

# ANTARCTIC

A NEWS BULLETIN

published quarterly by the  
NEW ZEALAND ANTARCTIC SOCIETY



WINTER AT SCOTT BASE

Photo: H. D. O'Kane.

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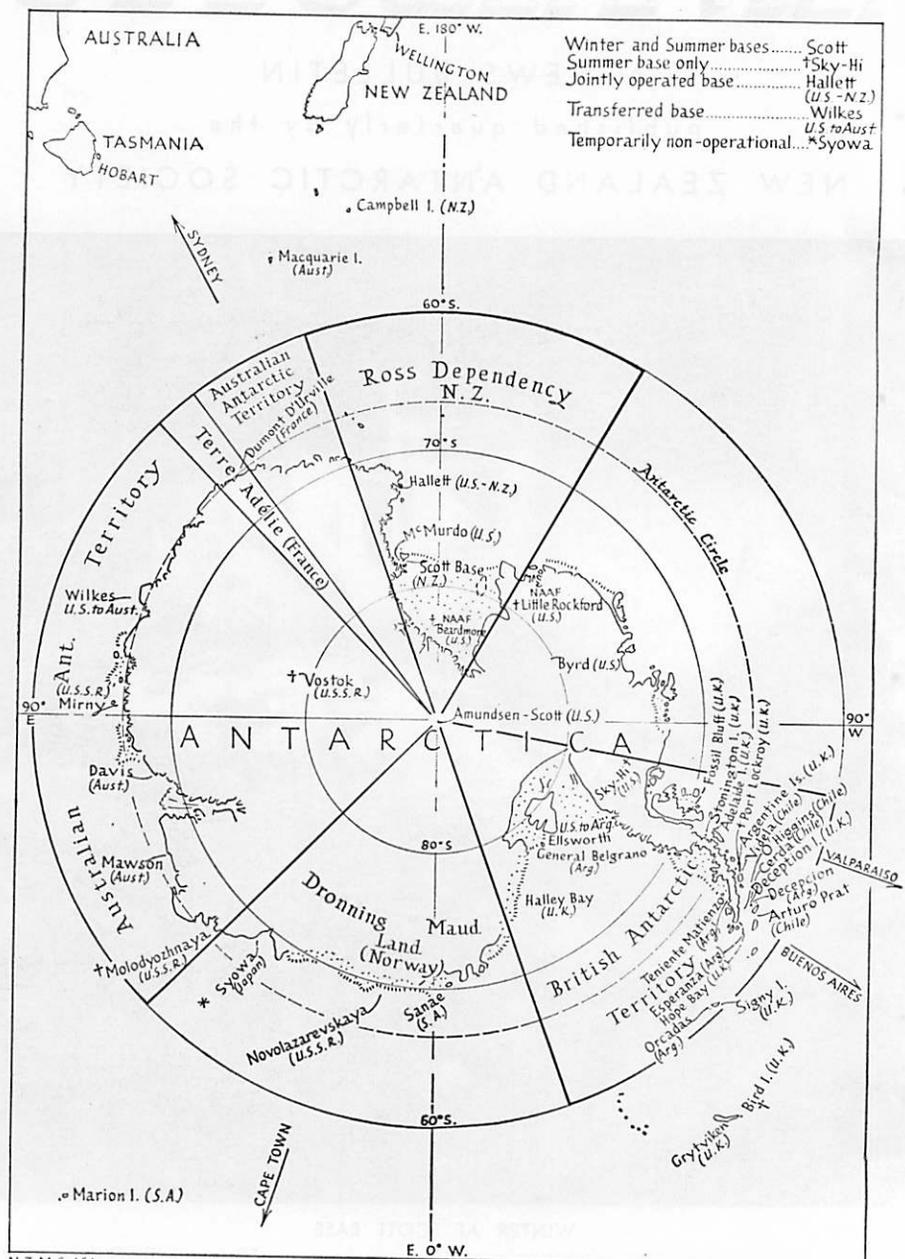
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Vol. 3, No. 7

SEPTEMBER, 1963

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N.Z.M.S. 161

DRAWN BY DEPARTMENT OF LANDS & SURVEY  
 WELLINGTON, NEW ZEALAND, SEP. 1962

# "ANTARCTIC"

(Successor to "Antarctic News Bulletin")

Vol. 3, No. 7

SEPTEMBER, 1963

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## GOVERNOR-GENERAL

### TO GO SOUTH

His Excellency the Governor-General of New Zealand, Sir Bernard Fergusson, is to visit the Ross Dependency towards the end of this year. He will fly in about mid-November, and is taking very great interest in his visit. It is hoped to make it possible for him to see something of the field work of the New Zealand summer programme as well as the life at Scott and McMurdo Bases.

Only one head of state of any country has previously visited the Antarctic. This was President Videla of Chile who travelled by sea in February, 1948, to inspect a number of Chilean bases in the Antarctic Peninsula (O'Higgins Land) area. (The Duke of Edinburgh visited British bases in the same area a few years ago.) But Sir Bernard will be much further south than any titular head of state has previously been.

### ON DECK AGAIN

Readers will be interested to hear that Jim Lowery, who was severely injured in the Sno-cat tragedy of November, 1959, is now well, reasonably "mobile" (with the help of a car), and is teaching mathematics and science at John McGlashan College, Dunedin.

## NOW READY

### INDEX "ANTARCTIC" VOL. 2

After considerable delays for which we apologise, the Index for volume 2, covering the years 1959, 1960 and 1961, is now published, and may be obtained from the Secretary at a cost of 2/6 per copy. We are again indebted to Mrs. N. W. Faircloth for the compilation of the index.

Subscribers who wish to bind their copies of "Antarctic" may have them bound in uniform style with volume 1 by forwarding the twelve issues plus the index to

**Express Binding Service,  
69 Victoria Street,  
WELLINGTON, C.1.**

with a remittance of 15/-.

### ASSISTANT EDITOR

The Council of the New Zealand Antarctic Society has appointed Mrs. R. H. Wheeler as Assistant Editor of "Antarctic". Mrs. Wheeler, who has had journalistic experience, is the wife of Ralph Wheeler, leader of the Victoria University of Wellington expedition, 1960-61.

### PHOTOGRAPHER

The photograph of Scott Base and environs taken from the air, on page 230 of our June issue should have been credited to **H. D. O'Kane**.

# NEW ZEALANDERS AT SCOTT BASE GREET THE SUN

When the sun returned to Scott Base on August 20, Colonel Tinker raised the New Zealand flag at "mid-day" for the first time since "sundown" last April.

It has been a good winter, they say. Apart from one record low, temperatures have averaged about 25° below zero. Winds, normally a scourge at Antarctic bases, have on the whole been moderate, only infrequently rising over 70 knots.

It was now light for several hours around noon although the sun itself would not shine on the base for some time, being blocked by the massive mountains Erebus and Terror. However, it was a spectacular glimpse for the dog driver sledging out on the sea ice or the skier travelling in anticipation along the top of Hut Point Peninsula.

## SUMMER PLANS

There is now an increase in the tempo of activities, with a great rise in scientific work and the preparations for the change-over. Field men will be departing very soon in a series of training trips to test gear and to get fit for the coming summer mapping journeys.

A major undertaking will be the building of a new hut 27 miles away at Cape Royds for the use of biologists studying seals and penguins.

Some 30 miles of movement poles are to be surveyed for position as part of a long-term programme determining the motion of the Ross ice shelf.

In October the first plane will come in bringing mail, the new base leader (Mr. R. Rawle) and Mr. J. H. Miller, veteran of the trans-Antarctic expedition and the leader of this summer's northern field party. Following them will be the replacements for the base staff, who are keen to get home to their families.

## A COLD WINTER

A mid-August report from Scott Base said:

It must be cold when kerosene freezes to a jelly, and that is just what happened at Scott Base on August 2, when the lowest temperature in the history of the base, minus 54.9°C., was recorded. The kerosene used for heating is stored in a 2500 gallon tank where in the extreme cold it jelled and could not be pumped. It took the mechanic, electrician and carpenter some hours of forcing hot air around the pump with an aircraft type preheater before the fuel line functioned again.

Further trouble came when the waste water in the heated outlet from the washroom block froze solid and as fast as the maintenance staff hacked away the ice from the outside the water froze again.

August is generally the coldest month of the Antarctic winter and a drop in temperature was expected. The first signs came during the night, when the buildings creaked as they contracted and periodic shots came from the evermoving tide crack and pressure ridges.

Daily routine remains normal despite the continuing cold. In a sluggish snow weasel the house-mouse digs off once soft snow that has now become brittle and iron-hard. The huskies are fed every second day and remain outside as fit and as lively as ever.

A favourite sport is throwing a cupful of hot water into the air to see it burst spectacularly into a cloud of crackling ice crystals as it freezes instantly.

Until sunrise in three weeks time we can expect anti-freeze to freeze, oil to look like pitch, the snow to squeak underfoot and no doubt ice cream will still remain the most popular item of the menu. Even bottles of whisky were frozen solid.

# NEW ZEALAND FIELD PARTIES WILL COVER WIDE AREA

DURING THE COMING SUMMER NEW ZEALAND GEOLOGICAL AND SURVEY TEAMS WILL BE WORKING IN SEVERAL WIDELY SEPARATED AREAS IN THE ROSS DEPENDENCY, AND IN ONE CASE WILL "TRESPASS" ON AUSTRALIAN ANTARCTIC TERRITORY.

The Antarctic Geology and Mapping Seminar held in Wellington earlier this year, when some 30 geologists, surveyors and cartographers considered the importance and relative urgency of the work in their spheres still remaining to be done in the Ross Dependency, led to a modification of the original plans for field work in the coming season.

It soon became apparent that even the preliminary reconnaissance mapping of northern Victoria Land may require more than one season's work, and that there were special projects of considerable value which would require the mounting of a series of more localised expeditions in various parts of the Dependency.

In consequence, there will be two field parties, working in areas 1000 miles apart, the one in northern Victoria Land in continuation of the reconnaissance mapping, the other south of the Ross Ice Shelf, in a portion of the area covered by W. W. Herbert's Southern Party in 1962-63, representing the first of the contemplated special projects. In addition there will be further field work by the Victoria University of Wellington and the University of Canterbury, and it is hoped that a reconnaissance can be carried out on the Balleny Islands, a couple of hundred miles north of the Victoria Land northern coast.

## NORTHERN PARTY

The major effort towards the completion of the reconnaissance geology and topography of the Dependency will be made by a six-man team led by J. Holmes (Bob) Miller, the Wellington surveyor and Immediate Past President of the New Zealand

Antarctic Society, who was Deputy Leader of the New Zealand component of the Commonwealth Trans-Antarctic Expedition and with Dr. George Marsh in the 1957-58 season made one of the longest dog-sledge journeys in Antarctic history.

This northern party with four sledges and 36 dogs will probably be flown from McMurdo to Hallett Station by late-October. From Hallett men and dogs will be flown by U.S. aircraft about 300 miles to a put-in point as far north of Mt. Welcome as proves practicable, in approximately 71°30'S., 160°E., at an altitude of about 7,000 feet. The only previous "resident" visitors to this area have been the men of the United States Victoria Land Traverse, including New Zealander A. J. Heine, in the summer of 1959-60. This party named Mt. Welcome because it was the first "land" they saw after crossing hundred of miles of featureless plateau in their sno-cats, coming in from the west. Gair's New Zealand Party last year were close to the area, and the United States "Topo West" helicopter-borne surveyors worked here for a few days.

From their put-in point somewhere south of the Oates Coast of Victoria Land, Miller's team will carry out topographical and geological surveys:

- (1) North and west as far as the Pennell Glacier for about a month.
- (2) South to the Mt. Welcome area for a week or more.
- (3) East, crossing the Rennick Glacier at about 5,000 feet to a re-supply depot already laid by aircraft north of the Leitch Massif in approximately

71°30'S., 164°30'E. This depot will contain 60 days' supplies. A month is allowed for this phase of the party's work.

- (4) North-west and north in the region of the Lillie Glacier for about a month.
- (5) South-east down the Tucker Glacier to the pick-up point on the glacier near Football Mountain.

One major advantage of this plan is that both the put-in point and the pick-up point are known to pilots of VX-6 squadron from their operations in support of the Victoria Land Traverse of 1959-60 and the Topo West helicopter tellurometer survey of last season. New Zealand key men, including Miller and the 1963 and 1964 Scott Base leaders, were flown over the area in United States aircraft last summer. The locality has been carefully air-photographed and sketch maps have been drawn by the Cartographic Branch of the N.Z. Lands and Survey Department. Australian and Russian aerial photographs taken on reconnaissance flights from ships operating off the Oates Coast have also been carefully studied.

### SOUTHERN PARTY

The Southern Party will be implementing the first of the smaller-scale localised projects referred to above. This project stems directly from the Seminar, where its importance was immediately recognised.

The party of four men will operate from an area traversed by W. W. Herbert's southern party in 1961-62, and will be led by V. R. McGregor, who was a member of Herbert's party. McGregor's team will use the two motor-toboggans which were tried out on the sea-ice of McMurdo Sound and up the Harbord Glacier last summer.

The team will comprise three geologists and a surveyor, and will operate in the area between the Axel Heiberg and Shackleton Glaciers, both of which flow north from the Polar Plateau to feed the Ross Ice Shelf. The party is not expected to make any deeper penetration than about 30 miles, and

will be in the field a much shorter time than the Northern Party, approximately mid-November to mid-January.

The party will be operating from two supply depots on the Ross Ice Shelf:

- (1) West of the mouth of the Strom Glacier, adjacent to the area between the Axel Heiberg and Liv Glaciers;
- (2) On the ice-shelf in a position suitable for the coverage of the area between the Liv and Shackleton Glaciers.

The team will spend approximately a month making sorties of a few days' duration from the first depot into the mountains; then move across the ice-shelf to the second depot and work similarly for a month from there. This project is of particular interest as being the first study of a specific geological problem by New Zealanders in this area, and also as being the first New Zealand field journey in which reliance is being placed solely on motor toboggan transport.

McGregor's party will be flown first of all to the Beardmore Depot, and then to the field depots by United States aircraft.

The specific aim of the project is to resolve a geological anomaly which became apparent as a result of earlier field work by New Zealand parties in the areas to the west and north and by the United States teams in the Sentinel Range further east. This concerns the structural relation between the Ellsworth mountains, which extend southward from the Antarctic Peninsula, and the Queen Maud Range. The work of McGregor's team may help to solve this problem.

### VICTORIA UNIVERSITY OF WELLINGTON

This year's Victoria team, V.U.W.A.E.8, will comprise seven men under Warwick M. Prebble, with Professor H. W. Wellman and Dr. A. T. Wilson as leaders of the scientific research projects. The University Grants Committee has given about £2,000 to feed and outfit the expedition.

The principal objective will this year not be geological, but geochemical study in continuation of work done by previous Victoria University parties on the warm lakes of the Taylor and Victoria Dry Valleys. It is hoped to provide an explanation of the chemical and physical processes taking place in these unique lakes. Work will later be done in the Darwin Glacier area, studying lakes there in order to date geochemically the last glacier retreat in the region.

Prebble and Henderson will visit the whole of the Dry Valley area to correlate the work done and draw a geological map.

### AT THE SOUTH POLE

Dr. Wilson and House will spend a week or two in early November at the U.S. Pole Station to make chemical analyses of snow samples, in order to determine the residual chemicals and dust present in the atmosphere when the snow was precipitated. In mid-November they will return to Scott Base, where they will be joined by Prebble, Popplewell, Hoare and Henderson and will proceed to the Taylor Valley and other localities for detailed geochemical work on the saline lakes. About mid-December they will be flown to the Darwin Glacier to investigate lakes in that area. About New Year Dr. Wilson will be replaced by Professor Wellman.

Before returning to New Zealand the team will carry out glaciological and geological studies in the Black Island-White Island area, probably crossing the ice by toboggan or dog team. The party will return to Scott Base by air.

### McMURDO ICE SHELF

Last summer New Zealand scientists began a study of the ice shelf between Ross Island and the mainland, now known as the McMurdo Ice Shelf and of the ice break-out in McMurdo Sound itself. Mr. A. J. Heine, who worked on the project last year, will again be in the field with an assistant. He hopes to establish a grid of stations at which various parameters of the ice-shelf will be measured annually.

United States scientists as well as the New Zealand authorities are interested in the unique glaciological problems presented by this area, and realise that the possibility of predicting the nature and extent of the break-out in any year would be of considerable practical value. The researchers want to find out what happens over the whole McMurdo area throughout a whole season, and to relate this to the meeteorological picture at the time.

To do this it will be necessary to arrange high-level photography on specified flight-lines at regular intervals throughout the season as well as to carry out further studies at ice level.

### BIOLOGY

The biological hut which it was hoped to erect at Cape Royds last summer will be set up early this season, and a team from the University of Canterbury will continue the study of Adelie penguins and Weddell seals in this area. The seal studies will be continued later at Scott Base. Work will also be done in soil science, and plankton will be collected from the ice-edge.

The seal-population study begun in the McMurdo Sound area last summer will be continued. This project will involve considerable aerial photography.

The Dominion Museum will be sponsoring biological work at Cape Hallett and Cape Adare.

### EXPLORERS OF THE FUTURE

Once again this summer three young New Zealanders will have the opportunity of seeing the Antarctic for themselves and of taking some part in the work of the New Zealand expedition. Two Queen's Scouts and one member of the Boys' Brigade with corresponding qualifications have been selected to travel south with the New Zealand party.

They are:

Douglas Crawford, Auckland.

Duncan J. McDonald, Palmerston North.

Francis John Stanton, Christchurch.

# New Zealand Teams Selected for Coming Season

As usual there has been no shortage of applicants—some 300 men have applied for the 30-odd positions. Over 200 of these men were personally interviewed before the final selection was made.

In late August, the 24th to the 30th, a training course was held for all appointees. The men were quartered at Waiouru Military Camp and after four days of basic lectures in administration matters, health and first aid, equipment, etc., proceeded by army transport each day to the slopes of Ruapehu for practical training in snow and ice techniques, ski-ing, crevasse rescue work, fire fighting and so on.

## TO WINTER AT SCOTT BASE

The following men have been selected as the wintering team at Scott Base for 1964:

**R. E. RAWLE:** Leader. (See June issue).

**A. G. LEWIS** (31) of Wellington, Senior Technical Officer in charge of Base Scientific Party. Mr. Lewis, an Englishman and an electronics engineer who has spent some time in Germany, served for two years in the Antarctic with the Falkland Islands Dependencies Survey, and is at present wintering at Scott Base with the New Zealand team.

**D.R. MILLER** (27) of Wellington, Scientific Officer. A science teacher at Wellington College, Mr. Miller was born in England and gained his degree in 1957 at Nottingham University, where he rowed for the first VIII.

**H. A. HORSFIELD** (27) of Wellington, Technician. Mr. Horsfield is also English by birth, coming to New Zealand in 1953. He joined the Post Office as a radio-technician trainee in 1958 after attending Wellington College.

**J. E. GAWN** (45) of Wellington, Radio Officer. Born in Dunedin, Mr. Gawn attended Wellington Technical College and was a radio operator on various ships and a radio technician with the Broadcasting Service from 1947 to 1952 before returning to sea. As a radio-officer in the New Zealand component of the Commonwealth Trans-Antarctic Expedition he wintered at Scott Base in 1957. He is married and has two children.

**B. D. GEORGE** (21) of Christchurch, Cook. Leading-Cook George has been serving in the shore establishment H.M.N.Z.S. Tamaki. A former pupil of Christchurch Technical College he joined the Navy in 1959. He will follow another Navy cook, Les. Wells, at Scott Base.

**D. W. HOBBY** (35) of Ashley Bank, North Canterbury, Fitter-mechanic. He was born of Army parents in Quetta, Pakistan, trained as a maintenance engineer, worked on various mining and other projects in Northern Australia, wintered over with the Australian Antarctic Expedition at Mawson Base in 1960, and after nine months in Fiji, came to New Zealand in 1962. He is married and has two children.

**J. D. C. FABIAN** (26) of Petone, Fitter-Mechanic. Fabian served his apprenticeship in the N.Z. Railways and is now a N.Z.R. maintenance fitter. He has had experience with the maintenance of both diesel and petrol engines. He has had wide experience of Alpine conditions, including search and rescue work.

**B. M. JUDD** (28) of Taupo, Fitter-electrician. After attending St. John's College, Hastings, he was apprenticed to the N.Z. Electricity Department and has worked in various parts of New Zealand. He is at present an employee of the Ministry of Works at Wellington Airport. He is married.

**W. R. LUCY** (26) of Balclutha, Surveyor-Handyman. Mr. Lucy attended Timaru Boys' High School and the University of Otago (1955-56) and is a registered surveyor working for the Otago Catchment Board. He is an enthusiast for the high country, having spent much time tramping, mountaineering and deer-stalking. He has also done some flying.

**D. R. MASSAM** (28) of Nelson, Handyman and Field-Assistant. An Auckland by birth and an old-boy of Mt. Albert Grammar School, Mr. Massam is a motor-mechanic by trade.

### SUMMER FIELD PARTIES

#### NORTHERN PARTY:

J. H. Miller: Leader and Surveyor.  
M. R. J. Ford: Surveyor.  
A. G. Sturm: Senior Geologist.  
M. J. Sheehan: Field Assistant.  
J. F. Graveson: Field Assistant.  
S. J. Carryer: Geologist.

Ford, Sheehan and Graveson are at present wintering at Scott Base.

#### SOUTHERN PARTY:

V. R. McGregor: Leader and Geologist.

P. J. Barrett: Geologist.  
A. L. Gough: Surveyor.  
P. C. Le Couteur: Geologist Field Assistant.

McGregor was a member of last year's southern field party.

### VICTORIA UNIVERSITY EXPEDITION:

W. M. Prebble: Leader.  
Prof. H. W. Wellman: Geologist.  
Dr. A. T. Wilson: Chemist.  
R. A. Henderson: Geologist.  
R. Hoare: Physicist.  
D. A. House: Chemist.  
K. B. Popplewell: Chemist.

Prebble, Popplewell, Wellman and Wilson have all had previous Antarctic experience.

### ICE SHELF PROJECT:

A. J. Heine: Leader.  
D. R. Massam: assistant (winter party).

Heine is an experienced Antarctic man having spent one winter and six summers in the Antarctic with either New Zealand or United States expeditions.

### BIOLOGY PROGRAMME:

At **Cape Royds** (University of Canterbury)  
Dr. B. Stonehouse: Leader.

## BALLENY ISLANDS EXPEDITION

In the 124 years since Captains John Balleny and H. Freeman discovered the ice-girt Ballenys some 150 miles off the Oates Coast, on only six occasions has man actually set foot on these forbidding coasts.

- (1) Captain Freeman himself, in 1839, scrambled ashore on Borraidaile Island up to his middle in icy water and grabbed a few stones—which were lost when "Sabrina" sank with all hands a few weeks later.
- (2) In 1948 Australian Stewart Campbell made an equally precarious landing for an equally insignificant reward, on Sabrina Island, south of Buckle Island.
- (3) Better fortune attended a party of Frenchmen from "Commandant Charcot", in 1949. Foiled in the first attempt to establish a base in Adélie Land, Captain Max Douguet made for the Ballenys, a party landed on Sabrina Islet and spent an hour or two on a tiny beach.
- (4) Three years ago USS Staten Island spent a few days in Balleny waters. A party which included Sir Raymond Priestley was landed by helicopter on Sabrina Islet.
- (5) Next day a party which included New Zealanders Murray Robb and Don Thompson landed by landing craft on the north-eastern tip of Buckle Island and stayed for about an hour.
- (6) A landing is also said to have been made from the Russian whaling factory ship "Slava" in recent years.  
And that is all.  
Dr. Trevor Hatherton will lead

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M.S.R. Smith: Biologist.  
P. Fitzgerald: Soil Chemist.  
And probably one other man.  
Smith has wintered at Scott Base this year.

At **Cape Hallett** and **Cape Adare**  
J. C. Kinskey.  
T. L. Riggert.

the New Zealand reconnaissance party which hopes to make the first considerable planned study of the forbidding island group. Details, especially regarding transport, have not yet been fully worked out, but the main objectives are as follows:

*Biology:* A study of the so far little known fauna and flora of the islands to establish their relationship with known Antarctic and sub-Antarctic forms. Plant life must be practically non-existent, but if primitive plants are found the link between Antarctic and sub-Antarctic flora will be of interest.

*Geology:* A study of the volcanic rocks of which the islands are thought to be comprised.

*Geophysics:* Gravity measurements will be made, also geomagnetic and ionosphere observations.

*Oceanography:* The general morphology, structural aspects and bottom fauna of the ocean in the vicinity of the islands.

*Survey:* So far only a very few running surveys have been made and from the data thus obtained plus aerial photography rough maps have been made. The large southern Sturge Island has never been properly surveyed.

### AT SCOTT BASE

The following will be stationed at Scott Base for the summer months:

R. B. Thomson: Deputy Leader.  
I. D. Smith: Postmaster.  
G. J. Billing: Public Relations Officer.  
D. C. Lawford: Storekeeper.  
D. W. Fenton: Carpenter.  
B. R. Aherne: Carpenter.  
H. L. Mallitte: Artist.  
H. McK. Fowler: Film Unit.  
S. Grau: Film Unit.

Mr. Thomson has spent two winters in the Antarctic and one in the sub-Antarctic. In 1959 he was at Campbell Island. In 1960 he was one of the three New Zealanders at Hallett Station, where he was in charge of the scientific programme. Subsequently he was Public Relations Officer at Scott Base for the summer. Last winter he served as Leader of the Australian Wilkes Station and led the traverse from Wilkes to the inland Russian station, Vostok (see p. 292).

## University of Canterbury in Antarctica, 1962-63

by BERNARD STONEHOUSE

The Antarctic summer of 1962-63 saw University of Canterbury biologists continuing their studies of seals, penguins and skuas in McMurdo Sound. Now in its third year, the Biology Unit is undertaking long-term studies of population numbers and trends, paying close attention to man's influence on the breeding and welfare of animals in the far south. Already there are indications that man's presence may be disturbing at least one colony of Adelie Penguins; the small group of breeding birds at Cape Royds, most southerly colony of penguins

in the world, has diminished alarmingly since the present spate of Antarctic activity began. Seals and Emperor Penguins by contrast seem to be thriving, and McCormick Skuas, most versatile and adaptive of polar birds, may be extending their breeding range southward in response to man's arrival.

Over one hundred Weddell Seals are killed each year at Scott Base, to feed the large number of huskies which haul the sledges of New Zealand field parties. For two reasons the main killing has been undertaken by the university team, which

measures and weighs each carcass, dissects out important organs, and brings back to New Zealand the skeletal remains for further study.

In this way material is accumulating from which studies in anatomy, physiology, reproductive biology and parasitic infection can be made. Murray Smith, who is at present wintering at Scott Base, is in charge of the killing programme and has already begun analysing the results of two seasons' energetic work. Warren Featherston has almost completed a first report on intestinal parasites and is planning experimental work for the coming season. Dr. Bernard Stonehouse, leader of the unit, is studying the skeletal material, and attempting to find the age of each specimen from weights, measurements, fusion of bones, tooth structure, and other indications.

### SEALS FROM THE AIR

The season's work began in November, 1962, when seal censuses were taken between Scott Base and Cape Royds (the main headquarters of the unit in Antarctica). Early in December Dr. Stonehouse and Guy Mannering (Antarctic Division photographer) made the first of a series of low-level reconnaissance flights along the whole length of McMurdo Sound, counting seals and photographing the main concentrations. The flights were later continued by Smith and Mannering, providing a valuable record of seal numbers and movements throughout the summer. Later in the season Smith and Dr. Vagn Flyger, a visiting American biologist, experimented with drugs to narcotise the seals for examination and marking; the techniques will prove most useful in the coming season's work. Smith also found a minute ectoparasite, *Antarctophthirus ogmorini*, living on the hair of some of his seals; we believe this is the first time they have been recorded from so far south.

### TWO EMPEROR COLONIES

The Emperor Penguins of Cape Crozier were visited by helicopter

early in December, for their annual census. Although a bad season for ice, with little open water visible from high land above the colony, the Emperors seemed to be flourishing. About 1,250 chicks were present, and some of the largest were already beginning to lose their down. Stonehouse and Mannering flew past the little-known colony of Emperor Penguins at Beaufort Island and were able to photograph it and make notes of its size and position. Slightly smaller than the Cape Crozier colony, the group stands on broken sea ice under the steep, rocky cliffs on the eastern side of the island.

The large Adelie Penguin colonies of Beaufort Island and Cape Bird, together numbering well over 100,000 birds, were also photographed and examined from the air. Solid sea ice covered most of McMurdo Sound well into December, and breeding at all the colonies must have been affected by the difficulties of obtaining food. Small groups of Emperor and Adelie Penguins were seen travelling at high speed over the ice toward open water; a few were even making use of the wide swathes opened by U.S. Navy and Coastguard Icebreakers. At Cape Royds, thirty miles further down the Sound, the Adelie Penguins began breeding as usual in late October and the first eggs appeared early in November, but incubation watches were prolonged to over two weeks and more, and many nests were abandoned before the end of incubation.

The Cape Royds colony, situated so far down the coast of Ross Island, is peculiarly vulnerable to the varying sea ice conditions from year to year. Long-term changes in climate may be indicated by the discovery of old, abandoned colony sites under the surface soil and rubble in the Cape Royds area. Paul Fitzgerald, a soil chemist attached to the Biology Unit, has been collecting soil samples with the object of tracing the extent, and if possible the age, of some of the old colony areas. It seems probable that, at some time within the last few hundred years, more penguins than at present were able to breed on the west side of Ross Island. Next season

Fitzgerald hopes to extend his investigations to the west side of the Sound, where breeding penguins are found only as far south as Inexpressible Island.

### FEWER ADELIES

The Unit's observations at the Cape Royds breeding colony show a continuing decline in the number of breeding pairs. In the days of Shackleton and Scott between 1,500 and 2,000 pairs were believed to breed annually on the colony, and approximately 2,000 pairs were estimated to have bred in the 1955-56 season when expedition activities began once again in McMurdo Sound. Since then the colony seems to have declined steadily; in 1958-59 1,700 pairs were estimated, in 1959-60 1,600 pairs, and two seasons later, when the University team begun regular observations in 1961-62, only 1,250 pairs were nesting on the colony. In the season of 1962-63 not more than 1,100 pairs were found.

The decline in number may be due to changing conditions in the sea, or to some other factor beyond the control of man and independent of his presence. To observers on the spot, however, a far more likely cause would seem to be the disturbance of visitors, some hundreds of whom descend on the colony each year during the summer breeding season. Most visitors, and most of the pilots who bring them, are prepared to co-operate in guarding the small group of birds once they know of its presence and realise the damage which thoughtless behaviour can inflict. However, each season brings its quota of unbriefed pilots and thoughtless visitors; last season's workers on the colony saw birds turned off their nests to be dressed in doll-sized shirts for the sake of "cute" photographs, saw portable-tape-recorder enthusiasts

stirring incubating birds with a stick to provide interesting noises, and counted the occasions on which the birds fled from their nests at the approach or take-off of visiting helicopters.

### CONSERVATION

In a brief report to the Ross Dependency Research Committee I have listed a number of remedies, including stricter flying regulations, the provision of interesting notes on the colony and its history, and a system of voluntary wardens to guard it, which may help in preserving this interesting and unique colony from extinction.

Oliver Sutherland, who assisted this year with the observations on penguins and worked hard with Murray Smith in the seal killing, also made notes on the McCormick Skuas at Cape Royds. Many hundreds of skuas are now regular visitors to the rubbish piles of Scott Base and the U.S. bases in McMurdo Sound, and there is some evidence that they might be breeding within easy flying distance on the slopes of Cape Armitage.

The work of the University unit was helped immensely by the friendly co-operation of the U.S. authorities, who provided air and sea passages for its members and kindly arranged the flights to Cape Crozier and elsewhere. The help of the Antarctic Division, New Zealand Department of Scientific and Industrial Research, is also acknowledged gratefully.

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### N.Z. EXPERT

Mr. W. H. Dawbin, a former lecturer in zoology at Victoria University of Wellington and now senior lecturer in zoology at Sydney University spent a few days at the Tory Channel whaling station early in August before going to the United States where he is to deliver a paper on the migrations and life cycles of the humpback whale. Mr. Dawbin's work, which has taken a number of years to complete, covers the entire Southern Hemisphere.

## HALLETT STATION NEWS

The wintering-over party at Hallett numbered 18, comprising nine civilians (six United States personnel and three New Zealanders) and nine servicemen.

Hallett Station stands on ground in an area that is snow-free during the summer months, says the U.S. Antarctic Project Officer's "Bulletin". With permanent occupancy, the original facilities have been added to and the station made more commodious and comfortable. Significant changes have been the construction of a new communications building and the conversion of the old building into a science laboratory.

A storm early in April caused minor damage to the James-ways and to the roof of one of the storage huts. The old science building, vacated after the building of the annex, is being re-modelled to accommodate a darkroom, library and general recreation space.

The last appearance of the sun was the occasion of a ceremony at 1245 hours on May 14 when the United States and New Zealand flags were lowered by the Officer in Charge and the Station Scientific Leader in winds gusting to 78 knots.

### BLAME THE WEATHER NOT THE SOIL

The soil round Hallett Station would grow vegetables if the climate was better. This is the conclusion of Dr. E. D. Rudolph, assistant professor of botany at Ohio State University, who last summer spent his second season in the Antarctic under a National Science Foundation grant. He will complete his work next summer.

Dr. Rudolph sowed New Zealand seeds of silver beet, radish, and cabbage in open ground at Hallett station. They did not grow. But he brought some of the soil back to the University of Canterbury and the same seed germinated well and gave promise of good crops.

He said that rock surfaces sometimes registered 90 degrees at Cape Hallett when the air was about 40 degrees. His trial simply meant that the soil there did not stay warm enough long enough to sustain plants, chiefly because of the bitter winds. With some sort of glass-house and artificial heating fresh vegetables could probably be grown on the spot.

### NEW ZEALAND TEAM FOR 1964

The three New Zealanders to winter at Hallett throughout next year are:

**N. M. RIDGWAY** (38) of Wellington, Senior Technical Officer. Born in England, Mr. Ridgway served in the Royal Navy, 1942-46, as a Petty-Officer Radio Mechanic. From 1949 to 1951 he was a science master at a boy's secondary school. He came to New Zealand in 1951 and joined the D.S.I.R. Oceanographic Institute in 1953. He has made a number of oceanographic cruises and has spent two summer periods in the Antarctic. He is married and has one child.

**D. S. ROWLES** (35) of Omakau, Technician. Mr. Rowles was born in London, served for three years in the Royal Artillery and in the Meteorological Technical Research Laboratory. Coming to New Zealand in 1957 he became a technician in the D.S.I.R.

**E. N. GREEN** (24) of Auckland, Technician. He was educated at Avondale College, 1952-55, and has served as an airman in the RNZAF since 1956, being stationed at Wigram, Hobsonville and Woodbourne, and serving with 41 Squadron, Singapore.

The "last" penguins and skuas of the 1962-63 summer re-appeared when a skua was sighted on April 8 and an Adelie penguin on the 10th and again on the 16th. A snow petrel was also observed on the 9th. The first two Emperor Penguins of the season were heading up Edisto Inlet on April 21.

## FRENCH PLANS FOR COMING SEASON

### THE NEW TEAM

The "Thala Dan" will leave Le Havre on or about October 10, as last year, and should arrive at Terre Adélie via Tahiti and Hobart about December 15. Twenty men of "T.A. 14" will board the ship at Le Havre under Jean Morin, a veteran of "T.A. 10." The team will comprise in addition eight scientists, seven technicians, two radio men, a doctor and a cook, all but four of whom are already appointed. Five of the appointees have previously spent a winter in the Arctic or Antarctic regions.

Twenty more men, the summer personnel, will join "Thala Dan" at Hobart. These comprise a construction group of eleven men, a four-man helicopter team, a three-man glaciological team under Claude Lorius, and two officials.

### 1963-64 SUMMER

For the summer season 1963-64 a number of special projects are planned in addition to the special emphasis on scientific discipline to which attention is being specially directed because of the I.Q.S.Y.

*Glaciology.*—Sampling and shallow pits (4-5m.) in the coastal zone on the mainland. Ice-melting for the extraction of CO<sub>2</sub> to assess the C<sup>14</sup> content. All specimens will be sent to France for analysis.

The five-man team will be equipped with special apparatus and will have two weasels, two caravans and a cargo sledge.

*Building Construction.* — Installation of the new "Central Electrique" which should be functioning by April, 1964, erection of a laboratory, and general repairs.

### WINTER PROGRAMME

The scientific programme for the 1964 winter will be the same as for 1961-63 with the exception that the programmes in glaciology and seismology will be discontinued, and

meteorological work reduced: only one meteorologist will winter over for surface observations. Added to the programme, however, will be studies in animal biology (birds) and in psycho-physiology.

### AT THE BASE

The technical and scientific programmes have been proceeding normally, without incident. Outside work is of course governed by the weather and the sun, but amounted to 181 hours per man in February, 132 in March, 104 in April, 76 in May, 77 in June and 65 in July. All the men are in good health and morale is reported to be high.

## CHILEAN SCIENTISTS FOR ANTARCTIC

A Chilean press report states that the United States oceanographic vessel "Eltanin" sailed from Valparaiso for Antarctic waters with 32 scientists on board, after a period in the port for re-provisioning.

Among the scientists were a number of Chilean technicians who have entered into a contract to work along with the ship's company, and experts from the University of Chile and the Catholic University, Valparaiso.

The "Eltanin" after her stay in the port was beginning her sixth voyage to the Antarctic. The current voyage was expected to last 60 days.

### BERNACCHI

Mr. R. A. Swan, the Melbourne author of "Australia in the Antarctic," reviewed in our March 1962 issue, recently gave an address to the Royal Historical Society of Victoria on Louis Charles Bernacchi, "the first Australian scientist to work and winter on the Antarctic Continent": he was physicist in Borchgrevink's Cape Adare expedition 1898-1900, and was responsible for the magnetic work on Scott's "Discovery" expedition, 1900-04. This valuable paper is published in the Victorian Historical Magazine, February 1963.

## ARGENTINE STATION CLOSED

Further details concerning the closing down of Ellsworth Station (see "Antarctic" June) are given in the U.S. Antarctic Project Officer's "Bulletin".

"At 1000 hours on December 30 the station was officially closed. A ceremony was held at the station flagpole with the Ellsworth crew, Captain Iriart, chief of the Grupo Naval Antartico, his staff, and the captain of the icebreaker participating. There was an honour guard of sailors. The Argentine flag was lowered, a bugle blown, and lastly, Captain Iriart conducted a final inspection of the station. Upon the completion of the inspection, all the buildings were sealed and messages indicating this official closing bearing the signatures of the station chief and the U.S. station representative, were taped over the doors of each building."

Ellsworth Station was one of seven stations built by the United States for the I.G.Y. It stands on an ice and snow surface of the Filchner Ice Shelf. After the end of the I.G.Y. the United States transferred custody of the station to the Argentine Government. The station has been operated by Instituto Antartico Argentino continuously from 1959 until its closure last December. A small contingent of U.S. Weather Bureau men worked at the station each year.

Recently Ellsworth has been showing signs of the stress of many feet of ice above it. Also, at the observed rate of seaward movement of the Ice Shelf (1300m. per year) it was obvious that eventually the station must drop into the Weddell Sea. So it was decided to pack up and return the major part of the expensive scientific equipment, leaving all the other general station equipment at Ellsworth, in case it should be decided to occupy the station again.

### PLANS FOR COMING YEAR

The same ships, aircraft and organisation are expected to be in

the field in 1963-64 as in the preceding summer, but the programme will be modified in conjunction with the requirements of I.Q.S.Y.

## SOUTH AFRICAN STATION

The latest news we have received concerning the South African Antarctic Station S.A.N.A.E. is that during March the met. tower was raised by 12 feet to 84 feet. If the weather was favourable endeavours were to be made to raise it higher still. Beacon lights had been installed for a distance of 1,200 paces.

As the core holes used for temperature readings had proved quite unpractical, since they became covered by snow-drifts in a couple of minutes' time, a new method was evolved which was giving excellent results: the temperature elements were built into an aluminium screen.

Temperatures for March:

Mean:  $-13.6^{\circ}\text{C}$ . ( $7.5^{\circ}\text{F}$ .)

Highest maximum:  $2.3^{\circ}\text{C}$ . ( $27.9^{\circ}\text{F}$ .)

Lowest minimum:  $-30.0^{\circ}\text{C}$ . ( $-22^{\circ}\text{F}$ .)

The mean wind measurement for March was 17 knots and the highest gust recorded was 77 knots. During the month there were 12 days when the wind was of gale force. The total period of sunshine in the month was 85 hours.

A S.A.N.A.E. report for May: "As regards the weather, May was a remarkable month. For the first time since our stay here the temperature dropped as low as minus 40 degrees. In spite of the cold we used every hour of sunlight for completing the most necessary outdoor jobs before the sun left us. The first thing on the programme was providing a supply of diesel-oil for the winter. The drums which had been stacked under 5 feet of ice, which was as hard as granite, had to be excavated inch by inch. Ultimately the drums—more than 100 of them—stood in long rows in front of the exit, ready for the contents to be pumped over into the empty drums in the snow

passage. Here we met a second problem. Much to our disgust we found that at minus 30 degrees diesel-oil is no longer a liquid, but a kind of jelly which simply refuses to be pumped. A job which normally would have taken three or four days took us more than three weeks.

"Earlier in the month three of us paid a visit to Polar Circle Bay. After a trip of more than an hour on the tractor, what we saw was very much worth the trouble. Up to the skyline the sea was one solid block of ice. And on the horizon a massive iceberg was standing. The silence was only periodically broken by the ominous creaking of the ice beneath us. Since our latest visit to the bay in January yawning cracks had appeared everywhere and we thought it advisable not to stay there any longer than necessary."

### S.A. ANTARCTIC SOCIETY

At the annual general meeting of S.A.A.V. on March 25 Mr. J. J. la Grange was elected chairman. The society meets monthly in the Geography lecture room of the University of Pretoria.

### PENGUIN WAYS

Soviet expedition member G. Kononov recalls these penguin incidents in a recent issue of the Soviet Antarctic Expedition Information Bulletin.

In the summer of 1959 an airstrip was laid on the shore ice near Lazarev Station. Here the "Ob" delivered a large number of empty barrels, which were unloaded just in the lee of the ice cliffs. That same day Adelie penguins appeared near the barrels. Soon, when they had become accustomed to their new surroundings, they made it their home. There are no outcrops of bedrock on the shores of Queen Maud Land, and the barrels, heating up during the day and radiating warmth, evidently reminded them of the rocks on which they normally nested.

Within a week there were already some 100 penguins—a whole colony had formed. At first the noise of the aircraft engines frightened them, but as soon as they were switched off, the colony quietened down, and stared inquisitively at the strange "bird." In the middle of January the penguins began to moult. They started to move about less, and hardly left the spot they had grown to love.

A curious incident occurred at Lazarev Station during the ceremony of the raising of the flag by members of the 5th Continental Expedition. In the morning the off-duty polar explorers were picked up by passing tractors and driven to the solemn assembly. Following the tractors from the shore ice on to the ice shelf came a large group of Adelie penguins. They joined the congregation, animatedly discussing something among themselves. When the meeting was over, the penguins set about inspecting the station site in a businesslike fashion. The bright red "Penguin" cross-country vehicle attracted special attention.

One day a sledge-tractor train left Lazarev Station and set off into the interior, following a previously marked route. Empty barrels and poles served as landmarks. When the train was 40-50 km from the coast, one of the drivers thought he saw a barrel standing a short distance from the track. He steered towards the dark object, and, to his astonishment, it turned out to be an Emperor penguin.

We often read descriptions of encounters with penguins a long way from the shore. Probably, when the Antarctic continent was at its warmest, the ancestors of the penguins lived much farther south, and some lingering instinct still leads the penguins to these spots.

Jim Henderson's "One Foot at the Pole," reviewed in our December issue, has been translated into Braille and will soon be available for blind readers.

# WINTER ACTIVITIES AT THREE AUSTRALIAN STATIONS

Judging by reports received from the three Australian bases, Mawson, Wilkes and Davis, all on the periphery of the Antarctic Continent and so enjoying a relatively mild climate, the Australians are by no means confined to their station buildings, even during the winter.

## MAWSON

Wild and windy conditions in May were not conducive to outside work, and field activities were not possible. The average temperature was only 2.2°; minimum—21.7°; maximum 24°F. Nearly every day there were strong winds and the highest gust reached 120 m.p.h. Blizzard conditions were experienced on 14 days.

Fortunately, however, a party of five in the tractor and the snotrac, made a glaciology survey of the plateau before the bad weather had set in.

Paish had built a training sledge and took the opportunity, when weather permitted, of training the huskies.

The working dogs at this time of the year are required for sea ice travelling.

Much patience is required in this training for sledging. The dogs sometimes start fighting each other, which results in much blood and fur flying. "Hap" ended up after one fight with a nasty gash on his leg. The garage floor became an operating theatre and Doctor Dick Lippett put him to sleep and successfully stitched up the wound.

## IN THE FIELD

Two field trips were achieved in June with several men making their plateau debut. Five men journeyed to Fischer Nunatak in a snowtrac, tractor and the Volkswagen. The trip was the routine glaciology survey between Mawson and Mawson Range, using the snotrac and the V.W.

Mid-winter celebrations commenced with McDonald setting up his radio office and making possible radio-phone communications with Wilkes and Davis. At mid-day on

June 22 we sat down to a banquet magnificently prepared by Howard, with Seavers and Grafton assisting him. Evening developed into quite a party, the main act being a ballet, produced and directed by Eather.

Even on mid-winter's day there was three hours of twilight. During these long dark hours, beautiful sunrises and sunsets sometimes occurred within minutes of each other. The minimum June temperature was — 21°F.

July commenced with a two-day blizzard and throughout the month we have since experienced 18 days of blizzard, the most fierce being of three days duration accompanied by winds exceeding 100 m.p.h. The highest gust recorded was 124 m.p.h. The lowest temperature was —14.6°F, the maximum 19.0° F.

Early in the month Wishart and two helpers departed for Fischer's Nunatak in search of drifting snow conditions as this was lacking at the station area. Their return to Mawson was subsequently retarded by the conditions that they had left to find. While this party was away from the station, three others, with two teams of dogs, left on a sea ice field trip to outlying islands west of the station. The party encountered in their five days away very high winds and drift but successfully carried out their work.

Regardless of the weather conditions, the scientific programme at the station continues. To assist moving about in a blizzard, rope lines are strung between buildings and, by feeling one's way along the line one can move from building to building. To let go the rope is dangerous, as visibility is reduced to several inches owing to the driving snow, and all around is white with no definition of terrain, making one lose all sense of direction.

## EMPEROR-WATCHING IS TOUGH

Ever since Edward Wilson, "Birdie" Bowers and Apsley Cherry-Garrard made the Worst Journey in the World from Cape Evans to Cape Crozier in the winter of 1911, the Emperor penguins' habit of breeding in the depth of the Antarctic winter has brought trouble to those who wish to observe their breeding behaviour. The Australians at Mawson have not broken with tradition.

Three Mawson men narrowly escaped death when the snow vehicle in which they were travelling broke through a patch of weak sea ice and sank in fifteen seconds. The men escaped by clambering out through an escape hatch in the roof.

A field party of six men led by Dr. Richard Lippett set out in two snowtracs on June 12 to travel along the coast over sea ice to the Taylor Glacier, 60 miles west of Mawson. They planned to make midwinter studies of the breeding Emperor penguins at the Taylor Rookery.

Eleven miles west of Mawson the sea ice suddenly cracked under the leading vehicle which slid off into the water. Lippett, Edward and Vukovich barely had time to scramble out through the escape hatch in the roof before the snowtrac sank. All men returned safely to Mawson in the second vehicle.

### THE PENGUINS WIN

Dr. Lippett, Watson and White left Mawson on July 18 to haul a sledge 30 miles over sea ice to the Auster rookery of emperor penguins, where they intended to carry out zoological investigations of the breeding birds.

Radio communication with the party was lost on July 23 when their transmitter failed. Next day they reached a position north of Austskjera where they were immobilised by a two-day blizzard. On July 27 and 28, attempts to proceed to the Auster rookery were defeated by blowing snow. However, on July 29 the men reached the rookery and, after preliminary observations, returned to their camp, planning to return again the following day.

On the 30th a bad blizzard made

them abandon the idea. They decided to return to Mawson at the first opportunity because radio silence had lasted beyond the specified time and they knew that the station party would be anxious about their welfare. On July 31 they began the return journey and on August 1 were struck by a blizzard while camped on an island of the Robinson group. Extremely heavy snowfalls completely buried the tent and sledge and the men were forced to cut their way out through the top of the tent when the pressure of snow threatened to flatten it. Taking their sleeping bags, they sought shelter away from the worst snow-drift area, but one sleeping bag was blown away and lost.

The party bedded down in the open in the snow for 24 hours and then, in desperation, decided to begin the thirty-mile walk back to Mawson even though heavy drift was still blowing. They abandoned their sledge and tent which lay beneath ten feet of snow.

Meanwhile a two-man dog-sledging party had left Mawson on July 28 to investigate the whereabouts of the man-hauling party. The dog-sledges had reached an island in the Robinson group, 15 miles from Mawson, when they were immobilised by the blizzard.

Dr. Lippett and his two companions reached Mawson after a gruelling 15-hour trip at 3 a.m. on August 4. All were suffering from frostbite to hands and feet and were given immediate treatment. The dog-sledging party was recalled by radio.

Although full recovery will take some months, it is not expected that any of the men will suffer any permanent injury.

## WILKES

A fire was discovered on the evening of April 23 in the Heater building adjacent to the Inflation building. To prevent the fire spreading to the Inflation building the wooden heater duct between the two buildings was chopped down. Some damage occurred to the roof and outside of the building but it was of a minor nature. A 55 gallon fuel tank shot a pressurised torch 20 feet into the air through the filler pipe which apparently and fortunately had not been capped after filling, otherwise an explosion might have occurred. The Heater building was a complete loss, but there were no injuries to any of the personnel.

The loss of the Heater building interrupted the upper air programme for only two days and preparations were soon under way for the construction of a new building.

## THE WEATHER

The average temperature for April,  $-3.5^{\circ}\text{F.}$ , was a record April low, the averages in some other years being as much as  $17^{\circ}\text{F.}$  warmer. The May figures were: Average  $-6.7^{\circ}\text{F.}$ , highest  $21.1^{\circ}\text{F.}$ , lowest  $-29^{\circ}\text{F.}$

The weather trends in May were full of surprises. "The prevailing winds," writes Saxton, "which are easterly, have this year so far been from the south! The monthly average temperature of  $-7^{\circ}$  and the lowest of  $-29^{\circ}$  were record low figures. Also, the highest temperature was the lowest recorded. We had the highest snowfall and just to confuse the issue we also had a two-day heat wave with an average top temperature of 15 degrees; this caused slabs of frost on the ceilings of corridors to fall like sheets of plaster which left quite a mess. The maximum wind was 80 m.p.h."

Thomas, who handled the radio communication to the traverse under very cramped conditions (in fact he was seen transmitting morse and stirring porridge at the same time)) organised morse classes during the winter.

Out of seal meat for dogs for quite some time, it was good news when a sealing party reported having got four on the sea ice beside their breathing holes.

## MAY TRAVERSE

The traverse party had a few troubles, though Wilkinson managed to persuade even the most obstinate vehicle to start. "But he did not appreciate Mal Kirton's remarks, when the engines were difficult, that Mal would radio for his dogs to come and collect him. Our lowest temperature of minus  $52.5^{\circ}\text{F.}$  was inconsiderate enough to arrive at 8 a.m. when starting and packing preparations were under way; in fact, no temperatures recorded in the field were above zero. Mal, who achieved good seismic results, found that we generally were travelling at our altitude of 4,400 feet on about 2,000 feet of ice which overlaid the rock. Throughout the trip Peter Ormay was always a willing candidate for field work and often had his beard and eyelashes covered in frost while watching from the hatch for the other vehicles, when fog conditions threatened to part us."

Midwinter's day was celebrated in the traditional Antarctic manner. The big occasion saw the station mess decorated and the tables laid out in banquet fashion around which all members of the party sat to dine and wine in a jovial atmosphere in keeping with the festive occasion. Everyone was more than satisfied with the seven-course meal.

## JUNE BLIZZARDS

June was blizzard month with sixteen days of them, and many of the other days also had quite strong cold winds. Peak gusts exceeded 100 m.p.h. These winds caused some anxious moments for Currie and McKenzie when guy wires from aeriels came adrift. Grimsley was seen on the odd day he could get out, trying to make temporary repairs to the ionosphere sounder aeriels. Parts of the amateur radio aerial were blown away. All the Met. Section had a most energetic time digging out the entrance to the balloon-launching building. They would

spend hours digging, only having to retreat as the wind came up and undid all their work in a few moments. Ormay, while carrying a few sheets of masonite for the kitchen renovations, was caught in a very sudden wind and masonite sheets sailed off not to be seen again.

July was ushered in by a seven-day continuous blizzard. Indications were for a new record for wind but, by the middle of the second week, the weather cleared. Still, it was the second windiest July on record. A 33° temperature was also the second highest on record for the month.

After some hurried preparations a fuel depoting party set off in clear weather to leave drummed fuel over fifty miles from the station in readiness for the spring traverse. The field party made some excellent travelling times, despite two blizzards, returning to Wilkes after one and a half weeks away. Temperatures were mainly in the minus thirties, with the minimum being — 37° F.

During the month Webster and Thompson in two vehicles spent a day on the plateau where they laid out empty fuel drums, to replace those buried, which indicate the start of the southbound route. When their weasel broke down a couple of miles from the station, they both returned squeezed into the one-man closed cockpit of the other and smallest vehicle. The faulty vehicle was retrieved two days later, after an intervening blizzard had blown itself out.

## DAVIS

The April newsletter had barely left when Davis was hit by the worst blizzard since the new team's arrival. High winds and drifting snow built drifts to roof level and for many days shovels were necessary to reach the outside world. New Zealander David Dodd grew many grey hairs during the blizzard to keep his instruments in operation and in one piece. The Met. section flew the weather balloon with instruments attached in heavy drift and 7 knot winds.

Health was good and morale high after the coldest May day since the

establishment of Davis, and after winds equalling the record.

Minimum temperature — 26.2°; maximum 26° F.; mean 2.6° F. Maximum wind 101 knots.

## MIDWINTER

Giddings excelled with his preparations for the midwinter dinner. The buffet tables were filled to capacity with delicately prepared food of every description and the layout of the main table would have done the "Hotel Royale" proud.

The intrepid trip of the month was undertaken by Lugg and Strover. With a dog team they ventured to Crooked Fjord, triumphantly returning to the station after five days in the field. Dodd won a break from Met. duties when he snowtracked to Soesdal Glacier.

Minimum June temperature was —12.3°; maximum 23.9° F.; mean temperature 5.2° F. Maximum wind gust 60 knots.

## PLANS FOR SPRING

By the end of July preparations for the field programme later in the year were well under way. The increased daylight hours made it possible to press on with the construction of a road for vehicle use through a section of the Vestfold Hills to the Ice Plateau. A survey was done by Dodd and Young and a possible route discovered near remote station Platcha.

Lugg and Eyre journeyed to Mule Island to check on an elephant seal colony.

Foale and Lee left Davis for one week. One dog-team carried them to Long Fjord, then to Platcha, where they were confined for two days by a blizzard.

Blizzards buried the normal building exits under ten feet of snow drift. The emergency roof hatch was used to advantage at this stage as Davis men ventured into the outside world. The hatch is much akin to a submarine conning tower exit. Exit-clearing after each blow became routine.

The maximum monthly temperature was 14.8° F. and the minimum was —19.5° F., while the mean temperature was 8°. Maximum wind gust was 81 knots.

### SEALS GO WALKABOUT

Young reported from Davis on August 15 that a party travelling inland from the station found two dead seals on the Plateau ice, 600 feet above sea level. One, a Leopard seal, was one mile inland from the junction of the Plateau ice and the coastal rock; the other, a Weddell seal, was two miles in from the junction. They were mummified by dehydration in the cold dry air and perfectly preserved. It is thought that they may have died there many years—perhaps hundreds of years—ago, but why they headed inland from the sea no one knows.

Her sources include her own letters from Sir Douglas, diaries, and material in the possession of the British Museum and the Royal Geographical Society. Lady Mawson lived in England for two and a half years gathering material.

In a notable foreword the Duke of Edinburgh says "Lady Mawson . . . has performed a valuable service to Australia as well as to all those who are interested in the Antarctic by giving us the opportunity to view in perspective a great and dedicated career."

### SOCIETY OFFICERS

At the Annual Meeting of the N.Z. Antarctic Society on July 7 officers elected were:

President: A. H. Robins.

Immediate Past President: J. H. Miller.

Vice-Presidents: H. F. Griffiths, A. S. Helm.

Treasurer: P. L. Wilson.

Publicity Officer: W. Hopper.

Council: Representing Wellington Branch: Dr. R. A. Falla, Dr. T. Hatherton, Cdr. W. J. L. Smith, Cdr. R. Humby, W. J. P. Macdonald, L. B. Quartermain; representing Canterbury: Dr. B. Stonehouse, H. F. Griffiths, R. J. Stanley, J. H. M. Williams; representing Dunedin: A. Leigh Hunt, N. L. Dickson, F. Simmons.

Mr. W. J. Macdonald was appointed Secretary, but subsequently resigned in consequence of an accident while skiing. Mr. Athol Roberts was then appointed.

The Australian Antarctic Division has moved from its mid-city Collins Street offices in Melbourne to a building at 568 St. Kilda Road, Melbourne, S.C.3, where among other amenities the staff has ample parking space for cars.

Dr. P. G. Law, Director of the Australian Antarctic Division, entered hospital late in June for manipulative treatment to his back, and was expected to be off the active list for a considerable time.

Among grants awarded to Australian Universities and research organisations by the United States National Science Foundation, announced in June by the American Embassy in Canberra, is a grant of \$13,200 (£5,871) to the Australian National University for research in the McMurdo Sound area of the Antarctic.

### LIFE OF MAWSON

A Life of the late Sir Douglas Mawson has been written by his widow, Lady Mawson, and is in press. The book is expected to be published in April next year by Longmans Green and Co. Ltd., London. This date coincides with the 50th anniversary of the ending of Mawson's first Antarctic expedition. Lady Mawson has stated that her book is a study of her late husband "from the human point of view".

### ANTARCTIC WEEK

Antarctic week in Christchurch this year is to be on a more modest scale than last year's highly successful effort. It is planned to link the week with Show week in November. The Christchurch City Council, the U.S. Naval Support Force, Antarctica, and the Canterbury branch of the New Zealand Antarctic Society will again co-operate in the effort.

# NEW ZEALANDER VISITS VOSTOK

## BUT FINDS NOBODY AT HOME

by R. B. Thomson.

[In our last issue Bob. Thomson, already veteran of one Antarctic and one sub-Antarctic winter, gave his impressions of the Australian Station at Wilkes, where he was Leader last year. In this article he describes the Australian traverse which he led to the Russian station on the high Polar Plateau 900 miles inland. Ed.]

Planning for the traverse commenced in May, 1961, followed by months of feverish activity at Wilkes preparing vehicles, sledges, equipment and supplies until our departure for Vostok on September 17.

Two D4 tractors hauled nine sledges, their load of some 22 tons consisting of two caravans, fuel, food, mechanical spares, drilling and scientific equipment. Two weasels (extensively modified) were also taken, one used as a scout and navigation vehicle, the other to house the seismic recording equipment, gravimeter and other delicate scientific instruments.

The planned scientific programme (maintained throughout the traverse) was as follows:

Seismic shots every 30 miles. (Drilling to a depth of 240 feet).  
Gravity readings every three miles (minimum).  
Magnetic readings every Seismic Station. (H D Z components).  
Glaciology pit every 60 miles.  
Bore-hole temperatures every 60 miles.  
Full meteorological readings every six hours.

Elevations continuous using two Weasels three miles apart.

During the first month or so persistent poor weather proved our greatest problem; whiteouts, blowing snow and blizzards with zero visibility made travelling most difficult and extremely hazardous. Thus commenced a battle against time which lasted throughout the Traverse. Full use of all reasonable weather had to be made to balance against periods blizzard bound, etc., and to keep our average mileage up to the required 17 per day.

On October 19 350 miles from Wilkes we arrived at the most Southern point previously reached by an Australian Expedition in Antarctica. We were now at over 9000 feet, still climbing, and with temperatures dropping to minus 50 deg. F. Surface conditions had become much worse, large lumps of sastrugi as high as 7 feet and long wind-scoured snow drifts diagonally across our course were most difficult to negotiate.

On October 25, having completed 450 miles, we passed the halfway point to Vostok. We were now nearing an altitude of 10,000 feet, temperatures were still becoming colder and on October 27 at 486 miles we experienced our record low of minus 82.2 deg. F.

### STRANGE PHENOMENA

In temperatures below minus 60 we experienced many strange phenomena; our breath froze in the air with a loud crackling sound as we exhaled, paint on vehicles and equipment cracked, splintered and exploded leaving only bare metal remaining, rubber became as hard as steel, wires and cables could not be moved without breaking, oil froze solid, and exposed parts of our bodies would be badly burnt if we came in contact with any metal, ice crystals caused strange refractions in the atmosphere and often up to 5 suns could be counted at any one time. On one occasion the tractor trains followed over 2 miles behind the navigating Weasel appeared above the horizon as a mirage miles ahead of the Weasel.

The airdrop point 572 miles inland was reached on November 1—4 days



ON THE VOSTOK ROAD

ANARE photo, A. Batty.

ahead of schedule. The drop made on November 5 by a Globemaster of the 9th Troop Carrier Squadron, United States Air Force, was a complete success and thus we received 1584 gallons of diesel fuel. The sight of something or somebody apart from ourselves was a great thrill too and we all felt a sense of loneliness after the aircraft had made its final run and departed on its 1000 mile return flight to McMurdo.

A period of steady progress averaging some 30 miles daily during the next week brought us to a position 749 miles south of Wilkes. Here at an altitude of nearly 12,000 feet and only 150 miles from Vostok we found the surface, although very hard, much flatter, and sastrugi much smaller. We were all now very determined to reach Vostok with minimum delay, so we continued to push on. Allowing little time for food, rest or sleep we managed at least 30 miles per day until the morning of November 18 when an

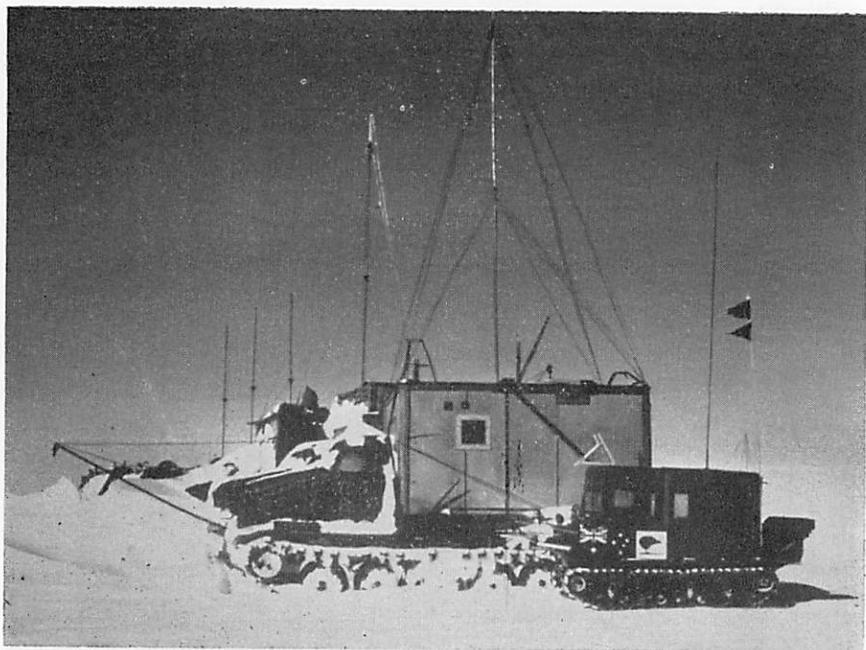
astro check of our position showed we were within 40 miles of our goal.

#### TODAY'S THE DAY

At 0840 we were mobile again having completed the usual tedious tasks of preheating and starting vehicles, but this morning a different atmosphere prevailed: today we should reach Vostok.

At 4p.m. with just over eight miles to go we sighted a vertical dark line on the horizon. This later proved to be an antenna mast at Vostok. Another two miles and numerous dark spots could now be seen on the horizon: these were the buildings and vehicles at Vostok. Two hours later I stopped our navigation Weasel amongst the vehicles and buildings of the Soviet Station.

A few days before we had received a radio message from the Russian Leader at Mirny cordially inviting us to make full use of the facilities at Vostok.



**AT VOSTOK**

ABOVE: Australian traverse navigation weasel is dwarfed by huge Russian Karkovchanka vehicles parked at Vostok.

ANARE photo, R. B. Thomson.

BELOW: Two of the Australian traverse team make themselves at home in the living-room at Vostok, below a portrait of Lenin.

ANARE photo, A. Batty.

First problem, however, was to find an entrance to what appeared to be the main building, difficult to determine as all buildings were nearly covered by snow drift. Some 2 hours probing and searching and the entrance, a bear skin rug, was located.

At minus 70 deg. F. the buildings were colder inside than out; thus it was essential that we obtain some warmth to make the place habitable. We accomplished this by using our combustion heater (Herman Nelson), and sometime later we had the main generating plant operating, giving us power for lighting, cooking and heating.

**HOME AWAY FROM HOME**

During the following six days spent here we showed ourselves Russian films, enjoyed ample Russian food, had our first good wash and bath in two months, and generally reorganised for our impending 900 mile haul back to Wilkes. We made use of Russian instruments to continue our scientific studies and in doing so found that their minimum thermometer showed a reading of minus 121.7 deg. F. recorded during the winter just passed.

Vostok Station proved to be much larger than we expected and is certainly a credit to the Russians in being able to construct such a

base in the remotest, and coldest, area of Antarctica.

On November 25 we departed North and in a record breaking run completed 74 miles in 22 hours. With constant good fine weather and 24 hours sunshine a strict routine could now be adhered to—a day's travel of 30 miles required between the seismic drilling stations



An Australian dons an "extreme cold" mask as used at Vostok.

ANARE photo, A. Batty.

could be achieved fairly easily and drilling and seismic work completed within 2-3 hours of making camp. Mechanical breakdowns were few, thus delays were greatly minimized and we found ourselves in the happy position of keeping well ahead of schedule.

**WHITE CHRISTMAS**

Continually brilliant sunshine had been experienced for 46 days when on December 24 a violent blizzard struck us 354 miles from Wilkes. However, we made the best of our forced stay inside the caravans to celebrate a real white Christmas Day; chicken, Christmas pudding and cake, champagne, and many goodies were a most welcome change

from our normal plain food, and surely we were the remotest party on Earth to celebrate this Christmas?

The weather cleared somewhat on the 26th and we were mobile again; but now that we were back near the coastal area of rapidly changing conditions, whiteouts, blizzards and drifting snow again became a problem. Temperatures now rapidly warming to  $-10^{\circ}\text{C}$ . caused damp snow to become an added problem, clogging tractor tracks and suspension. We pushed on, good progress continued and on January 5, 180 miles from home, we recorded for the first time in over 3 months a temperature above  $0^{\circ}\text{C}$ !

Poor weather but steady progress

continued until at 4.20 p.m. on January 14 we sighted the coast and icebergs, the first we had seen in four months, and at 6 p.m. we sighted Wilkes Station and our relief ship "Thala Dan" lying close inshore—a very pleasant sight indeed!

As soon as we were sighted from Wilkes, all types of vehicles carrying incoming and outgoing Wilkes parties and members of the ship crew now streamed out over the snow to welcome us. So many people, so many questions, the confusion and noise, was a strange contrast following the 120 days of quiet isolation we had endured in traversing 1800 miles into the little-known heart of the Antarctic Continent.

## THE WINTER HAS BEEN TOUGH AT RUSSIAN BASES

News filtering through from the wintering over Soviet teams suggests that the winter weather, even at the inland station Vostok, has not deleteriously affected the spirits or the activities of those running the four Russian bases.

A Russian press correspondent radioed from Mirny on April 25 that winter had come to Antarctica.  $72^{\circ}\text{C}$  of frost had already been recorded at Vostok in the heart of the continent. Winds were raging over the coast and the south-polar seas, at times reaching hurricane force.

"Late though it is," he said, "the 'Ob' has only recently completed its voyage round the coast of Antarctica. After taking on board the seasonal shift workers from Enderby Land, the ship set sail for Mirny. April proved to be a stormy month. The strong head wind turned into a hurricane. The 'Ob' began to encounter accumulations of icebergs and floes. Visibility was down to 50-200 metres.

"10 miles from Pravda Coast the 'Ob' ran into dense, snow-covered hummock ice. It seemed impossible to find a way through and the vessel was forced to heave to and lie at anchor. When the weather improved, aircraft with hydrologists on board twice flew out from Mirny. With the aid of this ice reconnaissance a pas-

sage through the ice was found and the 'Ob' sailed on to Mirny and forced a way through the fast-ice 20 km. from the station. With the assistance of aircraft fresh fruit and vegetables were flown to Mirny.

"After taking on board the men who have been working along the shores of the Davis Sea this season, the 'Ob' left Pravda Coast. Her departure was attended by the traditional ceremony of sirens and coloured rockets. The 'Ob' then set sail northward for Russia."

### LATER NEWS

A Mirny message dated June 14 spoke of wind speeds reaching 4 metres per second and air temperatures of  $30^{\circ}\text{C}$  below zero. The station living quarters were already completely snowed under, the message stated, and entrance to and exit from the quarters had to be made through hatches in the roof.

Despite these conditions there had been no interruption in the release of radio-sondes transmitting temperatures, pressures, degrees of

moisture in the atmosphere and the speed and direction of winds. Weather maps of the Southern Hemisphere were being regularly compiled and weather forecasts radioed to Vostok, Novolazarev and Molodezh, the other Soviet Antarctic stations.

### ARCTIC-ANTARCTIC CONTACT

The Mirny radio operators were in touch with their Russian homeland "day" and "night" and had also picked up stations in New Zealand, Australia, North and South America and western Europe. A few days before the dispatch was sent out, contact had been made with the Arctic station at Cape Schmidt. The personnel of Mirny were able at times to hear the voices of their relatives in various Russian towns.

### VOSTOK REPORTS

A radio dispatch from the inland Vostok (78° 27' S., 106° 52' E.) to a Leningrad newspaper dated July 12 stated that temperatures of -60°C. (-76°F) and lower had been recorded at the station. The Polar night clamped down on Vostok on April 27. Midwinter's Day was properly celebrated on June 22.

Vostok is about 750 miles south of Mirny, which is on the coast. While the latitude of Vostok is not very different from that of Scott Base, it is inland on the lofty Polar Plateau, so conditions are of course much more severe.

### PLANS FOR 1964

The 9th Soviet Antarctic Expedition is now being prepared. Scientific work will be closely co-ordinated with the requirements of the I.Q.S.Y. This will involve special attention to the earth's negative field, cosmic rays, the ionosphere and the upper layers of the atmosphere.

### UPPER SPACE ON THE MAP

The Soviet journal "Gudok" states (May 4) that 100 new names have been added to the map as the result of recent Soviet exploration in the Antarctic. These place names have

been approved by the National Committee for the Study of the Arctic and the Antarctic and have been notified to the international organisations concerned. The new names include those of the Soviet Cosmonauts Gagarin, Titov, Nikolaev and Popovich, which have been applied to newly discovered mountains and mountain ranges. Other famous names to appear on new maps are Ernst Telmann, Fredrik Juliot Curie, Igor Kurchatov, Julius Fuchik and Maxim Gorki.

### A YEAR AGO

Some further details are to hand regarding preparations for the re-opening last summer of Vostok Station, referred to in earlier issues.

A sledge tractor train left Mirny as early as September 17, the first spring trek.

The six man party was led by the Commander of the Land Transport Division, A. Borodachev and included an East German meteorologist. Their main task was to establish an intermediate fuel depot 100 km. inland, towards the top of the steepest part of the glacial slope, at a height of 1400 m. They also took with them an automatic radiometeorological station, which was to be set up in the interior. The station was constructed at the Arctic-Antarctic Scientific Research Institute.

Transport consisted of a powerful tracked vehicle and an S-100 truck-tractor towing two heavily laden metal sledges. In the first three days the party successfully crossed a wide zone of deep crevasses and climbed the steep slope to a height of 1300 m. Then they were temporarily held up by a sudden violent snowstorm.

To avoid wasting time the men set about installing the radiometeorological station. With the aid of the device scientists will be able to keep a regular check on weather changes on the glacial slope. The information recorded will be automatically transmitted back to Mirny for inclusion in the general weather reports for the Antarctic continent.

On September 26 as soon as the storm abated, the party pressed on southward. Soon they reached their

# AWAITING THE SUN AT AMERICAN ANTARCTIC STATIONS

The hours of darkness, 1963, are almost over for Antarctica. The first flight from New Zealand to McMurdo is expected to be made on or about October 1, and the first ship carrying stores and equipment for the American Operation Deep Freeze 64 was due at Lyttelton in August. The movements into the continent will soon be under way.

And what have the 314 wintering-over men isolated in the U.S. stations been doing since March when the last ships and aircraft left them behind to face the months of darkness and cold? Cold it certainly has been, with a record low of minus 109.8deg. F. recorded at the Amundsen-Scott Pole station on July 14, a minimum temperature .3 deg. lower than ever before recorded, and in surprising contrast to the plus 23deg. F. ruling at McMurdo Station on April 11, an Indian Summer which did not last into May. May at McMurdo, with a minimum low of minus 43deg. F. was the coldest May in the last seven years.

Cold and dark these months may have been, but they have not been

idle for the men. Equipment has had to be secured, overhauled and repaired; meteorological, upper atmosphere physics and siesmological programmes have been maintained.

But Jack's no dull boy after the darkness has begun. The University of Antarctica started lectures on April 15 at McMurdo, with four mathematics courses—basic mathematics, algebra, trigonometry, and the calculus; two language courses, Russian under the tutorship of the Russian exchange scientist at McMurdo, and Spanish, as well as courses in book-keeping, accountancy, physics, chemistry and American government; many other students are studying correspondence courses they enrolled in before their isolation began.

goal and set up the fuel depot, containing 10 tons of fuel.

On September 27 the expedition arrived safely back at Mirny.

## BELLINGSHAUSEN DOCUMENT

We referred in our last issue (p. 245) to the Russian claim that Bellingshausen's long-missing sailing charts, 1819-21 had been discovered. The second number of the Soviet bulletin "Antarctica" (1962) reproduces in both English and Russian a letter from New Zealand journalist Nicholas Turner to V. L. Lebedev, dated July 1, 1961, asking for details regarding two documents of great interest, concerned with the same expedition, previously referred to by Soviet Antarctic authorities.

Mr. Lebedev's lengthy (2,500 words) reply is also reproduced in both English and Russian. A copy of the correspondence is held in the library of the Antarctic Division, D.S.I.R., Wellington.

And of course there is the purely recreation side of life to consider too. Movies, card games, hobbies and self-entertainment—music and the theatre—help to fill in any spare time, while the ham radio not only entertains and interests, but may also bring in the stimulus of contact with an outside and seemingly far-distant world.

## LOSS AT McMURDO

Under the disturbing heading, "*McMurdo loses enlisted man*" the latest issue of the "Bulletin" of the U.S. Antarctic Projects Officer reports "The career of a Navy enlisted man ended on—July 1 . . . when Dean Everett Fadden entered the Commissioned Officer ranks". Mr. Fadden, who wintered over at Byrd in 1957-58, is a Watch Supervisor at the PM-3A nuclear reactor. We add our congratulations.

## HOPE SPRINGS ETERNAL

Midwinters Day was celebrated at the United States stations McMurdo, South Pole, Byrd and Eights and at the joint U.S.-N.Z. Hallett Station. An unusual note was introduced at the Pole where a "sumptuous buffet" on the Friday had a follow-up on Saturday, when "the fare was Italian style".

But the tiny Byrd Auroral substation went one better. The three men isolated there, 40 miles from Byrd, reported that they had invited some "girls from the factory across the street." We have not heard if the invitation was accepted.

## AMENITIES

The Ross Ice Shelf now boasts an ice skating rink, complete with skates rented from Christchurch, a refreshment stand calling plaintively "Waitress Wanted—No Experience Necessary" and a name—No-Squaw Valley.

The builders? The crew of USS "Arneb", who despite three forced withdrawals as a result of blizzards, finished and used the rink before "Arneb's" departure from Antarctica, and plan to extend the sports centre they have begun, should their ship return to it next season.

The season's first aurora was seen at the South Pole Station on April 12, for 15 minutes. Displays thereafter occurred almost daily.

Of the automatic weather stations set up at Scott Island, Minna Bluff, Little Rockford, Beardmore Glacier, Cape Crozier and on the Dawson Trail all had been picked up or had stopped transmitting by June except those at Little Rockford and Minna Bluff.

The tellurometer traverses of which so much has been heard in recent seasons will be replaced by Electrotape Traverses, using Electronic Distance measuring. The term turbojet, familiar in this connection, will be replaced by the term turbine-driven.

## PLANS FOR 1963-64

In outline, the United States Antarctic Research Programme USARP-64 is as follows:

During the summer, preparations will be completed for the special IQSY observations. An intensive field season in biology and geology is also anticipated.

### GEOLOGY

(1) Investigation of the Queen Maud Mountains by four men working at the Faulkner Escarpment adjacent to the Amundsen Glacier.

(2) Investigations by five men of the Neptune Range in the Pensacola Mountains.

(3) Between November and December 15 two men will study the geology of Northern Victoria Land. Using Army turbine helicopters they will operate from Hallett Station.

(4) A six-man party will work in the Ellsworth Mountains, with turbine helicopter support in the latter half of the season.

(5) In December two men will study the patterned ground in the McMurdo area.

(6) One man will study the application of photo-geologic techniques to Antarctic geology in the mountains west of McMurdo Sound.

### BIOLOGY

(1) At Hallett: Field investigations in the physiology of lichens.

(2) Marine ecology and ichthyology studies in McMurdo Sound.

(3) Seal physiology study at McMurdo, and a study of seal diving habits.

(4) Ornithological work at Cape Crozier.

(5) Research into the zoogeography of insects in the Pensacola and Queen Maud Mountains as well as in McMurdo Sound.

(6) Albedo studies over the ice pack, the continent, and ocean areas between New Zealand and Antarctica. Missions will be flown in C54Q aircraft.

## GLACIOLOGY

(1) An over-snow glaciological traverse will operate in the area bounded by Byrd Station, Pensacola Mountains, the southern margin of the Filchner Ice Shelf and the Ellsworth Mountains.

(2) Station glaciological studies at Byrd and Pole Stations. Topographical engineers will establish long-term movement networks 50 to 100 miles from Byrd.

(3) Topographical engineers will obtain additional geodetic control in the Ellsworth and Pensacola Mountains.

(4) Topographical engineers with turbine helicopters and electronic distance-measuring equipment will attempt to complete the last legs of Topo East.

## OCEANOGRAPHY

Navy oceanographers will spend a month aboard a Navy icebreaker in the eastern Ross Sea between 157°W. and 180°, working south from 78°S. 100 hydrographic stations are planned.

U.S.N.S. "Eltanin" will continue making 60-day cruises from South American ports. Cruise 9 during August-September will take place in the South Atlantic between 50° and 55°W.; cruises 10 to 13 (Nov. 1963-June 1964) in the South Pacific north of the Bellingshausen Sea. Work in the upper atmosphere and marine disciplines will continue.

The meteorological programme at Hallett will be reduced, and will largely be confined to summer observations for aircraft operations. The meteorological rocket programme at McMurdo will be discontinued pending analysis of the data obtained to date.

New upper atmosphere programmes include: A forward scatter programme. Antennae will be mounted on 100 to 150 foot towers at McMurdo, Byrd and Pole Stations.

A meson telescope and neutron monitor will be established at the South Pole.

Studies in VLF-ELF radio propagation and in the measurement of ice thickness on "Glacier" and at Byrd, Eights and Pole Stations.

Installation of transmitting equipment at McMurdo for a radio propagation experiment with recorders at Okinawa and in New Jersey to study seasonal changes of propagation paths.

## ON ANVERS ISLAND

The permanent biological station to be set up in Antarctica's Palmer Peninsula by the National Science Foundation will be located on Anvers Island, the largest island in the Palmer Archipelago, situated 64°30'S., 63°30'W. It was occupied by a British expedition during I.G.Y.

The station, whose installation may possibly be included in this season's Antarctic Research programme, will eventually be under the charge of Dr. M. E. Pryor, a biologist who, in 1961-62, was the American exchange scientist at the Russian base at Mirny.

Anvers Island has been selected as having the greatest variety of animal and plant life on the peninsula, after a 10 week's survey cruise last summer by the U.S.N. icebreaker "Staten Island," during which she visited more than 26 possible sites.

## UNLOADING FACILITY?

Yet another facility designed for McMurdo Station as first site is a ship unloading facility, which could reduce by some thousands of man hours the annual effort now required with the use of sleds and tractors across the ice.

A marginal wharf, sited on the west side of Hut Point where deep water is available very close to the shore line, with a cantilevered truss system supported on the shore, would utilize trusses anchored on the shore and extended 50 feet from the shore line to form a 70 x 200 foot wharf.

In addition, the United States Navy Bureau of Yards and Docks is making tests and conducting research to determine the feasibility of constructing a more permanent runway, also at McMurdo, or, if insufficient snow free land is there available, perhaps on the permanent ice barrier off New Zealand's Scott Base.

## IN BY AIR

Boeing flights numbering 28 are expected to pass through Harewood Airport during the 1963-4 season, according to advice received by the Airport authorities from Rear Admiral J. R. Reedy of Operation Deep Freeze. The main runway at Harewood is to be extended from 6600ft. to 8000ft., it is hoped by November this year, a lengthening which will enable the Boeings to lift off with sufficient fuel to fly direct from Christchurch to Honolulu without having to stop at Pago Pago, as they hitherto have had to do.

The first U.S. flights from Christchurch to McMurdo are scheduled for the first half of October. Three or four C-130 flights are contemplated. After mid-October regular flights will begin.

## MORE WATER

The Antarctic's only nuclear power plant, the PM3A Installation on Observation Hill at McMurdo, successfully completed its first run on full power in late March, although it has not yet, apparently, been employed to supply all the camp's power requirements.

A further use to which the plant may be put will be that of converting sea-water. From the process steam from the plant, a multi-stage flash-type conversion plant will, it is hoped, produce a daily 14,000 gallons of potable water, which would greatly reduce the man-hours and labour at present necessary to convert snow, by shovel and heating, to water.

## MAGNETIC SURVEY

Airborne magnetic surveys will concentrate on transects of the trans-Antarctic mountains near Hallett, McMurdo, Cape Douglas and the Beardmore and Robert Scott Glaciers. Other magnetic flights will be undertaken over Ellsworth Land from Byrd and Eights.

New commander of VX-6 is Commander George R. Kelly, U.S.N., who took over from Commander William H. Everett, U.S.N. in April last year.

## NEW PICKET SHIP

A new name will be entered in the roll of United States Antarctic ships during the coming summer. The picket ship to alternate duties south of New Zealand this year with HMNZS "Rotorua" will be the destroyer escort USS "Hissem" from the U.S. Atlantic Fleet. "Hissem" is expected to arrive at Dunedin via Lyttelton on September 19, and will leave Dunedin for 60°S. on September 26, to aid the fly-in of Deep Freeze aircraft. "Rotorua" will take over picket duties on October 12.

Veteran of four Deep Freeze Operations, Commander Manson "Buddy" Krebs died of a heart seizure on April 10 this year.

Commander Krebs, who deployed with VX-6 to the Antarctic in Deep Freeze IV, '60, '61 and '62, was dedicated to the Navy's support of science in Antarctica and was officer-in-charge of VX-6 detachment in Little America V during Deep Freeze IV, assistant operations officer for the squadron and Operations Officer in Deep Freeze '61 and '62. His services were recognised by the U.S. Board of Geographic Names when a mountain was named after him, and in February this year he received a citation from the Secretary of the Navy and a Gold Star in lieu of a second Navy Commendation Medal.

## TOUGH ON BACTERIA

Man, properly equipped, can survive Antarctic conditions, but man-carried bacteria cannot. Nor can they in the Arctic, but there, owing either to the slightly higher temperature or to some unique quality in Antarctic soil, they live a little longer.

Two Ohio State University bacteriologists conducted experiments last summer that proved that within nine days of introduction, coliform (intestinal) bacteria numbering 250 million per gram of sampled soil, had practically died out. The same strains, cultured and taken to the Arctic, died quickly, but less quickly than those in the South.

## PROJECT MAGNET

More than 15,000 miles of magnetic survey track were flown by Project Magnet aircraft in Antarctica last season, which, added to the 10,000 track miles flown during Deep Freeze '60, make available a total of 25,000 miles of Antarctic data, to be included on the 1965 World Magnetic Charts, 25,000 miles of area where little or no magnetic data had ever before been collected.

Outstanding in the '62-63 programme was the successful completion of a non-stop flight from McMurdo Sound, to the Geographic South Pole where the "world was orbited" in three minutes, and then to Punta Arenas, Chile, all done within 15 hours flying. This flight marked the first time a U.S. aircraft had left Antarctica by way of South America.

## AWARD TO CHILEANS

The first two awards under a new Chilean Fellowship Programme run jointly by the National Science Foundation and the Department of State have been awarded to two Chilean students—Hans A. Meinardus an instructor at the School of Engineering, Technical University, Chile, and Hellmuth A. Sievers, who is with the Chilean Hydrographic office.

Meinardus will study geophysical exploration at Colorado and Sievers oceanography at California's Scripps Institute of Oceanography.

The Fellowship Programme, initiated to foster increased scientific co-operation with Chile in areas related to polar research, has already provided U.S. assistance in establishing a geomagnetic programme, several U.S. geological and biological parties working in that vicinity. Two Chilean women scientists participated in the Antarctic research ship "Eltanin's" programme.

It's happened. A woman has broken through the ice curtain into

the U.S. Antarctic Research Programme, and researched in Antarctic waters. A DePaul University biologist, Dr. Mary A. McWhinnie, professor of biology, sailed for Antarctica in November, 1962, and conducted investigations aboard the research ship "Eltanin" until mid-January, 1963. Look out, Antarctica. here come the women!

## A WORD ABOUT CHARLIE

The Marble Point survival station established by Chief Warrant Officer George W. ("Featherfoot") Fowler (see 'Antarctic', March, 1963) not only involved a tremendous amount of recovery work for the party, but also involved a newcomer—Charlie—who kept the men company for all their stay at the site, and who protested so much and so vocally at the departure noises made as they got ready to go home that finally he too accompanied the 23-ton tractor back to McMurdo. There he began to sulk so was reunited with other Adelle penguins, with whom it was felt he would feel more at home. And did he? No one knows. He may be now living the life of all good penguins, or he may be one of the 98 Adelle penguins now in residence in foreign zoos throughout the world, having been taken from the Antarctic environs last season.

## ERRATA

Vol. 3, No. 6: June, 1963, p. 248: *Nearly seven million gallons of petroleum products* were carried to the Antarctic on U.S. ships. The *tonnage of cargo* carried by the U.S. ships was 12,510.

P. 249: U.S.S. "Glacier" was not actually instrumental in releasing the South African "R.S.A." in March, 1962, though en-route to offer assistance when "R.S.A." was released on March 22 by a break-up of ice thought due to a sub-marine explosion.

# British Antarctic Survey Plans for 1963-1964

Because of the greater scientific research called for by I.O.S.Y. and an expansion in the biological programme at Sydney, there will be an increase over 1963 of 12 men wintering at British Antarctic bases. The 1964 total of 98 men will be a record number.

"The **JOHN BISCOE**," **SHACKLETON**", **KISTA DAN**" and **H.M.S. PROTECTOR**" will again provide logistics support and platforms for science and survey.

## AIR OPERATIONS

The maximum use is now being obtained from the two De Havilland Otters operating from Adelaide Island. Since they must winter under cover at Deception Island they are operational only during the period October-March each year. This covers all but 1½ months of the field work season. Experience has shown that each aircraft can achieve about 200 hours in a season by flying whenever the weather is suitable. This is just enough to support the current programme. Investigations are in hand to find a suitable replacement, with increased capability, in two or three years time.

We are indebted to the British Antarctic Survey for the following outline of the Survey's plans for 1963/64:

## FIELD WORK

**GEORGE VI SOUND:** Completion of the 1963 topographical survey work as necessary, supported by air and tractor. Geology of the east coast of Alexander Island using dog teams.

**EAST COAST CENTRAL GRAHAM LAND:** Continuation of the current programme in geology and geophysics supported by air and using dogs and motor sledges. The party will be based on Stonington Island.

**SOUTH GRAHAM LAND PLATEAU AREA:** The geological and topographical survey will be air supported in the summer and the team will be withdrawn to winter at Stonington. In the spring of 1964 they

will attempt to return overland in advance of the arrival of the aircraft at Adelaide. Direct air support will be given when available. They will use motor sledges and dog teams and may be supported by tractor from Fossil Bluff if a suitable route is found in the region of the Good-enough Glacier.

**TOTTAN MOUNTAINS:** Continuation of the current programme.

## BASES

**HOPE BAY** is to close early in 1964;

**STONINGTON** will be maintained indefinitely subject to ice conditions;

**ADELAIDE:** A hut is to be built to provide storage for stocks of materials required for air support to the field parties.

**SIGNY:** A new hut to house biological laboratories sufficient for six full-time scientists and living accommodation for a total base staff of twenty will be erected in 1963/64. The hut will have a shell of moulded, fire-resistant, plastic and fibre glass panels supported on a steep framework. It will be heated electrically and have running water laid on in the laboratory rooms. The existing base hut will be retained as a generator house, radio room, meteorological office and store. The additional power requirements of the new laboratory will be met by the installation of new generators.

## AT RUSSIAN BASE

Dr. Charles Swinbank (36) of the Scott Polar Research Institute and prominent in Antarctic field work since 1949, is to winter next year at the Russian station, Mirny. He will be the first British member of a Russian Antarctic scientific expedition.

# THE TIDE HAS TURNED

## New Interest in Antarctic Research

The tide of interest in Antarctic exploration and research, which naturally ebbed somewhat at the conclusion of the I.G.Y., shows signs of flowing again. Two countries, **Belgium** and **Japan**, which had withdrawn from active participation, have announced plans for renewed activity in the Antarctic, and two other countries, **Switzerland** and **Holland**, are preparing to take part in Antarctic research in the coming summer, both for the first time.

### BELGIAN-DUTCH EXPEDITION

Baron G. de Gerlache, Chairman of the "Comité Antarctique Belgo-Néerlandais", the body responsible for and in charge of the planned Belgian-Dutch expeditions, has kindly forwarded us the following particulars of the project.

The plans for 1964 are to re-occupy King Baudouin Base with a team of 13 men, nine Belgians and four Dutchmen. Seven of the nine Belgians are veterans of the three earlier Belgian expeditions. The expedition will leave Antwerp on December 8, 1963, on the chartered vessel "Magga Dan." The leader will be Luc Cabes, 55, who was in charge of the work in Geomagnetism in Baron de Gerlache's own 1958 expedition.

#### NEW BASE

The new King Baudouin base will be built alongside the old base 70°30'S., 23°E. which will be used as a store-room. The programme will consist of observations in meteorology, geomagnetism, ionosphere,

atmospheric electricity, aurora and radio-activity; in fact, the I.Q.S.Y. programme. In addition there will be a limited programme in gravimetry and topography in the vicinity of the base.

It is hoped that there will be at least three Belgian-Dutch expeditions.

The committee is assisted by two advisory councils, one for science and one for logistics. Subsidies are shared in the proportion of three quarters from the Belgian Government and one quarter from the Dutch authorities.

#### PUBLICATIONS

The publications resulting from the work of the 1958 Belgian expedition are almost ready for distribution.

The forthcoming Belgian-Dutch Expedition is not the responsibility of Centre National de Recherches Polaires de Belgique.

### JAPANESE BASE TO RE-OPEN

A Tokyo message dated August 20, states that the Japanese Cabinet has formally decided to resume Japan's Antarctic observations by sending a team south in the autumn of 1965.

Japan suspended observations early last year, after having occupied Showa Base from 1957, with the exception of the 1958 winter. Japan vacated the base, which is situated in 69°S., 39°35'E., on February 8, 1962.

The outline of the re-opening plan, now approved, is, according to an announcement from J.A.R.E. headquarters on August 14, as follows:

1. The establishment of an organisation for continuous Antarctic research, including an executive

office in the Prime Minister's Department working in co-operation with related ministers and agencies.

#### ICEBREAKER

2. The construction of a new ice-breaker to replace the "Soya". The new vessel will be of 6,000 tons with deisel-electric engine of 12,000 h.p., over twice as powerful as "Soya". The cost will be about £3,000,000. In addition, two helicopters are to be built, at a cost of approximately £1,200,000.

3. The centre of actual operations will probably be the Polar Division of the National Museum, which will be raised in the near future to the status of a Department or higher Institute.

4. The transportation of the expedition's team and goods will be taken charge of by the Navy (officially called the Defence Agency). This has been a matter of discussion between the Japanese Government and the Science Council.

## First Swiss Antarctic Expedition Announces Plans

We have received from the Directorate of the 1st Swiss Antarctic Expedition in Lausanne, Switzerland, an outline of the two-stage project to be initiated in the forthcoming summer.

The expedition members will leave from Marseilles on October 26 on the Norwegian ship "Norsel". Calling at Aden, "Norsel" will reach Fremantle on December 1 and leave for Hobart a fortnight later. She is expected to arrive at Port Martin, Adélie Land, on January 5, 1964.

The expedition is taking 21 huskies, two aircraft (Pilatus Porter) and one vehicle for snow-milling in addition to the requisite scientific equipment and supplies. Their prefabricated base will be established in the Port Martin area (66°49'S., 141°24'E.). During the summer a route inland will be explored and all equipment tested. Eight to ten men will remain at the Base for the winter while the remainder leave for home by "Norsel" on February 18.

Meteorological observations will be carried out by the Expedition's Chief Scientist, who will also be chief of the wintering staff.

Norman Hedderley is going on the Swiss Expedition as auroral observer.

His age is 28. He served with the British Antarctic Survey as a meteorologist at Admiralty Bay in 1955, and at the Argentine Islands in 1956 where he was Base Leader.

He then had a break and came back to the Survey in 1959, when he was meteorologist at Halley Bay. He stayed on there for a second year and was Leader during 1960.

#### ADELIE LAND TO MAWSON

The men who return to Europe will leave again for Adélie Land in October, 1964, and arrive in the Antarctic in January, 1965. The spring of 1965 will see the commencement of a long overland journey from Adélie Land to the Australian base, Mawson, a direct distance of approximately 1900 miles, traversing 80 degrees of longitude. The proposed route leads from Port Martin to the Russian base Kom-somolskaya, approximately along the 75° parallel of latitude, and from there to Mawson (67°36'S., 62°53'E.) where it is expected to arrive three or four months after leaving Port Martin.

Throughout the long journey scientific research will be undertaken particularly in meteorology, geology and aurora.

The organisers of the expedition have received greatly appreciated advice from Sir Vivian Fuchs of the

## THE RUSSIANS COME TO MAWSON

Congratulations to the ANARE Club, the Australian "Antarctic Old Boys" organisation, on its official journal "Aurora", published annually at Midwinter.

Some idea of its bright and breezy style may be indicated by these extracts from an article by Mike Lucas describing a visit paid to Mawson by Russians on their way by air from Mirny to the new Molodezhnaya site in January 1962. The Australians had driven out with make-shift transport to the air-strip.

"At last they were there, fourteen smiling Russians in their leather trousers and jerkins and long black boots. The planes were fuelled and tied down. At 11.30 p.m., the six of us and the Russians all climbed onto the weasel and sledge and set out, up along the moraine line that leads to Rumdoodle. Somehow the twenty-one of us, including Reg Wakeford, crammed into the one small fourteen by seven foot caravan, sitting on the top bunks, bottom bunks and on each other's knees.

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United Kingdom and Dr. P. G. Law,  
Director of the Australian Antarctic  
Division.

### PHILATELISTS NOTE!

The Swiss Expedition has produced a striking cover, which may be obtained on application to 1st Swiss Antarctic Expedition, 1 Rue de la Louve, Lausanne 17, Switzerland. Each envelope costs one U.S. dollar, and is to be returned with your address on it, to the Expedition headquarters with one International Reply Coupon not later than October 15, or from then on to *Premiere Expédition Antarctique Suisse, c/m.s. "Norsel", Hobart, Tasmania*. The covers will be returned to the addressee postmarked at the Swiss Antarctic station.

"In this remote place, where the silence of the great rock mountains rising sheer from surrounding ice is only broken by the audible swish of snow petrels as they dive and bank around the buttresses high above, there followed the most extraordinary party I have ever witnessed.

"The chicken was passed round, the 'plonk' and 'Clubbers' uncorked, and much linking of arms, clinking of glasses and cries of 'friendship' ensued.

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"We piled out into the cold Antarctic twilight. Mattresses were laid on the sledge and the passengers wrapped up in blankets. Off we go: Cheers—this is splendid! I look back from the driver's seat—on the sledge thumbs up, bottles waving and cheers! It's a glorious 'night'. 1 a.m. and the sun just hidden, the ice shining, the motor humming and the sleds singing.

"Suddenly the sledge starts to ride slip, faster, faster; I can't hold the weasel straight; round we all go in a jerking tail flip.

"When the mattresses, bodies, bottles and blankets were sorted out . . . on we go—a little slower now and soon reach the parked (Russian) aircraft. It is 1.30 in the morning, temperature below zero. The Russians collect their luggage and we set off again. The weasel feels funny; I stop and look back. There is our right hand track neatly laid out on the ice behind us. There are no alternatives. We must walk the nine miles home.

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"Each evening we had a party where they entertained us with Russian dancing and singing to the accompaniment of a splendid guitar

## THE OLD BRIGADE

New Zealand is proud to be the home of many elderly men who in their younger days were members of famous Antarctic expeditions. One of the three survivors known to us of Captain Scott's first ("Discovery") expedition, 1901-04, is **Mr. C. Reginald Ford**, of Auckland. Last year in a gracious gesture the Commander of Operation Deep Freeze arranged a short visit to McMurdo Sound for three New Zealanders who were members of the crew of "Scott's "Terra Nova" in 1910-13. Readers will be interested to have some details about these three men.

**WILLIAM BURTON** (74) London born, was an assistant engineer on "Terra Nova" which he joined in London, being seconded from the Royal Navy. He rejoined the Navy after the expedition and served in various ships in World War I. On discharge he settled in New Zealand in 1921, and took up engineering work. He lives in Richmond, Christchurch.

**WILLIAM McDONALD** (71) is also a Christchurch man. Born in Glasgow, he went to sea at the age of 14, sailing with immigrant ships to New York and later, on vessels trading to Australia and New Zealand. He was serving on New Zealand coastal ships when he joined "Terra Nova" at Lyttelton. He went to Cardiff with the ship after the expedition, but returned to New Zealand as bos'n of the "Kaiapoi", then joined the Customs Department in 1914. He was severely wounded at Gallipoli, but on recovery rejoined

player. We returned with Hakas, jive and Australian bush songs. Presents were exchanged. Two ballet films, Vodka and cigarettes for us. Australian wine, cigarettes, records and a set of stamps and photographs for them . . .

"Monday saw their reluctant departure.

"Goodbye, Russkies—see you in Moscow."

the Department in 1917, retiring in 1954.

**MORTIMER McCARTHY** (84) lives in Lyttelton. An Irishman by birth, he was an Able Seaman on "Terra Nova", joining the ship in Lyttelton while he was working on New Zealand coasters. He went to the Antarctic with Bruce of Scott's expedition and served with credit in the Royal Navy in World War I. His brother Timothy was with Shackleton on his famous Elephant Island-South Georgia boat journey. Mr. McCarthy is still an active seaman.

We hope in our next issue to refer to **Felix Rooney** of the "Nimrod" and **C. Mauger** of the "Aurora".

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### AN APPEAL

Will anyone who knows of other Antarctic veterans (1895-1917) still living in New Zealand, or who were New Zealanders before the expedition in which they served, please communicate with the Editor, 1 Arika Rd., Wellington, E.2.

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### SUB-ANTARCTIC ISLANDS DESCRIBED

The Wellington Branch of the New Zealand Antarctic Society has devoted its latest three meetings to descriptions of life and work on three sub-Antarctic islands lying to the south of New Zealand.

Dr. R. A. Falla described the *Auckland Islands* and the experiences of last summer's New Zealand expedition there.

Mr. L. A. Pollock spoke on *Campbell Island* where he served as a coast-watcher during the war of 1939-45.

Mr. E. W. Dawson dealt with *Macquarie Island* which he visited in the course of the 1962-63 islands cruise of H.M.N.Z.S. "Endeavour."

# THE READER WRITES

## Sidelights of Antarctic Research

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

### DOGS OR TOBOGGANS?

Sir,—Your June issue of "Antarctic" calls for comments arising out of the article by P. M. Otway on dogs and motor toboggans.

Our own experience of the latter has so far been short and not altogether happy. By and large, however, I agree with the conclusion reached by Messrs. Otway and Markham.

In theory the motor toboggan will beat dogs in respect of speed, payload and endurance but it has a poor performance on gradients, over "deep soft" and glair ice surfaces and at height. It is also less handy in crevasse country, etc. In practice therefore, selection of the tool will depend on the nature of the material to be worked over, as your contributors aver. There is also the human element to consider and the average traveller who has no particular mechanical bent will get less out of a machine than he should, whereas he will pride himself on his skill with dogs.

Graham Land is real dog country and an exacting testing ground for any potential competitor. Last summer I tried out an Eliason "tin dog" on Adelaide Island with excellent results. Two subsequent excursions by wintering personnel have been dismal failures. In the autumn a party from Stonington Island freighted depot material over the plateau to the Larsen Ice Shelf with two Eliasons. Dogs could not have achieved this in the time but the Eliasons returned in very poor shape.

We believe that Eliasons suitably modified will "come good" when flown to a suitable project area by

Otter (their air freight factors are better than dogs). Some other points in their favour are:

- a. They don't need constant attention at base.
  - b. They don't eat when idle.
  - c. You can leave them in the field without an attendant.
  - d. It is worth travelling during short breaks in the weather.
- Some of the modifications we have in mind are:

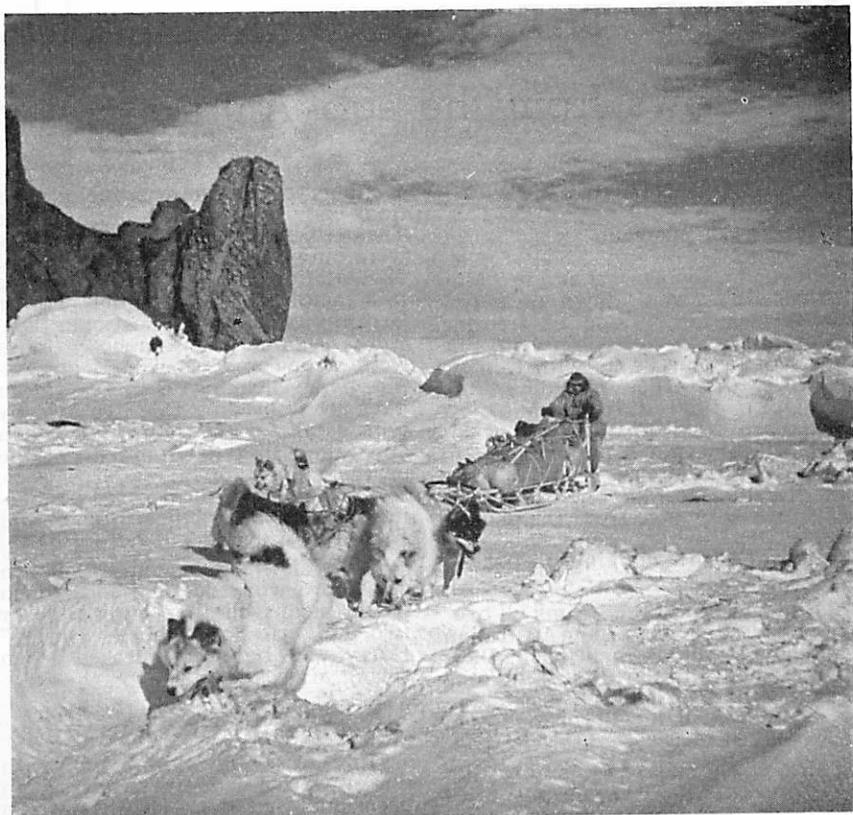
- a. Gearing down for less speed more torque.
- b. Channel type cleats for better traction.
- c. Tufnol-shod runners and skis to reduce friction.
- d. Aluminium metal work for lightness, on the grounds that you can add weight from the sledge pay load when you need it.
- e. Self lubricating chains.

J. R. GREEN,  
Operations Officer,  
British Antarctic Survey.

### AMERICAN KIWIS

The Antarctic has been setting an example to the world in the matter of international comity. Men of one nation have worked so long and so happily with men of another country, or have for so long worked under the control of another country's Antarctic authority that they have become in effect bi-national.

One such man is **Keith Wise**—entomologist K. A. J. Wise, of Christchurch. Keith has now worked in the Antarctic for three summers in succession, 1960-61 to 1962-63, mainly on projects sponsored by the Bernice P. Bishop Museum, of Honolulu. Last summer he also teamed



THE DOGS WILL FIND A WAY

Photo: H. D. O'Kane.

with Ray Logie to try out the first New Zealand motor toboggan on the sea ice of McMurdo Sound and up the glaciers to the Polar Plateau, he was a member of the New Zealand Auckland Islands expedition and he then spent five weeks on New Zealand's Campbell Island.

This summer he will again go south to do entomological work for the Bishop Museum. He will be accompanied by:

**J. C. L. M. Mather**, a Christchurch Teachers' College and University of Canterbury student, who carried out ship-trapping of insects on the Arneb last summer, and will be doing similar work on an American vessel next summer.

**Kelvin Rennell**, a Wellington meteorologist, who has spent 18 months on Campbell Island, will be assisting Wise in his entomological work in the coming season.

Another field assistant may be appointed later.

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The Antarctic "inland" has been described as "a biological desert," but according to Dr. Walter Loth in "German Research Service" about 50 species of animals are found in it. But the largest is a fly, a few millimetres in length, and wingless. Otherwise it would have long since been blown into the ocean.

# AROUND THE SOUTHERN ISLANDS

## News from the sub-Antarctic

### MACQUARIE ISLAND

#### Australia

Ellwood reports that in May temperatures were down to a few degrees on either side of freezing point and snow fell on twenty-one days out of thirty-one, with rain on most of the other ten days. "Although far different from what most of us are used to," he writes, "it gave quite a good opportunity to expedition members to have some fun learning to ski. The snow was welcome—a change from the usually black sand which can make the station area drab-looking during the winter months.

"Biologist Purchase beams all over when the name of the new Australian currency Royal, is mentioned. Dave has over a million Royals at the Hurd Point rookery and is wondering whether they will be accepted as legal tender.

"Chris Thomas had a big job weighing a 13-foot seal, but after Redfearn and his tractor were on the job he was able to do it easily. The seal hit the scales at 3,000 lbs. The tractor's biggest job has been the digging of the ditch for the fuel oil line. Harry rigged the plough on the blade and did the job in days instead of the weeks we would have taken, digging with spades.

"The seals have started a small settlement outside de Silva's ozone hut. Fred has to fight his way in to get to work now, so we are all waiting to see what happens if any big fellows decided to move in there."

#### "A WOW OF A TIME"

"June, of course, brought the mid-winter day celebrations—a wow of a time. Even the weather tried to help by giving the base a freeze-up which lasted for a few days. The

evenings entertainment included a floor show by the Macquarie "Little Theatre". Following the main show were numerous musical items and presentation of the "Oscar" for the best actor of the evening, Trevor Griffiths. Most of the costumes, etc., were original but somehow things went wrong and we wound up having two "Sleeping Beauties". Two days after the ding Doc Lyn Murray took us all for the monthly weigh-in and found that the majority of the party had put on a pound or two. No one was really surprised at gaining weight after the spread that John Tarbuck had put before us.

"With all the freeze-ups Redfearn gets more work on his hands. Each freeze means another burst pipe or two and cries of "where's Harry?" Harry will be quite pleased when spring arrives.

#### A BUSY JULY

"July was quite interesting with the arrival of leopard seals and an occasional sea lion. The leopard, a vicious-looking animal, is by far the most photogenic of the seals here, but photographer Whyte finds them most unco-operative when he tries to get a photograph of their many sharp teeth."

De Silva, Purchase and Thomas made a six-day trip around the island on a bird-banding expedition. They didn't have the best of weather for the trip.

Interior painting is now under way. Dr. Murray, showing his skill as a carpenter, is rebuilding his room in the sick bay and has already finished installing a built-in bunk and a writing desk.

The local weather: lowest air temperature, 20.2°F.; lowest ground temperature, 12.4°F.; wind gusts, up to 65 m.p.h.; highest barometric pressure, 1034 millibars. The temperatures are the lowest for four years.

## MARION ISLAND

### South Africa

A May report reads: "Sun? Except that we know how the word is spelt none of us can remember what the sun looks like. During May we have had only just 81 hours of sunshine. The only thing which distinguishes one day from the other is the change of colour of the sky from one gradation of grey to another. We soon became used to the constant rain, snow and cold but the notorious Marion-wind is too much for some of us. Not only is it no fun releasing a radio-sonde balloon successfully in a wind of 50 knots but on top of that one has to walk the whole distance from the house to the balloon shed on a three foot wide running board in the dark and you will end up in cold wet mud if you should fall off.

"The highest temperature during the month was 12.9° C. and the lowest 3° C. During 29 days there was a total rainfall of 428 mm."

## KERGUELEN

### France

During the first quarter of 1963 the main tasks confronting the 13th Expedition were to complete the radio shack, to set up the receiving aerials, to erect a temporary living hut, to transform five other huts into laboratories and to build a new seismological station at Port-aux-Français.

Good weather facilitated the outside work, and by the end of March 16 pylons had been placed in position for the receiving set-up and 12 uprights for the feeders. All the sections of the living room had been prepared for erection, and the foundations and basement were finished. Excavation for the seismological station vault was well on the way to completion and made it possible to obtain a satisfactory pier.

From March 15 to 31 the meteorological station carried out radar wind flights and radio-sonde flights from the Port-Jeanne d'Arc station, say 30 k.m. west of Port-aux-Français. The mean altitude reached by the wind soundings was 30.312m and by radio-sonde 27.682m.

"Nella Dan", chartered by the Australian expedition, was in port from March 10 to March 12. The Australians led by P. G. Law were given a warm reception and left us with the happiest memories of their stay. M. Rolland, Chef du Territoire, sailed on the ship.

## CAMPBELL ISLAND

### New Zealand

The present Campbell Island party have survived through what they term a miserable winter period with a little more than the usual Campbell Island rain, sleet, hail and snow to make everybody really at home. The mid-winter's day period was celebrated in the time-honoured fashion with the preparations of Chef J. Hall receiving admiring comments and very little more than glances as they disappeared from the tables. All men are well and very much looking forward to the first visit of the coming season's picket ship, the USS "Hissem."

This vessel is scheduled to call at the island on September 26 and will carry on board five new members for the island party:

- E. de S. Croix—Senior Met. Observer.
- R. M. F. Craig—Met. Observer.
- D. G. Herkt—Carpenter.
- W. G. Cousins—Ionosphere Observer.
- M. J. Davison—Radio Technician.

The new Officer-in-Charge, Mr. J. E. K. Judd, formerly of Hastings, will arrive on the island about October 23 on the same vessel and just prior to the annual servicing of the island by MV "Holmburn," at which time the existing party will be returned to New Zealand with its delights of "civilised life."

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### (STOP PRESS)

The sailing date of "Hissem" has been advanced, and our latest information is that she will probably leave Dunedin for Campbell Island and her picket duties on Monday, September 23.

# Oceanography in the Sub-Antarctic

by Elliot W. Dawson.

During April and May an eight-man team from the N.Z. Oceanographic Institute, D.S.I.R. worked from the Antarctic supply ship H.M.N.Z.S. "Endeavour," in the region, popularly known as the "Sub-Antarctic", to 58°S., about 500 miles to the south of Stewart Island.

The objectives of this cruise, which was led by the writer, were to carry out a biological and bathymetrical survey of the Macquarie Island region and the ridge to the south of it, known in part as the Hjort Seamount (rising to 400 fathoms from the surrounding depths of 2500 fathoms), the suspected ridge to the north-east of Macquarie Island (rising, in places to about 500 fathoms), the Emerald Basin, (a deep of 2500 to 3000 fathoms separating Macquarie Island from the New Zealand sub-Antarctic islands), and the Campbell Plateau (the area of sea bottom, averaging 250 to 300 fathoms, to the south of New Zealand on which the Snares, Campbell and Auckland Islands lie). Shallow water and shore collections in the vicinity of these islands were also planned.

The geology and bottom topography of this area was known in sufficient detail in only a few places and it had for a long time been a matter of considerable interest as to whether the ridge-like form of Macquarie Island extended any further to the north-east and whether there was, in fact, sufficient continuity of shallow depths to afford a possible migration route for bottom living animals between Macquarie and the New Zealand region during the lowered sea levels of the Pleistocene.

## TO MACQUARIE ISLAND

H.M.N.Z.S. "Endeavour" sailed from Auckland on April 9. Continuous echo-sounding profiles and magnetometer readings were kept down to Campbell Island where

shore collections and shallow dredgings in Perseverance Harbour were made. Course was set across the southern slopes of the Campbell Plateau towards the ridge extending south of Macquarie Island. On the evening of April 16 the ridge was located by the echo-sounder, rising up from 2000 fathoms to less than 1000 fathoms. A complete traverse of the ridge was made throughout the night and a further series of traverses were made working north along the ridge towards Macquarie Island. A number of shallower ridge tops were found and a good biological sample was obtained in 700 fathoms rising from 1650 fathoms. The next few days were spent dredging, trawling and sounding along the southern and eastern coasts of Macquarie Island.

A landing was made at Stars Gulch and useful shore collections were made although the fauna was rather sparse. On the next day, a landing was made in Buckles Bay at the north end of Macquarie Island at the site of the Australian base. Shore collections were made, especially at Garden Cove. During the next day further stations were occupied offshore in Buckles Bay and the traverse of the ridge lying to the north-east of Macquarie Island was begun. The United States research ship "Vema" had already reported a seamount about 100 miles to the north of Macquarie and it was suspected that this might indicate one part of a submerged ridge running towards the Campbell Plateau on the New Zealand shelf.

## NEW RIDGE

From April 24 to 26 a series of echo-sounding traverses were made across the area between Macquarie Island and the New Zealand shelf south of the Snares Island. Benthic sampling was carried out whenever suitable depths were found. North of Macquarie Island, a number of high spots, ranging from steep al-

most pinnacle-like mounts to more gently sloping seamounts and rising to less than 100 fathoms, were found on an almost continuous submarine ridge rising to 300 to 400 fathoms from the bottom on each side of 2000 to 3000 fathoms. The existence of such a ridge with its range of mounts had considerable biogeographic significance and was one of the most exciting discoveries of the cruise.

After another call at Macquarie Island, an attempt was made to determine the bathymetry on the west side of the island. No soundings are given on the latest Admiralty chart, and it was desired to compare the bottom fauna with that of the east side.

A number of successful sounding runs and dredging stations were made despite unpleasant sea conditions and the course was then set across the Emerald Basin due east of Macquarie towards the Campbell Plateau. Before leaving the Macquarie area the presence of breakers north of the Judge and Clerk was investigated and an unsuspected line of shallow soundings was found.

Campbell Island was again visited and a series of dredgings, trawlings and sounding runs were made around the Island and across to the Auckland Islands to the north-west.

## THE AUCKLAND ISLANDS

A number of useful stations were occupied to the south-east of Adams Island (Auckland Islands) and some time was spent ashore in "Leander" cove in the North Arm of Carnley Harbour, making biological collections. This region was of very great interest and some useful records of distribution of marine animals were made.

A comprehensive survey of the bottom of Carnley Harbour was made, and sufficient samples of animals and sediments to give a very good idea of conditions were obtained.

In particular the abundance of Whale-feed (*Munida*) and large swimming crabs (*Nectocarcinus*) was apparent. Both these animals

are of interest systematically as well as ecologically and good samples of each were taken for the former purpose. It seems that two species or forms of *Nectocarcinus* occur together here and the exact status of these forms will be much more easily determined from the abundance of large and small specimens of both sexes which we obtained. Both these animals form important food for seals and fish and this information on their habits is welcome.

Dredging, trawling, and echosounding was carried out along the east coast of Auckland Islands including several of the islets characteristic of this side.

A number of species of molluscs not previously recorded appear to be represented.

Shore collections were made at Erebus Cove in Port Ross and here, again, rich and interesting material was found. A comprehensive survey of the bottom animals and sediments of Port Ross was made.

The cemetery at Port Ross was also visited and the Ship's Carpenter repaired, as best he could, the now very dilapidated wooden crosses and grave markers.

Shore collections were made at the top of Laurie Harbour on the area of mud flat and rocky shore. A landing was made on Enderby Island at Sandy Bay and a series of shore collections was made from the strand line on the sandy beach and from an interesting flat intertidal rocky platform.

A number of the Enderby Blue rabbits were shot and the carcasses preserved for study by the Animal Ecology Division. Two stations were occupied at 10 miles and 15 miles north of Enderby Island in 85 and 95 fathoms (approx. 50°18'S., 166°23.5'E.) repeating stations from which Mollusca were collected by E. R. Waite from s.s. *Hinemoa* in 1907, the ecological associations of which have never been described.

A survey of the inadequately charted western side of the islands was made, working from Adams Island to Disappointment Island. Despite dredging up yellow sand near the Beehive rocks, close to the

site of the General Grant wreck in 1866, no trace of treasure was found! Course was set from the north of the Auckland Islands to the east along 50°S. to the longitude of the Bounty Islands with benchic stations every six hours. A useful profile was obtained of this part of the Campbell Plateau and a series of successful biological hauls was made from 80 to 350 fathoms, one at 330 fathoms, yielding several spectacular new species of Echinodermata.

### SOME RESULTS

For the first time a good picture has been obtained of the bottom topography of Macquarie Island and the ridge lying to the north and south of it. Some very welcome information has been obtained of the depth and shape of the North

## A SCOTT BASE LEADER REMEMBERS

by ATHOL ROBERTS

In his second instalment of happy memories Athol Roberts, Scott Base Leader 1962, recalls the work of the back-room boys entailed by putting a sledging party into the field.

As Leader one phase of my responsibilities was activities in the field. The main areas to be topographically and geologically mapped were from the Nimrod to the Beardmore glacier in the North and from the Beardmore to the Axel Heiberg Glacier in the south. Two parties, each of four men and two dog teams and called Northern and Southern parties respectively, were to operate in these areas.

Before being launched it was essential that the parties get plenty of local training and that all food and equipment was sorted and ready. The Americans understood our requirements in the field logistically and could support us. Reconnaissance flights be made to determine suitable landing areas and pick up areas on the Polar plateau and whether various areas and glaciers were negotiable.

The furthest south field parties were expected to be operating was approximately 600 miles from Scott Base, but in terms of a reconnaissance flight.

well down, we skimmed over the ice at 50 and arrived alongside the Dakota just as my boys pulled in! I just had time to get back to the airstrip, with no time for a meal.

### NEVER A DULL MOMENT

A reconnaissance flight was scheduled for 20th October. On the day I was informed that there were no aircraft available; one might be available late that evening but more probably the following morning. I therefore left at 9am on a flight to Hallett Station, 350 miles to the north, as the New Zealand scientific staff there were my responsibility and I wanted to see their living and working conditions. Returning to McMurdo at 4.30pm I was informed the reconnaissance flight was leaving in one hour. I checked with Scott Base to make sure the field boys who were also to go on the flight were ready and learned they were already on the way to the airstrip, so I got Phil Smith of USARP to run me out in their Power Wagon. With his foot

and we took off right on time.

The aircraft was a Douglas similar to our DC3, known to the Americans as an R4D. It was a beautiful clear sunny evening and the first leg was to the Liv Glacier, which entailed a flight of 500 miles over the mighty expanse of the Ross Ice Shelf.

### NOT TOO HOT

Once the mouth of the Liv was reached the U.S. Navy photographer, loaned to us for the occasion, began a run of photographs and these were periodically taken as instructed from time to time. To get a clear photo the escape window was opened. This opens outwards, having to be propped out with a mop handle, and the cold air streaming in lowered the temperature from + 60° to - 30° centigrade. As we reached the 9,000 foot polar plateau, flying at 11,000 feet, the cold appeared to get more intense and the window had to be shut from time to time to get some relief.

Along the polar plateau, down the Mill Glacier, across the head of the mighty Beardmore, past the Miller range, down the Nimrod Glacier and back up the ice shelf, we arrived back at Base after a flight of almost 11 hours. My total flying time for the day was approximately 18 hours out of the 24. I was extremely tired and hungry but after a feed and three hours sleep was back on the job again catching up with Base activities.

### OFF TO A GOOD START

It was planned to launch the Southern field party, under the leadership of Wally Herbert, on November 1, and the landing area was to be just south of the Dominion range on the polar plateau at 9,000 feet. In case the aircraft had trouble landing or taking off at that altitude the whole operation was to be split into three landings, each one self-contained from a provision and survival point of view. Herbert was to be the sole member on the first trip.

Owing to weather it was the 5.h before the first flight was able to get away. A perfect landing was made and about three hours were spent on the deck unloading, fitting

JATO bottles (Jet assisted take off) etc. Herbert returned with the aircraft which took off from the plateau with 12 JATO bottles, though later it was considered that eight would have sufficed.

After this successful run it was decided to send the balance of the provisions and equipment, with the four men and two dog teams, on one flight and this was successfully accomplished the following day, November 6.

(To be concluded)

## NEW ANTARCTIC STAMPS

Polar transport in many forms is pictured on a new definitive issue of postage stamps for the British Antarctic Territory, previously known as the Falkland Islands Dependencies.

Among them are skiers, ski-men hauling a sledge, huskies and a husky-drawn sledge and a desolate camp in the snow. Two of the stamps show tractor vehicles which have made their names in Antarctica—the famous Sno-cat used by Sir Vivian Fuchs in his Polar crossing of 1957-58, and the Muskeg. Three aircraft—the Beaver, the Otter and a helicopter, are depicted, also four famous and tough little ships—M.V. "Kista Dan," R.R.S. "John Biscoe," H.M.S. "Protector" and R.R.S. "Shackleton."

The highest (£1) value reproduces a map of Antarctica, and all the stamps show the head of the Queen by Annigoni.

The British Antarctic Territory does not include South Georgia, which will continue to use Dependencies stamps until the proposed new issue appears in the summer.

Leaders of Antarctic expeditions are classified by the indefatigable collectors of philatelic covers according to their willingness to apply special cachets, etc., to the covers sent them for mailing. The German publication "Dill Reports the News" says: "Generally, Whaling Companies do not be enthusiastic collaborators to collectors. The only whaling company which is accepting covers . . . is the Dutch one."

# WHAT IS THIS I.Q.S.Y.?

Non-scientist readers, having become quite familiar with the term I.G.Y., now find themselves faced with another strange "initial word", I.Q.S.Y., which clearly has some considerable bearing on Antarctic activities. The following is an attempt to explain I.Q.S.Y. briefly to readers who have no background of scientific training.

The International Geophysical Year ended its 18 months' run on December 31, 1958. Its purpose was to study the relations between events on the sun and their effects on the earth and its atmosphere. The time had been chosen to cover a period of maximum solar activity. The sun responded by showing a higher level of activity—as indicated by sunspot numbers—than at any time during the roughly 200 years since standard procedure was adopted for assessing solar activity. When the I.G.Y. was a year under way, a decision was made to extend the more important observations, less formally, for a further year. Before it ended there had been suggestions for organising international observations in a contrasting period of least activity on the sun.

These were the first stirrings which led to the proposal for the International Years of the Quiet Sun—1964 and 1965.

## WORLD PROGRAMME

So the I.Q.S.Y.—International Quiet Sun Year—is to be a full-scale international programme in those I.G.Y. sciences which are in any way concerned with sun activity: Meteorology, Geomagnetism, Aurora, Airglow, Ionosphere, Solar Activity, Cosmic Rays and Aeronomy.

The programme will not be a repetition of the I.G.Y. It has been pruned, for example, of subjects such as seismology and oceanography which are connected with the solid earth and have little direct connection with the main theme of the inter-relation of solar and terrestrial events. But it will involve, as before, the collection of large masses of data by stations maintained by many nations, and the subsequent correlation and publication of the data collected.

The world organisation primarily responsible for the I.Q.S.Y. is the Comité International de Géophysique (C.I.G.), a committee of the International Council of Scientific Unions (I.C.S.U.). In 1962, C.I.G. formed an I.Q.S.Y. Committee to organise the programme in detail. The provisional programme was drawn up at a meeting in Paris last year. The second meeting of the I.Q.S.Y. Committee was held in Rome in March of this year.

## ANTARCTIC BASES

It is important that observations should be on a world basis. Since it has until recent years been more difficult, if not impossible, to carry out such observations in the Polar Region, particularly Antarctica, than anywhere else, special attention was given during the I.G.Y. to research, in the sciences concerned, in the Arctic and Antarctic. Moreover, in research on the upper atmosphere, observations made in the polar regions are in many respects critical. Because of the great efforts made during the I.G.Y., and since continued, facilities for making observations have been greatly improved at the Antarctic bases permanently maintained by many countries. So types of equipment which could previously only be used in highly developed populous communities can now be used in the Antarctic and in the far north.

It is therefore not surprising that the programmes of Antarctic research drawn up for 1964 and 1965 have been moulded very considerably by the nature of the observations being planned for the I.Q.S.Y.

At the second C.I.G.-I.Q.S.Y. Assembly held at Rome in March, 36 countries had representatives present, and by April of this year

no fewer than 61 countries had notified their intention of actively participating in the I.Q.S.Y.

### PLANS ANNOUNCED

Of these countries, nine have bases functioning at present in the Antarctic. They are Argentina, Australia, Chile, France, New Zealand, South Africa, the United Kingdom, the United States and the U.S.S.R. Japan has just announced her intention of re-opening her Showa Base for the I.Q.S.Y. period, and Switzerland is commencing Antarctic work in the coming summer. The organisation of a Dutch-Belgian expedition has also been announced. The nature of the Antarctic programme for 1964 and 1965 of all these nations will undoubtedly be influenced by the I.Q.S.Y. programme.

Some indications of the importance of Antarctic observations in the I.Q.S.Y. coverage is given by the published programmes (in "I.Q.S.Y. Notes" No. 2) of two countries taken at random. Of 49 types of observation mentioned in the *Argentine* programmes with the locality specified, 24 are to be carried out at one or more of the Antarctic stations, in a number of cases at Antarctic stations only. In the *Australian* programme the corresponding figures are: total 31: Antarctic and/or sub-Antarctic 18. The Australian cite eight projects which are to be studied *only* at Antarctic or sub-Antarctic stations.

### STUDY GRANT

Mr. J. M. Caffin, chief reporter of the Christchurch "Press", has been awarded a United States State Department foreign specialist's grant to study the Antarctic planning operations of the U.S. Navy and scientific work being done under the auspices of the National Science Foundation. Mr. Caffin, who is on leave in Britain, will spend a month in the United States on his way back to New Zealand.

## ANTARCTICA

The new volume prepared by the New Zealand Antarctic Society and which constitutes a survey of the whole of Antarctic knowledge is now complete and in the hands of the publishers. The contents of the book are:

### PART 1—THE NATIONS IN ANTARCTICA

- Chapter 1. National Relations in Antarctica—By John Hanessian, Jr.
- Chapter 2. Techniques of Living, Transport and Communication—by Philip Law.
- Chapter 3. The Mapping of Antarctica—by J. Holmes Miller.

### PART 2—THE SOUTHERN OCEAN

- Chapter 4. Oceanography—by J. W. Brodie.
- Chapter 5. Marine Biology—by R. K. Dell.
- Chapter 6. Birds and Mammals—by B. Stonehouse.
- Chapter 7. The Pack Ice—by J. Heap.

### PART 3—THE ANTARCTIC CONTINENT

- Chapter 8. The Ice Shelves—by C. Swithenbank and J. H. Zumberge.
- Chapter 9. The Ice Sheet—by A. J. Gow.
- Chapter 10. The Land Beneath the Ice—by C. R. Bentley.
- Chapter 11. Geology of Antarctica—by Guyon Warren.
- Chapter 12. The Oases in the Ice—by R. H. Clark.
- Chapter 13.—The Flora—by George A. Llano.
- Chapter 14. The Terrestrial Fauna—by J. L. Gressitt.

### PART 4—THE POLAR ATMOSPHERE

- Chapter 15. Antarctic Meteorology—by M. Rubin and W. S. Weyant.
- Chapter 16. The Aurora Australis—by M. Gadsden.
- Chapter 17. The Polar Ionosphere—by J. W. Beagley and G. A. M. King.
- Chapter 18. The Polar Geomagnetic Field and its Fluctuations—by A. L. Cullington.

Details of publication should be available in the next issue of "Antarctic."

# NEWS OF THE WHALERS

## ANTARCTIC PELAGIC WHALING

Four fewer factory ships were engaged in pelagic whaling in the Antarctic in 1962-63 than in the previous season. The Norwegian factory ships "Thorshammer", "Pelagos" and "Norvhal" and the British factory ship "Southern Venturer" did not participate. The first two were sold for breaking up. "Southern Venturer" was sold to Japan.

The taking of fin and sei whales began on December 12 and of blue whales on February 1. Severe time limitations had been placed on the capture of humpback whales. In area V, for example (130°E.—170°W.) covering the western part of the Ross Sea, the permitted hunting period for humpbacks was only January 20-22, and in area II (0°—60°W.) and area IV (70°E.—130°E.) the humpback was totally protected. All baleen whaling operations ceased on or before April 7.

## BIG DROP

The catch of the pelagic expeditions, i.e., excluding shore-based stations, amounted to 11,299 blue whale units, as compared with 15,253 in 1961-62 and 16,453 in 1960-61. The aggregate permitted total was 15,000 units. Apart from the war years, the first post-war season and season 1931-32, last season's catch was the lowest since 1927-28.

The season's catch, in blue whale units, according to countries engaged, was as follows (number of factory ships and comparative number of blue-whale units in 1961-62 in brackets):

	1962-63	(1961-62)
Norway (4) .....	1379	(3701)
U.K. (1) .....	502	(1069)
Netherlands (1) .....	457	( 614)
Japan (7) .....	6149	(6574)
U.S.S.R. (4) .....	2812	(3292)
	<hr/>	<hr/>
	11,299	15,250
	<hr/>	<hr/>

As for species of whales caught, the figures for the last season are:

	Blue	Fin	Humpback	Sei	Sperm
Norway .....	4	2,290	—	1389	1041
United Kingdom .....	1	858	—	435	297
Netherlands .....	19	848	—	87	376
Japan .....	727	10,415	7	1094	1839
U.S.S.R. ....	196	4,197	263	2498	2220
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL .....	947	18,668	270	5503	5773
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
1961-62 .....	1,118	26,438	309	4749	4864
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

## ANOTHER TO JAPAN

Press report on July 21:

Britain's last Antarctic whaling factory ship is to be sold to Japan. Transfer of the 20,000 ton "Southern Harvester" will lift Japan's whale catching quota five per cent to 45 per cent of the world total.

Japan already is the world's leading whaling nation.

## CONSERVATION PLANS

Faced with a steady drop in whaling catch figures, as indicated above, the whalers in the five countries still actively engaged in Antarctic whaling have been driven to the consideration of drastic conservation measures to prevent the total extinction of their source of income.

## TALKS IN MOSCOW, LONDON

For example, Britain and Russia put forward draft proposals at a conference in Moscow from April 29 to May 5, attended by representatives from the British, Soviet, Norwegian and Japanese whaling interests, and reached agreement on various points, including an international inspection system.

On June 28 experts from Britain, Japan, the Netherlands, Norway and the Soviet Union ended two-day talks on an international observer plan to help win the battle for conserving the world's whale population.

Their recommendations on observers in whalers next came before the 18-nation International Whaling Commission's annual meeting which started in London early in July.

No statement meantime was issued.

The I.W.C. annual meeting—the 15th—lasted several days. After a plenary session the talks were behind closed doors.

The 18 nations in the I.W.C. are Argentina, Australia, New Zealand, Brazil, Britain, Canada, Denmark, France, Iceland, Japan, Mexico, the Netherlands, Norway, Panama, Sweden, South Africa, the Soviet Union and the United States.

## DRASTIC RULES

At the conclusion of the meeting new restrictions agreed upon were announced.

The number of blue whales which can legally be caught has been reduced by one-third for next season. Because of the acknowledged decline in the stocks of baleen whales, 10,000 blue whales units can be caught instead of 15,000, the figure for some years now.

The commission also accorded complete protection to the humpback whale in waters south of the Equator, as this species, like the blue whale, has been seriously depleted.

## BOOKSHELF

**ANTARCTIC RESEARCH:** Papers presented at the 10th Pacific Science Congress, Honolulu, August 21-September 6, 1961. Geophysical Monograph no. 7: American Geophysical Union. 228 pages. Price in U.S.A. \$10.00.

This splendidly produced volume, well illustrated and with an abundance of maps and charts, was designed as a memorial to Matthew Fontaine Maury, one of the United States' earliest enthusiasts for Antarctic exploration and research; before publication it had become also a memorial to co-editor Harry Wexler and scientist-explorer Edward C. Thiel.

The book contains 24 authoritative papers by scientists from seven countries under two general headings: (1) Geography, Solid Earth and Upper Atmosphere; (2) Meteorology, Oceanography and Glaciology by authors of the standing of Raymond Adie and Charles Bentley. Of particular locality interest to New Zealanders are "The Geology of Cape Evans and Cape Royds, Ross Island, Antarctica" by Samuel B. Treves, "Geology of Lake Vanda, Wright Valley, S. Victoria Land, Antarctica," by Robert L. Nichols, and "New Zealand Glaciology" by Richard P. Goldthwait and Ian McKellar. A summary is given of New Zealander D. M. Garner's paper "Studies on Physical Oceanography in the Ross Sea by the New Zealand Oceanographic Institute."

**STEFANSSON: AMBASSADOR OF THE NORTH:** by D. M. le Bourdais. Harvest House Montreal. \$2.50 paper. \$4.50 cloth.

The author, a close associate of Stefansson, states in the preface that the book is not intended as a biography. (He wrote an unpublished biography some thirty years ago.) It is, however, a detailed record of the life of a remarkable man, an anthropologist, explorer, and visionary who for a great part of his life was an ardent advocate of the potential of the "North". Stef-

ansson's several expeditions are examined at length. His successes, mistakes and disappointments—the controversies in which he was embroiled, the tragedy of Wrangel Island—are all told. The author has succeeded in presenting an evaluation of the career of a man of complex personality, the "Prophet of the North". The book is well indexed and there is a map showing the route of the principal expeditions.  
N.L.D.

**SHIPPING ARRIVALS AND DEPARTURES — SYDNEY 1788-1825:**  
by J. S. Cumpston,

This is an invaluable book of over 140 pages for all interested in early Australian history. About 5,000 entries in chronological order, with an alphabetical index of ships, give such additional details as the name of the master and the cargo carried.

Copies may be obtained from Dr. Cumpston, 24 Holmes Cres., Campbell, Canberra, A.C.T., Australia. The price for New Zealand buyers is £A2.5.- for American buyers \$5.00, post free. The edition is limited to 200 copies.

**N.Z. JOURNAL OF GEOLOGY AND GEOPHYSICS—SECOND SPECIAL ANTARCTIC ISSUE** Vol. 6 No. 3, June 1963: (7/6 Publications Officer, D.S.I.R., Box 8018, Wellington.)

This second special issue contains the following articles:

The Geology of the Queen Alexandra Range, Beardmore Glacier, Ross Dependency, Antarctica; with Notes on the Correlation of Gondwana Sequences: G. W. Grindley.

Publications Resulting from Work Done under the Aegis of the New Zealand Antarctic Research Programmes, 1952-1962: L. B. Quartermain.

Geological Investigations in Southern Victoria Land, A. Part 4—Beacon Group of the Wright Valley and Taylor Glacier Region: P. N. Webb.

Paleomagnetic Results from the Beardmore Glacier Region, A: J. C. Briden and R. L. Oliver.

Ice Breakout around the Southern End of Ross Island, A: A. J. Heine.

Hydrological Heat and Mass Transport across the Boundary of the

Ice Shelf in McMurdo Sound, A.: A. E. Gilmour.

Geological Structure and Stratigraphic Correlation in Antarctica: B. M. Gunn.

The Geomagnetic Secular Variation in the Ross Dependency: A. L. Cullington.

Location of the South Magnetic Pole: A. L. Burrows.

Geomorphology and Stratigraphy of the Nimrod Glacier—Beaumont Bay Region, Southern Victoria Land, A.: M. G. Laird.

**UNITED STATES IGY BIBLIOGRAPHY 1953-1960**, a massive compilation of 2,853 abstracts filling 392 pages, is available from the U.S. National Academy of Sciences, 2101 Constitution Av., N.W., Washington 25, D.C., U.S.A. Price \$3.00.

**PUBLISHED IN  
NEW ZEALAND**

**NEW GENERA AND SPECIES OF ASTEROIDEA FROM ANTARCTICA:**  
H. E. S. Clark In Trans. Roy. Soc. N.Z. Zoology, 2 (6): 45-6. 1962.

**NEW COLLEMBOLA FROM 83 DEG. SOUTH IN ANTARCTICA:** J. T. Salmon Ibid. 2 (18): 147-52, 1962.  
**LICHENS FROM CAPE HALLETT AREA, ANTARCTICA:** J. Murray. In Trans. Roy. Soc. N.Z. Botany, 2 (5): 59-72. 1963.

**"INSIDE COLUMN"  
APPROVES**

The popular columnist of the "Dominion", Wellington, in his "Inside Column" recently offered his congratulations to the Department of Scientific and Industrial Research on its special issues of the New Zealand Journal of Geology and Geophysics, including the Antarctic Issue published in December last. (Contents in our June issue). "Dom" continues:

"And now this week comes the second special Antarctic issue, a considerable document of truth and even art.

"It's a feather in our New Zealand cap."

# The New Zealand Antarctic Society

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

You are invited to become a member.

## BRANCH SECRETARIES

Wellington: W. J. P. Macdonald, Box 2110, Wellington.  
Canterbury: Miss Helen S. Hill, Box 404, Christchurch.  
Dunedin: J. H. McGhie, Box 34, Dunedin.

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## " THE ANTARCTIC TODAY "

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

**Ionosphere Research** (J. W. Beagley).

**Meteorology** (A. R. Martin).

**Marine Biology** (R. K. Dell).

**Aurora Australis** (I. L. Thomsen).

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

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

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## " ANTARCTIC "

Published Quarterly • Annual Subscription £1

Copies of previous issues of "ANTARCTIC" with the exception of Vol. 1, No. 1, Vol. 2, No. 2, Vol. 2, No. 4, and Vol. 2, No. 9, MAY BE PURCHASED FROM THE SECRETARY OF THE SOCIETY, P.O. Box 2110, Wellington, at a cost of 5/- per copy.

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

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

Price: 4/- per issue.