ANTARCTIC

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ANTARCTIC SUMMER

New Zealanders Herbert and Pain returning from the climb of Mt. Fridtjof Nansen, January, 1962.

Photo: P. M. Otway.

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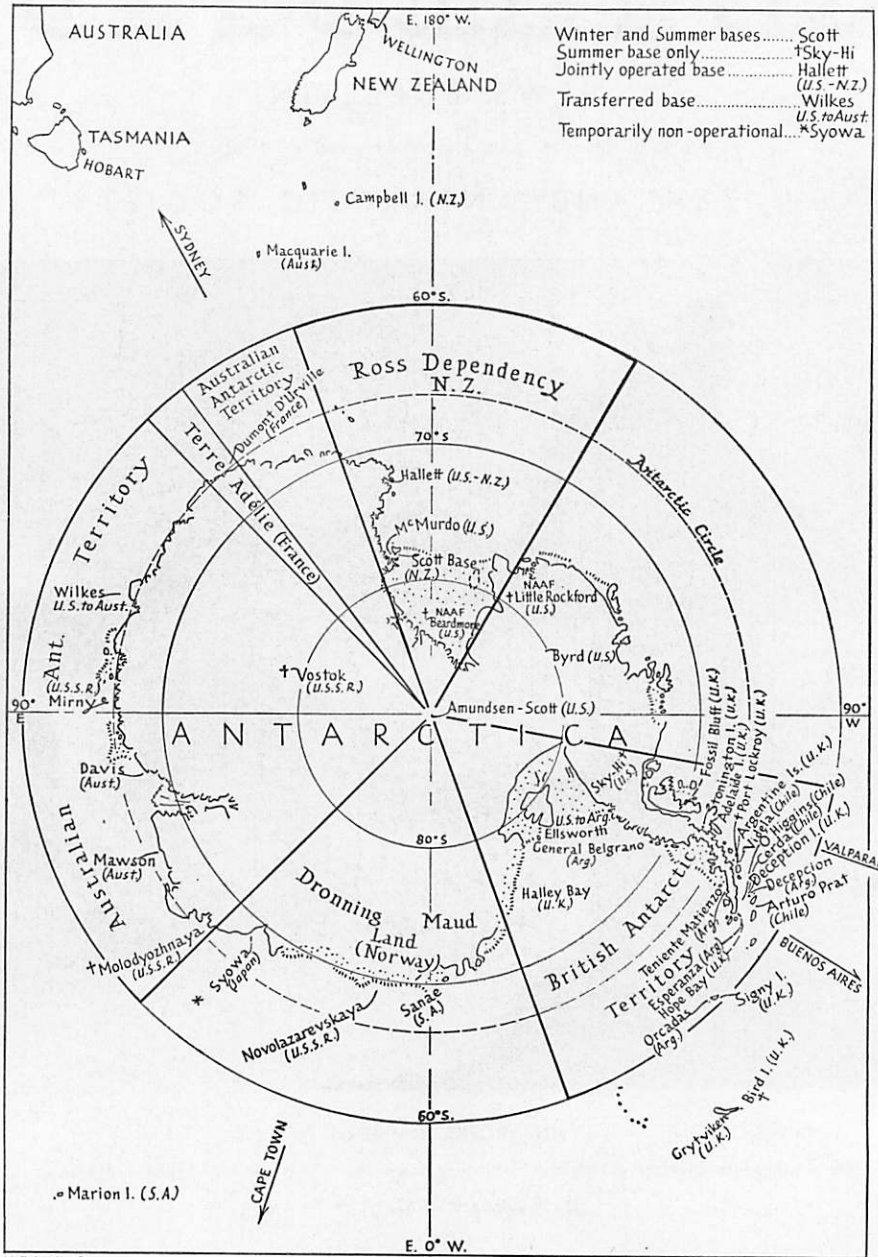

N.Z.M.S. 161

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"ANTARCTIC"

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

Business Communications, Subscriptions, etc., to:
Secretary, New Zealand Antarctic Society, P.O. Box 2110, Wellington, N.Z.

CONGRATULATIONS

Members of the New Zealand Antarctic Society will unite in congratulating Mr. A. Leigh Hunt, of Wellington, founder of the Society 30 years ago, on the honour accorded him by the naming after him of the *LEIGH HUNT GLACIER* (85°05'S., 173°50'E.), one of the farthest south place-names on the map of the Ross Dependency.

The name was suggested by the Southern Party of last summer's New Zealand Geological and Survey Expedition to commemorate Mr. Leigh Hunt's long and distinguished contribution to New Zealand's Antarctic activities.

PEPPING UP ANTARTICA

Americans at McMurdo like to make their outpost look a bit like home. Among well-known advertising slogans posted incongruously along the ice road from Williams airstrip to the 'town' of McMurdo are:

"Smoky Bear says 'Use your ash-tray'."
"Drive carefully—School's open."

Equally incongruous but improvised are these amateur efforts:

"Keep off the grass."
"Help Keep Antarctica Green."

And there are signposts indicating nostalgically "Illinois 80," "Highway 40," and "New Jersey Turnpike."

R.G.S. Honour For American Explorer

The 1962 Patron's Medal of the Royal Geographical Society has been awarded to Captain Edwin A. McDonald, U.S.N., retiring Deputy-Commander of Operation Deep Freeze, for his "outstanding services to Antarctic exploration, including the first coastal explorations in the south Bellingshausen Sea."

Captain McDonald was Rear Admiral Tyree's right-hand man and Commander of Task Group 43.1,—a quartet of icebreakers which annually play a big role in opening up Antarctic coastal waters for summer re-supply by cargo ships. His polar assignments have taken him by air over both poles and on six Arctic and seven Antarctic expeditions.

CHALLENGE TO YOUTH

"We have springboards into the unknown built by the young men of IGY. Perhaps you may sledge or sail in their wake, for tomorrow, as in the past, the courage and curiosity of youth can play a great part in making this last unexplored frontier on earth yield its benefits to all the world."

—from "Defrosting Antarctic Secrets" (see page 131).

New Zealanders at Scott Base Prepare for Summer

After the havoc wrought by the big storm on May 28, the Base was practically back to normal by Midwinter's Day, as the result of much hard work by all hands. The blizzard resulted in the death of one dog. The others were all dug out of the snow alive and well. Timber and oil drums were blown away, a radio aerial came down and part of the Base heating system was put out of operation for a time. The peak gust was about 98 knots, the wind averaging about 70 knots for several hours.

MIDWINTER

June brought good weather with relatively mild temperatures, the average being about -4° F (-20° C). The lowest temperature recorded during the month was -45° F (-43° C).

Midwinter's Day was celebrated on Friday, June 22. Both Friday and Saturday were declared holidays except for essential work.

THE BIG FLASH

Interest in the detonation of the high-altitude bomb at Johnston Island extended as far south as New Zealand's two stations Hallett (joint US-NZ), and Scott Base.

A radio message from Athol Roberts at Scott Base on July 13 says that the countdown on the 9th was followed closely. The special purpose of senior-scientist Ian Richards' observations was to discover if disturbance of the ionosphere by the blast extended to Antarctic latitudes. A disturbance which reached its peak about two and a half hours after the nuclear detonation was recorded on both the D-region and panoramic ionosondes. The whistler equipment recorded a crash but no whistler at the time of the explosion. Only a minor change was noticed on the earth-current equipment for a few hours after the explosion. As the correlation of results may take weeks or even months of work it is too early to assess the significance of these observations.

GETTING READY

Preparations throughout the winter for the coming summer's field parties have included the re-lashing of the dog-sledges, checking and repairing polar tents, packing twenty-man-day food boxes, repairing and making up new dog harness and checking and repairing the many other items needed to keep a party of eight men in the field for three to four months.

The scientific programme ran smoothly throughout the winter: the few breakdowns were quickly remedied by the technicians.

SPRING AT BASE

July brought colder weather, with the temperatures generally between -30° and -40° F. but no blizzards, though the wind was from 5 to 20 knots throughout.

A message received as we go to press says, "The weather has still been kind to us: winds from one to 20 knots with about 90 degrees of frost at the worst. All are hoping that the weather will remain good for the arrival of the planes."

The New Zealand flag was raised again at the base on August 21, though the sun itself was still hidden by Erebus and Terror.

TOUGH JOB

After the winter the oil stored in 44-gallon drums at Scott Base needed replenishing to ensure a good supply till the tankers arrive. This was done from a large American dump spread over acres of snow and ice out on the ice-shelf about four miles from the base. Here, during a break-out of sea-ice at the end of last summer, thousands of full drums were hur-

riedly dumped by backing vehicles into the area at a fair speed and suddenly applying the brakes.

This left the drums in a jumbled heap at all angles. Most of them are now buried under feet of snow which has compacted into a hard, almost icy consistency. So digging down to the drums was solid hard work. The Americans supplied a crane and 20-ton sledges, but even with that help the task confronting Roberts (Scott Base leader), Mills, O'Kane and Langston on August 27 was a difficult and even dangerous one. The cold affected the controls of the crane, and often the heavy drums suddenly dropped three or four feet and bounced out of the grips holding them.

A bitterly cold wind brought driving snow with visibility closing in to a few yards. By the time the party was headed back for camp one man had to walk in front to try and follow the outward track. Later still, even the ground was not visible. But Scott Base now has ample fuel on hand.

THE COVERED WAY

Flat element heating tapes are to be laid under the covered way at Scott Base to prevent ice forming on the "roadway."

At certain times of the year, when there is a slight thaw, the snow on the roadway begins to melt. But before the water can drain away the temperature drops suddenly, freezing the water into solid ice which gradually increases to 18 inches deep.

To prevent this, a steel trough is being laid under one side of the road. The heating tapes will be installed in these troughs to maintain the temperature above freezing point.

The tapes will be encased in glass fibre reinforced resin, forming heaters designed to operate in a temperature range from minus 40 to plus 100 degrees centigrade.

In the past, many summer man-hours have been spent in attempting to drain the covered way, which has sometimes been ankle-deep and more in water.

BIOLOGICAL PARTY

The University of Canterbury team to work at Cape Royds this summer will be led by Dr. Bernard Stonehouse, F.I.D.S. biologist and leader of last summer's team at Cape Royds. Plans for this party have not been finalised at time of going to press, but Dr. Stonehouse will be accompanied by two men who worked with him last summer, Warren Featherston and Murray Smith, by O. Sutherland and possibly one other man.

The party plans to continue the work begun last year, with particular reference to seals, penguins and marine collecting. In the 1961-62 summer, Smith gave special attention to the reproduction biology of the Weddell seal, and Featherston to the parasites of the Weddell. Attention will be given also to Adelie penguin population trends, plankton and sea-bottom sampling, and the McCormick skua (a study initiated by E. C. Young in 1960-61).

A major innovation will be the erection at Cape Royds of a prefabricated biological laboratory and living unit. This building, already made, will house an electric generator, a stove and a kerosene space-heater. As well as providing greatly improved facilities for biological research on the spot, this amenity will make it unnecessary for the team to occupy the old Shackleton hut with the consequent risk of damage or destruction by fire of the historic hut. The laboratory has been constructed by the Ministry of Works in conjunction with the Antarctic Division and the University. It will be maintained by the Antarctic Division. Erection of the building is expected to be completed by early February.

SCOUT VISITORS

As was done last year, three New Zealand Queen's Scouts have been selected to pay a working visit to the Antarctic this summer. The boys selected are B. S. Bythell (Blenheim), D. S. Gray (Whangarei), and C. M. Hope (Christchurch).

Men Selected for 1962-63 New Zealand Expedition

From over 300 applicants the following men have been selected for work under the New Zealand Antarctic Programme, either based on Scott Base or as the New Zealand component at Hallett Station.

As usual, the applicants were unevenly distributed among the posts. For example, there were 60 applicants for the one carpenter's post, and about 100 applicants for the job of field assistant. Among the applicants were three with previous Antarctic experience. The shortage this year was in the field of senior scientists and technical officers.

TRAINING

The men selected underwent an intensive course of training in early August at Mt. Ruapehu. For many, it was a first introduction to snow work. The course included training in first aid, Antarctic search and rescue, and snow-caving. Six of the party later attended a fire-fighting course at the Fire Services Training School in Wellington ,and most of the scientists and technicians received further training at D.S.I.R. establishments in various parts of New Zealand.

The leader, Lieutenant-Colonel Tinker, and the deputy leader, Mr. W. R. Logie, were expected to leave for the Antarctic on one of the first American aircraft to fly south, about mid-September.

TRAMPERS LOOK TO ANTARCTIC

Wellington trampers may tackle the rugged Tucker Glacier, west and south of Cape Hallett, next summer—if they obtain Government and United States Navy support.

Sponsored by the Federated Mountain Clubs of New Zealand, and organised by Wellington's Tararua Tramping Club, eight New Zealanders may make the trip.

Half of the party would be scientists recruited from the Universities. The other part would be made up of experienced climbers.

TO WINTER OVER

The following men have been selected for the wintering party at Scott Base next year. One of the two carpenters may not winter over.

LT.-COL. R. A. TINKER: Leader (See "Antarctic," June).

T. J. ANCELL (22), Wanganui, technician. Trevor Ancell is an airman (Trade Communication Fitter: air), in the R.N.Z.A.F. Born at Palmerston North and a pupil of Palmerston North B.H.S. and Papakura High School, he joined the R.N.Z.A.F. as an adult entrant in 1957 and in 1961 was posted to the Radio Equipment Calibration Centre, Woodbourne.

I. D. CAVE, M.Sc. (25), Wellington, Scientific Officer. Ian Cave is a Demonstrator in Physics at the Victoria University of Wellington. He was born in Stratford and attended Wanganui Technical College, 1951-55. He graduated M.Sc. in Physics at Victoria University of Wellington this year. He has had seven years climbing experience in the Southern Alps.

W. J. DOULL (33), of Dunedin. Maintenance Officer (electrical). Bill Doull is an electrician with the Ministry of Works. Born in Dunedin he went to Kings High School, worked with the railways for six years and joined the M.O.W. in 1957. He is married and has four children.

E. C. GATLAND (38), Takapuna. Technician. Eric Gatland, born at Onehunga was at New Plymouth B.H.S. 1938-41. He is a research technician at the Naval Research Laboratory, Auckland. He served in the R.N.Z.A.F. during the war and

was with the P. and T. before joining the Navy Department. He is married and has four children.

M. L. GLOGOSKI (25), of Tamaki. Maintenance Officer (mechanic). Leith Glogoski is a fitter with the Railways Department. He was born in Coromandel, and was educated at Avondale College.

W. F. GOSS (36), of Porirua East, Maintenance Officer (Carpenter). Bill Goss, born in Auckland, went to Petone Technical High School. He served with the Navy for three years in the Pacific area, and has been a carpenter by trade for the past 14 years. He is married with five children.

Q. F. McLEA (27), of Palmerston North, Radio Officer. Fred McLea's birth place was Mangonui, but he went to Auckland Grammar School 1949-51. After training in radio work he was a radio officer on U.S.S. Coy's ships till 1958, when he went to the United Kingdom and served on U.K.-registered ships before taking a position as Radio Inspector at Palmerston North.

M. S. R. SMITH (22), of Rangiora, Biologist. Murray Smith will join the Winter Party at Scott Base after a season (his second), in the field with the University of Canterbury Biological party. A Rangiora boy, he was at Christ's College 1953-57. He is completing his studies for B.Sc. (Hons), at the University. In rowing he has represented Canterbury for three years and the South Island for two.

B. M. T. WATERS (26), of Christchurch, Maintenance Officer (Carpenter). Barry Waters was born in Christchurch and went to St. Andrew's College. A carpenter, he has had wide experience as a building foreman, including 18 months at the Benmore Hydro.

D. W. WEBSTER (24), of Silverstream, Lab. Technician. Don Webster is having his second winter at Scott Base, his previous service being in 1959-60. He has married since his return from the Antarctic. A Petone boy, he attended H.V.M. T.C. and also the Wellington Technical College. He is an Electronics Technician at the Dominion Physical Laboratory.

L. WELLS (30), of Auckland, Cook. Les Wells was born in Palmerston North and was at the P.N. Technical High School for eighteen months. He joined the Navy nine years ago. He is married and has three children.

SUMMER SUPPORT

The following men will be stationed at Scott Base during the 1962-63 summer: **W. R. Logie,** Deputy Leader (see June "Antarctic"); **G. J. Billing** (P.R.O.); **J. F. Graveson** (driller); **G. A. Jackson** (storekeeper); **L. H. Louden** (mechanic); **P. J. McGill** (dog handler); **D. G. Richards** (postmaster and radio operator).

An English electronics engineer who has had considerable experience professionally in England and Germany will be for this year a summer-party member. He is **Arthur George Lewis** (30), who flew out from England in late August to join the Antarctic Division. Mr. Lewis has had previous Antarctic experience, having served for two years with the Falkland Islands Dependencies Survey at its Port Lockroy and Halley Bay bases.

Others who may visit the Antarctic during the summer include **J. H. Miller, T. Hatherton** and **A. Heine.** All have had previous Antarctic experience. Bob Miller was Sir Edmund Hillary's second-in-command during the Commonwealth Trans-Antarctic Expedition 1956-58. Trevor Hatherton led the three-man New Zealand party which reconnoitred for a site for the New Zealand base in 1955-56 and was senior scientist in 1956-58. Arnold Heine has been a member of New Zealand expeditions and was New Zealand representative on the U.S. Victoria Land Traverse in 1959-60.

SNOWCRAFT

Arrangements may be made for a six-man team of expert New Zealand mountaineers to train some 30 American scientists and others in snowcraft before they go into the field from their McMurdo base this summer.

ANTARCTIC MARINE LIFE

A New Zealand authority on deepsea animals, **J. S. Bullivant,** from the Oceanographic Institute, D.S.I.R., Wellington, will join American scientists working at the Allan Hancock Foundation, California, on the study of the already extensive collections from Antarctic waters. He expects to be away from New Zealand for three years.

Mr. Bullivant will also probably accompany scientists from the University during the cruise of the Research ship "Eltanin" in southern waters. Extensive preparations have been made at the University of Southern California and at the Hancock Foundation for examination of all material taken from the "Eltanin's" marine samplings.

Scientific teams from the university have been aboard the "Eltanin" since the beginning of her shakedown cruises in North Atlantic waters several months ago.

ANTARCTIC ISSUE

A special issue of the New Zealand Journal of Geology and Geophysics to be published towards the end of this year will be devoted to Antarctic exploration and research. The Journal has already published a considerable number of articles dealing, particularly, with Antarctic geology (two are noticed in this issue of "Antarctic"), but the special issue will be wholly concerned with Antarctic topics.

As well as papers dealing with work done in the fields of geology and geophysics, there will be an article by W. W. Herbert, leader of the New Zealand field party which last summer explored the area east of the Beardmore Glacier and climaxed a successful season's work by descending the Axel Heiberg Glacier, Amundsen's route to the Pole.

There will also be a full bibliography of the publications which have sprung from New Zealand's Antarctic activities during the past six years. Altogether this promises to be a very significant publication.

NEW ANTARCTIC SHIP THIS YEAR

The 600-ton "Endeavour" which was New Zealand's Antarctic supply ship from 1956-57 till 1960-61, is being replaced this summer by a new H.M.N.Z.S. Endeavour.

She is a Patapsco class tanker launched in the United States in 1944. She served in the United States Navy as U.S.S. Namakagon and was placed in reserve after the war. In 1962 she was brought from reserve and refitted for Antarctic service. She was then commissioned, renamed H.M.N.Z.S. Endeavour and sailed for New Zealand.

The decision to retain the name Endeavour was made because of its close association with exploration in the history of New Zealand and its link with Captain Cook, who rediscovered New Zealand in H.M.S. Endeavour in 1769. The ship's former name, Namakagon, is that of a tribe of North American Indians.

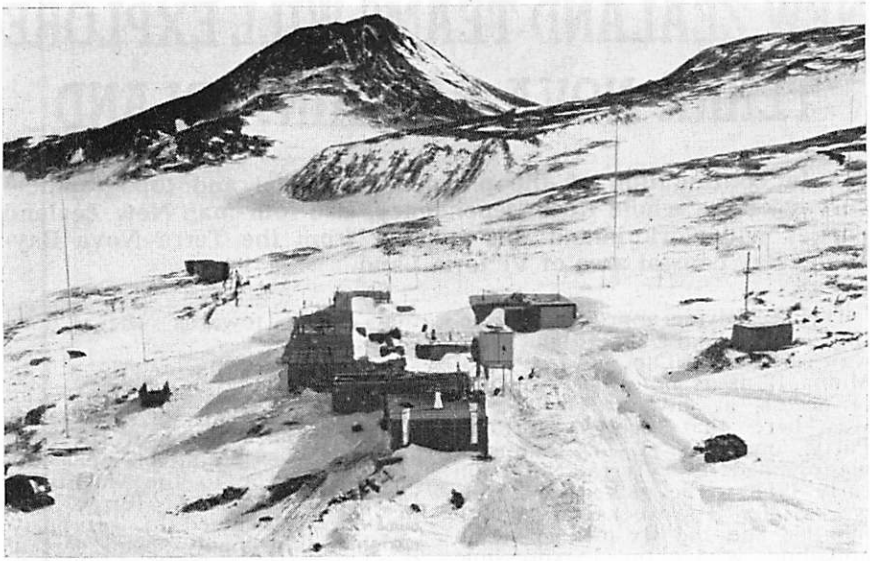
New Zealand's second Endeavour retains the ship's crest used by the first. This shows a sextant against a background of the Southern Cross. The sextant is symbolic of the exploration and the charting carried out by the various Endeavours, while the Southern Cross, besides being embodied in New Zealand's flag, is the constellation which points the way to the great southern continent.

The new vessel's 'vital statistics' are:

Displacement: 1,850 tons (light), 4,335 tons (full load).
Length o.a.: 310 feet.
Breadth: 48 feet.
Machinery: Diesel-electric; two shafts; 3,300 b.h.p.=14 knots.
Complement: Six officers and 62 ratings.

The Chief of the New Zealand Naval Staff, Rear Admiral P. Phipps, said that the vessel would be on loan from the United States Navy.

In addition to transporting new personnel, stores and equipment for New Zealand activities in the Ross Dependency the tanker's bunkerage capacity would enable her to take fuel and aviation spirit for both U.S. and New Zealand parties.



SCOTT BASE TODAY

Looking along the covered way towards the Gap and Observation Hill. The U.S. McMurdo base lies just to the right of the Gap, about two miles from Scott Base.

Photo: H. D. O'Kane.

"In the past, out of the kindness of their hearts, the Americans have taken down a lot of our stuff by air and sea," he said. "The new vessel will enable us to reciprocate."

On August 2, 68 officers and ratings flew out of Auckland by R.N.Z.A.F. DC6 transport for San Francisco. Two more aircraft-loads of personnel are scheduled to join them before the complement for the trip to New Zealand is filled.

Admiral Phipps said on August 29 that "Endeavour" will make two trips to Scott Base, Antarctica, this summer and possibly three in later seasons.

COMMANDING OFFICER

Commander J. Lennox-King, V.R.D., R.N.Z.N., has served in the Antarctic previously as leader at Scott Base in the 1959-60 season, and is a former commanding officer of the previous Endeavour.

He joined the Auckland Division of the R.N.V.R. in March 1931 and was promoted to Sub Lieutenant in 1935. Mobilised in 1940, Commander Lennox-King served in the Atlantic and Pacific during the Second World War. He was mentioned in despatches in August 1942 for services during the capture of Diego Suarez.

Demobilised in 1946, he was appointed a lieutenant-commander in the Auckland Division of the R.N.Z.N.V.R. in 1947. Commander Lennox-King rejoined the Royal New Zealand Navy in 1952 and in 1955/56 was Staff Officer to the Canterbury Division of the R.N.Z.N.V.R. This involved liaison with the headquarters of the United States Deep Freeze expedition and he spent seven weeks in the Antarctic in the summer of 1956/57. He subsequently held appointments as senior officer of the Navy's Fishery Protection Flotilla and as commanding officer of the first Endeavour.

NEW ZEALAND TEAMS WILL EXPLORE TERRA NOVA BAY HINTERLAND

In continuation of the planned geological and topographical survey of the whole Ross Dependency, two four-man New Zealand parties will work inland this summer from the Terra Nova Bay-Wood Bay coastal area of Victoria Land.

This area, lying approximately between 74° S and 76° S, about halfway between Cape Adare and Minna Bluff, is notoriously difficult of access, at any rate by sea. It was here that Scott's Northern Party, under V. L. A. Campbell, was landed by "Terra Nova" in early 1912, to be picked up a few weeks later. The weeks turned into months, and the six men spent an appalling winter on Inexpressible Island in Terra Nova Bay, huddling in a tiny cave cut out of a drift. In the summer of 1958-59 a team of 12 men led by Dr. H. J. Harrington planned to work in this area, but adverse ice conditions made a landing impossible, despite United States ice breaker assistance.

This summer two different methods of attack will probably be used. One team will leave Scott Base early in the summer (mid-October), and sledge up the coastal sea-ice and piedmont as far as the David Glacier, which discharges into the Ross Sea in the area of the Drygalski Ice Tongue at the southern end of Terra Nova Bay. It is possible that this team will use the two American-made Polaris "Sno-Traveller" motor sledges which have been purchased by the Antarctic Division and will be taken south this summer. Dog teams will also be used.

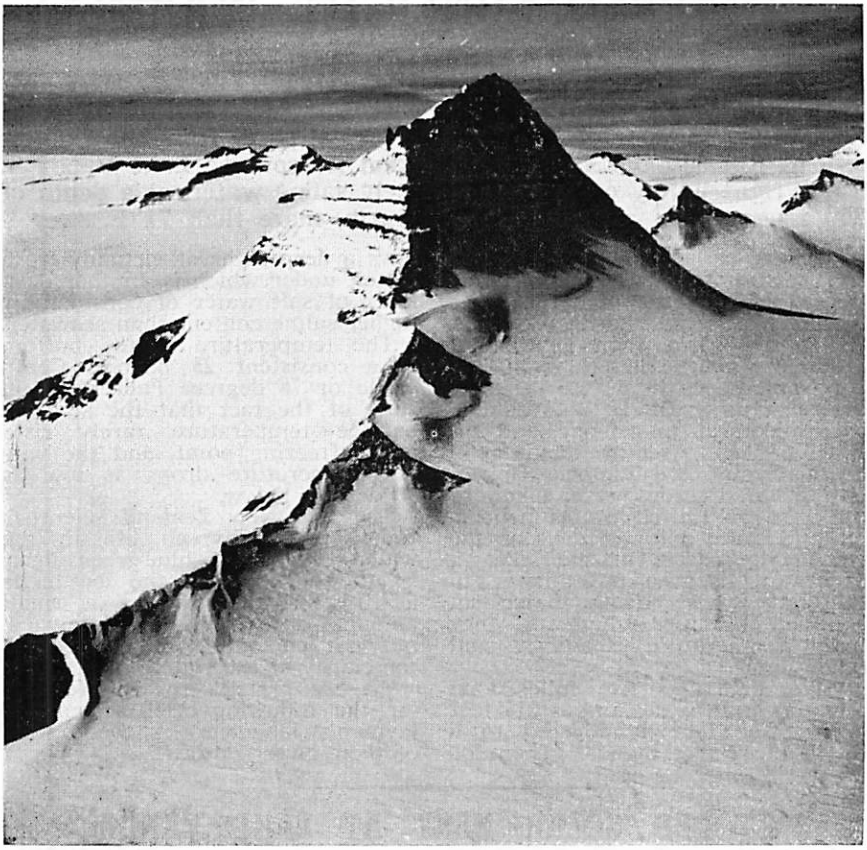
This southern party will be led by R. W. Hewson, an experienced field party man who is wintering over at Scott Base after a summer dog sledging in the far south. The team will later probably be flown by U.S. aircraft from their position south of the David Glacier across the David towards the Larsen Glacier.

The Northern Party also of four men, will probably be flown in during the first half of November, either to the Plateau, at the head of the Reeves, Campbell or Priestley Glaciers or to the vicinity of Inexpressible Island, Terra Nova Bay, 75° S. Included in this party, which will probably spend part of October and early November in practice sledging in the vicinity of Scott Base, will be H. S. Gair, geologist, and K. P. Pain, who was a member of last year's southern field party.

On the arrival of the Northern Party in the field in mid-November the expedition will re-group and form a depot somewhere on the Plateau. One section will now sledge south to the Larsen Glacier area, while the other section will work north and may possibly descend from the Plateau via the Aviator Glacier (74.5' S, 165° E), which flows in an easterly direction from the southern side of Mt. Monteagle to feed the Lady Newnes Ice Shelf between Cape Sibbald and Cape Johnson, 17 miles to the south-west.

The composition of the respective field parties has not yet been finally decided, but the men involved will be:

I. D. Cave (25), of Wellington; M. R. J. Ford (23), of Lower Hutt; R. W. Hewson (24), of Inglewood; H. S. Gair (36), of Christchurch; K. P. Pain (34), of Westport; J. F. Ricker (24), of Vancouver, Canada; M. J. Sheehan (24), of Invercargill; D. N. B. Skinner (24), of Auckland; J. A. Tobin (29), of Hamilton.



UNNAMED PEAK

This arresting feature is situated in approximately 72° 10′ S., 165° E., in the northern portion of the area which will be explored by New Zealand geological and survey teams this summer. An air photograph, U.S. Navy.

The motor sledge or toboggan chosen for the New Zealand expedition is the "Ranger" type. It weighs 550 lb., is 10 feet long by 3 feet wide, seats two men and draws a load of 1,000 lb. The toboggan is fitted with a Kohler 9.6 h.p. single-cylinder engine. The body is of welded steel. While the toboggan, of course, runs on tracks, it is fitted with two balancing wood skis and is steered by means of wooden skis in front.

N.Z. AWARD

Two recent students of Victoria University have been awarded the Royal Society of New Zealand's Hamilton Prize for Antarctic geological research work.

The students, now science graduates, are Messrs. P. N. Webb and B. C. McKelvey. These young geologists pioneered in the 1957-58 and 1958-59 summers, the series of expeditions sent into the Dry Valley areas of Victoria Land by the Victoria University of Wellington.

TRAPPED SUNLIGHT WARMS ANTARCTIC LAKE

In the summer of 1960-61 a biological party from the University of Kansas, U.S.A., discovered that ice-covered Lake Vanda in the Wright Valley contained extremely saline water, at a depth of 200 feet, which was surprisingly warm, more than 71° F.

Various explanations were offered to account for this phenomenon. Could it be due to hot springs bubbling into the lake? Could it be caused by a high geothermal gradient — heat coming from the centre of the earth?

Last summer Dr. H. W. Wellman, senior lecturer in geology, and Dr. A. T. Wilson, senior lecturer in chemistry, of the Victoria University of Wellington, were taken to the area by United States helicopter and camped for 18 days on the ice in the centre of the lake, in order to discover the answer to these questions. Using an ice-drill supplied by the Americans, they took temperature readings and other data.

Lake Vanda is five miles long and one mile wide, and is 218 feet deep. The lake is covered to a depth of 12 feet by ice. Then follows a deep layer of virtually fresh water, under which is another deep layer of salt water of considerably higher saline content than seawater.

The temperature at the bottom is a consistent 25 degrees Centigrade or 78 degrees Fahrenheit, in spite of the fact that the summer surface temperature rarely rises above freezing point, and the winter temperature drops as low as 40 degrees below.

The two New Zealand scientists found practically no life in the water—only a few blue-green algae. At the edge where the ice melts a little in the summer, a small amount of green algae spawned, but not enough to interfere with the clarity of the water.

We are grateful to Dr. Wellman for the following brief account in layman's language of the results of their investigations.

STORED SOLAR HEAT AT LAKE VANDA

by H. W. Wellman and A. T. Wilson

Lake Vanda is permanently covered by about 12 ft. of ice. It occupies the lowest part of Wright Valley, near the centre of the Dry Valley system of Antarctica, and is 15 miles east of the Polar Ice Plateau, and 30 miles west of the Ross Sea.

On drilling through the ice in 1960 American scientists discovered that the water at the bottom of the lake, about 200 ft. below the base of the ice, is warm with a temperature of 27° C. This is about 47° C. hotter than the mean annual temperature at the top of the ice.

The warm water at the bottom is well insulated from the surface of the ice by the 200 ft. of cooler water and by the 12 ft. of ice, and only a small supply of heat is required to keep the bottom water warm. The Americans thought the heat came from the rocks below the lake, and suggested that the temperature increases downwards in the rock unusually rapidly—that the geothermal gradient is unusually high.

We were able to force a probe into the mud at the bottom of the lake and found that heat was flowing down out of the lake and not up into it. The heat must come from above. Solar radiation is a possible source. Most of the solar radiation does not get through the ice. We measured the small amount that reached the water below, and the amount that reached a depth

of 50 ft. From the difference we estimated the amount that reached the bottom of the lake. It proved to be almost the same as the heat that was being conducted away, and it seems likely that the water is being kept warm by this very small amount of solar radiation that reaches the bottom of the lake. Heat is supplied during the summer months only, but the heat leaks away so slowly that there will be not much difference between the summer and winter temperatures of the bottom water.

Lake Vanda, being in Antarctica, receives much less sunshine than do most lakes, and you may wonder why water is not warm at the bottom of all lakes. There are two reasons. The most important is water density. If water is warmed it becomes lighter and if the water of Lake Vanda were pure, the bottom water would rise and carry away the heat. But the bottom water contains salts that make it much heavier than pure water even when warm, and a high salt content in the bottom water—salinity gradient—is the first essential for storage of solar radiation. The other essential factor is clarity of the water. Unless water is extremely clear, sunlight will not penetrate far and the amount that reaches the bottom will be insignificant.

Silt and floating organisms make most lake waters cloudy, but Lake Vanda is unusually clear. The ice cover prevents waves from stirring up silt from the edge, and there are very few floating organisms. Consequently, although the sunshine is less than at most lakes, a greater proportion reaches the bottom of Lake Vanda.

Lakes with a strong salinity gradient may prove to be a useful way of trapping solar energy providing the water can be kept very clear.

AGAIN THIS YEAR

Following the research at Lake Vanda last summer by Drs. Wellman and Wilson, a three-man party comprising T. G. L. Shirtcliffe and B. Popplewell (Victoria University of Wellington, Physics and Chemistry Departments respectively) and R. F. Benseman, will travel south in December and will spend two weeks at Lake Bonney. Investigations will be carried out similar to those made at Lake Vanda last summer. American scientists have worked at Lake Bonney, but their work has been in the main a study of the chemical constituents of the lake water. The New Zealanders will be more concerned with its physical properties.

SOCIETY NEWS

CANTERBURY BRANCH

From September 17 to 21 the Canterbury Branch of the N.Z. Antarctic Society will organise in connection with "Antarctic Week" in Christchurch, an Antarctic display in a central city store. The display will be on view from 9 a.m. Sept. 17 to 9 p.m. Sept. 21. Lunch-hour lectures and film showings will be a feature of the exhibition. There will be a public day at Christchurch International Airport, Harewood, on Sunday, April 23, when United States Deep Freeze planes and facilities will be open for inspection.

WELLINGTON BRANCH

The September meeting of the Wellington Branch took the form of a film evening, when Mr. Shcherbakov of the U.S.S.R. Legation presented several Russian films on Antarctic exploration, with explanatory comment.

DUNEDIN BRANCH

A well-attended meeting on Aug. 30 saw two films, one on Admiral Byrd's Second Expedition and the other a Lockheed Antarctic film.

We regret to announce the death recently of Mr. Cecil Dunning, a foundation member of the branch, and the committee man responsible for the distribution of "Antarctic." Cecil was a tower of strength to the Dunedin Branch for many years. He leaves a widow and an only son, to whom our sincere sympathy is extended.

VUWAE 6

UNIVERSITY PLANS NEW EXPEDITION

Next summer the farthest south New Zealand field party will be from the Victoria University of Wellington. The University has mounted an expedition during each of the past five years, hence the name VUWAE 6.

This year's expedition will work in the Darwin Glacier area of Victoria Land, some 150 miles south of McMurdo Sound. The Darwin Glacier, which takes its name from the Darwin Mountains, sighted and named by Scott's 1901-04 "Discovery" expedition after Major Leonard Darwin, lies chiefly in Australian Antarctic Territory, 156° – 160° E., 79°50'S., but enters the Ross Dependency shortly before it discharges into the Ross Ice Shelf.

THE DARWIN

The "Darwin Glacier" map produced in 1961 by the New Zealand Department of Lands and Survey, is based principally upon a survey of the area made in 1957-58 by R. Carlyon of the Commonwealth Trans-Antarctic Expedition. It was reconnoitred from the air in the summer of 1961-62 by Prof. R. H. Clark and Mr. R. H. Wheeler (leader of the 1960-61 V.U.W. expedition). They report it to be "a reasonably smooth-surfaced glacier with relatively few crevasses, extending from the plateau down to the Ross Ice Shelf some 200 miles south of Scott Base."

VUWAE 6 will map exposed rocks and carry out geomorphic and glaciological observations in the area. A few miles back from the coast the Carlyon Glacier (named after Roy Carlyon of the New Zealand component, Trans-Antarctic Expedition, 1956-58) diverges from the Darwin to meet the coast farther north. The triangular area thus enclosed by the Darwin and Carlyon Glaciers, and bounded on the east by the Ross Ice Shelf, is mostly exposed rock. Again, west of the Carlyon towards the plateau are some areas of exposed rock, and a very large ice-free area was seen across the Darwin on the south side of that glacier.

WORK PLANNED

Basement metamorphics and dykes were exposed on the triangular coast section, and here, too, appear to be exposed the Basement-Beacon unconformity. The higher areas appear to be of Beacon and dolerite. This year's expedition will be studying the metamorphics in order to compare them with the sections studied by earlier V.U.W. expeditions, the Koettlitz by VUWAE 4 (1960-61) and the McMurdo oasis by VUWAE's 1-3 (1957-60). The expedition will give some attention to the Basement-Beacon unconformity and will also examine sedimentary rocks with care. Glacial geomorphology, and particularly glacio-chronology, will be carried out by the expedition as far as it is able.

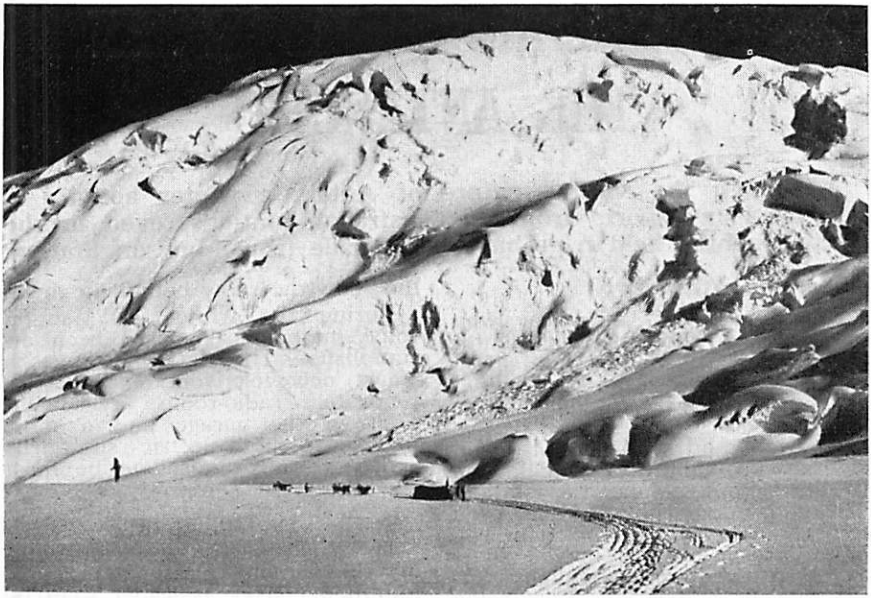
THE TEAM

The leader will be Ian A. G. Willis of Wellington, who was with the University expeditions of 1959-60 and 1960-61.

Deputy Leader will be American geologist, Professor C. C. Rich of Bowling Green State University, Bowling Green, Ohio, U.S.A.

The other members are all students of the Geology Department, Victoria University of Wellington: T. R. Haskell of Napier, J. P. Kennett of Wellington, W. M. Prebble of Eastbourne, and G. J. Smith of Wairoa. The party expects to leave New Zealand for the Antarctic about the middle of November. The expedition will be under the general operational control of the Antarctic Division, D.S.I.R., and will be based on Scott Base.

The precise operational picture is not yet clear, but it is likely that



NEW ZEALAND DOG TEAM

traversing the Axel Heiberg Glacier.

The lower slopes of Mt. Don Pedro Christophersen as seen from the top terrace of the Amundsen Icefalls.

Photo: P. M. Otway.

the party will be landed, by United States aircraft, on the Ross Ice Shelf and will first cover the triangular coast area. The party will then move up either the Carlyon or the Darwin Glacier and examine the areas at higher altitude towards the plateau. They will probably be brought out in late January or early February after two months in the field.

[STOP PRESS]

On September 12 two dog-teams left Scott Base on a spring training run. The goal for the first night was Scott's hut at Cape Evans, and for the next day Shackleton's hut at Cape Royds. The men concerned were Hewson, Pain, McKenty and Langston. They left in a —50° C. temperature using nose-guards to add to the protection afforded by their beards.

BIOLOGY

A symposium of Antarctic Biology was held in Paris during September 2-8. It was organised by S.C.A.R. with the co-operation of the French Academy of Sciences at the Faculte de Medecine, Paris. Its aims were to review progress in Antarctic biological research, to discuss the most profitable lines of future research, to integrate Antarctic work with biological research elsewhere, and to discuss the special problems involved in research in the Antarctic and Sub-Antarctic, including international co-operation. About sixty papers were read. Delegates attended from Argentina, Australia, Belgium, France, New Zealand, Norway, South Africa, U.S.S.R., the United Kingdom and the United States. Dr. R. A. Falla, Director of the Dominion Museum, represented New Zealand.

AUSTRALIANS AT WORK IN THE ANTARCTIC

Though the routine nature of Antarctic winter activity is portrayed in reports from the Australian stations, even in the winter months field trips have been made from Mawson Station.

MAWSON

Newcomers to Antarctica, who have always thought that winter there meant six months total darkness, have been pleasantly surprised by the winter at Mawson. On the shortest day they still had five hours light and soon after the sun was already shining at mid-day on the little hill behind the station. The long dark hours have been compensated for by wonderful colours of sky and ice in the short days, and brilliant moonlight during the first half of June being succeeded by astonishingly vivid auroras.

May had been remarkable for fine, cold weather but spoilt its record with blizzard which added to the already huge drifts dividing the station.

In July weather was again kind with not one blizzard during the month. Snow drifts were reduced and polished by the wind. The harbour ice was clear of snow, showing the pale green ice five feet thick. The sun was well up at mid-day, with discernible warmth.

The highest wind of the winter was one of 105 m.p.h. during June and although July was the coldest average July on record the lowest temperature was only 27.8 below zero Fahrenheit.

May saw the first issue of "Katabatic," the occasional magazine, fifteen pages of articles, contemporary poetry and art, leave the printers after much cajoling and hard work by the editors.

From May onwards Henderson weather station was manned for a week at a time by successive pairs and finally by Miller and Melvold, who had to walk the twelve miles back after a ten-day stay, leaving the snowtrac snow bound up there.

During the winter at Mawson some major works have been accomplished. The station now has a smart new telephone exchange, a renovated radio-room, a cement floor in the garage and a most ingenious photo-electric snow-drift gauge which promises to be most successful.

IN THE FIELD

Two field parties were out during the winter. Firstly a party of four under Wigg as leader went by snotrac to Taylor Glacier, 5½ miles west of base, for biology on Emperor Penguins. They were lucky with the weather and enthusiastic about the charm of the emperors and the beauty of the situation. They returned with a live specimen of great dignity and social poise, who is quite at home in the mess. The second party with Nelson as leader with two dog teams left on June 29 in perfect weather for Auster Rookery, 35 miles east of Mawson.

These teams returned from Auster after dark on July 5. After a final day's run of twenty miles all men were dog-tired and doubtless the dogs were man-tired. Due to the necessity of camping on the island the lack of daylight prevented their reaching the penguin rookery and returning to the campsite in one day. Though they failed to count the penguins they gained valuable experience which will be useful for much longer dog trips to follow. This journey was the closest ever to mid-winter from Mawson.

On July 15 five men took the dogs on a sixteen-mile return run down the west coast to see the remains of the Dakota aircraft

wrecked in 1960. There is now only the top tail-fin showing above the snow. Sea ice journeys reveal many still-open breathing holes and occasional seals, indicating that they have not left the area at all this winter. The wandering albatross and snow petrels have also been sighted.

The main social event was mid-winter's day, for which were received goodwill messages from many Antarctic connections—from Africa to Argentina. Dinner was supplemented by champagne and cognac, and other specialties provided by Head Office were magnificent. Royal toasts were followed by personal exchange greetings between us and Davis and Wilkes, in the radio office, then a twilight handicap race on the sea ice, with competitors on motorcycles, bicycles, man-hauling, skiing and a husky puppy team. It was won by a man rolling coil wire. This was followed by a buffet tea in fancy dress and a concert.

DAVIS

Davis, named after Captain John King Davis, veteran of Shackleton's 1907-09 and 1917, and of Mawson's 1911-14 and 1929-31 expeditions, is situated approximately on the 69th parallel in longitude 78° E. It is on the shore of the Princess Elizabeth Coast about 3,000 miles S.S.W. of Fremantle. The locality is rocky, with many lakes and fjords.

Long Fjord, to which reference is often made in Davis reports, lies some 18 miles east of the station. It is the site of an observation post ideally situated for the collection of data on the violent katabatic winds which are caused by the downflow of air from the high inland plateau. So furious are these winds that a special type of shelter had to be devised for the observers, two of whom occupy the observation post at a time, for fortnightly periods. This is a red-painted steel caravan which was mounted on a sledge and hauled round the coast after the sea froze in the 1960-61 summer. The journey of 18 miles took six days of hard work.

The fortnightly relief is effected by the new men with dog teams, the teams being driven back to Davis itself by the men who have been relieved.

DAVIS NEWS

At Davis the sun disappeared on June 5 and although due to return on July 8, was not actually sighted till July 18.

Many beautiful sunsets occurred towards the end of May, and it was becoming difficult to judge whether it was sunrise, mid-day or sunset.

The event of the winter, even over-shadowing mid-winter's day, was the birth of a litter of ten pups to Lulu, the best female breeding dog. Gasps of amazement accompanied the increasing count.

In May two men made the first trip to Platcha in the snowtrac but unfortunately on the return trip, while doing some local exploration, Hulcombe met with an accident which resulted in his being hospitalized. By July he was back among his generators.

Platcha was visited again by successive pairs in July who installed the radio and meteorological equipment in the 9 feet by 5 feet hut. During high winds the walls move but the hut is well guyed down and living conditions inside are very good, with electric light and gas stove, but no kitchen sink.

Davis had the worst blizzard of the winter late in May. At one time there was nearly as much sand and grit flying past as there was snow. This sand has blasted much paint off the buildings.

June weather was very mild with an all-time high pressure of 1018/9 m/bs for Davis. The maximum temperature was 23.1 Fahrenheit, the minimum temperature was minus 17.8 F. The strongest wind was 55 knots. The lowest temperature of the winter was minus 29.7° Fahrenheit which occurred during a short spell of clear sky during a very overcast month.

OATES LAND

During float plane and helicopter flights early this year from the "Thala Dan" off Oates Land, south of New Zealand, the Australians photographed 300 miles of coastline and mapped 24,000 square miles of previously unknown territory.

WILKES

June weather produced a change from the cool, calm days of May to the roughest, windiest days on record, near the end of the month when the winds peaked at 115 m.p.h. on June 24. These strong winds caused the following items of damage: parked weasels were blown some yards; heavy steel plate was blown against and broke the new garage windows, which resulted in the garage being near half-filled with blowing snow before temporary repairs could be made; all the sea ice was broken up and disappeared; the new 5,000-gallon rubber fuel tank and its stand were broken off the foundations and blown sideways; many buildings suffered minor damage and drift snow penetrated inside most of them.

All the main station buildings were by then buried under snow drifts and the only exits were via doorways and up many steps cut in ice and snow or through roof hatches.

Before the sea ice had been blown out a fishing contest attracted many entrants and over 50 fish were caught through innumerable holes cut in the sea ice.

MAJOR JOURNEY PLANNED

As mentioned in the June issue of "Antarctic," plans have been drawn up for a major traverse in the summer. The object will be to carry out seismic ice depth measurements for a distance of 850 miles inland from Wilkes to link up the work of the Australians in 1961 with other seismic work carried out by the Russians at Vostok Station.

The expedition will be led by the station leader, Robert Thomson, of New Zealand, says a press release from Canberra dated June 21.

Five Australian and one American technician will be in Thomson's party. No further details were announced.

Bob Thomson, whose home is in New Plymouth, was senior ionosphere observer at Campbell Island in 1959. Late that year he joined the Antarctic Division, Department of Scientific and Industrial Research, and left New Zealand for Hallett Station where he was Scientific Leader throughout 1960, and then for the 1960-61 summer was Public Relations Officer at Scott Base. In April of last year he left for Australia to join the Australian National Antarctic Research Expedition to Wilkes Station as officer in charge.

The big event of the winter was mid-winter's day, celebrated on Saturday, June 23, which also coincided with the six months' anniversary since the departure from Melbourne.

A great deal of the work programme has been directed towards vehicle and equipment preparation for the long traverse planned to leave Wilkes late in September for Vostok.

July produced mainly cold, calm weather with a record low average temperature of 37.4 degrees below freezing. The latter end of the month saw the sun struggling a little higher above the horizon to bathe the station in a few hours of sunlight, but unfortunately not much warmth.

The big celebration of July was American Independence Day, July 4: a giant fire cracker, constructed by Goldenberg and Walker, was placed on the headland across the bay and at mid-day it was fired. The resulting explosion and sheet of bright flame was recorded on numerous cameras and gave a vivid impression which was likened to Cape Canaveral.

BALLOONS WILL TEST RADIATION

Radiation detection instruments to be carried by balloons to an altitude of about 20 miles over the Antarctic next year are being designed and built at the University of Tasmania.

About 30 balloons carrying the instruments will be released from Wilkes Base by scientists with the 1963 Antarctic expedition.

The programme of upper atmosphere radiation study will be the first wholly conducted by Australia.

Last summer, Australian Antarctic scientists launched similar radiation probes from Macquarie Island in co-operation with the University of California. The United States university provided the equipment.

A senior physicist of the Antarctic division (Dr. N. R. Parsons), who is working at the University of Tasmania, said the balloons would be sent up to an altitude of about 20 miles—above 99 p.c. of the earth's atmosphere — during periods of activity on the sun and in the earth's magnetic field.

They would carry neutron-charged particles and X-ray monitors, and their information would be relayed by radio to a receiving station at Wilkes Base.

It was hoped that each balloon would drift about the 100,000 ft. level for several days, continuously radioing information about radiation there.

Dr. Parsons said that radiation detectors at ground level were being used at Wilkes Base, but the blanketing effect of the atmosphere prevented all but high-level radiation reaching the ground.

The balloon-carried instruments would overcome this handicap.

He said the balloons would be released during periods of radiation fluctuations because of sun spots, solar flares, and auroras, and the information from them would be recorded at the base on charts.

NORWAY

No Norwegian Antarctic base has been in operation this year and no Norwegian Antarctic activities are proposed for the coming year.

The Norwegian Polar Institute (Norsk Polarinstititt) has published two papers arising out of research carried out in Dronning Maud Land 1949-52, also six maps of limited areas on the scale 1 : 250,000.

JAPAN MAY RETURN TO SHOWA

As Showa Base is—we hope temporarily—unoccupied there is no news of recent Japanese activities in the Antarctic.

Mr. M. Murayama and his 1961-62 wintering team returned to Japan by air from Capetown on March 16. The summer support party under Professor T. Yoshikawa returned on the "Soya" which reached Japan on April 17. "Soya" is unfitted for further Antarctic work, and after repair will revert to her original work as a patrol ship along the Okhotsk coast of northern Japan.

Mr. Murayama and Prof. Yoshikawa reported that Showa Station had been so carefully sealed for the future re-opening that the station could be used at once anytime within the next five years, and that the stocks of fuel and food would be enough for a wintering team of 10 men. Now at the station, where there is no sign of human presence, the automatic meteorological observing tower will be carrying out its routine work, possibly till next March or even later.

FUTURE UNCERTAIN

Meanwhile pressure is being brought to bear from many quarters for the recommencement of Antarctic work by the Japanese Antarctic Research Expedition.

At the end of April, the Science Council appealed to the Government to re-open JARE as soon as possible. This, the Council claimed, is most desirable, especially in the quiet period of solar activities in 1964-65; and unless the diesel-electric icebreaker of 5,000 tons and 10,000 h.p. and the powerful gas-turbine helicopters are built, though they are both desirable, the expedition ought to charter a foreign icebreaker. In May, the Ministry of Education is expected to examine a concrete plan for future re-opening. The Ministry of Finance is believed to be concerned about the expensive estimate (over £2,500,000) for the building of the ship.

The full scientific reports of JARE are now being prepared by various sections, though preliminary reports have already been printed in the "Antarctic Record."

RESEARCH SHIP HOME

The research ship "Umitaka-Maru" of Tokyo Fisheries College returned to Tokyo on March 16 after 140 days and a voyage of 48,000 kilometers (see "Antarctic," Vol. 2, No. 12). Prof. T. Kumagori, the expedition leader, said that the research field was around the Antarctic Convergence from 115°E. to 36°W., especially in the Weddell Sea area, and the extensive observations of marine life, weather, oceanic currents, submarine relief, etc., were proving very fruitful.

50-YEAR-OLD BACTERIA FOUND ALIVE

Bacteria frozen in the Antarctic ice for half a century have been found alive in samples collected by New Zealanders of the Huts Restoration Project, 1960-61, at the request of an American scientist.

The bacteria were deposited in Antarctica by the expeditions of Captain R. F. Scott and Ernest H. Shackleton, just after the turn of the century. The scientist, George H. Meyer, a University of Texas microbiologist, said that the history of the sites and the fact that the organisms were recovered from human excrement deep in the ice determined the age. It is extremely unusual for micro-organisms of this type to survive for a long time, he remarked.

Dr. Meyer and Dr. Marie B. Morrow, University aerobiologist, are trying to learn the relationship between micro-organisms and their environment, how they are influenced by solar irradiation, negative temperatures, desiccation and other conditions, and why they can survive in Antarctica.

ERRATUM

Vol. 3, No. 2, June 1962: p. 59, l. 19: for 1941 read *1841*; last line: for 150 read *120*.

MAPS OF THE ROSS DEPENDENCY

The New Zealand Government is steadily pushing ahead, by field work during the summer periods and map drawing and production throughout the year, with the complete mapping of the Ross Dependency, which is under New Zealand administration.

Readers who may wish to have maps, either of the Dependency, or of portions of it, may obtain them on application to any office of the Department of Lands and Survey, or to one of the numerous map-selling agencies.

The following maps are all obtainable, at the prices stated:

Map of the Antarctic Regions—1:16,000,000, 2nd Ed. 1955. NZMS 94. 4/-.

NZMS 135 Ross Sea Region—1:4,000,000 and 1:1,000,000, 1957. 5/-.

NZMS 175/1 Beaufort Island—1:25,000, 1960. 2/6.

NZMS 166 Tucker Glacier (Hallett region)—1:250,000, 1960. 7/6.

NZMS 175/3 Part of Victoria Land (W. McMurdo region)—1:250,000, 1961. 6/- for set of two sheets.

NZMS 166 Mt. Discovery—Prov. Ed., 1:250,000 (2 col.). 3/-.

NZMS 166 Westhaven nunatak—Prov. Ed., 1:250,000 (2 col.). 3/-.

NZMS 166 Darwin Glacier—Prov. Ed., 1:250,000 (2 col.). 3/-.

NZMS 166 Byrd Glacier—Prov. Ed., 1:250,000 (2 col.). 3/-.

NZMS 166 Shackleton Inlet—Prov. Ed., 1:250,000 (2 col.). 3/-.

NZMS 166 Mt. Rabot—Prov. Ed., 1:250,000 (2 col.). 3/-.

NZMS 166 Mt. Miller—Prov. Ed., 1:250,000 (2 col.). 3/-.

NZMS 166 Mt. Hope—Prov. Ed., 1:250,000 (2 col.). 3/-.

NZMS 166 The Cloudmaker—Prov. Ed., 1:250,000 (2 col.). 3/-.

NZMS 166 Granite Harbour—1st Ed., 1:250,000 (full colour). 7/6.

NZMS 166 McMurdo Sound—1st Ed., 1:250,000 (full colour). 7/6.

NZMS 175/4 Cape Bird—1:25,000. 3/-.

TWELFTH FRENCH EXPEDITION TO ADELIE LAND

We are now able to give in fuller detail the story of the French 'summer campaign' of 1961-62, briefly outlined in our last issue.

For the first time the French expedition made use of the Danish Lauritzen Line vessel "Magga Dan," replacing the veteran "Norsel." "Magga Dan" left le Havre on October 25, 1961, with 34 passengers, the 19 men to winter-over in "TA12" and 15 of the 20-man support party. The ship reached Melbourne on December 8 and Hobart on December 11. Here the remaining five summer-party men embarked: they included Paul-Emile Victor, Director of Expeditions Polaires Francaises, and old campaigners Robert Guillard, Claude Lorius, and Roland Millicamps.

Leaving Hobart on December 14, "Magga Dan" arrived at the Pointe Geologie archipelago, Adelie Land, on December 19. Unloading began next day in fine weather. The lingering winter ice between l'Ile des Petrels and l'Ile Jean Rostand prevented unloading at the usual "pre" (meadow) on l'Ile des Petrels but that evening Captain Pedersen, after meticulous soundings, manoeuvred his ship round l'Ile des Petrels and succeeded in mooring her at a new disembarkation place between the two islands. Here the ice could be used as a quay and when the ice went out it was only a few cable lengths to the disembarkation point. When unloading was completed "'Magga Dan" anchored in the shelter of the west cliff of the Astrolabe Glacier between l'Ile Lamarck and l'Ile Jean Rostand. This proved a safe anchorage.

FOR AND AGAINST

The new landing arrangements thus made necessary had two important consequences.

There was a great saving in time and labour. Provisions, construction material, etc., could now be unloaded directly on to the shore by means of a "flying fox" 200m long and oil could be conveyed by a pipe-line directly to the fuel-tanks. The oil cargo was transferred in this way from ship to shore in seven hours, on January 6.

There was, however, a 'hold up' in the installation of the projected cable railway. As the change of landing place meant surveying a new route for the cable railway, it was now necessary first of all to investigate the possibility of constructing a new road instead. In any case, the planned point of departure for the cable-way, Jakobsen Rock, was coated in ice and remained ice-covered till the end of January, making construction of the starting platform impracticable.

TRAVERSE PARTY

On Christmas Day the four-man geological field party under Lorius began its journey to the plateau. On January 11 Ricou was brought back to Dumont d'Urville base suffering from a severe dental infection. He was replaced by Ducheron. The traverse team returned to base on January 29 after five weeks in the field. Three weasels were used, each drawing a loaded sledge. Meteorological observations were carried out as well as the glaciological work.

In February five men made observations on the Astrolabe Glacier.

An exceptional spell of good weather between December 20 and January 11 speeded up the disembarkation. During this period of over three weeks snow fell on only two days and there were only three days of strong wind.

The equipment required by the hydrographers, glaciologists, surveyors, and helicopter crews was

all landed by December 22, so they were able to get to work at once.

HELICOPTER FLIGHTS

During "Magga Dan's" 53 days at l'Ile des Petrels the Djin helicopter was in 100 per cent. use on 33 days. There were only 12 days on which it could not be used at all. The helicopter was re-crated aboard "Magga Dan" on February 10 after ferrying ashore 170 tons of cargo and 26 passengers in nearly 59 hours of flying time, without mishap. The group was under the command of Captain A. Simonot.

CONSTRUCTION WORK

Among the main tasks of the construction party under R. Guillard was the laying of 130 metres of metalled road four metres wide. This task occupied six men for 21 days. Very light explosive charges only could be used, and the rocks being demolished had to be shrouded in steel nets to prevent possible damage to base buildings.

The construction of a shelter (number 21) for cosmic ray studies was also carried out and considerable alterations were made to the Base. The vehicles were reconditioned where necessary.

HYDROGRAPHY

A full programme of hydrographic work was carried out. The summer's work in conjunction with that of previous years and the extension of photographic coverage will facilitate the production of a "Terre Adelie Pilot."

In biology, the work done included 14 dredges in the environs of l'Ile des Petrels to obtain bottom samples at depths of from 0 to 20 metres, horizontal and vertical plankton trawls, water sampling for temperature and salinity, a study of Giant Petrels on one of the islands of the archipelago, and census and marking of Fulmar nests on l'Ile des Petrels.

"Magga Dan" left for Hobart on January 17 in order to take Ricou back for hospital treatment. Before this date work was carried out on chart-correction, biology and hydrography, off the Astrolabe Glacier, at Cape Bienvemu, and Cape Jules, off the Zélée Glacier and at Port Martin.

The two small craft "Christine" and "Evelyne" which had been extremely useful during the work referred to above, were both damaged during a heavy gale on the 18th. A rock used for mooring was dislodged, and the two boats were dashed against the coast. They were taken back to France for repair.

CHANGE OVER

On February 1 the new wintering team took over the base. The following day the base was visited by the Australian supply-vessel "Thala Dan" with Philip Law on board.

Further cartographic, hydrographic and biological work was undertaken, after the return of "Magga Dan" from Hobart. Ricou came back with the ship. For the first time the topographic survey was extended as far as Mathieu Rock. "Magga Dan" finally sailed for Hobart on February 14.

Radio communications with Noumea, McMurdo, Mirny and Kerguelen were satisfactorily established, but Wilkes presented some difficulties.

SETTLING IN

February was a month at once smiling and deceitful: smiling because it enabled the new-comers to begin housekeeping after 42 nights in the garage, deceitful because it was a shocking month climatologically, with wind, snow and blizzard reducing an already short month to a mere week during which outside activities were practicable.

Every day, when weather permitted, everyone not otherwise employed sallied out to gather up tins, casks, old planks, boxes, frozen-in rubbish, etc. The most spectacular "save" was that of the Continental tractor half buried in the snow since 1956.

Leisure time interests included physical exercises before dinner every day, English lessons after dinner, and a game of radio-chess with the Russians at Mirny.

THE NEW TEAM

The "Magga Dan" with the new French expedition (TA13) for Terre Adélie will leave le Havre about October 10 and is due to arrive in Terre Adelie early in December, via Hobart.

The Expedition programme for 1962-63 differs greatly from those of previous years. The Scientific Organization responsible for the programme implemented by Expéditions Polaires Francaises has agreed to devote the efforts of the 1963 wintering party to an extensive remodelling of Dumont d'Urville Station. Of recent years the greater part of the expedition's resources has been devoted to equipment, apparatus and scientific observations, to the detriment of the Base installations. The buildings erected in 1956 at the commencement of the I.G.Y., were temporary structures. When the French Government decided that as from 1959 the base should be a permanent one, and in view of the projected acceleration of scientific activity for the Year of the Quiet Sun, modernisation of the base became essential.

In addition to the amenities (mentioned above) installed last summer, the following installations will be undertaken during the coming year:

The various depots will be dismantled and re-arranged and a full inventory made.

Reinforced concrete foundations will be prepared for the erection in 1963-64 of a power plant, two laboratory blocks and a garage.

The living quarters will be given over entirely to dormitory accommodation and the magnetic ionosphere and meteorological laboratories which at present take up much of the space will be transferred elsewhere.

The construction of new living quarters is scheduled for the season following the Year of the Quiet Sun.

In the light of all this construction work, the scientific programme for 1962-63 will be limited to—

Aurora and night sky (two men)
Ionosphere (one man)
Meteorology (one man)
Radio-activity (one of the above)

All the other members of the expedition will be engaged on construction work. The year's leader will be Robert Guillard, a member of Expéditions Polaires Francaises since 1947, who has taken part in no fewer than 13 expeditions either in Greenland or in Terre Adélie, including the first year in Terre Adélie for the I.G.Y., 1955-57. He was responsible for the construction of Dumont d'Urville and Charcot Stations.

The wintering party will number 20. M. Paul Emile Victor will direct the summer activities. For this period two Alouette helicopters will be in use.

A PENGUIN BOOK

Readers wishing to have Prevost's fine study *L'Ecologie du Manchot Empereur* may obtain a copy from Hermann, 6, rue de la Sorbonne, Paris Ve, France, at a cost of 21,00 N.F. (See review in June "Antarctic"—and your bookseller.)

800-MILE FLIGHT

A bird taken from its seaside nesting site, flown 825 miles inland, and then set free, has found its way back to its mate and young chick. This remarkable demonstration of homing instinct was accomplished in 10 days and involved a flight over the cold, barren, and comparatively featureless terrain of the Antarctic Continent.

The bird was one of six South Polar skuas caught and banded at Cape Crozier on January 25. The skuas were transported to McMurdo Station by helicopter and flown from here directly to the South Pole aboard a U.S. Navy C-130 aircraft. On arrival at the Pole the same afternoon, the birds were released.

One of the six was seen again at its Cape Crozier nest on the afternoon of February 4. The bander had been camping near the nesting area ever since the homing experiment was initiated and had kept a regular watch over the nests involved.

This is believed to be the longest experimental demonstration of the homing ability of these birds.

NEWS FROM S.A.N.A.E.

(70°20'S., 2°25'W.)

Early in March the third South African National Antarctic Expedition reported as follows:

We had another blow on February 24, with gusts to 40 knots. Then followed two days of fine weather. On the 27th the wind started to blow from the east and lasted for three days with gusts to 60 knots and lots of blowing snow.

Within seven days from the first blizzard the 330 ft. long snow corridor was dug out and covered. This corridor provides ample storing space for boxes and fuels. Driftsnow still comes in in a few places; these holes will be covered now. The wiring of the technical hut still has to be done.

The small OC3 Oliver tractor has been repaired and is of great value.

The first stars are already visible in the evening. The coldest temperature so far has been —25° C.

The three parakeets join in the conversations during meal times.

LUMINOUS OBJECT

At 2007 GMT on March 18 a brilliant luminous object was seen to the north-east of the station. The object moved from east to north at about 10 degrees above the horizon; it was visible for about 10 seconds.

OLD STATION TO NEW

On March 21 about 90 per cent. of the meteorological instruments and equipment had been transferred to the new station. One Redifan G40 B transmitter, two Redifan R40 M receivers, one PYE VHF transmitter/receiver and a certain amount of mechanical spares and supplies were still at the old station.

INJURIES

On March 21 Danie Olivier, diesel mechanic, fell in the snow corridor and suffered from brain and spinal concussion. He recovered speedily and by the end of the month he could already assist in the lighter tasks.

On March 8 Albert Brand hurt his foot under a tractor. After the foot had been put in plaster of Paris and he had to use crutches, he also recovered completely.

On Thursday, April 12, the first radio contact with another Antarctic Base (Mawson) was made from the new S.A.N.A.E. station. Unfortunately conditions were poor and this first contact did not last long.

IN MEMORIAM

While the M.S. R.S.A. was lying in Polarsirkelbukta, the ship's radio operator, Mr. Thomas Moriarty, became ill due to heart trouble. The two doctors were by his side but at 1030 on February 8 he passed away.

At the request of his family in Ireland, Mr. Moriarty was buried on the iceshelf on February 12.

S.C.A.R.

The annual S.C.A.R. meeting was held at the University of Colorado, Boulder, from August 20 to 24. New Zealand's delegates were Mr. W. H. Ward, Director of the Dominion Physical Laboratory, and Mr. G. W. Markham, Superintendent of the Antarctic Division, D.S.I.R.

In addition to the general S.C.A.R. meeting, several specialist sub-committees have been meeting under S.C.A.R. auspices to discuss particular aspects of Antarctic exploration and research.

LOGISTICS

At Boulder, August 13-17, a Logistics Symposium was held. The delegation from New Zealand comprised Mr. G. W. Markham, who was joint organising secretary of the Symposium, Mr. F. Ponder, Ministry of Works (architect of Scott Base), Sq. Ldr. J. R. Claydon, R.N.Z.A.F., who was senior pilot of the New Zealand component of the Commonwealth Trans-Antarctic Expedition, 1956-58 and Cdr. J. Lennox-King, Commanding Officer of H.M.N.Z.S. "Endeavour."

SUMMARY OF THE YEAR'S WORK BY BRITISH ANTARCTIC SURVEY

News from the British bases is scanty as activities during the winter months have been confined to routine scientific observations and general maintenance work.

Readers will, however, be interested in the following brief progress report to supplement the accounts of field work and summer relief activities which have appeared in earlier issues.

Seven main bases and three subsidiaries were relieved last summer and occupied during 1962 by a total wintering party of 89. An eighth main base (Port Lockroy, Wiencke Island, off the west coast of Graham Land) was closed down, and its staff and equipment transferred to the Argentine Islands base. The Survey's two ships, R.R.S. "John Biscoe" and R.R.S. "Shackleton," were again assisted by the charter ship, M.V. "Kista Dan," and by two Otter aircraft operating from Adelaide Island.

PHYSICAL SCIENCES

A full programme of geophysical, meteorological, auroral and tidal observations was carried out at the two observatories at the Argentine Islands and Halley Bay. Ionospheric soundings and the investigation of "whistlers" were transferred to the Argentine Islands in January when the Port Lockroy base was closed down.

The magnetic survey of northern Trinity Peninsula has been extended southward from Hope Bay and now covers the area north of 63°51'S. Seaborne magnetic surveys have been confined to detailed work in the Bransfield Strait and to the north-west of the South Shetland Islands. Gravity observations, including repeat readings at stations established in 1959-60 and 1960-61, now cover most of the west coast of Graham Land as far south as Fossil Bluff at 71°20'S. in Alexander Island and isolated points on the east coast. Experimental seismic shooting in the north-east part of the Bransfield Strait proved to be most successful. Palaeomagnetic investigations have also continued successfully and the main results are now being published.

TOPOGRAPHICAL SURVEY

The triangulation of the east coast of Graham Land has been continued southwards to the limit of the existing aerial photography in about 65° S. Further south, in the Drygalski, Green and Crane Glacier areas, detail has been filled in by sledge traverse and plane-table survey.

The triangulation of Adelaide Island was started in the south and south-east of the island, and was extended to the off-lying islands during the summer. In the north of the island, reconnaissance was carried out for a tellurometer traverse planned to link the triangulation in the south with earlier work in Hanusse Bay, but bad weather prevented any observations from being made. Surveyors based at Stonington Island travelled by Muskeg to Fossil Bluff in George VI Sound, but work there was curtailed by unusually high temperatures and resultant wet snow. However, they managed to reconnoitre southwards from Fossil Bluff to Stephenson Nunatak (72°11'S.) and set up stations for a tellurometer traverse.

During the 1961-62 summer, additional angles were observed in the Joinville Island group, supplementing the previous year's work. Six tellurometer lines were measured on Robert, Nelson, Greenwich and King George Islands in the South Shetlands, in spite of very bad weather.

Compilation was continued by the Directorate of Overseas Surveys and three topographical maps were published during the year—one in the 1:500,000 series and two 1:200,000 sheets. Work also continued on the Trans-Antarctic Expedition maps. These and all future maps will use the cartographic symbols as agreed by members of S.C.A.R.

GEOLOGY

Detailed geological surveys of the James Ross Island area and Trinity Peninsula, north of Cape Longing, have been completed. A reconnaissance survey of Adelaide Island is nearing completion and detailed work has been continued in central Marguerite Bay and in the vicinity of Fossil Bluff. The raised beaches of the South Shetlands have also been investigated.

Particular emphasis has been placed on stratigraphical, palaeontological and structural investigagations in order to correlate the areas already investigated. The preparation of a comprehensive geological map of Graham Island, compiled from all available sources, is nearing completion.

GLACIOLOGY

Glaciological studies on the small ice caps of the Argentine Islands have been completed and routine observations and measurements are continuing at other stations.

Sea ice observations were carried out from all bases.

BIOLOGY AND SOIL SCIENCE

As part of the 1961-62 expansion of biological research a number of new programmes were begun at Signy Island in the South Orkneys. Priority has been given to projects providing fundamental background information such as the study of processes of soil formation, solifluxion phenomena and temperature regimes at various depths. In the 1961-62 summer, 180 soil samples were collected from a representative range of sites and brought back to England in cold-store. These are now being examined by chemists and microbiologists. Also during the summer, a primary survey was made of the vegetation of Signy and a substantial collection of mosses, liverworts and five flowering plants obtained. The ecology of the more important species was studied in some detail.

A new programme of research on the invertebrate fauna of soils and bryophyte mats was also begun at Signy and will continue over the next two years. The freshwater fauna of a series of small lakes is also being examined in detail in relation to essential changes in the composition and temperature of the water.

Ornithology has continued to be an important part of the biological programme. Detailed work has been done on the general behaviour and breeding biology of Cape Pigeons and Sheathbills. Adult and young Giant Petrels and nestling Cape Pigeons have been ringed in numbers together with smaller totals of other species.

Routine observations on the elephant seal population have continued and Weddell Seal pups have been tagged.

Some biological work has also been carried out away from Signy Island. Botanical collections have been made in many areas including the South Sandwich Islands. At Halley Bay a study of the endocrinology and behaviour of Emperor penguins was concluded, and the collections made are being examined in England. At South Georgia, the routine study of elephant seals in relation to the sealing industry has continued, and a programme of research on the breeding biology of the fur seal has been completed.

WANTED!

ANTARCTIC Vol. 2, No. 2

(June, 1959)

Enquirer willing to purchase or to exchange Vol. 1, No. 1, 2, 3 or 4. Apply: Secretary, N.Z. Antarctic Society.

DEEP FREEZE 63 PLANS EARLY START

United States operations in the Antarctic for the coming season are scheduled to begin earlier than ever before.

Rear Admiral David M. Tyree, who will command U.S. Naval Support Force Antarctica until his successor, Rear Admiral James H. Reedy, takes over, probably at the midway point of the operational season. Deep Freeze 63 will be Admiral Tyree's fourth command in Antarctica.

If all goes according to plan, the first aircraft will end the six-month winter of isolation for the 288 Americans now in Antarctica on September 15, when Admiral Tyree hopes to make a ski-landing at McMurdo Station. September 15 would be twelve days earlier than any previous break-through of the winter solitude.

Deep Freeze 63, involving some 4,000 men from all branches of the service, using twelve ships including the New Zealand Navy ships "Rotoiti" and "Endeavour," and some 36 aircraft, is expected to be well under way by mid-October, by when the airlift phase will be in the midst of flying thousands of pounds of passengers and cargo to the inland and coastal stations under U.S. control. November should see the breaking-up of the ice by the ice-breakers to permit the passage of cargo ships and fuel tankers bringing to the continent the provisions, fuel and equipment that will be handled from there on primarily by aircraft, to fulfil the basic mission of Deep Freeze 63—the support of the U.S. Antarctic Research Programme, which is under the auspices of the National Science Foundation.

PROJECTS PLANNED

Major projects for the coming season include the exploration of the Palmer Peninsula area for the site of a future scientific camp; the establishment of Eights Station, a new year-round science outpost at the place where last year's "Sky-Hi" airlift project established a temporary scientific camp (see "Antarctic," March, 1962); four major overland traverses, one from Byrd Station to Little Rockford summer weather station, another from Byrd Station north-eastward to the Martin Peninsula to search for a site for off-loading bulk fuel for Byrd Station; and two manned by scientists from the University of Wisconsin, beginning at the South Pole, to study snow geophysical features high on the polar plateau.

At McMurdo Station, the largest of the U.S. Antarctic stations, a large (40 x 100ft.) sea-water distillation plant is to be constructed, as well as a partial sewerage system and other construction works for further storage space and extension of present facilities.

At Byrd, the cutting and roofing of three tunnels and an aviation fuel storage area, and the erection of three new buildings within this "city under the snow" are among the planned works; and construction plans for Amundsen-Scott and Hallett Stations are laid out.

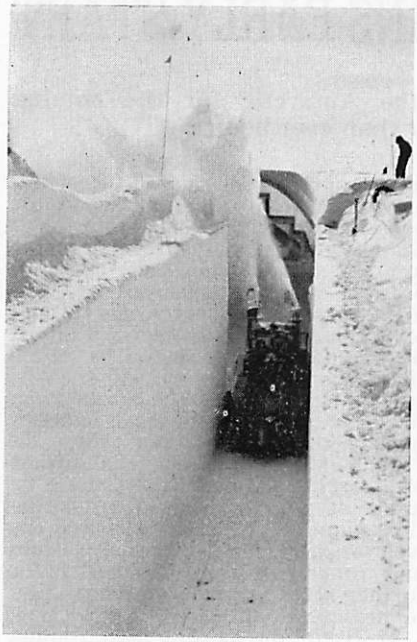
A military version of the Boeing 707 is due to arrive at Christchurch International Airport on September 11. This aircraft carries 61 passengers and will fly direct from Honolulu to Christchurch.

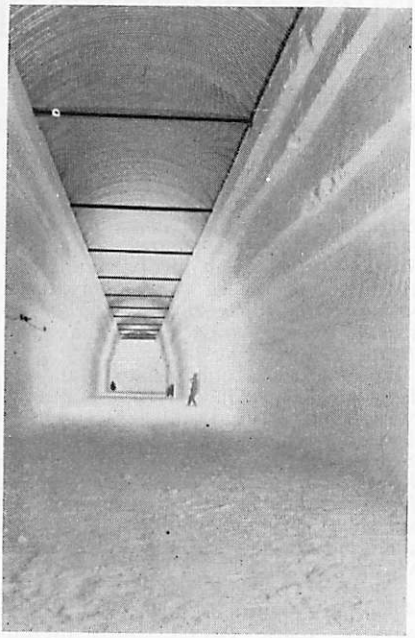
Considerable additions are to be made to the facilities for scientific research at the McMurdo Station. The biological laboratory will be considerably enlarged. The new cosmic ray building is also to be enlarged, in preparation for the International Year of the Quiet Sun.

Further experimenting in snow compaction is scheduled to make possible the construction of a snow runway for wheeled aircraft on the Ross Ice Shelf.

AWARD MADE TO VX-6

The Navy Unit Commendation has recently been awarded to U.S.





MAKING THE NEW U.S. BYRD STATION

Top left: The 19-ton Peter Snow Miller completing a passage-way between the two tunnels.

Top right: The bare interior of one of the tunnels, showing the underside of steel arches that form the roof.

Left: Seabees install steel arches roofing a tunnel. The arches will be covered by nearly seven feet of snow.

Official U.S. Navy Photographs.

Naval Task Group 43.2, better known to readers as VX-6, for "exceptionally meritorious service from November 1955 to April 1961." The presentation of the commendation was made by Admiral Tyree at Quonset Point, Rhode Island, on April 19 last. The citation referred to the great co-operation and assistance rendered by the Task Group to the scientific effort made in Antarctica, citing the Group's achievement in carrying out the first flight of land-based aircraft from New Zealand to Antarctica; in making long exploratory flights in the face of perilous take-off and landing conditions, unreliable communications, inaccurate charts and adverse weather; in performing the mercy flight from McMurdo to Wilkes and back to evacuate the Australian who was ill; and the technical skill, co-operative spirit, courage and devotion to duty manifested by all personnel of this Group.

RELOCATION OF SOUTH MAGNETIC POLE

New Zealanders A. L. Burrows and A. Hanley, working in conjunction with a U.S. Navy Hydrographic Office, succeeded in finding the present location of the south magnetic pole (see "Antarctic," March, 1962). While U.S.S. "Burton Island" towed a shipboard magnetometer back and forth across Commonwealth Bay, Burrows and Hanley used the ship's helicopters to fly to various shore stations to measure the angle of magnetic inclination. A preliminary plot indicates that the pole is now located just off-shore in Commonwealth Bay at about 143°E,. 67°S.

SENTINEL RANGE MAPPED

Three topographical maps covering the Sentinel Range of Ellsworth Mountains have been published by the U.S. Geological Survey, being the first of a series of 1:250,000-scale maps being prepared by the Survey. Thirty-eight more are now under preparation.

The three maps of the Sentinels as well as physical features, carry many names appearing for the first time since their approval by the Board on Geographic Names. The maps are entitled the Newcomer Glacier, Vinson Massif and Nimitz Glacier. Copies may be obtained from the U.S. Geological Survey, Washington 25, D.C., for 25 cents each.

ROSS SEA ROCKETS

The sixth high-altitude weather rocket to probe the atmosphere over the Ross Sea was scheduled to be fired about June 20 from a launching site a mile from McMurdo. Since April, five 92 in. weather rockets had been fired. Two failed and a third soared to a height of 202,000 ft.

The high-altitude weather probe, sponsored by the National Science Foundation, is a highlight of the mid-winter scientific programme. According to Mr. J. F. Bettle, leader of the three-man rocket-firing team from Texas Western College of the University of Texas, the 1962 meteorological programme is the first systematic rocket probing of the upper atmosphere to be conducted from a land site in Antarctic history..

THE BYRD SATELLITE

(See "Antarctic," June, p. 67.)

A fuller explanation is now possible of the evacuation of the auroral sub-station 42 miles north-east of Byrd Station which was to have been manned throughout the winter by a team of three which included New Zealander G. N. Johnstone.

The station's 8 k.w. diesel generator failed on March 13. A new 10 k.w. generator was delivered to the sub-station on March 22, but communication with Byrd was not wholly successful, and in the absence of a stand-by generator and effective emergency communications the sub-station was closed down.

"ELTANIN"

The U.S. Research Ship "Eltanin" left Valparaiso on July 5 for a cruise in the Drake Passage south of Cape Horn. The vessel is reported as having gone as far south as the S. Shetland Islands. She was expected to return to Valparaiso early in September.

Seven Men Will Never Scoff Again

Claude Taylor sent the following message on July 9 after the men at Hallett Station had heard a radio news report from New Zealand of a "strange sky phenomenon" seen there.

"Following observations recorded here by several observers and on all sky camera colour photo may be of help to interested parties in New Zealand.

1. Object appeared at about 11.10 hours Greenwich on July 7. Took about three to four minutes to cross from south horizon to north horizon.

2. At northern horizon bearing from Hallet was 51 degrees east from true north. Closest approach to zenith was 36 degrees when bearing was 39 degrees west from true north.

3. Object appeared as three with resolved spots of light, one much brighter than other two. Greyish form around them was possible vapour trail. Overall impression was that object orbited well within atmosphere. Certainly it was below normal auroral heights as it passed below auroral.

4. When bearing was approximately true north a flash of light occurred which did not alter orbit or form at all. No noise heard.

5. Revolution of three spots of light at great height indicated large spread. Relative position of spots did not seem to change. Camera photo did not revolve spots.

6. No resemblance to satellite or any sky phenomenon seen by any of seven observers who are unlikely to again scoff at reports of flying saucers."

Taylor, Hallet Station.

CONFIRMATION?

A luminous object similar to that described by Taylor as seen at Hallett Station was observed by personnel at the South African SANAE Station, on the other side of the Antarctic, on March 18.

HALLETT STATION

NEW ZEALAND TRIO FOR 1963

As usual, the scientific staff to winter over at Hallett Station will include three New Zealanders. They will be:

D. M. SUTER (39), of Christchurch, Senior Technician. Doug Suter was born in Wellington and educated at Christchurch B.H.S. and Mt. Albert Grammar School. A radar technician he served in the R.N.Z.A.F. from 1941 to 1945, and later was in the Army (R.N.Z.E. M.E.). He was senior Ionospheric Observer at Campbell Island 1959-60. He is married and has three children.

B. J. L. MAIN (22), Waiouru, Technician. Brian Main is a Radio Technician in the New Zealand Army School of Signals, Waiouru. He was born at Christchurch and went to St. Bedes' College. He has served for 11 years in the Scout Movement, being a Queen's Scout and a Scoutmaster. He has represented Central Military District at Soccer.

L. J. WYLDE (22), of Hamilton, Technician. Len Wylde is Tauranga born and was a pupil of Hamilton B.H.S. 1952-56. He obtained his B.E. (civil), at Auckland University College, and worked in Wellington and Hamilton.

Two men will be carrying out biological investigations, chiefly at Cape Hallett, during the summer months. They are **B. E. Reid, who** has had considerable previous Antarctic experience, including a winter at Cape Hallett, 1959, and **H. J. Cranfield,** M.Sc., whose two brothers, Bill and Bob, have both wintered at Scott Base in earlier years.

EIGHTH SOVIET EXPEDITION PREPARES TO GO SOUTH

Plans for Soviet Antarctic work in 1962-63 have been announced by the Marine Department of the U.S.S.R. Five stations will be operating during the forthcoming Antarctic summer, and four of them will be maintained throughout the 1963 winter.

The expedition will continue the established scientific research programme and will also make preparations for the International Year of the Quiet Sun, January 1964—December 1965.

More than 40 countries have agreed to take part in the Year of the Quiet Sun. During that period Soviet scientists will conduct observations at four Antarctic stations: Mirny (66°33'S., 93°01'E.), Novolazarevskaya (70°46'S., 11°49'E.), and at two stations to be reopened in 1963. Vostok, situated in the region of the two Poles (South Geomagnetic and the Pole of Cold) (78°27'S., 106°52'E.), was closed down on January 21 and will be re-activated next January. Molodezhnaya (67°58'S., 44°02'E.) in Alasheev Bay was closed on March 31 and will re-open this summer. The seasonal station Komsomolskaya will also be active.

At the end of October and the beginning of November the "Ob" and the "Kooperatsaya" will leave Leningrad with the personnel and stores of the eight Soviet expedition. They are expected to reach the Antarctic in December.

The eighth expedition will also continue the scientific investigations begun last year in the region of Enderby Land, with emphasis on geology.

The "Ob" will deliver several thousand tons of expedition supplies, including powerful caterpillar-tracked truck-tractors, which will take supplies to Komsomolskaya and Vostok, and aircraft specially equipped for Antarctic work—"IL-14", "LI-2" and "AN-6" airplanes, and an "MI-4" helicopter.

FIRE-PROOF HUTS

Two experimental huts are constructed from non-combustible materials. It is intended to establish one at the reopened Molodezhnaya Station, and the other at Vostok. The expedition's marine division will carry out oceanographical research in the coastal waters of Antarctica—in the area between Mirny Observatory and Novolazarevskaya Station.

The well-known Polar explorer Dr. M. Somov (Hero of the Soviet Union) has been appointed leader of the expedition. He led the first Antarctic expedition.

In accordance with tradition, the members of the eighth expedition will continue to co-operate with scientists of Australia, Britain, New Zealand, the U.S.A., France, and other countries conducting research in Antarctica. The members of the Soviet expedition will assist scientists from Czechoslovakia, the German Democratic Republic and other nations.

FROM THE OB

Oceanographic observations will be made this summer by scientists on the "Ob," in the coastal waters between Mirny and Novolazarevskaya and along the standard section on 20°E. Detailed observation of the convergence between 100°E. and 0° will be made, as well as observations along the route from the Soviet Union to Antarctica and back.

THE STATIONS

MIRNY, 30m. above sea level, will have in 1963 a winter population of 56, 20 of whom will be scientists.

NOVOLAZAREVSKAYA is 112m. above sea level, and will have six scientists and seven others wintering-over.

VOSTOK: 3,420m. above sea level, personnel 12 (six scientists).

MOLODEZHNAYA will have a winter population of four scientists and two others.

The newspaper "Golos Rigi" of July 6 gives some further details based upon an interview with Aleksander Afanasev.

MOLODEZHNAYA

Members of the eighth expedition will be working at Molodezhnaya Station. This station has been established on a favourable site, where the bedrock crops out above the surface of the ice-cover. Several fresh-water lakes are situated nearby. Veterans who have wintered-over at other stations in Antarctica call this region the "Southpolar Switzerland."

Alongside the new station there is an area suitable for the landing of aircraft. A great deal of construction work is to be done at Molodezhnaya. The village will be enhanced by a new hut built of "Arbolite" and other specially manufactured light, but strong, non-combustible materials.

SCIENTIFIC RESEARCH

The research programme of the eighth expedition is vast and interesting. Meteorologists will conduct aerometeorological observations from land and air, the results of which will be communicated by radio to the Soviet Union, and will make it possible to prepare local weather forecasts for Soviet Antarctic whaling fleets. The geophysicists will complete a large programme of geomagnetic, ionospheric and seismological observations and continue to study cosmic rays, polar aurorae, earth currents and the propagation of radio-waves. The glaciologists will investigate off-shore ice in the Davis Sea and continue to study the structure and depth of the Antarctic continental ice-cover. Geologists and geographers will explore vast areas of Enderby Land. They will be able to travel by land and by air. During flights they will make photogrammetric surveys. The scientists will not be confined to studying the land. The marine division of the expedition will carry out oceanographic research in the area between Mirny and Novolazarevskaya.

HEADED FOR VOSTOK

At the end of December 1962 four truck-tractors and a tractor will set out from Mirny and head for Vostok towing sledges. This train will cover nearly 1,500 km of extremely difficult country and deliver fuel, scientific equipment and other stores to Vostok. The train will return from Vostok to Mirny.

POLISH GROUP

The "Ob" will carry stores for Dobrowolsky Station, which was transferred to the Polish Academy of Sciences by the U.S.S.R. The "Kooperatsiya" will deliver a group of Polish polar explorers and scientists to this station.

It was reported on July 19 that the Polish scientists, Professor Stefan Moncharsky and Tadeusz Jasiuk, had been visiting Soviet colleagues in Leningrad. Before leaving for home Professor Moncharsky told "Tass":

"During our stay in Leningrad we have had an exchange of views with Soviet scientists on forthcoming operations in Antarctica. This autumn our scientists will commence work again at Dobrowolsky Station, nearly 400 km from Mirny. The Polish scientists will leave for the Antarctic on board the 'Kooperatsiya' together with members of the Soviet expedition. They will be transferred from Mirny to their own station by airplanes and helicopters."

AT HASWELL ISLAND

Pryor, the American biologist who is the U.S. exchange scientist at Mirny this year, reported that it was planned to establish an emergency shelter and cache on Haswell Island for biological observations during the 1962 winter. The last skuas and Adelie penguins had left the area on March 16, and their departure was followed by the return of the Emperor penguins.

It was intended, he said, to flag a trail from Mirny to the island as soon as the ice was thick enough,

and to make journeys to this and other off-shore islands at three-day intervals.

MAPPING

The Soviet Navy in co-operation with the Arctic and Antarctic Institute is publishing in a set of 15 sheets the charts produced by the Russian Antarctic Expedition of Bellingshausen and Lazarev in 1819-1821.

ON THE SCREEN

"Trud" reported on May 18 that two new coloured shorts on Antarctica have been made by the Central Studio of Documentary Films, under the direction of producer-cameraman Mark Troyanovsky.

"Moscow-Antarctica" is the title of one of these films. This feature is devoted to the intercontinental flight, the first ever made, by two Soviet aircraft from Moscow to the Antarctic. (See "Antarctic," March, 1962.)

The second feature, "The Continent of Peace," is an entertaining story of Antarctic explorers from many lands. The audience sees the Mirny settlement of the Soviet scientists, the American base McMurdo, the Australian scientific station, the Japanese settlement, and so on. "Here in the ice country of the 6th continent scientists of different nations are readily maintaining friendly links and exchanging important scientific information," says "Trud."

SUN APPEARS

Dr. V. Konstantinov reported from Novolazarevskaya, in the Schirmacher Oasis, Queen Maud Land, that the sun on July 26 lit up the rocky hills and ice with its rays. The rising of the sun coincided with particularly intensive polar aurorae and a violent magnetic storm. Physicist N. Dimitriev, who is spending his second winter in the Antarctic, said that this was the first time he had seen such a polar aurora. The magnetic storm caused a stir among the radio men who spent many hours trying to establish contact with Mirny.

ADELIES ON ICE

In "Information Bulletin," the Russian scientist L. I. Dubrovin reports this unusual behaviour in the penguin world:

"Adelie penguins unlike Emperor penguins hatch out their young on the ground, therefore, one can only meet birds sitting on their eggs on portions which are free from ice and snow. Great was our surprise, therefore, when in November of 1960 in the region of Lazarev Station we perceived a small colony of Adelie penguins sitting on eggs right on top of the ice and iceberg. Beneath these birds water-filled holes 20 to 25 centimetres wide and up to 20 centimetres deep had formed. In fact, each penguin with an egg was sitting in an ice bath.

"These holes were also found without birds. The water in them had again changed into ice and on the bottom deserted and cold eggs lay.

"What were the penguins about when they chose this iceberg for hatching out eggs? Obviously they were confused by the dark colour of its surface due to the small inclusion of fine mineral particles. In this region there are no outcrops of rock on the coast. The nearest parts which are free from ice are at Schirmacher Oasis situated 80 kilometres from the coast.

"Unfortunately we were unable to follow to the end this unusual behaviour of these penguins. Evidently they did not succeed in hatching out their young under such conditions."

Soviet diplomat Nicolai Alexayev told the 12-nation Antarctic conference in Buenos Aires that the Antarctic is a "part of our planet still unknown when man is already travelling in outer space."

INDEX

We regret that the index to "Antarctic" volume 2 is not yet ready.

ANTARCTIC TREATY MEETING

The New Zealand Ambassador to Washington (Mr. G. R. Laking) headed the New Zealand delegation at the Antarctic Treaty Consultative Committee meeting which opened in Buenos Aires on July 18. With him was Dr. E. I. Robertson, D.S.I.R., and Mr. D. G. B. McLean, Second Secretary to the New Zealand Embassy in Washington. The meeting is the second of its kind held since the pact to preserve the Antarctic for peaceful scientific purposes was signed by 12 Powers in 1959. The first consultative committee meeting was held in Canberra last year.

The Australian High Commissioner to Canada (Mr. D. O. Hay), Mr. P. G. Law, Director of the Antarctic Division, and three others attended on behalf of Australia. Heading the United States delegation was Mr. Robert McLintock, the U.S. Ambassador to Argentina.

Argentina's Foreign Minister (Dr. Bonifacio del Carril) looked ahead to a time when Antarctica could serve as "a territory of transit" linking South America with Australia and New Zealand.

Delegates to the conference met on July 19 behind closed doors guarded by a permanent force of 50 policemen, says a press report from Buenos Aires. It was the second day of the consultative conference.

Some delegations were reported itching to bring up questions involving jurisdiction.

The meeting was held to consider the furtherance of the objectives of the Antarctic Treaty and discussion centred round measures to continue and if possible increase co-operation among the 12 Governments carrying out scientific activity in the Antarctic.

Matters considered at the meeting included the conservation of wild life in the Antarctic, arrangements for radio communications, logistics, the exchange of information on proposed scientific activities, administrative facilities and support for the International Quiet Sun Year.

LIGHT AHEAD?

One matter discussed was the preservation of historic sites in Antarctica. Why, asked a writer in the London "Times" on July 7, will the conference be addressing itself to this problem? "The signatories hope," he said, "that by reaching agreement on interesting but unexceptionable issues like this they will learn to work together and trust each other until they feel confident about tackling, with some hope of agreement, the controversial and quite momentous problems of an almost virgin continent. What, for example, will happen when one country discovers in the territory claimed by another country some rich and accessible mineral deposit for which there is an urgent world demand? No one knows. The contingency could not be covered under the terms of the treaty and last year's consultative meeting in Canberra did not attempt to discuss it.

"The treaty came into force only a year ago and all the member countries know how much anxious negotiation preceded its signature at Washington in December, 1959. None of them wants to imperil too soon the remarkable achievements which it represented, not least the first international inspection system accepted by Russia, and a formula on sovereignty accepted by countries recognising and not recognising claims within the area. The acceptance of a status quo is not often a permanent solution for anything, but the treaty is to run for 34 years and the habit of co-operation may grow.

"Then, if the area has remained without military installations, sovereignty would have become much less important and individual claims might finally be waived. The world would surely be relieved if five-and-a-half million square miles of it became completely supra-national. This is the ultimate hope.

"The Antarctic Treaty exists to help the original signatories and subsequent signatories to cope peacefully with emerging situations, which will obviously become more complex as the continent is developed."

IN THE SUB-ANTARCTIC

Reports from the Islands

MACQUARIE ISLAND

(Australia)

At Macquarie Island in June darkness falls about 3.30 p.m. The first half of 1962 was relatively mild, but in June, reports leader Pedersen, "We had snow, sleet or rain on 29 of the 30 days."

Two men made a field trip lasting 17 days. "They visited many parts of our rugged island—down the east coast to Hurd Point and several areas on the gaunt west coast." The rats at Lusitania Bay, they reported, "are almost man-eaters—attacking boots and gloves."

Evans has visited Lake Prior fortnightly for plankton investigations.

"Our livestock section," says Pedersen, "has yielded several prime lambs and very sadly, our friends Fred and Freda, the pigs, ended up in the station refrigerators. We look forward to more fresh meat from our flock of sheep. Vic Dwyer's poultry pens are now producing about a dozen eggs daily. Vic has confounded his charges by extending daylight artificially."

During mid-winter's afternoon, Cooke and Miller went for a swim in Buckles Bay. The sea and air temperatures were 39 and 37 degrees respectively. "Robin lolled about as if it was a hot bath, but Johnno didn't last as long for fear of seals (so he said).

"A cold snap early in July left the whole island frozen solid. Unfortunately, this included the plumbing. The uncomfortable result was the hasty sealing of draughty cracks in a ramshackle outbuilding.

"Since the first sighting at Buckles Bay of leopard seals on the day following mid-winter, these animals, with their spotted snakelike bodies and heads, have appeared all along the coast. They are one of the predators of the Gentoo penguins that overwinter here. Another one of the rarer visitors seen lately on Macquarie is the Hooker sea lion. These animals are much smaller than the elephant seals but more aggressive: they will move quite fast and will chase men.

"The O.I.C. and Vestgens made a ten-day trip around the island banding chicks of the Wandering Albatross. These birds nest in the tussocks and on the feather-beds of the west coast. Eleven chicks were banded."

CADETS

When the relief ship leaves Melbourne, probably in December, she will again carry two school cadets for the trip to Macquarie Island. The two boys will be chosen from Command nominations, one being nominated from each command for the final selection by Army Headquarters and the Director of ANARE.

Those picked will not be below the rank of cadet corporal, not less than 16 years of age, and must have given outstanding service during their cadet training.

They must be boys who will be a credit to themselves and the cadet corps.

RESEARCH BOAT

A 13 ft. catamaran-type craft powered by a 5½ h.p. Johnson outboard motor is being used in research work at Macquarie Island.

The boat was specially designed to specifications of portability and ruggedness required for the work.

Beam is five feet, and overall weight is 200 lb. The twin hulls of marine plywood are filled with plastic foam for safety and buoyancy.

The whole craft is painted bright yellow for maximum visibility.

The boat is being used by biologist A. I. Evans, on Lake Prion, a large fresh-water lake in the centre of the island.

Microscopic marine life is collected for classification in a silk drogue towed behind the boat.

MARION ISLAND

The South African Weather Bureau Newsletter says: It is not really cold at Marion Island, and a wind of 60 m.p.h. is nothing new —all you have to do is to put two bricks in your pockets when you go outside.

AUCKLAND ISLANDS EXPEDITION

(New Zealand)

A party of New Zealand and overseas scientists will spend a month on the Auckland Islands from late December next. Although a good deal of information has been accumulated about the biology and geology of these islands by the 1907 expedition organised by the Canterbury Philosophical Institute, and by members of the Second World War coast watching parties (the "Cape Expedition") much scientific work remains to be done.

The members of the party so far are:

Dr. R. A. Falla, Director of the Dominion Museum, leader; Dr. R. K. Dell and Mr. J. Moreland, Dominion Museum; Professor G. A. Knox and Mr. P. Johns, Zoology Department, University of Canterbury; Mr. J. B. Wright, Geology Department, University of Otago; Mr. J. Dumbleton, Entomology Division, D.S.I.R.; Dr. E. J. Godley and Dr. F. J. Fisher, Botany Division, D.S.I.R.; Dr. J. C. Yaldwyn, Curator of Crustacea and Coelenterata, Australian Museum, Sydney; Dr. L. Gressitt, Entomologist, Bernice P. Bishop Museum, Hawaii; Dr. P. James, Lichenologist, British Museum (Natural History), London.

Transport for the party is being arranged by the Antarctic Division, Department of Scientific and Industrial Research.

The base will be at Ranui Cove, in Ross Harbour at the northern end of the main island, where the buildings used by the Cape Expedition are still standing. It is hoped to have a smaller vessel in the area to help with transport around the island and to carry out dredging work for the marine zoologists.

CAMPBELL ISLAND

(New Zealand)

A recent radio telephone conversation with Colin Clark, the Officer in Charge, brought out the following information:

"The weather has consisted of a moderate amount of snow, very little sunshine and plenty of mist and rain; repeat this day after day and you understand a little of our weather.

"Mid-winter's day was honoured as the major turning point in the long winter and was celebrated with a big 'binge' which exhausted all the long-saved luxuries of our solid and liquid stores. During the speeches, reference was made to the desirability of forming an association of ex-Campbell and Raoul Islanders, to promote getting together in similar fashion as the Antarctic boys. Plans to further this discussion are in hand and action will be taken accordingly at the earliest opportunity.

"The year has been highly successful in the field of bird banding. On June 29 Goffin and Clark banded 102 Royal Albatross chicks during a very cold trip around the upper slopes of Mt. Honey. This brought the island's total to over 1,000 Royal Albatrosses banded during the current mating season. This is a very satisfactory figure considering that the banding is done only as a leisure occupation.

"The whole party has kept very good health during the winter and morale has remained very high."

The team for the 1962/63 expedition year has now been finalized and the following will be making Campbell Island their "home away from home" for this period:

Alan Wright, Officer in Charge.
Bill Groenestein, Radio Technician.
John Hall, Cook.
Case Roobeck, Mechanic Handyman.
Ian Fisher, Senior Ionosphere Observer.
Allan Dodds, Ionosphere Observer.
John Squibb, Sen. Met. Observer.
Peter Fox, Met. Observer.
John Washer, Met. Observer.

These men will really form a

VETERANS PASS

A. H. LARKMAN

The death occurred at Wanganui on July 15 of Alfred Herbert Larkman. An Englishman by birth, Bert Larkman was a member of Shackleton's Trans-Antarctic Expedition of 1914-17. He was Chief Engineer of the "Aurora," which carried the Ross Sea component of the expedition to McMurdo Sound, where it was intended that the ship should be frozen in. In May 1915 "Aurora" was carried to sea in a big ice break-up, and drifted for nearly a year before finally reaching New Zealand.

Mr. Larkman went back to England but returned to New Zealand in 1920 and became well known as head of the engineering department of the Wanganui Technical College and as a keen advocate of daylight saving.

A few days before his death Mr. Larkman was cheered by the news that a peak rising from the Polar Plateau has been named Larkman Nunatak.

We are pleased to be able to publish this tribute by an "Aurora" ship-mate who is the sole survivor of the epic depot-laying journey of 1916, south to the Beardmore Glacier.

A TRIBUTE

by R. W. Richards

So Bert Larkman has passed on. He was the first person I met in Hobart in 1914 on my joining the "Aurora" and I had my last long talks with him in March of this year. His photograph and that of Ernie Joyce are before me on the table as I write while on the wall is a picture of the unshipping of the "Aurora's" damaged rudder during her drift in the ice—a formidable task that will always be associated in my mind with him.

I suppose I had more contact with Larkman than the other members of the "Aurora's" shore party for I acted as greaser in the engine room on the voyage down. The engines were in bad shape and my first impressions of Bert were formed then when he was tireless in doing everything possible to nurse them along.

In more recent years I met Bert again and had many intimate talks with him. I think he was one of the most sincere characters I have known. There was very little compromise in his make-up and when he believed in a cause he was tireless in trying to advance it.

Right up to the last he retained the keenest interest in Antarctica and had just managed to complete his story of the "Aurora's" drift before the end. Vale, Bert.

JOHN PIRRIT

Many New Zealanders will feel a deep sense of personal loss in the death of "Jock" Pirrit, who was drowned in a yachting accident at Wemyss Bay in Scotland recently, at the age of 37.

A geologist, a man of action, and a man of vision, he had worked in the Canadian Arctic, had climbed in our own Southern Alps, and had engaged in oil prospecting in Timor and Indonesia, before wintering at Byrd Station as scientific leader in 1959. In the 1959-60 summer he led an American traverse from Byrd Station which greatly increased our knowledge of the northern part of Marie Byrd Land.

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miniature League of Nations originating as they do from various places on the globe and as five of this party have already spent time on the islands this term should prove to be of interest to all.

"It is clear that the discovery and exploitation of the Antarctic continent cannot be credited to any one nation. It is the result of the work of very man expeditions—a truly international achievement."

—Gordon de Q. Robin in Unesco "Courier."

Whales Have Not Disappeared

The frequent reports suggesting the shrinkage of the Antarctic whale population and the necessity for drastic conservation measures may have given many people the impression that whales in Antarctic waters are actually scarce.

A different picture is presented by an article in the May issue of the Norwegian whalers' journal *Norsk Hvalfangst-tidende,* outlining the sightings of sea-mammals on the circumnavigation of the world in southern waters by an expedition of the Academy of Sciences of the U.S.S.R. in the 1957-58 summer.

The Antarctic Ocean section of the voyage, between 60° E. and 120° W., south of the Pacific and Indian Oceans, is recorded as follows (condensed):

Between December 7 and 22, 1957, from the African coast to Mirny, we met and identified at least 77 blue whales, 660 fin whales, 5 sei whales, 10 sperm whales, 15 small minke whales, and up to 1,500 killer whales and large dolphins.

Blue whales were met in groups of 3 to 5 animals, rarely they were seen singly; fin whales—in twos, in threes (usually one calf), and in groups numbering up to 10 animals. Concentrations of these whales numbered hundreds of animals, most of which did not get into the count.

On December 17 we entered a pack ice belt at 62°00′S. and 65° 37′E. Crossing floating ice belts we met groups of fin whales and blue whales; they were seen in large areas of open water. Numerous blows were observed all along the sky line. In one area of water we counted more than 200 fin whales, and more than 50 blue whales.

On December 22 we came up to the roadstead of Mirny. Very big fin whales and humpbacked whales appeared frequently near the shore ice. Once we saw the double blow of a southern right whale. On December 24 four very big fin whales entered the lead made by the "Ob."

Between January 10 and February 12, 1958, when we were working and travelling in the area between Mirny and the Balleny Islands and Rennick Bay we met 189 blue whales, 769 fin whales, 527 humpbacked whales, 47 sei whales, 66 minke whales, and 37 bottle nose and killer whales.

ONE DAY

During one day, January 20, 1958, near the "Ob" at 64°—65° S. and 117°40′—121°22′E., we counted 277 fin whales, 71 blue whales, 68 humpbacked whales, 42 sei whales, 12 minke whales and dozens of beaked and killer whales.

Dozens of very big whales, mostly fin whales, were feeding in huge areas of open water behind the belts of floating ice. Killer whales were encountered even in small pools amidst heavy ice.

A great number of fin whales, blue whales, and humpbacked whales was seen near the Balleny Archipelago in open water and pools of different sizes.

Very big fin whales were observed at the shore ice of Rennick Bay. Near the "Ob" we counted more than 125 humpbacked whales and 26 blue whales. That was less than 8 miles off the shore. In Rennick Bay we watched humpbacked whales playing: several dozens of humpbacked whales appeared suddenly near the "Ob," coming from under the shore ice(!) and jumping out of water for almost ¾ of their length. The school observed included whales of different sizes.

TO NEW ZEALAND

In the period from February 13 to February 17, on the way from the Balleny Archipelago to New Zealand, we met 95 blue whales, 277 fin whales, and 63 sperm whales. Most of the blue whales and fin

whales were moving fast to the north and within an hour groups of these whales outdistanced the "Ob," which moved at a speed of 15 miles per hour.

During the period from March 18 to 29, in the section between New Zealand and Sturge Island (the Balleny Archipelago) we counted 34 blue whales, 255 fin whales, and 273 humpbacked whales. Some of the whales were moving northwards, but most of them were still feeding.

On March 31, in the area of Scott Island, we encountered hundreds of whales which were feeding at ease. We counted near our boat 15 blue whales, about 50 fin whales, and more than 100 humpbacked whales. (A detour was now made to the north.)

By April 20 we returned to the ice zone at 66° S. and 126° W. We were in the midst of numerous icebergs about 100 m. high, newly formed ice and pack ice. Nevertheless whales were frequent. We met there blue whales, fin whales and individual minke whales.

On April 24 we headed northward for Easter Island.

During the 105 days of observation in the Antarctic Ocean alone we encountered and identified 4,089 large whales, including 14 southern right whales, 526 blue whales (12.8 per cent.), 2,378 fin whales (58.1 per cent.), 1,025 humpbacked whales (25.0 per cent.), 73 sei whales (1.78 per cent.), and 73 sperm whales (1.78 per cent.).

Blue whales, fin whales, and sei whales migrating to summer feeding areas or to winter breeding places moved at a speed considerably exceeding 15 miles per hour for quite a long time; in the course of a little more than one hour they could appear at the sky line, catch up with our vessel, and disappear somewhat ahead of it. Therefore, they must have been moving at a speed of about 20 miles per hour.

THE WHALING NATIONS

The annual meeting of the 18-nation International Whaling Commission was convened in London on July 2. Australia and New Zealand were represented.

Among the subjects touched upon was the setting up of an international inspection system of Antarctic pelagic factory ships. It is reported that a meeting was to be convened in August to discuss the matter further.

AGREEMENT REACHED

The Antarctic Whaling Conference in July re-introduced the limit of 15,000 blue whale units previously imposed on the Antarctic whale catch.

Over recent years whaling has become more costly and less profitable. Whales have become steadily more scarce until even the long-established Norwegian whaling industry has been threatened. When the 15,000 blue whale unit limit was imposed the nations could not agree on the proportionate catch for each nation, with the result that larger and larger fleets assembled at the beginning of a season and caught frenziedly until the overall total was reached: a costly process. At the same time, the demand for whale-meat fell, and prices for oil dropped from over £100 a ton to about £50.

When in 1959 Norway and the Netherlands withdrew from the catch-limiting agreement, the overall catch rose above 15,000 units. Marine biologists warned that even this size of catch was too high for adequate conservation measures.

This is why at the recent meeting the catch-limit was reimposed, following an agreement on national quotas: Japan 33 per cent., Norway 32 per cent., the Soviet Union 20 per cent., the United Kingdom 9 per cent., the Netherlands 6 per cent. This agreement will expire in 1965.

Japan and Russia have in recent years been steadily increasing their lead in Antarctic whaling at the expense of the other nations. The

Russians added a new factory ship in each of the last two seasons, making four in all. A fifth is under construction and two more still are planned. The Japanese have increased their fleet by purchase from Norway and Britain.

1961-62 CATCH

Pelagic whaling began on December 12 for fin and sei whales, and on February 1 for blue whales. Catching did not end till April 7, except for the Japanese fleets, which ceased operations late in March, and the season was on average rather longer than in the previous year, 115 days as compared with 96.

In spite of this the catch totalled only 15,242 blue whale units as compared with 16,433 units in 1960-61.

Twenty-one factory ships with a total of 260 catchers were engaged. Provisional oil production figures for the past two seasons are as follows (number of expeditions in brackets):

	1960-61	1961-62
Norway	(8) 743,712	(7) 569,108
U.K.	(2) 196,472	(2) 163,496
Netherlands	(1) 139,774	(1) 90,088
Japan	(7) 667,350	(7) 735,541
U.S.S.R.	(3) 376,263	(4) 351,213*

*Catch for new fleet not given.

BLEAK FUTURE?

A press report from Oslo on August 10 said that only three Norwegian whaling fleets were being prepared for participation in the coming season's Antarctic whaling. Work had been secured for only 1,000 to 1,500 men, compared with last season's 4,000 to 5,000. Owners, said the report, were hesitating to decide after last season's poor catch and the present slump on the oil market.

NUCLEAR POWER

The nuclear re-actor at McMurdo (U.S.) Station began delivering power to the station on July 10. The plant developed a self-sustaining reaction first in early March, and had been under routine checking and observations since that date.

BOOKSHELF

Two short books, each of about 100 pages, have recently been published, both of which make splendid reading for anyone anxious to obtain a general picture of the Antarctic of today. One is Australian, one American, and both are written by prominent Antarctic men who write well. The emphasis in both books is on "what's going on": but the authors of the two books have quite different aims, and there is little overlapping. Our advice is to buy, read, and keep both of them.

THE FAR SOUTH. John Bechervaise, Angus and Robertson, 103 pp maps and illustrations. N.Z. Price 19/-.

John Bechervaise is one of Australia's most experienced Antarctic explorers. He has served three times as Officer-in-Charge of an Australian Antarctic station. His book is a splendid introduction to Antarctica for the adult, who will appreciate it all the more if he has a good general education and an enquiring mind, and a liking for sound imaginative writing.

A brief historical survey is followed by chapters on the general nature of the "World of Ice," the elements which shape its climate, its natural life, how man lives in this stern environment, and the prospective value of the scientific research which is today the principal reason behind the nations' continuing presence in the Far South.

The penetrating wisdom of this little book, and the quality of the writing, are evident in the final words:

"We live in an age of atoms and satellites. Antarctica, at this long last, could become a bitter testing ground of the strength of national rivalries and ambitions—or it could provide a vast international laboratory for the study of geophysics, whose language is universal and whose achievements are a common heritage of humanity."

DEFROSTING ANTARCTIC SECRETS. Henry Francis Jnr. and Philip M. Smith, Coward McCann Inc., New York, 121 pp., illustrations. U.S. price $2.95.

This is the ideal book for a questing, adventure-loving boy, or for the man who is still a boy at heart. The emphasis is on youth. The American authors, though University graduates with very considerable Antarctic — and Arctic — experience, are both young men, and their book is written in straight-forward, non-technical language, which never becomes childish. They emphasise, too, the part played by young men in Antarctic exploration and research.

The book, like *The Far South*, gives a first-rate general picture of the Antarctic, what goes on there and what it is like to live there. But it is much lighter in tone than the Australian book. The emphasis is on men, real young men who are named, rather than on research, and the 92 illustrations and four maps fit in admirably with this general tone. But here too is challenge.

SUB ANTARCTIC CAMPBELL ISLAND. Alfred M. Bailey and J. H. Sorensen. Denver Museum of Natural History. 305 pp, illustrations and maps. $7.00 (soft cover $5.50).

Two well-known naturalists, the Director of the Denver (U.S.A.) Museum of Natural History and the acting Chief Inspector of Fisheries in our New Zealand Marine Department, have joined forces to produce a fascinating book which quite remarkably provides a wealth of detailed and authoritative information on all aspects of the wild life of New Zealand's Campbell Island, in a volume which is interesting throughout its 300 pages even to the man who does not know the scientific name of a single plant or bird. The authors achieve this result by an easy natural style, frequent quotations from field diaries and journals, an attractive layout and a wealth of no fewer than 230 extraordinarily beautiful, sometimes humorous photographs.

Mr. Sorensen, a member of the New Zealand Antarctic Society, spent four years on the island as a coast-watcher (and unofficially as a bird-watcher) during the second world war, while Mr. Bailey visited the island with the Denver Museum expedition in January and February 1958, a visit which he describes as "the most interesting of my fifty years of travelling to the far places." The enthusiasm of both men irradiates the book, which provides, for good measure, a short historical narrative and notes on the island's geology and vegetation.

PUBLISHED IN NEW ZEALAND

Geological Investigations in Southern Victoria Land, Antarctica. Part 8—Evaporite Salts in the Victoria Valley Region: G. W. Gibson. In N.Z. Jnl. Geol. and Geophys. 5 (3). August 1962.

The Geology of the Mt. Markham Region, Ross Dependency, Antartica: B. M. Gunn and R. I. Walcott. In N.Z. Jnl. Geol. & Geophs. 5 (3). August 1962.

Growth of Adelie Penguin Chicks: R. H. Taylor and H. S. Roberts. In N.Z. Jnl. Sc. 5 (2). June 1962.

WATCH FOR THIS!

The second "Special Publication" of the Scott Polar Research Institute, to be published later this year, will be of very special interest to New Zealanders. It is *The Ross Sea Shore Party, 1914-17* and is written by Mr. R. W. Richards of Pt. Lonsdale, Victoria, who is the sole survivior today of the six-man party which sledged south right to Mt. Hope at the foot of the Beardmore Glacier in order to lay depots for Shackleton, who, so far as they knew, would be depending on these depots in the later stages of his proposed crossing of the Continent from the Weddell Sea to the Ross Sea.

They did this despite the fact that they had been marooned at Cape Evans when the "Aurora," on which they were to winter, was

blown out with its imprisoning ice in May, leaving 10 men to subsist as best they could on what they could find in the old huts. Only seven of them survived, to be rescued nearly two years later and brought back to Wellington, New Zealand.

This will be an illustrated volume of over 40 pages. We hope to review it in our December issue.

NEW NAMES ON DEPENDENCY MAP

Among the new place-names suggested by the New Zealand field parties who explored the area east and west of the Beardmore Glacier in the Ross Dependency last summer, and approved by the New Zealand Geographic Board, are some of particular interest.

VETERANS HONOURED

FORD SPUR (84°55'S., 173°40'E.) is named in honour of C. Reginald Ford, of Auckland, who was Stores Officer on the "Discovery" in Scott's first expedition (1902-04), wintered in McMurdo Sound for two years, and after the expedition acted for some time as Scott's secretary.

HARE PEAK (84°49'S., 173°50'E.) is named after C. H. Hare, a 21-year-old Christchurch boy when he joined the "Discovery" in Lyttelton. He wintered in the Antarctic in 1902, and was within a hair's-breadth of losing his life when participating in the sledge journey on which George Vince was killed. Mr. Hare today lives in Queensland.

EVANS GLACIER (83°47'S., 170° E.) commemorates Petty-officer E. Evans of Scott's Last Expedition, who died near here on the journey back from the Pole in 1912.

WILD ICE FALLS (84°50'S., 162°00'E.) at the head of the Beardmore west of Mt. Buckley are named after Frank Wild, one of Shackleton's companions on the first ascent of the glacier.

WORSLEY ICE FALLS (82°50'S., 156°30'E.) extending for 20 miles at the head of the main Nimrod Glacier, are named in honour of New Zealander Frank Worsley, master of the "Endurance" and pilot on Shackleton's boat journey from Elephant Island to South Georgia.

The series of "AURORA NUNATAKS" (85°34'S., 177°30'E.) is named after members of the crew of the "Aurora," which carried the Ross Sea party of Shackleton's proposed Trans-Antarctic Expedition in 1915, and was trapped and drifted helpless in the ice for nearly a year. They are LARKMAN NUNATAK (see page 127), MAUGER NUNATAK (Mr. Mauger, ship's carpenter, lives today in Dunedin), DONELLY NUNATAK (after the second engineer), NINNIS NUNATAK (for A. H. Ninnis, later of Dunedin), and STENHOUSE NUNATAK (first officer of the "Aurora" and in charge of the vessel during the long drift).

IN MEMORY OF AMUNDSEN

A temporary research station has been established at King's Bay, Svalbard (Spitzbergen) as the nucleus of a memorial to Roald Amundsen. It is proposed to expand the station by adding new buildings as laboratories and living quarters for a permanent staff, and the establishment will be called **The Roald Amundsen Institute for Polar Technique.**

The purposes of the Institute are research, the collection, study and testing of material, and practical training in the field of polar technique, including survival, transport, navigation, engineering, resources and raw materials, Polar settlements and industrial planning.

The chairman of the Governing Board, to whom enquiries should be made, is Einar Sverre Pedersen, Sandhamnsgt 19, Stockholm, N.O. Sweden.

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: J. H. M. Williams, 85 Waimea Terrace, Ch'ch.
Dunedin: J. H. McGhie, Box 34, Dunedin.

"THE ANTARCTIC TODAY"

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

Ionosphere Research (J. W. Beagley).

Meteorology (A. R. Martin).

Marine Biology (R. K. Dell).

Aurora Australis (I. L. Thomsen).

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

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

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