. Weddell seal. He was kept overnight in the garage. It was then decided that he was too big to try to keep as a pet, and when it was found that he would provide too little meat for the dogs he was released near his hole in the ice.

In July five men ventured on the bay ice in a weasel and a sno-cat. They found free water about five miles from shore. At the water's edge many birds were seen, including giant

petrels, snow petrels and Antarctic petrels. Several leopard seals were seen, and one was killed for dog-food and brought back to camp. It took about ten shots into the head with a .45 pistol to kill it.

A trail trip was made in July to conduct observations of snow and ice conditions.

Early in August, with increasing hours of daylight, preparations for the spring traverse were being made, including the construction of a sleeping wanigan.

By this time the bay ice was up to 42 inches in thickness. Oceanographer Tressler, the camp Scientific Leader, continued to get samples of bay water from the floor through holes in the ice.

By mid-August the cool calm weather appeared to be over, and temperatures of 23° F. with high winds were recorded. Preparations of supplies and equipment for the traverse in September were continued; Tressler with Eyres and Ommundsen made a sno-cat trip over the bay ice to the Chappel Islets, about five miles from the camp. The bay ice was continuous as far as they could see.

S. C. A. R.

At the second meeting of the Special Committee for Antarctic Research held in Moscow from August 4 to 11, New Zealand was represented by Dr. E. I. Robertson, Chairman of the Ross Dependency Research Committee.

All the nations at present working in the Antarctic have intimated their intention to carry on for at least another year, some on a slightly reduced scale.

POLISH EXPEDITION

Poland intends to establish a base in the Antarctic during the summer of 1959-60. S.C.A.R. has agreed to supply Poland with a list of the locations where it is considered advisable that stations should be set up, in the hope that the Polish base may be located in one of these positions.

As membership of S.C.A.R. is limited to those countries actually participating in Antarctic research, Poland has not yet become eligible for membership.

WEATHER ANALYSIS

"Weather Central", located at Little America since January, 1957, will close down in mid-January, 1959, when the station ceases to be a full-scale scientific base. Weather data from the various Antarctic bases will as before be sent in to the American base at McMurdo, and will be re-broadcast from there. It is not proposed, however to set up another centre for actual weather forecasting.

Instead, an international **Weather Analysis Centre** is to be established "outside of Antarctica". It has been left to Australia and New Zealand to work out a plan for the establishment of this centre, and to report their proposals to S.C.A.R. before the end of September. The new Centre will prepare current daily weather maps, and will, it is hoped, be in operation some weeks before the closing down of Weather Central at Little America.

FUTURE MEETINGS

The next meeting of S.C.A.R. will be held in Melbourne in February. Prior to this meeting a symposium on Antarctic meteorology will take place in Melbourne.

A full-scale scientific symposium will, at the invitation of Argentina, be held in Buenos Aires in November, 1959.

"MIDWINTER'S DAY"

One of the men in the party at Scott Base, states the Ross Sea Committee's "Newsletter", is Graeme Midwinter, who is responsible for aurora and solar radiation; and for obvious reasons he looked on the shortest day as his special day. However, apart from allowing him to go around saying "This is Midwinter's Day", he was given no extra privileges.

Russians Plan Antarctic Crossing and More Coastal Stations

The Soviet Union revealed at the recent S.C.A.R. meeting in Moscow that Russian scientists plan to drive on in the spring to the Pole of Inaccessibility, to set up two new stations in other parts of the Antarctic, and in 1959-60 to make a trans-continental traverse from Mirny to the Bellingshausen Sea.

Last summer the tractor train party aiming to set up a station at the Pole of Inaccessibility, approximately 80° S., 50° E., was halted some 400 miles from its objective and Sovietskaya was established on February 15 last in 78° 24' S., 87° 35' E., 887 miles from Mirny and 12,000 feet above sea level. If a station is set up at the Pole of Inaccessibility, as the Russians plan to do in October or November, it will probably be at an altitude of nearly 15,000 feet, and men living there may have to wear oxygen masks. The temperature may never rise above zero, and may fall to about -120° F.

TRANS-ANTARCTIC JOURNEY?

The Russians are reported to be planning for 1959-60 a traverse of the Antarctic Continent almost at right angles to the British crossing of last summer. The plan is to leave Mirny in October, 1959 and passing via the Pole to reach the Bellingshausen Sea west of Grahamland in March, 1960.

It is proposed to set up this year a new station named Bellingshausen on the shore of the Bellingshausen Sea, to serve as a support station for the crossing. No vessel has ever yet penetrated to the coast in this area.

The Soviet Union also proposes to establish a new base in Queen Maud Land. Japan, Belgium and Norway have bases on this coast, although the Japanese base was not occupied this winter. The proposed Italian Expedition of Dr. Zavatti also proposes to work in this area.

Both the new Soviet bases will be established by ships doing oceanographical work in the areas concerned.

The Soviet Union intends to continue work at all previously established stations except the intermediate Pionerskaya, which will be closed down next January. Scientific work at the new stations will probably be limited to glaciology and meteorology, and at Oasis only meteorological, actinometrical, geomagnetic and some glaciological observations will be conducted.

REPORTS FROM MIRNY

Mirny scientists are gathering and studying data on the intensity of inter-latitude air exchange, and are exploring ways to find connections between the weather anomalies of the southern and northern hemispheres.

Magnetic observations carried out by M. Ostrekin, chief of the geophysical party, on Bezmyanny Island, which has recently been explored for the first time, have proved to be highly interesting. The co-ordinates of the island are 65° S., 99° 21' E. The magnetic incline here has been found to be much lower than shown on the maps.

It is planned to make "complex glaciological observations" along the land routes Vostok - South Pole - Sovietskaya during the period October 1958-February 1959.

MIRNY

A recent publication of the Academy of Sciences of the U.S.S.R. gives this description of the site (66° 33' S., 93° 00' E.) of Mirny, to the south of Haswell Island off the Queen Mary Land coast.

"This site is an ice-bank projecting northwards from the mainland, from 40 to 65 feet in height, ending vertically at the sea. At the very edge of this precipice four small nunataks 2,000 to 3,000 feet apart stand up above the continental ice. Facing them are fifteen rocky islets scattered over the surface of the sea, the largest of which is Haswell Island. The great number of projecting and submerged rocks presents a serious danger to ships. During the winter, an ice-sheet is formed here, nine to twelve miles in width, but in summer it breaks up and the coastal strip is almost free of ice.

"But fragments of ice remain throughout the whole summer, drifting bergs or bergs resting on the sea bed. The site is therefore not very convenient for the building of a supply base as the unloading of ships here is extraordinarily difficult and even dangerous. Building also is difficult, and it proved necessary to site some of the principal buildings not on the rock areas but on the continental ice."

LIFE AT VOSTOK

"In central Antarctica" says Vasili Sidorov, leader at Vostok Station, "the human organism is subjected to a strong impact of a whole complex of unusual meteorological factors. The chief of these are low atmospheric pressure, dropping in the area of Vostok station to 45 mm. of the mercury column; exceptionally low temperature; and a dearth of oxygen. All this demands adaptation to the existing conditions. The most noticeable changes are observed in the activity of the cardio-vascular system and the respiratory organs; blood pressure sharply drops."

AND AT SOVIETSKAYA

"Our station" says Vitaly Babarykin, Chief of Station, "is situated on a high-altitude plateau of Central Antarctica, in the vicinity of the 'pole of inaccessibility'. The station's exact coordinates are: latitude 78° 24' S., longitude 87° 35'. This is a pole of

cold. In June the temperature here time and again dropped to -113° F. On June 19 we registered the lowest temperature anywhere on earth, -114.12° F. at a wind velocity of 4 metres per second.

"Notwithstanding the rigorous natural conditions, on that day aerologist Maevsky, radio-technician Malikov and physician Konstantinov sent up a radio-sonde and carried out theodolite observations.

"From the 15th through to the 24th of June our station sent up high altitude radio-sondes more frequently. I would like to point out that the low temperature in our area has continued since the beginning of winter. Thus, in April the average monthly temperature was -76.9° F. and in May -79.9° F. On the "warmest" day in the past three months the temperature was -45.2 F. below zero.

COLD

Up to June 15 the lowest temperature ever recorded was -102.2° F. Then Vostok reported a new low of 112.18° F. On July 25 the temperature at Sovietskaya dropped to -117.4° F., at Vostok on August 9 it was -122.4° F., and now news has come of a new minimum, at Sovietskaya, of -124° F.

Soviet explorers report that at temperatures below -94° F. a drop of water thrown on the ice instantaneously turns into a ball of ice which does not freeze to the surface of the ice.

Men selected for work at Soviet stations are chosen by special medical commissions, and undergo a long period of training in baro-chambers. Yet Soviet doctors report that many men suffer from shortness of breath, palpitations of the heart and sudden attacks of asphyxia at night. At the high-altitude stations men suffer from headaches and nausea. Low blood pressure is a common symptom. The greatest trouble is with the cornea of the eye and the respiratory tract. All

these phenomena are short-lived and disappear in five or six days.

Symptoms are particularly marked in men who go to Sovietskaya from Mirny by plane, without any acclimatization period. After a flight of just over five hours they find themselves at an altitude of almost two and a half miles. It has therefore been suggested that prospective Sovietskaya members should spend short preliminary periods first at Pionerskaya, then at Komsomolskaya and later at Vostok before going on to Sovietskaya.

At the inland stations there are large rooms where the temperature is maintained at between 62° F. and 68° F. With a temperature of below -94° F. outside, no one stays in the open for more than twenty minutes or half an hour at a time. All wear special padded winter clothing, moleskin masks and protective goggles when outdoors. The mask is attached to a fur cap which comes down well over the ears. From it a hose of corrugated rubber leads down under the wearer's clothes, so that he breathes air warmed by the heat of his own body. Scientists who work in the open are equipped with electrical and chemical heaters.

ALONG THE COAST

Professor V. Kort has reported that during the coastal cruise of the "Ob" last summer considerable emendations were made in the mapping of the King George V Coast and Oates Coast. Between the Davis Sea and the Ross Sea a previously unknown depression was discovered in the ocean bottom stretching along the coast. In some places this depression has a depth of more than 4,900 feet. It constitutes the dividing line between the ocean bottom and the continental platform of Antarctica.

Another discovery was of a vast contemporary volcanic zone in the south-western area of the Pacific.

In the area of Scott Island, north of the Ross Sea, a crab was caught very similar to Kamchatka crabs.

Oceanographical plans for 1958-59 are for one ship to work in the "shelf" area of the Bellingshausen Sea and in the region of the Antarctic convergence north of this sea, and for the second ship to make observation along the Queen Maud Land coast.

OCEAN BED

The geomorphological studies carried out by Soviet scientists refute the supposition that the bottom of the ocean is smooth or slightly undulating. It has a distinctively volcanic relief, in which individual volcanic cones attain an altitude of 9,810 feet. The freshness of outline of this relief suggests that these submarine volcanic formations are fairly young and relatively contemporary. These discoveries, says a Russian report, permit us to speak with greater certainty about the existence of the ancient continent of Gondwana, which in remote ages connected the Eastern Antarctic with Africa and Western Australia.

ROCKET FIRINGS

During the 1957-58 Antarctic cruise of the "Ob", 22 rocket launchings were made. The first, on December 31, 1957, was in the region of Mirny Station, and 12 other launchings were made south of 60° S. between January 20 and April 26 this year. All twelve were in the area bounded by the meridians 120° 32' E. and 109° 10' W. One, on April 1, was in Ross Dependency waters, 67° 26' S., 180° W. The rockets fired were of the "Meteo" type, thought to reach elevations of 70 miles or more. They carried instruments for the measurement of temperature and atmospheric density.

ANTARCTIC WEATHER

The aerometeorological studies carried out by the expedition at sea, on the coast and inland, have made it possible to draw up a picture of the circulation processes of the atmosphere in the Antarctic which determine the specific features of the climate and

the weather in the Southern hemisphere.

The zonal type of atmospheric circulation which predominates there is nothing but a series of cyclones incessantly following each other. It has been established that this chain of cyclones does not move away from the continent, as was supposed, but closely follows the Antarctic coast line. As a result the exchange between the masses of air in the polar and equatorial regions is very small, and this is one of the basic reasons for the extremely cold climate in the Antarctic.

It has been found that the atmospheric pressure in the Antarctic is below normal throughout the year, and its annual cycle is directly opposite to that in the Western Hemisphere. In the Antarctic the pressure in winter is lower than in summer. The troposphere in the same latitudes in summer and winter, has a lower temperature than that in the Arctic. Contrary to the Arctic, the stratosphere in the Antarctic in winter is higher than in summer.

THE ICE COVER

It has been suggested that the entire Antarctic ice cover is being maintained by the periphery cyclonic precipitation, while the central anticyclone region is characterised by very poor accumulation, an almost flat surface and slow movement. On the whole, the entire Antarctic glacier cover follows the same pattern of development as the ice formation in the other areas of the globe, i.e. it is shrinking. However, the process in the Antarctic is developing scores of times slower than in other parts of the world.

It has been established that 150 miles from the coast the ice-cap is 4,610 feet thick; 200 miles from the coast 6,470 feet; and in the vicinity of Pionerskaya Station, 6,200 and 6,540 feet.

Dr. Pyotr Shumsky, head of the glaciological section of the second Soviet Antarctic expedition (1957-58)

told a correspondent that after the analysis of scientific data obtained it became clear that the continent rises above sea level only as far as the area of station Vostok-1, situated at a distance of 450 miles from the shore. Then comes a deep depression in which the thickness of ice reaches two and a half miles, and basic rock is situated almost 3,270 feet below sea level.

Thus, gravimetric data confirms the assumption that the central part of Eastern Antarctica represents a deep depression.

There are reasons for discounting the theories of some scientists, he says, that Eastern Antarctica is a group of islands. Various data indicate that Antarctica is a continent which was pressed under the ocean by the weight of ice. Should the layer of ice be removed, the land part of the continent would rise by approximately one third of the thickness of the ice crust.

Temperature readings in wells bored in glaciers and mountain rock revealed an unusual temperature regimen. Usually the temperature in wells rises with their depth, while in Antarctica the process is reversed—the greater the depth the lower the temperature, but only to a certain point, i.e. the border of the upper third of the ice layer. Lower, the temperature gradually rises.

This is explained by the fact that cold moves through ice from the central, very cold regions. A normal lowering of temperature takes place on the surface in areas situated deeper inside the continent or higher on the glaciers. It has been estimated that in the area of the continent's pole of inaccessibility the average annual temperature reaches -85° F. This is the lowest annual temperature on the globe. Permafrost on land areas free from ice reaches a thickness of up to 500 feet.

A Moscow message dated August 25 reports the discovery during air reconnaissance of a large Emperor penguin

colony near the western shelf of a glacier about 250 miles from Mirny. Mirny scientists have also observed a rare albino penguin near the station.

One of the features of the past year at Mirny has been a great "drought". In the first half of this year there was on the Davis Coast only a fraction of the precipitation it had in the same period in past years. An unusual expansion of the belt of sea-ice surrounding the continent has also been observed. In May, this belt was already more than 300 miles wide.

CHUGUNOV ISLAND

The Soviet I.G.Y. Committee has kindly given us the following information about the island the discovery of which was referred to in our June issue, p. 270. It will be noted that the position is further south than originally reported here.

"During the period of activities of the Soviet Antarctic expedition of 1956, in an air-photo-survey flight an island was sighted on the edge of the Shackleton Shelf. The island was found to be an ice dome with moraine outcrops. Its co-ordinates are: 65° 58' S. and 99° 21' E.

"In April 1958 the island was visited by a party of Soviet investigators who named it Chugunov Island, after an expedition member who perished in the Antarctic."

TRIAL FLIGHT

The Soviet expedition plans an aerial reconnaissance this year to survey the route which their trans-Continental tractor train will follow in the 1959-60 season. They will probably use a plane similar to the U.S. Dakotas.

The plane will land at McMurdo Sound between October 15 and November 15, after flying from East Antarctica over the U.S. South Pole Base.

At McMurdo a United States Navy Air group will provide 1,600 gallons of fuel, rest the Soviet air crew, and service the aircraft.

The distance of the proposed Russian flight is approximately 2,310 land miles, compared with the 2,500 land miles the Americans have regularly been flying between Christchurch and McMurdo. But the Russians will have an altitude problem—up to 14,000 feet of icecap in parts of the area they plan to fly over.

FROZEN HISTORY

Why do the glaciologists in the Antarctic dig snow-pits?

Practically all the Antarctic ice-sheet is permanently dry. All precipitation is in the form of snow. Summer melt is rare and usually affects a surface layer only a few centimetres thick. Thus every snow-fall, including everything that falls with it, is separately and safely filed away for future reference under later snow-falls. So by digging a pit, counting annual layers and measuring snow density, the amount of annual precipitation for many years can be determined.

The tritium content of the snow can be used to estimate its age, but only for snow which fell prior to 1954. Since then, hydrogen bomb tests have upset the natural tritium balance. Analysis for other radio-active contaminations in precisely-dated snow layers will yield data on general atmospheric circulation since the first fission bombs were exploded in 1945. It should also be possible to follow the degree of atmospheric contamination resulting from industrial activity by analysis of snows down to the layers which fell in pre-industrial times.

Natural substances which fall with snow and are buried beneath succeeding layers—such as volcanic ash, meteorites, spores and bacteria—are extremely well preserved. The ash of the 1883 Krakatoa eruption may prove to be identifiable in both hemispheres.

Depths of 300 metres will include 2,000 years of frozen history.

AUSTRALIAN ANTARCTIC PROGRAMME TO BE ENLARGED

For the coming summer the Australian Government has chartered both M.V. "Thala Dan" and M.V. "Magga Dan". The heavy programme which the Antarctic Division is undertaking for 1959 makes it necessary to use two ships.

One will relieve the Macquarie Island, Davis and Mawson Stations, while the other will visit the U.S. Station at Wilkes, which Australia will maintain as from February 1 next. Further exploration of little-known stretches of the Antarctic coastline will be carried out by both ships.

The very great distances involved and the shortness of the Antarctic summer, together with the additional number of men to be transported to and from the four bases, and the need to visit and service the unmanned automatic weather station in eastern Wilkes Land, puts the task beyond the capacity of one ship.

"Thala Dan" was used by A.N.A.R.E. last summer. "Magga Dan" was used by the Trans-Antarctic Expedition for the summer season 1956-57. The ships are sisters, but "Thala Dan" was built two years later than "Magga Dan."

The first expedition will be to Macquarie Island in December, and two more will go to the continent early in January.

Early in August it was reported that no qualified medical men nor physicians had offered their services, and that more radio men were needed.

MAWSON DAYS

A succession of blizzards combined with shortening daylight made outdoor activity at Mawson difficult during May. Early in the month a scheduled two-day visit to an Emperor penguin rookery 25 miles away by Burnett and Brown turned into a seven-day visit while they weathered the worst blizzard in a tent. First,

snow piled up to the roof and then strong winds scoured the snow, threatening to tear out their tent pegs.

SEISMIC PARTY RETURNS

The seismic field party encountered temperatures below -30° F. The party returned on May 16 after eight weeks away. All were extremely fit though most had skin missing from faces and hands through frostbite. Other activity was the opening up of the satellite station at Taylor Glacier by Chapman and Evans and a 400-mile flight to Davis by Wilson and Richardson with a load of freight.

June was ushered in by a blizzard with winds over 100 m.p.h. and meteorologically the month was the worst in Mawson's $4\frac{1}{2}$ year history.

During July the weather gradually improved and although temperatures remained low the month ended with several exceptionally calm days. These, combined with the return of the sun, brought a feeling of relief throughout the station. The dogs playfully and noisily showed their appreciation also.

OUTDOOR WORK BEGINS

The improvement encouraged outdoor activity and, apart from the endless maintenance and construction work, some strenuous trips were made, notably by Oldfield and McLeod who walked the 20 miles to Mount Henderson measuring accumulation of snow and ice. At Taylor Glacier, Blake and Chapman climbed a difficult 1,000 ft. peak that rises steeply above the sea.

Two dog teams are being prepared for a 400-mile journey from Amundsen

Bay to Mawson, leaving next November. The dogs and sledges will be flown out and will return by a devious route calling at several small mountain ranges whose peaks are thought to rise to 8,000 feet. King, McLeod and Knuckey will accompany the dogs. The dogs enjoy their training. Those left behind vociferously signify their disappointment and those being taken to the sledge almost pull the men off their feet in their eagerness.

The R.A.A.F. continued flying throughout the winter months, carrying out reconnaissance flights and assisting the continuous staffing of the Taylor Glacier Station by transporting men and supplies. Now they are preparing for a full spring and summer programme.

It is necessary to house instruments measuring magnetic variations far away from abnormal influences and to maintain continuity of records. Physicists Cook or Arnel have to attend these instruments at seven each morning. All find the everyday tasks difficult in winter weather, but these men's morning battle over a rough and exposed track must rival any peacetime duty for fortitude.

Winter leisure was enlivened by the appearance of a comprehensive weekly newspaper bearing the name of "Mawson Maize". It produced some surprisingly high standard prose and poems and further appearances are eagerly awaited. The Editors remain anonymous.

AIRCRAFT DOWN ON ICE

On August 15 the first serious air emergency A.N.A.R.E. has had to face was created when one of the expedition's Beaver aircraft was forced down by engine trouble about 80 miles east of Mawson. The plane, piloted by Squadron-Leader Grove and carrying Sergeant Manning and McLeod, geologist, was flying from Mawson to Davis when low oil pressure caused the pilot to turn back. Lack of oil, however, forced the plane to land short of its home base. The pilot

wisely decided to land on land-based ice rather than on sea ice, which can break up or be blown out to sea in a storm. But thick cloud and severe air turbulence along the coast made the operation most dangerous. Moreover, the area where the plane touched down was surrounded by a mass of small crevasses, and in the gale-force winds the men had difficulty in tying down the aircraft on the icy slopes. They spent the night in their survival equipment.

The following day Flight-Lieut. Wilson took off in the second Beaver aircraft from Davis. Wilson flew first to Mawson where he picked up Sergeant Richardson and all necessary tools and spares for repairing the Beaver's engine. Then he flew to the stranded plane, landing Richardson and picking up Manning and McLeod, who were flown back to Mawson.

For the next two days Richardson and Grove worked unceasingly on the disabled engine. In the low winter temperatures encountered in Antarctica, manual work is uncomfortable even with gloves on, yet Richardson worked for long periods without gloves.

If the Beaver could not be repaired, it would create a serious break in the expedition's scientific programme. To haul a spare engine to the site of the forced landing would require all the available surface vehicles at Mawson and the time taken to carry out such a journey and effect engine change in the field would amount to two months. This would seriously disrupt the seismic field work and the aerial photo-survey programmes planned for the spring.

Throughout Sunday all radio communications between Mawson and the men working on the plane were blacked out by solar activity, so on the following day Adams (Officer-in-Charge) and Wilson flew east to find out how repairs were proceeding.

Good progress had been made. Although bearings were damaged, the engine gauges indicated the engine

could produce sufficient power for flight. The aircraft was made as light as practicable and a take-off on reduced power was successfully executed. The second Beaver accompanied the disabled aircraft in case a second forced landing took place.

The engine's oil pressure and temperature showed steady deterioration during the flight and 15 miles from Mawson it appeared necessary to land. However, by descending very slowly and using the minimum engine power, Grove managed to bring the aircraft back to Mawson safely.

HURRICANE AT MAWSON

Buildings at Mawson were damaged in a violent storm on September 7 which recorded up to 130 miles. The ionospheric laboratory was moved three feet from its foundations when two guy wires holding it down were snapped by the high wind. Although spare radio valves and other delicate components were scattered on the floor no serious damage occurred and the major pieces of equipment were undamaged.

Iron sheeting was torn from the hydrogen generating hut, while power and telephone lines, radio aeriels and fire alarm wires were damaged. Other huts were severely shaken but the large aircraft hangar stood up well to the storm.

Most of the damage has been repaired and steps are being taken to moor the displaced hut solidly in its new position.

NEWS FROM DAVIS

The chief feature of the weather during May was the light winds encountered. The average wind speed was 6.5 knots, which is the lowest mean wind recorded for a month at Davis. There were no blizzards and very little snow. Temperatures in degrees fahrenheit were: mean average 7.6, maximum 29.2, minimum minus 11.6.

On May 15 the Beaver aircraft arrived from Mawson. The Davis party

took the opportunity during aircraft ice reconnaissance and radio beacon trials to view the Vestfold Hills and surrounding terrain from the air. All were greatly impressed by the grandeur of the Sorsdal Glacier about 7 miles S.W. of the station. On May 22 the Beaver returned to Mawson. The sea-ice on May 30 measured 30 inches and it was estimated from the air that it extended approximately 5.2 miles from the coast in the vicinity of the camp area.

At Davis also June began with a blizzard gusting to 100 miles per hour. The average temperature was 4° F. on the 2nd. There were three blizzards during the month, which is in strong contrast to all previous months. The temperatures in degrees Fahrenheit for June were: mean average, 3°; maximum, 22.1°; minimum, -20.5°. Relative humidity was 69 per cent. and average wind speed 10.5 knots.

The sea-ice thickness early in July was 40 inches and after the blizzard on June 28 open sea was visible about two miles from the station beyond the adjacent sea-ice. Gardner at last gave up the unequal battle of endeavouring to keep the Ferguson tractor mobile because of the increasing drift about the station and the lack of any tractor shelter. With the exception of Nell the husky, who was always moving about depoting food for a snowy day, the area surrounding the station was devoid of all life.

WEATHER RECORDS

Although Davis is only in its second year as an A.N.A.R.E. station a number of records were broken in July. The main ones were: minimum temperature, -28.2° F.; lowest daily maximum temperature, -18.6° F.; average wind speed for 24 hours, 43.5 m.p.h. and minimum average wind speed for 24 hours, 1.75 m.p.h. The maximum temperature for the month was 29.7° F.

For the first twelve days of July strong winds blew continuously, culminating with a blizzard from the

13th to the 15th. During this period much of the outer sea ice was broken up and blown away, leaving open sea visible at a distance of approximately $1\frac{1}{2}$ miles; but with the very low temperature which followed, this area was soon frozen over again. Although officially the sun was above the horizon again on July 16 it was not visible owing to overcast skies, until the 24th, when it shone weakly in the north for a few hours during the middle of the day.

Up to August 10 no sign of returning seals had been observed but what was hoped to indicate an early spring was the presence for several days of a giant petrel flying around the bay.

* * *

The automatic weather station on Lewis Islet, which began operations on January 24, ceased sending out signals on May 20.

NORWAY STATION

At Norway Station ($70^{\circ} 30' S.$, $2^{\circ} 32' W.$) observations have been carried out according to plan.

In the middle of July there was a very heavy 13-hour blizzard of some 82 knots. One of the radio masts was broken, the observation tower was partly destroyed, and two dogs disappeared from their chains. During some of the squalls gusts of over 100 knots were registered in the tower. Fortunately no one was injured and there was no damage to the base buildings.

Preparations for the new air-mapping expedition are going on according to plan. The air-force personnel and other members have been training for this project all summer and the programme, weather permitting, will be a comprehensive one.

All is well at the station, reports the Director of Norsk Polarinstittutt.

ITALIAN PROJECT

The small expedition being organised by Istituto Geografico Polare, the Italian Antarctic Scientific Expedition, is scheduled to leave Italy on October 3. The expedition ship, a schooner with a net tonnage of 150 tons, is 91 feet long and 14 feet wide, and has a speed of about 10 knots per hour.

Travelling via Anzio, Suez, Madagascar, Port Elizabeth and Marion Island to the Queen Maud Land coast, the expedition plans to build a base on Cook Peninsula.

The personnel of the expedition will comprise:—

Prof. Silvio Zavatti: leader, meteorologist and oceanographer.

Major Giorgio Costanza: second in command.

Dr. Massimo Cirone: physician and biologist.

Dr. Guiseppe Cuffaro: photography and kinematography.

Prof. Federico Gatta: surveyor.

The captain of the ship will assist in the oceanographical work. A radiotelegraphist, a cook and five seamen complete the party.

Many Italian firms, including Olivetti, Palmolive, Giviemme, Fargas, Monda and Motta, have helped to finance the expedition.

German Expedition Postponed

A correspondent of "Ice Cap News" reports that Dr. Karl Herrligkoffer's proposed expedition will not now leave Germany before 1959 as no suitable ship was available for charter this year.

For 1959-60 Dr. Herrligkoffer has already chartered the "Kista Dan", and the German expedition is expected to leave on September 30, 1959, for the coast of Neuschwabenland, between 3° and $7^{\circ} W.$ The ship will remain in Antarctic waters and return in the spring of 1960.

Showa Base Will Be Re-manned This Year

The Antarctic Committee of the Science Council of Japan presented to the Council in April a plan for the re-occupation and maintenance of Showa Base (69° S., 39° 35' E.), established on East Ongul Island, Prince Harald Coast, in February 1957, but abandoned in February 1958.

The Council requested the Government to implement the plan. A general election delayed a decision, but on July 11 the Japanese Government decided to continue research in the Antarctic and to send the third J.A.R.E. (Japanese Antarctic Research Expedition) to Showa Base for two winters, 1959 and 1960. Dr. Takeshi Nagata was again appointed leader of the expedition.

The expedition will comprise 38 members in addition to the "Soya's" crew of 80, and 12 airmen. The wintering team will consist of 12 men, with an increase to 15 if conditions are favourable with regard to weather, ice and transportation. During the winter as well as on the voyage, observations will be made in meteorology, geomagnetism, aurora, air-glow, cosmic rays, ionosphere and physical geography. Studies in oceanography and biology will also be made during the voyage and in geomorphology and gravimetry while the "Soya" is at anchor near the base. Geological and glaciological research may be added for the 1960-61 expedition.

As a result of the severe ice conditions encountered in Lutzow-Holm Bay last season, the "Soya" is now being re-constructed to enable her to carry two large helicopters (Sikorsky 58) in addition to the two smaller Bell helicopters and a light Beaver aircraft.

The wintering party will include six scientists, with Mr. Masami Murayama as chief scientist. Mr. Murayama is a well-known alpinist and has been a member of the Japanese Himalayan Expeditions to Manaslu. The twelve

men of the wintering-over team, with 30 tons of essential equipment, will be carried in on the Sikorskys from the area where the "Soya" can move freely. If the weather and ice conditions are good enough for the "Soya" to reach the coast near the base, 90 tons of equipment and stores will be transported by snow vehicles.

If conditions are still good after this, the number of the wintering team will be increased to 15 and 60 additional tons of material will be off-loaded.

Extensive repairs to "Soya" will be necessary (screw, screw shaft, rudder, etc.) as well as the re-modelling to provide an adequate flight deck.

A SHANGRI LA OF THE SOUTH

In a talk on Radio Japan, Dr. Nishibori, leader of the team which wintered at Showa in 1957, maintained that the eastern coast of Lutzow-Holm Bay, especially in the vicinity of Ongul Island, where the base is built, is "a very comfortable place" in which to live. For the entire year, he says, the lowest temperature was -33° F., a temperature which is often experienced in central Hokkaido (the northern island of Japan).

Why, he asks, is the climate here so mild? It is because the wind blows mainly north-east in this area from the Indian Ocean and it is situated about 200 miles nearer to the Pole away from the region of floating ice. The sky was always clear of clouds near Showa Base, although the weather was often cloudy or stormy 70 miles further north. Even when the continental wind blew hard from

the south-east in the south of the innermost part of Lutzow-Holm Bay, there was a gentle southwind or no wind at all at Showa Base, and the temperature there "never dropped too much".

Showa Base stands firmly on bare rock and it will not be buried under snow or washed away on icebergs. The location is ideal for a base camp and Dr. Nishibori is certain that the buildings and supplies his party left behind will remain in perfect condition for many years. The automatic meteorological recorder is presumed to be recording daily data for a year, so it is expected that a complete meteorological report will be awaiting the Japanese party which is to re-occupy the base next summer.

At King Baudouin Base

The lowest temperature at the Belgian station during June was -18.4° F. and the highest wind gust 51 miles per hour. The snow level in early July was above the hut roofs and still rising. Thanks to the calm weather and a very frequently clear sky, there had been at least two hours of daylight every day.

In July the temperature was at first very mild, 5° F. to 14° F. during the first four days, but it dropped sharply to -56° F. on the 31st.

Between June 15 and 24 the meteorological team was put to a severe test because of the four weather-balloon releases called for by the I.G.Y. programme.

The 17 men at King Baudouin Base received with great satisfaction the news that a fresh team will take over from them next January. All are in good health and awaited the return of the sun on July 24, with particular interest because it coincided this year with the Belgian National Day.

On July 13 it was noticed that the ice had completely disappeared from King Leopold Bay, but later a new layer of ice formed eleven inches thick.

NIGHT IN A CREVASSE

On July 15 Giot and Picciotto travelled by dog-sledge the 18 miles to Breid Bay to examine the sno-cat left there earlier in the year. Nearing Fjoll Pass one of Picciotto's dogs fell down a crevasse. A snow-bridge 32 feet down broke the dog's fall and Giot went down to it. As it proved too difficult to get the dog to the surface, Picciotto went back to base through the darkness for help and at dawn on the 16th de Gerlache and three others went out in a sno-cat with Picciotto, to find that Giot had spent the night in his sleeping bag on the snow-bridge. He and the dog were safely brought back to base. On the 29th the same two men succeeded in reaching the sno-cat which was found almost buried in snow.

The aircraft engine has been repaired and trials were to be carried out on the first suitable day.

The Belgian Telephone Service has inaugurated a system whereby men at the Belgian base can carry on direct telephone communications with their families, the expedition headquarters in Brussels, or other friends. Calls can also be relayed to foreign countries. Persons wishing to contact expedition members can do so through the Brussels office. The Belgians claim that New Zealand is the only other country to have this direct public telephone communication with its expedition members.

The control of Belgian Antarctic research is being taken over by a newly - formed body, the Belgian National Centre for the Antarctic Campaign 1958-59-60. The purpose of the Centre, whose Director is Captain F. E. Bastin, is to continue the work of the Belgian Expedition under Commandant de Gerlache, at present in the Antarctic.

Halley Bay Base Under F.I.D.S. Control

Control of the Halley Bay Base (75° 36' S., 26° 41' W.) on the Coats Land shore of the Weddell Sea, set up and maintained by the Royal Society specifically for the I.G.Y., has now been passed to the Falkland Islands Dependencies Survey.

Its programme of work, similar to that of Base F in the Argentine Islands, will be continued on the present lines, but survey and geological work will be added and this will necessitate sledging. As the R.R.S. "John Biscoe" and R.R.S. "Shackleton" will be fully occupied carrying out the annual relief of the other F.I.D.S. bases, the "Tottan" has again been chartered for the relief of Halley Bay.

Further extension of activities at existing bases is also planned, notably the use of aircraft at the southernmost base (Base E in Marguerite Bay) which was re-opened this year.

NEWS FROM THE BASES

Most bases report that field work during April and May was hampered by very variable weather and consequently unreliable sea ice.

Hope Bay personnel were unable to travel south owing to patchy sea ice in Crown Prince Gustav Channel, but were kept occupied ferrying stores across to the View Point hut at Duse Bay, as the "Biscoe" had been unable to get into Duse Bay this year.

Base E reported a thaw at the beginning of April which made travel difficult and unpleasant, but later in the month a depot was laid at the foot of a known route up on to the plateau, other routes were reconnoitred, north of base, and a survey party visited Neny Trough to the southeast. A gale at the beginning of May cleared the ice from Neny Fjord to the south and again hampered travel, but later in the month the ice was sufficiently secure to allow two men from Base Y on Horseshoe Island, just over 20 miles to

the north, to deliver and collect some equipment. On May 8th two Base W men visited Base Y from the Blaiklock Island refuge where they had been working, linking up the Base W (Loubet Coast) and Base Y surveys.

THREE MEN LOST

In the middle of May the weather improved and a depot was laid on an islet west of base, prior to laying a depot further west in Marguerite Bay, on the Dion Islets. On the 27th three men (two meteorologists and one diesel mechanic) set out for the Dion Islets with two dog teams and two months supplies of rations and fuel. Unfortunately, gales again hit the area without warning at midnight that night and continued unabated until the afternoon of the 29th, resulting in the break-up of the sea ice near to their proposed route. The men had intended to camp on Pourquoi Pas Island but search parties have found no trace of them, and it is feared that they continued further and camped on the sea ice, and they are now presumed lost. The missing men are Geoffrey Stride, David Statham and Stanley Black.

Three of the dogs returned to base and it was hoped that the party might have been stranded on one of the numerous islands. Parties from Bases W and E assisted in covering the area systematically but without success, although seven more dogs returned to base, two of them being found in good condition a few miles to the south of base on June 21 and two more in mid-July. In all, ten of the original fourteen dogs returned to base but no trace of the men or their equipment was found.

Base W abandoned part of its programme in order to assist in the search for the missing men, but surveyors have been able to work south of Lallemand Fjord and westwards into Laubeuf Fjord.

SURVEY WORK

At Base J on the Graham Coast, one survey trip lasting a fortnight was carried out in April, and at the end of May a party travelled south to Holte-dahl Bay. A party from Base O (Danco Coast) on board the "Biscoe" laid a depot at Cape Willems and then carried out a preliminary triangulation of Charlotte Bay from the Cape Reclus refuge. Work in Wilhelmina Bay to the southwest was curtailed by bad weather and severe ice conditions which made boating impossible. The party returned to base on May 27. On May 17 Base O was able to contact South Georgia by radio-telephone and able to exchange news. Reception was reported to be exceptionally good.

The new survey of Signy Island has been completed, and at King George Island several trips have been made to localities around Admiralty Bay.

Base F reports good progress with the scientific programme.

NEWS OF THE SHIPS

The "Biscoe" left Stanley on April 1 for the last visit of the season to South Georgia and the more northerly bases, and on April 3 picked up a field party from Greenwich Island in the South Shetlands. She returned to Stanley on the 21st and sailed again on the 30th, bound for South Georgia, Montevideo and thence home to the U.K., arriving at Southampton on June 4.

The "Shackleton" sailed from Stanley on April 5 and arrived at Southampton on May 14.

A total of 13 F.I.D.S. men spent their leave in South America on the way home.

A bird, believed to be a giant petrel, landed in the Melbourne suburb of St. Kilda on June 15. It bore a ring marked "F.I.D.S. British Museum

Natural History 54109", so had probably flown over 2,000 miles from Grahamland to Victoria.

AT HALLEY BAY

On Midwinter's Day the 20 men at Halley Bay base, at present controlled by the Royal Society, had a special breakfast, enlivened by the appearance of the fourth number of "The Halley Comet". The five-course lunch was based on fresh food brought in the "Tottan" on December 31, 1957 and since stored in the natural deep-freeze of a tunnel deep in the snow near the main hut. During the afternoon presents which had remained unopened since the beginning of the year were unwrapped.

A party of Argentine scientists led by Dr. Otto Schneider called at Halley Bay on January 26 and made relative gravity observations.

When the U.S. ships "Westwind" and "Wyandot" called at Halley Bay on January 8, sets of the new radio-sonde ozone apparatus, designed and made by Dr. A. W. Brewer of the Clarendon Laboratory, Oxford, were delivered. This apparatus had been flown from England to Capetown and taken aboard the U.S. vessels there, a "most valuable act of co-operation".

Argentina

Argentine Foreign Office sources stated in July that talks between the U.S. and Argentina for the transfer of Ellsworth Base to Argentine operation have resulted in a final agreement.

WHAT GOOD IS IT?

"In an age when man is beginning to extend his activities beyond his own planet and out into space, academic studies of the physics of the upper atmosphere" such as are developing into the most fruitful and exciting of all the I.G.Y. polar projects "are essential pre-requisites for the designers of rockets, satellites and space-ships, and certain aspects of such studies can only be carried out in polar regions." (Phillip Law.)

ELLSWORTH STATION TO BE AN ARGENTINE BASE

The United States is to transfer Ellsworth Station (77° 43' S., 41° 08' W.) to Argentina, which already has a station, General Belgrano (77° 59' S., 38° 44' W.) established in January 1956, some 40 miles to the east.

Both bases are on the Filchner Ice Shelf in the south of the Weddell Sea, but General Belgrano is reported to be less lavishly equipped than Ellsworth. Shackleton, the base for the Commonwealth Trans-Antarctic Expedition, is slightly further still to the east, but is not a station specifically designed for scientific research.

It is the intention of the Americans to stage a tractor journey from Ellsworth to Byrd Station, a distance of about 1,000 miles, starting about October 15 and making seismic soundings of ice thickness and other glaciological studies en route. Two single-engined Otters are expected to fly the same route, and the party will probably be flown the 647 miles from Byrd to Little America, and be evacuated by ship from Kainan Bay or McMurdo Sound.

This journey would cover the route of Lincoln Ellsworth's famous pioneer flight of 1935, the first crossing of any substantial portion of the Antarctic Continent.

An over-snow traverse from Byrd Station last summer penetrated as far east as 88° W., and a traverse from Ellsworth drove about 450 miles to the south and then headed west of north. The new project would complete the seismic profile across West Antarctica, and should settle the question of a possible below-sea-level channel connecting the Ross and Weddell Seas.

WINTER AT ELLSWORTH

For the proposed Ellsworth-Byrd traverse next spring a messing wanigan has been constructed at Ellsworth. The shiny black wanigan is built on the

stripped frame of a five-ton sledge and is complete with electric lighting, running water from a built-in snow-melter, stove, heater, cook's bunk and a table for six. The complete wanigan weighs little more than the original sledge.

On July 8 Ellsworth was treated to an unusual auroral display. For 18 hours there was a magnificent display. At times the entire sky was a sheet of flaming red vibrating in the eerie stillness. Rays, arches and bands seemed to be radiating in all directions, blotting out the stars in the background. Time and time again coronas would form overhead and burst out in multi-coloured rays like a shower of sparks in a gigantic Fourth of July display.

THE DUFEEK MASSIF

Further details have been released of discoveries made on the over-snow traverse from Ellsworth last summer. On December 10 the five-man party under Edward C. Thiel reached a mountain range which had been mapped as 100 miles to the north-east on a flight by Navy aircraft in January 1957. It lies about 300 miles south of Ellsworth.

The peaks rise 5,000 feet above the ice-sheet and 9,000 feet above sea level. The range is remarkable for horizontal bands of black and rust-coloured igneous rock, largely diorite. From a distance the eastern end appears to be overflowed by the northerly movement of ice, but extensive snow and ice free areas were discovered here, to the north of the range. In one of the ice-free valleys was a lake some hundred yards wide.

UNITED STATES TO CONCENTRATE ANTARCTIC EFFORT

This year the United States, in Operation Deep Freeze IV, will withdraw from three bases in the Antarctic and concentrate efforts at McMurdo Sound, Byrd Station, the South Pole and Hallett Station, shared as before with New Zealand.

The two stations outside the range of the Ross Sea supply base will be transferred to other nations: Wilkes Station on the Knox Coast of Australian Antarctic Territory to Australia, and Ellsworth Station, at the southeastern end of the Weddell Sea, to Argentina.

Little America, the fifth station to be built and occupied on the northern fringe of the Ross Ice Shelf since Admiral R. E. Byrd led his first expedition south in 1928, is to be closed down, at least as a fullscale station. Little America V, constructed in January 1956, has been the major United States scientific base in the Antarctic. Two miles from the present ice edge at Kainan Bay, it is a small town of about 20 large buildings and several smaller ones connected by a covered way; and as well as being the field scientific headquarters for the whole U.S. I.G.Y. programme, has been the location of Weather Central and the supply base for Byrd Station, 647 trail miles to the east. It has housed some 70 men each winter since its construction.

A major factor in the decision to close down the station is the fact that cracks in the ice shelf on which it is built have appeared behind the station, an indication that in any case its days are numbered.

The range, which extends for thirty miles and is ten miles wide at its broadest point, has been named the Dufek Massif. The traverse party spent a week in the area, and photographs now published show an imposing mountain range.

The scientific work previously carried out at Little America will be divided between the U.S. McMurdo Station and New Zealand's Scott Base.

OPERATIONS SCHEDULE

Admiral Dufek arrived in New Zealand in early August, and will again have his headquarters in Christchurch, but with a staff only a quarter of whom have been engaged on Antarctic work before. Five R4D's, one R7V and three P2V's of the VX-6 Navy Squadron will fly into Christchurch from the 8th to the 26th of September, and the first Globemaster (C124) is due to arrive on September 17, followed by one every two days until all ten have arrived.

Seven ships will call at Lyttelton, the port of Christchurch, between October and January, on their way south. They are the ice-breakers "Glacier" (due October 31), "Staten Island" (November 23) and "Northwind" (December 12), as well as the tankers "Nespelen" (December 12) and "Chattahoochee" (January 5) and the cargo ships "Wyandot" (December 10) and "Arneb" (December 30). In addition U.S.S. "Brough" will as in previous years serve as an ocean station during the flights to McMurdo Sound.

The survey of a possible permanent rock landing field at Marble Point, north of Cape Bernacchi, on the west coast of McMurdo Sound is to be completed this season. Up to the present, aircraft flying in from New Zealand have used an ice runway on McMurdo Sound, which has more than once softened or broken up, preventing the

use of large aircraft over lengthy periods.

N.A.A.F. BEARDMORE

An important extension of the McMurdo weather service will be re-opened more than 300 miles south of McMurdo Sound. This is the six-man camp at the foot of the Beardmore Glacier formerly called Liv Station, but now known as Naval Auxiliary Air Facility, Beardmore. It is located about midway between McMurdo and the Pole. It is maintained by six men for weather intelligence and as an alternative landing point for planes making the McMurdo-Pole flight.

A weather services' husky named Arrival will accompany the aerographer's mate and assume the duties of mascot. Fifteen tons of supplies will be air-dropped to maintain the station.

The United States Navy has bought for 70,000 dollars the de Havilland Otter plane of the Commonwealth Trans-Antarctic Expedition which in January made the 1,900-mile flight across the Antarctic to Scott Base. The aircraft originally cost 125,000 dollars.

FUTURE PLANS

This season's operation will provide the initial logistic support for the ANTARCTIC RESEARCH PROGRAMME (A.R.P.) which will take over U.S. scientific activity in the Antarctic when I.G.Y. officially ends. A.R.P. is sponsored by the National Science Foundation in co-operation with the National Academy of Sciences. The Navy will continue as executive agent for the Defense Department in furnishing logistic support for the programme, and Rear Admiral George Dufek will continue in overall command of the support forces. He will also continue to serve as Antarctic Projects Officer with responsibilities for political, scientific and legislative aspects of the Antarctic programme.

About 2,700 men will be involved

in the re-supply operation, and they will leave approximately 200 military and civilian personnel behind to spend the winter at the four permanent stations.

McMURDO

A storm on June 20 lashed the Air Operating Facility at McMurdo Sound. Gusts up to 76 knots and sustained winds of 54 knots were experienced for 24 hours.

Air Development Squadron Six has been preparing its aircraft for the coming flying season. The helicopter has been undergoing a major maintenance check. The R4D Dakota, which was flown to the New Zealand ski-runway at Scott Base when the McMurdo runway deteriorated last autumn, was towed back to McMurdo behind a D-4 tractor and underwent a face-lifting period. Parachutes were repacked, oxygen equipment checked and survival kits inspected, while the electronics division overhauled radio equipment, radar search equipment and electronic navigation gear.

Over 15,000 photographs have been taken and processed this year by the McMurdo photo division.

The clearing of an ice runway 6,000 feet long for the coming air operations was vigorously prosecuted during August. New and pre-existing tidal cracks and pressure ridges were carefully surveyed. A crew of five men lived on the ice in wanigan shelters so as to take full advantage of the "pre-dawn midday twilight", though the temperatures were consistently in the minus fifties.

Six men flew in the helicopter to the Wilson Piedmont Glacier, between Granite Harbour and Marble Point on the Victoria Land Coast, and ate a picnic lunch during the noon sunrise visible there.

On August 4 flight operations were resumed. An Otter made the first flight since flying ceased on May 14. Late in the month an R4D (Dakota) also made a flight.

SKIN GRAFT

A major skin graft was successfully carried out at McMurdo on July 14 by Lieut. F. Ackroyd.

Chief Herman Foster, U.S.N., injured his leg when replacing a telephone pole blown down during a blizzard. He was supervising the use of a motor-driven post-hole digger when a sudden gust blew part of his baggy Antarctic clothing into the machine. His clothing caught in the universal gear of the drive shaft and was torn off his body while one leg was drawn into the giant auger. He managed to reach out and shut off the fuel feed to the engine.

In a temperature of 45° below zero Fahrenheit Foster was carried to McMurdo Hospital. After sufficient granulation tissue had built up on the injured limb it was decided to attempt the skin graft. Dr. Ackroyd borrowed from the hospital at Scott Base the high-quality razors necessary for taking the skin for the graft. With the patient under general anaesthesia, skin from the opposite thigh was placed over the defects on the injured limb. The operation took six hours.

Twelve days later the dressings were removed and revealed a perfect take.

LITTLE AMERICA V

A unique feature of Little America is Dr. Slagle's Thermo-therapy Clinic and Health Farm. It consists of a small gymnasium and Finnish bath or steam-room. The latter is complete with hot rocks from Marble Point provided through the courtesy of U.S.S. "Glacier". (Little America itself is built on the Ross ice shelf.)

Even the penguins shudder about five o'clock every afternoon when the back door of building seven opens, belching steam and lobster-red explorers, who proceed to roll in the snow and vigorously rub themselves dry.

An exclusive club has been formed consisting of all those who have ex-

perienced a 250 degrees spread (for instance, 210 in the steam room and minus 40 or more outside). The greatest "spread" of which we have received notice is 326 degrees: 272 degrees inside and minus 54 degrees outside.

About 40 per cent. of the Little America population engages in this curious activity more or less regularly, including Dr. Slagle himself, Mr. A. P. Cray, the station scientific leader and Captain E. H. Maher, commander of the Naval Support Force.

Little America has its own weekly paper, "Penguin Post", which includes among its features a monthly weather summary, sports section, "On the Bright Side", "Doings Around the Campus", Chaplain's Corner, and candid biographical sketches of the wintering-over personnel.

UNIVERSITY OF THE SNOWS

Mid-March saw the inception of "Little America College", unique among scholastic institutions because of the over-abundance of highly erudite professors and individual tutors who teach the 25 classes. The subjects studied include English, French (at three levels), German, Russian, Spanish, mathematics (five courses), physics, electronics, a survey of the Bible and Christian doctrine, European history, music, meteorology, radio code (two classes), amateur radio and photo-processing.

The total enrolment, many men of course taking several subjects, is 216. As the wintering-over party numbers only 107, there is evidently a keen thirst for knowledge at Little America.

Dr. Slagle performed an appendicitis operation in the station sick-bay during the winter. The patient made a good recovery.

OUT ON THE BAY ICE

Mr. A. P. Cray, station scientific leader, assisted by Captain Maher and Dr. Slagle, early in August carried out the farthest south and first mid-winter oceanographic station in the Antarctic

in temperatures of -45° to -55° F.

The group trudged out through Crevasse Valley and after lowering their heavily laden sledges down the seventy-five foot ice-shelf, set up their two tents on the bay-ice of Kainan Bay. One tent was used for living quarters and the other for scientific studies.

Assisted for a time by Lieut. Arruiz of Argentina, Jean Alt of France, and U.S. glaciologists Den Hartog and McGinnis, the party chipped out four-foot-square holes in four feet of solid ice and blasted out some 15 feet of firm slush ice. Each morning they had to form a bucket-brigade and bale out tons of slush-ice which had accumulated since the previous day's operations: assisted, annoyingly, by curious Weddell seals.

EXHAUSTING WORK

A Nansen bottle with two thermometers attached was lowered with a hand winch for temperature readings at ten levels and water samples for the purpose of salinity measurements from the surface to 365 metres. This meant that the cable had to be manually cranked some 1,000 turns each reading to bring the bottle to the surface. This task was so exhausting under the adverse conditions that the men systematically rotated after making 25 turns. This study produced one of the lowest temperatures ever recorded under the ice.

The second phase of the science work required the repeated lowering of the Ekman current meter to depths of about 400 metres to determine the speed and direction of the Ross Sea current. Observations were also made of the change in the elevation of the ice-shelf.

THE SUN RETURNS

On August 22 military and civil personnel assembled near the snow-banked flagpole to celebrate the return of the sun. Heavy low-hanging clouds obscured the sun; the temperature stood in the minus forties and a brisk wind was blowing into the faces of the

parka-clad formations. But an Otter flew overhead, a short ceremony was held and the flag raised. Cameras were removed from underneath parkas and pictures taken before the shutters froze.

EVACUATION PLANS

Early in November a reconnaissance party will make air and surface observations in search of a suitable route from Little America to McMurdo. A trail blazing party will set out about November 20 to establish the actual trail across the Ross Ice Shelf, searching out crevasses and filling them in as necessary.

On January 20 a heavy tractor train under the supervision of Major Merle Dawson will begin transporting the equipment that has been in use at Little America, to McMurdo. The operation is expected to take about ten days over a trail of some 420 land miles in length.

Meteorologists at Little America have found "a pattern of jet streams" above Antarctica which should help high-flying planes of the future to link the continents with new air-routes. In some cases reaching hurricane force, they travel in gently curving paths 50,000 feet or more above the Antarctic. Between June and October the winds move west-east, then there is a transition period and during November, perhaps even later, they flow east-west at lower altitudes.

Air lines, using the proper timing and routing, could ride these currents between South Africa and southern South America to Australia, New Zealand and the southernmost regions of Asia, leap-frogging over Antarctica.

TRAVERSE TO VICTORIA LAND

A traverse led by Albert P. Crary will leave Little America about October 15, crossing the Ross Ice Shelf to the top of the Skelton Glacier and from there into Victoria Land. Planes from McMurdo will support the party as far as the top of the Skelton. It will be self supporting on the high plateau beyond.

N.A.A.F. CAMP ROCKFORD

Camp Rockford will be set up at Mile 160 on the Army-Navy Drive from Little America to Byrd to serve as a weather station and auxiliary landing strip for flights between Byrd and McMurdo after Little America has been closed. It will not be manned until next season. Sleeping and messing wanigans for the six camp members will be left at Mile 160 by the tractor train taking supplies from Little America to Byrd in October. Another tractor train will bring G.C.A. and communications gear, as well as equipment to carry out a complete meteorological upper air programme, to Rockford from Little America when the latter camp is closed down in January.

The garage was "bustling with activity" in August in preparation for the October tractor train to Byrd Station. As an example: the twenty-ton messing wanigan was given a complete overhaul after 5,200 miles of trail service. On the last return trip from Byrd one generator was wheezing and "you could see daylight through the roof", but after mechanics, drivers, steelworkers, builders and electricians had all done their work, in spite of the wanigan's new name, "Helluva Mess", it was ready for the 647-mile journey once more.

BYRD

A tractor-hauled sledge train will bring supplies to Byrd over the 647 mile trail from Little America. The train is due to start about October 1 and should make the trip in about two weeks. Supplementary supplies will also be air-dropped, commencing on October 15. Relief personnel for the 24 men wintering-over will be flown in by ski planes. VX-6 aircraft will be based at Byrd during the summer to provide support for science traverse parties.

TRAVERSES PLANNED

A triangular traverse out of Byrd Station, commencing in October, will

cover virgin territory between Byrd and the Horlick Mountains. The actual route will be from Byrd to a point 85° S. and 80° W., from there to a point 85° 50' S. and 140° W., and back to Byrd. The party will carry out seismological, glaciological and other studies.

An airborne traverse from Byrd will be conducted along 130° W. longitude, running southward from Mt. Waesche to the northern edge of the Horlick Mountains. Ski-equipped aircraft carrying a team of scientists will land at fifty-mile intervals for seismographic soundings and other observations.

SOUTH POLE

Midwinter Day at the Pole Station was celebrated with a breakfast of fresh bacon, fresh eggs in the shell, fresh grapefruit and fresh oranges, all saved from the foods flown in during summer operations and kept frozen. Dinner consisted of turkey and ham and all the trimmings.

The minimum temperature for the winter was -101.7 F.

A problem at Pole Station, as at other permanent camps in snow-covered areas, is the disposal of waste. At the Pole a trench 100 feet long, ten feet wide and ten feet deep has been bulldozed, about 100 feet from the station. Cans are compressed flat and as much waste as possible burned.

The 18 men who have wintered over at the Pole are to be relieved in early December by a new group of volunteers. Air Force Globemasters will commence air-dropping supplies at the Pole about November 1 and, weather permitting, the job will be completed by December 1. The largest items to be dropped by parachute are two 60 kilowatt generators weighing 2,000 pounds each.

During the period in July when most Antarctic stations were reporting unusually low temperatures, the South Pole was experiencing a heat-wave. For almost ten days the temperature remained in the vicinity of -40° F.

SUB-ANTARCTIC ISLANDS

KERGUELEN (France)

In an article in T.A.A.F., the quarterly journal of Terres Australes et Antarctiques Francaises, M. Jean Breheret says that there is no insuperable obstacle of temperature, sunshine or soil to vegetable growing on the islands once called "The Isles of Desolation".

The climate in mid-summer in well-sheltered positions is comparable to that of early spring in France. The major difficulty is the wind, which not only lowers the temperature but has a disastrous drying action and hinders growth. Any plants over 10 c.m. in height suffer heavily and most can only be grown satisfactorily under glass. The wind, says M. Breheret, "is an inexorable foe and allows no liberties."

Vegetables like radish, turnips and cabbage can be grown in the open from mid-December to mid-January. Only careful siting to avoid prevailing winds, with full use of natural shelter and shelter-fences, make this practicable.

Growth in hot-houses is satisfactory throughout the year, and salads make rapid growth in summer. During the periods 15 March-15 May and 10 September-1 November some use can be made of electrically-heated forcing-frames and of manure-beds. The latter however attract swarms of mice, with dire results to the crops unless constant war is waged on them.

Cold-frames give good results from October to March with leaf-vegetables grown in France during the hottest period. But the violent winds often make it dangerous to work among the frames, which have to be securely tied down.

The Australian "Thala Dan" called at Port-aux-Francais on March 7. Visits were exchanged. The Australians were welcomed by M. Leblond,

Administrator of the Islands, and entertained at a dinner. They inspected the scientific installations and the seal factory before returning to the ship.

MACQUARIE ISLAND (Australia)

Five men occupied the Hurd Point Observatory during May. The first party of two got lost in fog in the vicinity of Lusitania Bay on their trip back but finally returned to the main camp fit and well. The second group took with them a 70-pound pack of tools and spares for the auroral radar, which had developed "chronic faults".

The flag was flown at half-mast on May 26 in memory of Richard Hoseason and Alistair Forbes, who died at Heard Island in 1952: on July 4 in memory of Charles Scobles, who died at Macquarie in 1948.

A new camp water supply has been built, a hill-side reservoir.

The Royal and rock-hopper penguins and the skuas migrated from the island during May. The King penguins and chicks remained, together with male sea-elephants, Starlings and small brown finches arrived.

DAVY JONES' LOCKER

To celebrate their 120th anniversary, the Sydney firm of David Jones arranged for the Macquarie men to cast into the sea 57 bottles containing £100 vouchers. The launching into the world export market of £5,700 capital duly took place. The sealed bottles were last seen drifting south-east!

June 13 marked the occupation of the new quarters. Their warmth, comfort and convenience are much appreciated. June weather was characterised by several severe frosts which blocked water-pipes and froze the ground. There were also the usual high winds, hail, rain and snow. Webster and McInnes climbed the island's highest point, Mt. Hamilton.

On July 14, Knox contracted acute appendicitis, filling the island base

hospital to capacity: one bed. The surgical group, Dr. Bayer, Cordwell, Baines and Webster emerged as an experienced team. Knox made a splendid recovery. This was the third operation for appendicitis carried out at A.N.A.R.E. stations.

The auroral watch has been maintained by half the camp party on roster, in conjunction with one man at Hurd Point. The extraordinary auroral displays proved most interesting but cloud over one or other observatory limited the number of parallactic photos taken.

Day-return field trips are still popular. Recently Kaloczy on hike to Sandy Bay retrieved a radio-sonde which had completed a flight tracked by radar and landed on Mt. Elder. Such island landings are rare. The transmitter was tested and proved alright.

A lively aggressive sea-lion paid a visit to Hasselborough Bay. It roared and charged photographers. Other visitors were sea leopards displaying vicious mouths of sabre teeth.

MARION ISLAND (South Africa)

In a light-hearted article in "Vox", the magazine of the C.S.I.R. Staff Association, Mr. R. W. Vice describes his journey to Marion Island as ionosphere observer ("I feel it would be in bad taste to give a detailed description of the trip in anything but a medical journal"), and gives some details of the station.

Marion House ("very large and yellow") rocks in a high wind, and the winds are usually high, as it is set on poles in a jelly-like marsh. The breakers on the rocky coast are frightening: one night a heavy raft was washed off Gunner's Point which is 40 feet above sea level. All round the coast are marshes and little lakes, but the "country is not as dreary as it sounds. It is hilly and the marshes are covered with grass and moss. Sur-

prisingly, the marshes are not very muddy, being more like a wet sponge than anything else. Walking over them was something of a struggle—in the bad parts it was sometimes necessary to crawl. Inland were the mountains, 4,000 feet at their highest, and snow-covered throughout the year."

Mr. Vice describes watching a companion trying to walk from Marion House to the store against a 70 m.p.h. wind: "Bonnie would stand for minutes on end leaning forward against the wind like a rugby player in a scrum. When the wind dropped momentarily he would scramble forward a few feet and resume his stance. This manoeuvre was repeated until he reached the steepest part, when inevitably he would be blown back to the starting line. Finally he shed his pride and crawled up."

Temperatures range from 22° F. to 55° F.

The true owners of the island are the birds and the sea elephants. "The best-mannered were the penguins. When visited they would file past courteously to have their photographs taken and then immaculately go about their business. Sea elephants were the rudest. They snored and snuffled until approached too closely, and then they would simply belch."

AIRCRAFT FLIGHT

During the recent visit of S.A.S. "Natal" to the island for the annual relief a long range Avro-Shackleton coastal-reconnaissance aircraft of the South African Air Force was twice sent to the island for navigational exercises. The aircraft left Ysterplaat at 1 a.m. on March 22. The weather during the flight was changeable but suitable for flying purposes: there was mist, rain, light hail, a thunderstorm and several frontal zones, but little turbulence.

The Shackleton arrived over Marion and Prince Edward Islands about 8 a.m., dropped to 200 feet and flew several times over the weather and radio stations. The passengers particularly noticed the beautiful green

colouring of the countryside. After circling the island for about 25 minutes the aircraft set a course for South Africa, arriving at Ysterplaat 15 hours after departure.

A week later the same Shackleton made a second trip to the island. During the circuit of the island on this occasion the crew was informed by radio telephone that the sheep belonging to the station had disappeared. Shortly afterwards the crew discovered the sheep from the air and reported their whereabouts by R.T. to the island staff.

CAMPBELL ISLAND (New Zealand)

Since the special servicing by M.V. "Holmglen" in June last year, and the arrival of Mr. G. P. Kape, who then took control, excellent progress has been made on all aspects of the station's programme. All are in fine fettle and morale is high.

The scientific programme has been maintained consistently throughout the year, and sponsoring Scientific Departments are well pleased with the results to date, particularly in view of the extensive I.G.Y. commitments.

BUILDING PROGRAMME

"This is not yet complete, but by annual servicing time the major portion of the new station will be finished, leaving only subsidiary work including buildings such as general stores, workshop, boatshed, tractor shed and sundry associated jobs. Unless other Antarctic and Sub-Antarctic stations forestall us, we can boast of having the most southerly railway in the world—"the rock island line"—built under the supervision of Mr. G. P. Kape. Specially designed trolleys, winch driven, are under construction and will be in operation during this year's annual servicing, together with other facilities such as roller conveyors, which will help to speed up the turn-round of the servicing ship.

As a result, the continual headache of soft peaty roads over which stores were transported, will be largely overcome.

"For the interest of animal lovers, we now have two pet lambs discovered during a recent cross country tramping expedition. Both the station dogs, Hans and Flash, have been very kindly disposed towards their guests, who now follow them everywhere. The construction of suitable accommodation is included in the priority building programme."

STAFF 1958-59

The recruitment and training of the relief expedition is proceeding apace. The new appointees so far selected are:—

Officer-in-Charge: P. G. Poppleton, who served as Officer-in-Charge with the 1955 Expedition, when stage one of the present station programme was completed.

Senior Meteorological Observer: E. L. Clague, who has been granted an extension for a further twelve months.

Meteorological Observer: D. Phipson.

Meteorological Observer: J. R. Lamb.

Ionosphere Observer: R. B. Thomson.

Mechanic/Handyman: W. R. Hare.

The Radio Technician, Senior Ionosphere Observer, Cook and Carpenter have yet to be selected.

The U.S. Naval Support Force, Antarctica, have once again kindly consented to assist us in transport of mail and personnel to and from the island, and Mr. J. R. Lamb will be proceeding to the station on U.S.S. Brough some six weeks before M.V. "Holmglen".

Mr. E. L. Clague, who has been granted the extension, is to return to New Zealand on this ship to undergo medical and dental checks, and then return to Campbell Island on M.V. "Holmglen" in November with the remainder of the in-going staff.

WHALING

The Chairman of the Norwegian Whaling Association (Frithjof Bettum) said on July 25 that Norway may withdraw from the International Whaling Convention, on the grounds that there are now too many catchers chasing too few whales. The position would be aggravated by the Soviet plan to send out two new expeditions next season.

The International Whaling Commission at its meeting at The Hague decided to retain the 14,500 blue-whale-unit catch limit for the next Antarctic whaling season. Holland alone supported an increase to 15,000 units. A Japanese suggestion to fix an earlier date for the opening of the season was also rejected.

It was reported from Tokyo on August 5 that the Japanese Fishery Board is planning to increase the number of catchers by one to 69 for the next Antarctic whaling season. The rights for the extra boat, said the message, would be bought from Norway.

Hector Whaling Limited, London, which operates the "Balaena" whaling expedition to the Antarctic, has bought the New Zealand Shipping Company's veteran cargo steamer "Tekoa", built in 1922. She will be used to carry supplies and equipment to the expedition in the Antarctic, and to bring back whale-oil, whale-meat and other by-products. Its conversion will include the fitting of a meat-cutting deck and large-scale accommodation alterations to provide for an increased complement.

WHALE MARKING

In an article "Whale marks recovered during the Antarctic whaling season 1956/57", the "Norwegian Whaling Gazette" reports:

"Perhaps the most important recovery this season is Mark No. 11201 from a humpback whale marked in October 1952 at Malinoa Island, Tonga,

under Dr. W. H. Dawbin's scheme in the western Pacific ocean and recovered in the Bellingshausen Sea 4½ years later."

Mr. Dawbin was, until his appointment to a lectureship in zoology at Sydney University, a member of the Council of the New Zealand Antarctic Society.

The significance of the recovery lies in the fact that it affords proof of interchange by whales between sectors of the Southern Ocean. It was thought reasonable to suppose that whales from Tonga migrated in summer to Area V in the Antarctic, approximately the Ross Sea area, and that it was whales from the coast of Chile and Peru which resorted in summer to the Bellingshausen Sea.

This whale was marked in 21° 02' S., 175° 08' W., and caught in 68° 01' S., 95° 45' W.

PELAGIC CATCH 1957-58

In the 1957-58 Antarctic whaling season, pelagic hunting of fin whales commenced on January 7 and of blue whales on February 1. It was permissible to take humpback whales from 0° eastwards to 70° W. in the period February 1-4 only. The closing day for baleen whale catching as fixed by the Committee for International Whaling Statistics, was March 16, the same day as in the previous season. The season therefore lasted 69 days for fin whales and 44 days for blue whales.

Preliminary reports give a catch of 14,839 blue-whale units, 339 units above the fixed maximum.

Provisional catch figures are as follows:

Expeditions	Whales	Oil: barrels
Norway (9)	13,284	850,600
U.K. (3)	5,531	324,872
Japan (6)	11,834	630,093
Holland (1)	1,867	116,497
U.S.S.R. (1)	3,544	224,578
Total (20)	36,060	2,146,640

The whales caught comprised 1,683 blue whales, 25,208 fin whales, 396 hump-backs, 2,385 sei whales and 6,388 sperm whales. The Russian "Slava" expedition caught in addition 493 minke whales and 75 killer whales.

Britain, Norway, Japan and the Netherlands have agreed to a total of 215 catchers for next season, one more than last year. Britain (3 expeditions) will have 37, Norway (9) 95, Japan (6) 69, and the Netherlands (1) 14.

HOW OLD IS A WHALE?

Studies of the ear-plugs found in the mid-ear of baleen whales at the National Oceanographic Institute at Wormley (England) confirm suggestions that whales are getting scarcer. Some years ago, whales caught used to have an average age of about six years. Now they are younger. Once many whales caught were over 30 years of age, but now few approach this whale "middle-age".

The ear-plugs are made of a horny material and in female whales develop laminations like the rings of trees. The markings are believed to be related to the hormone cycle of the female whale during each breeding season.

Last year the Institute received 1,000 sets of ear-plugs for analysis.

QUEEN HEARS FUCHS

At the Royal Festival Hall in London on June 11 the Queen, the Duke of Edinburgh and Princess Margaret heard Sir Vivian Fuchs give a lecture on the Trans-Antarctic Expedition, illustrated by colour slides.

In a tribute to the New Zealand party led by Sir Edmund Hillary, Sir Vivian said, "They did a tremendous amount of work, not only in putting down depots for us on the plateau but in finding a route for us over the plateau. They also carried out a tremendous amount of geological and survey work."

BOOKSHELF

"Antarctic Night", by Lt.-Cdr. Jack Bursley. London, Longmans, 256 pages, ill., N.Z. Price 18/-.

(Reviewed by J. H. Miller)

This is no book for the serious Antarctic reader. But for the person wanting a story of adventure, and of the call adventure makes to a young man this is an entertaining book.

Bursley, as an enthusiastic young Newfoundland dog driver, was a last minute choice for Byrd's first expedition in 1928-29. His skill as a dog handler proved invaluable to the expedition. He again went south with the U.S. Antarctic Service Expedition, 1939-41 and again as a dog driver participated with two companions in a memorable exploratory journey of 1,200 miles eastward from Little America into Marie Byrd Land. Again in 1955-56 we see Bursley, now a Commander in the U.S. Coastguard, at Little America V with Deepfreeze I. He was then entrusted with the leadership of the mechanised party probing out into Marie Byrd Land on a reconnaissance of the 700-mile route which eventually led to Byrd Station.

His account of his experiences is not, and makes no claim to be, a history of these various expeditions. In fact from the historical angle there are many inaccuracies and omissions such as Gould's magnificent geological journey in 1928-29. However, to the dog lover, this book brings warming accounts of a man's love for, and his dependance on, his canine companions.

Bursley spent three winters in Antarctica at various well-spaced periods of his life and his book does give an interesting comparison of the impact of the wintering experience on a youth, on a man by now a husband and father, and finally on a veteran with wartime and polar experience. One would suspect that the psychological aspects of "wintering" have been occasionally over written. The progression from the day of dog travel

to the mechanical present is well portrayed, even if Bursey makes it obvious that the dog is his first and lasting love. His writing is on a popular level throughout most of this book but one or two portions reveal an intense and introspective facility of expression as in writing of his long exploratory journey. "We found and sensed the sleeping spirit of a lost world which engulfed us in emotions that defy the use of words as a medium of expression; and such unexpressed and inexpressible emotions brew a strange kind of love which preserves all the memories of their origin."

* * *

"The White Desert", by Noel Barber. London, Hodder and Stoughton, 205 pages, ill. (advance copy English price 16/- nett).

This is not the objectionable book which unbalanced and misleading cable reports might lead one to expect. It is an onlooker's story of the Trans-Antarctic Expedition, told by a noted journalist who was on the spot when first Hillary and then Fuchs reached the South Pole and when, later, the sno-cat caravan arrived at Scott Base.

With his first-hand impressions of these historic occasions, and with his newspaper man's flair for human interest and the dramatic event, Barber has written as lively an account of the great crossing as we are likely to have until Fuchs and Hillary themselves give us the inside story. It is a well-balanced narrative, covering the whole expedition from conception to successful conclusion, with stress, naturally, on the portions of it which this onlooker was himself privileged to see. There are pen-portraits of many of the participants, candid, and shrewd in the main, and considerable background information about life at Antarctic bases and on Antarctic flights.

Barber is in a few places, this reviewer feels, unjust to Hillary, but

such remarks form an infinitesimal part of the book and stem from an Englishman's natural desire that the Englishman Fuchs should receive the maximum credit for his great exploit. A man who writes of Hillary like this can surely not be considered Hillary's enemy:

"It was impossible not to be immediately drawn to him. He had great charm. He was no braggart, but he was not politely over modest . . . A hard-headed New Zealander, on whom the world's honours had fallen after Everest, he had a natural shyness and pleasant manner that made people enjoy his company . . . Hillary was and is a man of enormous physical stature, with a heart and courage as great as his body."

—L.B.Q.

DANGER: WATER RISING

It is a fact that glaciers are receding in all parts of the earth, which indicates a slight rise in average temperature. But it has not yet been established that the polar ice-caps also are melting. This would require an extended series of measurements of the thickness of the polar ice, which have not been made. But this is one of the objectives of the present International Geophysical Year. Professor Robert P. Sharp has estimated for the American Geophysical Union that the average thickness of the Antarctic ice is in excess of one mile and that its complete melting would raise the sea-level all over the earth by 200 feet. He calls this ice "something of a Sword of Damocles hanging over the heads of all peoples living close to the sea." However, he also advises a relaxed attitude toward this possibility. "Conceivably", he says, "it might happen in 10,000 to 20,000 years".

Australians can now communicate with Scott Base by radio-telephone, at a charge of 12/6 per minute with a minimum of three minutes.

A NEUTRAL ANTARCTIC?

The Indian delegation on July 15 proposed that the forthcoming U.N. General Assembly should debate "the questions of Antarctica". The United Nations "should call upon all states to agree to utilise this territory solely for peaceful purposes, and in particular, to agree that the area shall not be used in any manner that would create or accentuate world tensions or extend to this area the influence and effect of existing tensions."

This "limited purpose" could be achieved without any nation renouncing such right as it might claim in Antarctica, or claims of sovereignty or other rights consistent with the charter.

Japanese officials stated on July 13 that Japan will continue to work for an international treaty assuring the freedom of scientific investigation in the Antarctic by all nations, and will oppose any "foreign" territorial claims there.

Negotiations for the neutralisation of the Antarctic as proposed by President Eisenhower in May, were said on August 20 to be apparently "nearing a critical stage". Conversations were being held in Washington by representatives of twelve nations active in the Antarctic or its off-lying islands, with a view to setting a time and place for a formal conference. The representatives had agreed on complete secrecy, but it seemed unlikely, said the "New York Times", that the basic principles of a treaty would be agreed upon before going into formal sessions.

The Latin American nations, Argentina and Chile, are believed to be opposed to any renunciation of their over-lapping claims to the Graham Land peninsula, which is also claimed by Britain. The Chilean reply to the American note, for instance, rejected "any system whatever of international administration".

The Soviet Union believes that an Antarctic treaty should not include "any provisions affecting the question of territorial claims in the Antarctic which could be regarded as placing

some states in an unequal status with regard to other states".

A Gallup Poll in Australia shows that 48 per cent. are in favour of making the Antarctic international territory, 15 per cent. are against, and 37 per cent. without definite opinion. Men supported the plan more strongly than women, 56 per cent. of the men questioned being in favour. Labour and non-Labour voters, as groups, held similar opinions.

POLAR ANTIBIOTIC

Dr. J. M. Sieburth of Virginia Polytechnic Institute, who accompanied the Argentine Antarctic Expedition of 1957, has claimed that the Antarctic seas contain an abundant and powerful antibiotic that protects the birds, fish and mammals of the far South from bacterial diseases. When he examined a Gentoo penguin caught near the Almirante Brown Base on the west coast of Graham Land, no germs of any kind could be found either in the penguin or in the euphausian shrimp which formed its sole food.

He concludes that this is due to the antibiotic properties of Antarctic phytoplankton (microscopic plants found in countless millions in the surface waters of the sea). This activity is apparent in concentrations as low as five parts in a million on a dry weight basis.

"A similar differential antibiotic activity was exhibited," he says, "by the phytoplankton, the shrimp eating the phytoplankton, and the stomach contents of the penguins that had been feeding on the shrimp."

The Antarctic antibiotic has not yet been reported as isolated.

It is of course no longer true that, for example, common colds do not occur in the Antarctic, and a year or two ago there was a case of diphtheria. As Sir Douglas Mawson has said, Dr. Sieburth's observations are "far too sweeping". They represent "only part of the story, which will not be complete without further intensive research".

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.

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