

# ANTARCTIC

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New Zealanders on the Ferrar Glacier

## COVER PHOTO

A general panorama looking up the Ferrar Glacier. The New Zealand ensign is flying from the sledge. The figure in the foreground is Dr. Trevor Hatherton. The division of the glacier into its north and south arms can be seen, with the mountain Knobhead (about 8,300 feet) at the bifurcation. Photo by Lieut.-Commander W. J. L. Smith.

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# "ANTARCTIC"

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## SITING NEW ZEALAND BASE

The main task of the New Zealand observers with American Operation Deepfreeze was to locate a suitable site for the base camp to be established in the McMurdo Sound area next summer by the New Zealand expedition under Sir Edmund Hillary, which is to provide the supporting party for the Trans-Antarctic crossing under Dr. Vivian Fuchs.

To this end the observers carried out two long sledging journeys, and several long-range aerial reconnaissances made possible by the helpful co-operation of the American expedition.

### RECONNAISSANCE FLIGHT

On January 1 and 2 Mr. B. M. Gunn was flown by Skymaster on a photographic flight, using trimetrogon cameras, along the eastern escarpment of the Victoria Land coastal ranges from David Glacier to Shackleton Inlet. The flight was made at an altitude of 10,000 feet and a speed of 180 knots.

Mr. Gunn's impression was that "from the point of view of access and trafficability the Koettlitz Glacier", which had appeared to offer the most direct access to the plateau, "was undoubtedly the worst seen". The best access, he reports, would seem to be by the 15-mile-wide Skelton Glacier, which lies in about 78° 30' S. Almost the whole route up the Skelton Glacier, appeared from the air suitable for vehicle transport, and

ski-aircraft could be landed at any point. Later flights as low as 1,000 feet confirmed this favourable impression.

### ROUND TRIP BY SLEDGE

While Mr. Gunn was thus engaged Dr. Trevor Hatherton and Lieut.-Commander W. J. L. Smith, accompanied later by American N.B.C. cameraman W. Hartigan, left the "Edisto" by helicopter on December 31 and were landed on the beach of Dry Valley. This proved impracticable as a starting-point for the proposed sledge journey, so the helicopter transported the New Zealanders to firm bay ice east of the Double Curtain Glacier. From here they man-hauled their two fibre-glass sledges to the southern side of the Ferrar Valley.

Wearing crampons the two men, now joined by Hartigan, sledged east towards Butter Point, and pitched camp on the ice tongue which adjoins the Bowers Piedmont Glacier.

Next day they journeyed south on sea-ice down the coast, shunning frequent dangerous areas of thin

and broken ice. Relaying the sledges at one period over a pressure ridge, the party reached the stranded moraines which line the edge of the glacier and pitched camp on "the most solid looking area of bay ice in the vicinity."

On January 2 tide cracks hindered progress and both Hatherton and Smith "were prevented from going in very deep by the restraining effect of the harness and sledges". Cape Chocolate was reached about 1500 hours, but conditions became so bad that it was decided to push east towards the westernmost Dailey Island. Hartigan had injured a knee, so the two New Zealanders had to pull almost 600 lb. over difficult ice.

A two-day camp was established at the edge of the permanent ice-barrier, here a mere two feet or so higher than the bay ice. The men's feet were very wet. "Not having much faith in the old explorer's method of sleeping with wet socks inside the sleeping bag Smith experimented by heating a pair (naturally not his own but Hatherton's) in a billy. The tent that night reeked of burnt wool and we took the rest of our socks in the bag with us."

The 3rd of January was spent in short reconnaissance journeys towards Cape Chocolate and the westernmost Dailey Island. On one bad thaw area Smith went through the slushy ice to his hips. The Dailey Island was only reached with difficulty and "one glance from the top was sufficient to completely reject any idea of the New Zealand base being established in this area."

On the 4th the party headed for "home" and reached the American air-strip, Airopac, at 0530 hours on January 5. After a hot meal and sleep, the three men were flown back by helicopter to the ship.

#### UP THE FERRAR GLACIER

Dr. Hatherton, Lieut.-Commander Smith and Mr. Gunn were taken by helicopter on January 16 to the foot

of the Ferrar Glacier and arrangements were made for a rendezvous on the 27th.

The ascent of the glacier took five days. Pulling the two fibre-glass sledges with 450lb. of equipment was hard on the first day. The sledges, "loaded to twice their capacity", were top-heavy and often overturned on the irregular ice-surface. Eight miles were covered in six hours' hard pulling.

Next day the ice was harder and the wind stronger. Crampons were worn. Camp was pitched near the Cathedral Rocks, with the weather sunny and warm.

By lunch time on the 18th the three men had topped a rise and were in the great flat area at the confluence of the Ferrar and Taylor Glaciers. They headed slightly to the right of Knobhead (see photo), and after a three-and-a-half hours pull reached the medial moraine that marks the junction of the two glaciers. Strong winds reminded the explorers of Scott's vivid description of the perpetually windy area hereabouts, so they camped on the moraine.

#### WINDY GULLY

After breakfasting on the calm, windless morning of the 19th, they left camp at 0900 hours and almost immediately met a high wind, at first head on, but veering round until by late afternoon it was on their backs. At lunch they put up the tent for protection. 1600 hours found them past "the snow-free wind-blasted area on to fairly soft snow over which the going was fairly stiff." On this they camped about three miles from Finger Mountain ice-fall.

On January 20 they were again on hard blue ice after lunch. Strong wind and drifting snow then kept them in their tent until 1650 hours, and then they were soon in among crevasses, at first under three feet wide, but late up to 40 feet wide and half a mile long. Gunn, an experi-

enced mountaineer, now took the lead, and bruised shins and knees slipping into minor cracks. At 2030 hours camp was pitched three-quarters of a mile from the hills west of North-West Mountain.

#### HIGHEST CAMP

This camp Hatherton, the leader of the party, decided to make their highest camp. Next day was spent lightly laden exploring and photographing in the vicinity of the camp. Mt. Beehive was climbed and from its summit they were able to get a panoramic view from the north-east through west round to the south-east. To the west the Taylor Glacier (or upper Ferrar) ran on steadily about 10 miles and then rose fairly sharply to the plateau. The day had been cold and Hatherton speaks of "breath having formed quite solid ice on Gunn's beard, while Smith's permanently dripping nose had frozen into immobility."

The return journey took from January 22 till January 25. At the "windy gullies" they tried to get some shelter by getting under the lee of Beacon Heights, but the gale continued unabated throughout a night spent on a shelf in the sloping ice. "Our confidence in the performance of the light tent was considerably augmented," says Hatherton, "by its survival during the night".

Next day the wind still kept them "staggering in their traces" but a forced march brought them to Camp 3 on the moraine. By this time the party had broken all their crampons (eight in all) on the iron-hard ice. In a final forced march of 25 miles on the night of the 25th the party reached their helicopter rendezvous, a day ahead of time. "Packed and airborne" on the 28th, the 27th having been impossible for flying, the New Zealanders were able to land and examine for 20 minutes a likely looking base site at the junction of the Ferrar Hills with the Bowers Piedmont Glacier.

Then, airborne once more, they found a temporary home on the "Wyandot".

#### BASE SITE APPROVED

After hearing Dr. Hatherton's report the Ross Sea Committee approved this site at the foot of the Ferrar Glacier as the New Zealand expedition's base.

The position is at the north-east spur of the northern foothills west of Butter Point at 163° E. Two triangular-shaped glaciated terraces have been cut on this spur. The lower rises from sea level in a series of steps to almost 300 feet. It is perhaps 600 yards wide at the eastern end, tapering to a point to the west. It has a 60 yards wide "beach" apparently covered throughout most of the year by snowdrift ice.

The surface is entirely morainic and is mainly gravel and sand. Drainage is excellent. The site is well protected by the Bowers Piedmont ice and by the hills, except to the north. Four miles away at Butter Point materials and stores can be unloaded upon permanent ice direct from ships and taken to the site without delay. With a little route-finding access to the Ferrar Glacier should be possible throughout the year for vehicles and dogs.

#### MORE EXPEDITION MEMBERS

Two more men have been selected as members of the New Zealand expedition.

Mr. Roy Albert Carlyon, B.E. (Civil), aged 23, will be assistant surveyor-navigator with the field party. A single man, Mr. Carlyon is on the staff of New Zealand Railways in the district engineer's office at Wanganui.

Born in Wellington, Roy Carlyon spent his early years in the Cook Islands. Educated at Balmoral Intermediate School, Mt. Albert Grammar School, and Wanganui Technical College, he spent four

years at Canterbury University College, from which he graduated in 1951.

The winner of a special engineering bursary in 1950, he financed his further university expenses through fencing contracts, wharf labour, and woolstore work during vacations. He is a University of New Zealand rowing blue.

Before joining New Zealand Railways he was with the Ministry of Works, surveying traverses for new bridges, and for most of his four years in Canterbury devoted his spare time to deerstalking and climbing.

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Dr. Ronald W. Balham, Ph.D., M.Sc., Wellington, will be meteorologist at Scott Base, McMurdo Sound, and the expedition's biologist-zoologist.

Dr. Balham, who is 34 and married, is a biologist in the wildlife division of the Department of Internal Affairs. He is a master of science, University of New Zealand, with honours in zoology, and a doctor of philosophy of the University of Missouri, United States, also in zoology.

Educated at Wellington College, he became a qualified meteorological observer during wartime service with the Royal New Zealand Air Force, when for three years he was with the "Cape Expedition" on Auckland and Campbell Islands. During this period he did observational work on auroral and ionospheric activity.

He is a very experienced zoologist and will add considerably to the expedition's scientific scope. He is an expert photographer and, in an emergency, would be quite capable of taking his place in the field parties.

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The U.S. Navy plans to store 100 loaves of bread in the Antarctic, and to test their edibility at the rate of one a year for 100 years.

## ADELIE LAND

The "Norsel" left Hobart on December 26 with the French expedition which is to re-occupy the base-site of the 1952-53 Adelle Land Expedition. The party included M. Paul-Emile Victor, director of Expeditions Polaires Francaises, and M. Bertrand Imbert, in general command of the expedition. The landing party of 14 is led by M. Robert Guillard. The expedition encountered unusually favourable conditions and reached its destination at Petrel Island, off Pointe Geologie, on New Year's Day. Here the Frenchmen will establish France's most modern geophysical laboratory, which should be ready for the arrival of the I.G.Y. scientists next January. The observatory is situated on the highest point of the island, and the 350 tons of equipment were conveyed to the site by a kind of funicular railway 150 yards long, the first railway in Antarctica.

The expedition's equipment includes a four-ton landing barge, modern ice-tractors and sno-cats, and weasels, but no dogs, and no aircraft. The terrain around the south magnetic pole, where a satellite base is to be set up, is said to be unsuitable for landings. Fifteen tons of equipment, including food for five years, will be transported from the base camp to the magnetic pole bivouac.

The "Norsel" arrived back at Hobart on February 2. Weather conditions had been so good, it was reported, that radio communication with Paris had been maintained throughout.

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Dr. George Marsh (30), of London, and Lieut. F. R. Brooke, R.N. (29), a naval surveyor, have been added to the New Zealand expedition's field party. F.O. W. J. Cranfield (22), Christchurch, and Sergt. L. W. Tarr (31), Thames, have been added to the Antarctic Flight

## N.Z. PARTY JOINS "THERON" FOR TRIP TO SHACKLETON BASE

The "Theron" carrying the advance party of the Commonwealth Trans-Antarctic Expedition arrived at Montevideo on December 9. Here she was boarded by Sir Edmund Hillary and Mr. J. H. Miller, who joined their fellow New Zealanders, Lowe, Haslop and Claydon. The "Theron" called at South Georgia, and left on December 20, crossing the Antarctic Circle on the night of December 24.

Running into ice, progress became slow, and on December 27 came to an end at about latitude 68deg. Afterwards the vessel managed to blast a way through ice from four to six feet thick but on January 15 was firmly held in approximately latitude 67 deg. 37 min., longitude 31 deg. W.

At this stage a message was received from the Navy's armed net-layer "Protector" offering assistance to find a way out of the ice-fields. The offer was gladly accepted and "Protector" raced from Anvers Island off the west coast of Graham Land, about 1,200 miles away. Meanwhile "Theron" was drifting W.N.W. at about 15 miles a day from a position in the Weddell Sea some 600 miles E.S.E. of the Orkneys.

On January 20, after a hold-up of three weeks, a three-hours reconnaissance flight by the "Theron" Auster showed easier ice conditions 20 miles to the north-west, and every effort was made to break out in this direction.

### THERON BREAKS FREE

A helicopter from the "Protector" located the "Theron" soon after noon on January 23 when the vessels were about 55 miles apart, with "Theron" moving north at two to three knots. At 3 a.m. on the 24th the two ships met, soon after "Theron" had broken free, in lat. 66° 20' S. long. 31° 50' W. The "Theron" now turned east along the

Antarctic Circle, with Vahsel Bay still some 1,200 miles away. The base established by the Royal Society expedition was passed on the 27th, but flights showed the terrain to be unsuitable as a base for the crossing party. Good progress was now possible and early on January 29 the ship was only 90 miles from her destination and pressing on through a calm open sea at her maximum speed of 12 knots. Reconnaissance flights showed that the sea route to Vahsel Bay was reasonably open, but that there was no suitable landing site in that area. Arrived at Vahsel Bay itself, Fuchs took off, with New Zealander Gordon Haslop at the controls, along the edge of the ice-shelf forming the southern coast of the Weddell Sea. Here several promising sites were noted, the plane sometimes coming down as low as 50 feet for closer observation.

Next day Fuchs was able to radio his London headquarters: "Shackleton P.O. established 30 minutes past midnight today, January 30". Later messages gave the position as 25 miles west of Vahsel Bay, on a ledge of the 115 feet wall of shelf-ice. All hands now worked 16 hours a day to off-load the 300 tons of stores on to old ice 15 to 25 feet thick.

### LANDING TROUBLES

On February 1 a northerly blizzard caused considerable flooding of the ice in the vicinity of the dumps

which had been established close to the ship, and slowed down the transportation of stores by tractor to the site which had been selected for the base further inland. The "Theron" was bumping heavily with the increasing swell, and suddenly, as the ice bore down on her stern, the after-moorings parted and the ship drifted away, tearing out the forward moorings as she went. Later, she was able to return to the ice edge and all hands went on board except the five men who were stacking stores at the Shackleton base site. By 4 p.m. next day a southerly wind had cleared the ice from the unloading berth and the "Theron" again made fast.

The party at Shackleton were found busy salvaging equipment after a disturbed night spent in a tent and in one of the tracked vehicles. Despite the savage conditions, the stores were little damaged. There was almost continuous snow from January 29 till February 3, and on the 5th further ice-movement made it imperative to seek an early departure. All the stores were unloaded and at 1540 hours on the 7th farewells were said and the "Theron" moved through close heavy pack-ice to more open conditions and headed north.

#### THOSE WHO REMAIN

The eight men left behind at Shackleton are: K. V. Blaiklock (leader), R. A. Lenton (second-in-command), R. H. A. Stewart, J. la Grange and P. H. Jeffries (meteorological observers), B. Homard (engineer), E. Williams (wireless operator) and R. Goldsmith (doctor). When the ship left they had no shelter but a packing-case 22 feet by 10 feet which had previously housed a sno-cat, but it was anticipated that their first pre-fabricated hut would soon be erected.

Shackleton is situated in 77° 57' S., 37° 16' W., two miles from the sea. A reconnaissance flight during

the "Theron's" stay revealed a previously unknown mountain range 75 miles south-east of Shackleton, with peaks rising apparently to 4,500 feet in another range 100 miles to the south.

The "Theron" encountered very difficult ice conditions, but after 12 hours' battling broke through to more open water and at 6 p.m. on the 8th was at the Royal Society base, 200 miles to the north. On the 10th the vessel was clear of the last sea ice and heading for South Georgia and home. She was welcomed at Montevideo on February 23.

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#### GRASSHOPPER IN ANTARCTIC

The U.S. Bureau of Ships and Naval Electronic Laboratory have developed a small robot weather recording device which will be used during the United States I.G.Y. programme in the Antarctic. Weighing 200 lb., the so-called "grasshopper" is dropped from an aeroplane. It automatically opens, rights itself on its six legs, and immediately goes into action. It gathers weather information at pre-determined intervals, transcribes it automatically into International Morse Code and transmits it by radio at the rate of 17 words a minute. The "grasshopper" is operated by batteries and works for 60 days. It records surface wind speed, wind direction, temperature, barometric pressure, and humidity.

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When America Tv. cameraman William Hartigan was filming the activities of "Operation Deepfreeze" he never went out until he had filled his pockets with a hardware store. He always carried a soldering iron, long-nose pliers, tubes, batteries and even an ohmmeter, so that he could fix his equipment on the spot if he had to.

## AMERICAN PART IN I.G.Y., POLAR BASES BEING BUILT

The United States contribution to I.G.Y. will include the establishment and manning of a series of bases in the sector between 160 deg. E. and 120 deg. W. To this end "Operation Deepfreeze", comprising the ships of task force 43, United States Navy, has been reconnoitering in the sector allocated to America, and landing supplies for the establishment of a main base.

Under the operational command of Admiral George J. Dufek, United States Navy, and led by 67-year-old Antarctic veteran Richard E. Byrd, U.S.N. (retired), "Operation Deepfreeze" began in November, with the departure from Boston of the fleet, consisting of ice-breakers, Navy freighters and a tanker. Also taken south were eight planes, Albatrosses, Dakotas, Skymasters and Neptunes, and three helicopters to plot bases and survey routes to the Pole.

Lyttelton, the scene of many former departures for the south, was the jumping-off port, and the ice-breaker "Glacier" left there on December 10th, the advance ship, with a two-fold plan; to plot a route through the pack-ice, and lay out an airstrip for the planes which were to make an historic flight from Taiieri, near Dunedin, and Harewood, Christchurch, to the polar ice. While at Lyttelton, the expedition was unfortunate in losing one of its helicopters, on December 14th—fortunately without loss of life.

Admiral Byrd hoped to make his main base on the site of the Little America he established in 1928, on the Ross Ice Shelf, then fly in his planes from New Zealand. To assist in this long and difficult flight, ships of the expedition were to form a radar "chain" by December 20th from New Zealand to the ice-shelf, and the planes would fly down this chain. The "Eastwind" was not

part of the chain, as it was to tow a small tanker down to McMurdo Sound.

Sunderlands of the R.N.Z.A.F. were to stand by as rescue craft if needed. Fortunately they were not.

The "Glacier" had hoped to reach McMurdo Sound within a week of leaving New Zealand. She encountered the usual storms of that area soon after leaving New Zealand, during which Admiral Byrd received slight injuries. The "Glacier" entered a 440-mile belt of pack-ice in Long. 179° 55' W. Lat. 67° 20' S. and broke out of it 37 hours later in Long. 176° 40' E. Lat. 73° 45' S., and radioed the pack as being light to moderate.

### ROSS ISLAND REACHED

December 18th saw "Glacier" off Ross Island, and a survey was immediately made for a landing strip. A seven-foot ice-saw was used to determine the thickness of the ice when a suitable landing place had been found several hours later. A minimum of six feet was necessary to hold the loaded planes from New Zealand.

An air-strip 9,000 feet long and 300 feet wide was marked off on the frozen waters of McMurdo Sound, 800 miles from the Pole, four miles off Cape Armitage, near Hut Point. It was covered by three inches of loose snow, not enough to cause skidding, but enough to give breaking friction.

Meanwhile, back in New Zealand, the planes of "Deepfreeze" had been testing their equipment, radio channels, radar, and making final checks on survival gear.

A signal was received from the flagship at 6 p.m. on Monday, December 19th, ordering the planes to leave at dawn on the following day. With a favourable forecast, headwinds being only eight knots, the first Neptune took off from Harewood Airport at 4.59 a.m. followed by a second Neptune at 5.4 a.m. and then the two Skymasters after 8 o'clock.

The four slow planes, based at Taieri, took off for their 2,000-mile flight at intervals after 6.47 a.m. The heavy planes were assisted by Jato bottles.

Two Neptunes and two Skymasters landed at McMurdo Sound 14 hours later, having crossed the most dangerous seas in the world, a little over two hours behind schedule. The other planes were forced by headwinds to return, and it was planned that they would make another attempt. This was later countermanded.

The last of the ships to clear the pack was the "Arneb", which entered the open waters of the Ross Sea on Christmas morning. The Task Force then split into two groups, Admiral Dufek heading his group towards Little America, 400 miles to the East, the other group going to McMurdo Sound, to begin unloading men and materials to build the two bases.

The Eastern group found a vastly different Bay of Whales from former expeditions, different even from the "Atka's" reconnaissance months before. After a steady search along the ice-shelf, Kainan Bay was chosen as the port for Little America V, as the ships could unload alongside the shelf, and there was an easy ramp up which goods could be hauled. The camp site was about 30 miles nearer the projected Byrd station, in Marie

Byrd Land, to which parties would be sent as soon as the base was established.

#### DECISION MADE

Admiral Dufek made the final decision on the choice of site, acting on the advice of the ice experts. The Bay of Whales, 30 miles to the west, which had served previous Little Americas, was no longer useful, or indeed recognisable, and a choice could not be delayed. Kainan Bay became, almost overnight, a big port, outlet and inlet for Little America V.

In McMurdo Sound, the tanker "Nespelen" and the cargo ship "Wyandot" stood by, waiting to unload, while the ice-breakers "Edisto" and "Eastwind" battered their way through the bay ice, trying to reach Cape Royds on Ross Island, a few miles from the runway.

By February 2nd the base at Kainan Bay (Little America V) had 12 buildings up; being constructed—two aircraft maintenance shops and three buildings for International Geophysical Year scientists working on weather, geomagnetics and magnetic observations. Little America V will be "weather central" for the entire International Geophysical Year programme in the Antarctic.

Admiral Byrd flew to Hut Point by helicopter on February 2nd and found 11 finished prefabricated buildings on a site that only six weeks before was a barren plot of volcanic rock. This base will serve as an air-operating facility and staging area for an International Geophysical Year observatory that the United States plans to build next season at the South Pole. Thirty-four buildings will go up at Hut Point.

Captain Scott's old hut of the 1901-04 expedition was visited by men of the Task Force, and found in good condition, as was food found inside. Admiral Dufek issued instructions that the Hut was to be

regarded as a shrine, and little was touched save a few samples of food removed for chemical analysis, to prove a theory that Captain Scott's party lacked essential vitamins on their last journey.

Supplies from the ships tied up alongside the ice-shelf were hauled by weasels and sno-cats towing sledges, and were dumped at both bases. All hands, scientific, civilian and Navy worked long hours, and the haulage system was described by one of the officers as running more smoothly than on an interstate highway.

The expedition suffered some losses of men and equipment by accidents to survey and depot-laying parties. On December 22nd a single-engined Otter crashed on take-off near Cape Bird in McMurdo Sound, carrying cargo for the tent camp at Hut Point, 40 miles away. Two seriously-injured Navy men were flown to the ice-breaker "Edisto", lying off McMurdo Bay, after three days spent in a tent, battered by gales, on Ross Island.

On January 6th a driver of the United States Navy was killed when the tractor he was driving disappeared into a crack in the ice in McMurdo Sound. The body was not recovered.

#### AIRCRAFT ACCIDENTS

An Otter aircraft was reported missing on February 4th, with seven men aboard. She was on a flight from Marie Byrd Land to Little America V, returning with some of a trail-blazing party whose tracked vehicles had broken down on the Rockefeller Plateau, just north of Marie Byrd Land. A full-scale search was put into operation, all available planes, ships and men being thrown into the hunt.

The ice-breaker "Eastwind" was rushed from McMurdo Sound with another plane and helicopter aboard to aid in the search.

After a week's anxious searching, the men were found by a helicopter,

walking back to Little America V, safe and unhurt. A "white-out" caused the crash, the plane hitting the side of a mountain. A cushion of snow prevented injury to the crew, some of them even thinking it was a normal landing—no compliment to the pilot. The plane was declared unsalvageable.

A "white-out" caused a trail-blazing party to be pinned for two days while a little more than half-way on the outward journey, into Marie Byrd Land. This party was heading to a point Lat. 80° S. Long. 120° W., where an I.G.Y. Base is to be constructed for American scientists. They encountered many difficulties, including deep crevasses and sastrugi. They had a spotter marking the trail by dropping flags every 20 seconds, and scouting for ways around the crevassed area. Even so, in one four-day period, they covered only two miles.

Major discoveries were made on some of the aerial survey flights. On January 14th, four mountain ranges, with peaks up to 10,000 feet were discovered between Lat. 85° S. and the Weddell Sea bay ice, by a Neptune plane on a 19-hour flight.

Two other flights were made by four-engined Skymasters, both reaching a point about 550 miles beyond the South Pole in the quadrant south of Africa. One plane reached Lat. 82° S. Long. 62° E. on a 2,500 mile round trip flight, discovering a plateau 14,400 feet high just south of its deepest penetration into the Antarctic.

The other plane which flew over the South Pole, diverted from its original flight plan by a "white-out", explored an unknown region from Lat. 80° S Long. 145° E. to the Pole, but without observing any outstanding features. The plane then flew over the Pole at 1,800 feet, finding the Pole's altitude to be 9,700 feet above sea level. The area, a flat plateau, appeared to be covered with a fine deep powdery snow.

## GOOD FLYING WEATHER

The planes took full advantage of the flying weather available, and, before the base fuel tanks were completed and filled planes taxied direct to the ice edge and were filled from the tanker "Nespelen", an operation believed unique in flying history.

A Skymaster exploring a 130-mile wide belt extending from McMurdo Sound to Long. 90° E., roughly along Lat. 80° S., found the northern end of a range, with peaks up to 10,000 feet high at Lat. 79° S. Long. 156° E. The range was about 30 miles wide and extended 50 miles to the south. A second range was sighted at Lat. 79° 30' S. Long. 151° E., and it extended to the southeast. This range was 60 miles wide, with peaks up to 12,000 feet. The plane's commander reported that the ice-cap along the 90th meridian between Lat. 80° and 82° S. averaged 13,000 feet in altitude.

On a flight to Vincennes Bay from McMurdo Sound to a point Lat. 66° 45' S. Long. 108° E. a Neptune surveyed 120 miles of coast to the west, going north of the Antarctic circle. The ice-cap was reported to be an average of 11,500 feet, dead flat and snow-covered.

Admiral Byrd, of course, flew over the South Pole again, accompanied by another old Antarctic veteran, Dr. Paul Siple, who will lead the Expedition's scientific staff at the Polar base next winter.

Directions used by the pilots for flying over the South Pole appear to be just a little too vague for accurate flying. Taking off from Little America V they say "just fly till you hit the Beardmore Glacier and turn right, then straight on". Undoubtedly Polar exploration has changed.

On January 16th, owing to the possibility of the ice runway in McMurdo Sound breaking up, the two Neptunes and two Skymasters left for New Zealand, where, once

more R.N.Z.A.F. services were alerted for emergencies—again not needed.

Another factor which influenced the return of the planes to New Zealand was an accident to the tanker "Nespelen"; ice-floes pinched her against the shelf, leaks were sprung in her storage tanks and 107,000 gallons of high octane petrol either leaked into the sea or were contaminated.

March 7th was given as the deadline date by Admiral Dufek for the last of the seven-ship expedition to be out of both McMurdo Sound and Kainan Bay. They will leave behind them 167 men to spend the winter at the two bases, 91 at Hut Point and 76 at Little America V. Originally housed in tents, the men were gradually being moved into buildings as they were finished, and the comforts of civilisation were fitted.

One of the plans for the next season is to try and build an air-strip on land. Navy engineers have been surveying the areas around McMurdo Sound, so far without much success. A possible site is Dry Valley, about 40 miles west of Cape Royds. The valley, about two miles wide and 17 miles long, is composed of glacial deposits which rise about 60 feet above sea level. To date, no decision has been made, but that seems the most likely choice. Such an air-strip would allow planes to operate for five months longer than the period at present available, when planes are dependent on sea-ice or snow formations. The advantage to a possible permanent base is quite obvious.

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A sculptured figure in oak of **Captain Robert Falcon Scott** was unveiled recently at the Parish Church of St. Mark, Devonport, England, by the Commander-in-Chief, Plymouth, Admiral Sir Mark Pizzey.

Captain Scott once sat in the choir-stalls of the church.

## Russians At Queen Mary Land

The advance party of the Soviet I.G.Y. Expedition, which left Russia towards the end of last year, has established a base on the Queen Mary Land coast. The 12,000-ton diesel-electric vessel "Ob" reached its destination in the Davis Sea on January 6. A party under I. I. Cherevichny, veteran arctic flier, landed immediately and next day aircraft were unloaded on to the ice, while other parties reconnoitred up to 20 miles inland. By January 10 helicopter flights had begun.

On January 17 it was reported that winds of hurricane force were hampering work. Tractors and other equipment which had been put ashore had to be taken back on board when the "shore" ice began to break up.

After a nine-days' aerial search a site was selected for the base, Mirny, west of Farr Bay (or Depot Bay), behind the Helen Glacier, in the Haswell Island area: 66° 37' S., 92° 57' E. Farr Bay was named after Dr. C. Coleridge Farr, of Christchurch, who was a member of the advisory committee for Mawson's 1911-12 expedition, which discovered the bay. This site, just to the west of the Shackleton Ice Shelf, is 270 miles west of the site on the Knox Coast, originally assigned to the Russians, a site to which no vessel has ever penetrated, says Walter Sullivan, of "The New York Times", "because of its girdling belt of pack-ice". The Farr Bay area is much more accessible and was air-mapped and surveyed by Americans in 1947-48.

### MIRNY ESTABLISHED

"The "Ob" had to cut a channel at one stage nearly 550 yards long through ice nearly five feet thick. The "Lena" had arrived by January 25. Bad weather now set in, and strong winds with a hot sun began to break up the shore ice. Expedition members were still living on board ship at the end of January, but Mirny was taking shape. The base is ultimately to comprise 24

buildings, a radar station, etc., lining a street 500 feet long parallel with the shore. A series of fierce storms destroyed the five ice-reinforced roads which had been constructed to link Mirny with the supply ships. The destruction of the last one on February 3 meant that temporarily communication between ships and base was limited to helicopters and other aircraft. The ships moved to a new position from which further attempts were made to unload supplies overland. On February 7 the refrigerator ship No. 7 arrived.

### EXPLORATORY FLIGHTS

Moscow Radio stated on February 7 that planes from Mirny had flown 230 miles to the east to visit "Bunger's Oasis," discovered by American airmen of Operation High Jump 1946-47. The oasis was found to cover about 200 square miles just inland from the Queen Mary Land coast. The Russians discount the theory that it is of volcanic origin. "The high degree of solar radiation and the heat of the rocks make the snow melt early in the spring," said the radio, "forming streams and rivulets which fill fresh-water lakes. No snow is left. Powerful currents of warm air rise over the stony surface. One particularly interesting aspect is the extreme dryness of the air. The flora here is very poor, consisting mainly of several types of black, grey and white lichen growing on the stones. Moss is occasionally to be found on the beds of the streams, but even this

poor vegetation covers only an infinitesimal area of the oasis."

The soil here at midday reaches a temperature of 77° Fahr. and the snow temperature stands at about 20° Fahr. The only animal life observed was bird-life: stormy petrels and gulls.

On February 27 Moscow reported that the ships had been compelled to move out some distance from the shore, and helicopters were being used to complete the off-loading. Building operations had, however, been speeded up; 18 arctic-type houses were nearly completed, and central-heating had been turned on. Good flying weather was helping the scientists with their work. The radio station had been erected, and direct radio-contact with Moscow established.

On March 1 it was reported that a plane from Mirny had flown over the South Pole in a ten-hour flight made to investigate the geomagnetic pole area. Here the second Soviet base is to be established 750 miles from the coast. It will be named Vostok (East). The "Vostok" and the "Mirny" were the ships of Bellingshausen's expedition in 1820-21. A third base to be known as Sovietskaya will be situated still further inland, at the "Pole of Inaccessibility". These bases will be supplied exclusively by air.

The "Ob" was reported on February 27 to be trapped in ice, but two days later had left the Davis Sea on a three months' voyage along the shore of the Antarctic Continent to the Balleny Islands, thence north to New Zealand and Australia. The "Ob" will later return to the Davis Sea and sail home to Leningrad.

Moscow reported on March 18 that reconnaissance aircraft from Mirny had noticed pack-ice rapidly closing the only remaining passages in the Davis Sea. The "Lena, the only ship left at Mirny, just got clear in time.

## ROYAL SOCIETY SHIP LEAVES

The motor-ship "Tottan" left Southampton on November 22 carrying an advance party of ten scientists under Surgeon Lieutenant Commander David Dalgleish to establish an I.G.Y. base on the Weddell Sea coast. The expedition is sponsored by the Royal Society.

On January 6 the expedition landed in Coats Land and established its base at 75° 36' S. and 26° 45' W. This is some 150 miles north-east of Vahsel Bay, where it had been hoped to establish the base. The bay, in which all the stores were landed by January 16, is formed by two ice headlands two miles apart. A slope between them gives easy access to the ice sheet. From the top of the slope the ice level continues in a gentle rise to the east, and in the far distance about 35 miles away the main continental plateau is visible.

The base was set up on stable ice as no exposed rock could be found. A hut 120 feet long was built upon a metal carpet. During building operations the weather was calm and sunny, and as the temperature was high the party was sleeping in the daytime and working at night. At first the weather was so hot that it was making surfaces slushy, but later the ice became harder, making transport easier.

The "Tottan" left for South Georgia on January 22.

Considerable interest was aroused by the discovery of an emperor penguin rookery near the base site, as only five others are known in the whole of Antarctica, and Dalgleish (the leader) was one of the three F.I.D.S. men who spent the winter under canvas at the Dion Islets rookery in 1949.

## Australians Begin Inland Journey

The Australian party at Mawson began on November 1 its long-planned southern journey which aimed at penetrating 300 miles inland over the Antarctic plateau. When the hours of daylight had lengthened sufficiently supplies of food and fuel were hauled up the coastal slopes of the continental ice-sheet and dumped at a forward depot on the plateau 10 miles inland from Mawson. During this period one of the party's three weasels broke down.

With the remaining two weasels a party of seven men (Bechervaise, Parsons, Lacey, Crohn, Gowlett, Fox, McNair) set out on November 1 on the first stage of the journey. The party was held up for two days near Mount Henderson by high winds which, whipping snow from the surface, produced "drift" which decreased visibility to zero. By November 4 they had covered only 20 miles. However, two days later, although high winds and low visibility continued, the party had reached a point 62 miles south-east of Mawson; there the 100-mile depot was established.

### FARTHEST SOUTH

The party then moved on to the south. After travelling all day through the Matterhorn Outliers, at midnight on November 26 in bright sunlight the party halted at a main massif of the Prince Charles Range in lat. 70° 10' S., long. 64° 48' E., having travelled 220 miles from Mawson. The caravan was set up as a permanent base at Depot Peak. The ranges are vast and complex, high rock ridges and spurs project up to 1,000 feet from 6-7,000 feet of ice. Weasels can approach within a mile before crevassing becomes dangerous. The major and final depot for future work was placed here. "We have had trials with the weather and weasels," reported Bechervaise. "One weasel is now running on five cylinders, with a penny and a primus stove dome

blocking off the useless valves. The electric fuel-pump is troublesome and the springs bad."

The area explored embraces 10,000 square miles of mountain-studded ice plateau. The men visited and climbed several mountain peaks by weasel, by man-hauled sledges, or on foot, and obtained unparalleled views of this majestic range, only a fraction of which was within striking range of the party. To the north of the range a series of immense crevassed ice-ridges run parallel with the main range in a south-easterly direction. Through these ridges the Australians pioneered a safe route and discovered a feasible gap through the mountains further to the south. In the vicinity of the peaks themselves great caution was necessary, for the ice at the approaches to the mountains is heavily crevassed. The team was divided into survey and geological groups and the men were roped together for safety wherever they moved. Fortunately, only minor break-throughs into crevasses occurred.

The weasels needed a great amount of maintenance and all hands assisted with the repair work. At 50° below freezing some remarkable repair jobs were carried out without shelter, including the replacement of springs and the renewal of bogies. The survey work was also difficult in the extreme cold and at times ice excavations were made to provide temporary shelter for the men

taking observations. Macklin maintained excellent radio contact with Mawson.

### SICK WEASELS

On December 1, on the way home, the party reported that in spite of most careful nursing throughout, there had been a serious breakdown of "warhorse three" with broken springs and track, and driving sprocket wheel teeth almost completely shed, 150 miles from base. Weasel five was also sick, due to the reversal of the exhaust and inlet valves of one cylinder during the Melbourne overhaul. "We must envisage abandoning weasel three and possibly manhandling, for which we are prepared," says the report.

Bechervaise reported on December 4: "In two days we repaired the spring and fitted a new track to weasel three, but the engine failed to maintain oil pressure through a worn bearing, and after 20 miles big-end trouble developed. Weasel five cannot tow weasel three 135 miles from 69° 22' S, 64° 23' E, so we have removed the engine from weasel three for return to Australia and hope to reach Mawson with it. I am leaving weasel three, two cargo sledges and a small quantity of inessential gear. We will ride the other sledges if possible, otherwise walk . . . Our time of return will depend on weather, and weasel five's performance."

On the 9th, Bechervaise radioed that the weather had held, but the Australian track modification on weasel five broke, after having totalled 1,170 miles. "We patched it and ran a further 10 miles over an extraordinary ablation area between Henderson and Mawson, and finally broke the crest of the ice-slope. A field party walked from Mawson that day, taking a new track with the Ferguson tractor, and brought the weasel home."

### BACK AT MAWSON

On January 11 the ice was rapidly melting in Horseshoe Harbour, and the dark welcome line of water was only five miles away, with the pack-ice invisible beyond the horizon. Hundreds of icebergs were on the move again after their long imprisonment. Seal hunting and other expeditions over the sea-ice ended at the new year, exactly 10 months after the harbour first froze.

The year's field trips aggregated more than 1,000 miles of travel on plateau ice and about half that distance over the frozen sea.

Bechervaise describes the brief summer thaw at Mawson: "Miniature rivers race down the steep ice-slopes from the plateau, and sparkling streams from the last shrinking snowdrifts spill over the Mawson Rock. Orange, yellow, black and green lichens and brilliant mosses provide welcome colour round the station."

Days of calm, sunny weather caused a spate of activity on the station—concreting and painting, blasting, building, consolidating and generally preparing for the arrival of the 1956 expedition. A party comprising Bechervaise, Crohn, Elliott, Parsons and Ward, climbed the Casey Range (named by the Banzare Expedition of 1929-31), also the David and Masson Ranges about 20 miles south of Mawson.

### "KISTA DAN" HEADS SOUTH

The "Kista Dan" left Melbourne on December 28 with a relief party of 18 men for Mawson. The first objective was to explore the little-known Wilkes Land Coast almost due south of Melbourne; the second, to choose a site for a second Australian base at the Vestfold Hills, about 350 miles east of Mawson.

The vessel encountered unusually difficult ice conditions, but on January 16 the pressure of the pack-ice eased. That afternoon the ship

reached a large ice-floe one mile wide. The expedition's aircraft, taking off on ice-skis, made a flight to reconnoitre a way into the coast. No easy southern path was sighted and since heavy cloud conditions were advancing the "Kista Dan" sailed a north-easterly route through heavy pack-ice, and the following night reached a position  $64^{\circ} 46' S.$  and  $119^{\circ} 12' E.$

By midnight on January 18 the ship had approached to within four miles of the coast in  $111^{\circ} E.$ , and early next morning anchored alongside an islet in the shadow of the continental ice-cliffs. The islet is the largest of a group of six small rock outcrops close to the edge of the continent. A party went ashore in calm weather. As no landing had been made on the islet before, a stone cairn was built and an Australian flag left beneath it.

On January 20 the aircraft flew as far as Cape Poinsett, 60 miles east of the ship. In the course of a five-hour journey Flight-Lieut. Clemence photographed as far west as the Underwood Glacier tongue at longitude  $108^{\circ} E.$

That night "Kista Dan" sailed for the Windmill Islands, lying south-south-west of the islet which was visited on the 19th. The only open route lay across a shallow bank studded with grounded ice-bergs, through difficult waters, sometimes as shallow as seven fathoms.

Next morning deep water was reached on the other side of the bank, and "Kista Dan" approached three islets close together several miles to the north-west of the main Windmill group.

A landing was made on the largest. It proved to be rich in bird-life, and contained large rookeries of giant petrels. A party of six led by Bewsher was put ashore and camped on a snowdrift, while "Kista Dan" sailed on to the Windmill Islands.

At 8.30 p.m. the ship moored alongside a large ice-floe suitable for aircraft take-off. At 4.30 a.m. a preliminary flight was made to reconnoitre the islands. On a second flight Clemence and Seaton took off at 9.30 a.m. on a photo-run westward. After a journey of 520 miles, in which they reached the Bunger Hills, the airmen reported unbroken ice from Bunger onwards to the horizon. This would prevent the ship from penetrating the area as had been intended.

A third flight was made at 4.50 p.m. to photograph the islets.

While the flights were being carried out an eight-man party, in army dukws, landed on one of the islands, mainly for geological observation.

Canberra reported on February 1 that contact had been made with the Russians on Haswell Island, and that Australian scientists had visited Russian installations.

#### MEANWHILE AT MAWSON

On February 2 the men at Mawson were eagerly awaiting the arrival of the "Kista Dan" when Bechervaise reported:

"Already the freeze has recommenced, whitening the splashed rocks round the harbour from which the old ice has been gone only a fortnight. After 10 months is revealed the forgotten blue and sparkle of the sea but when it is calm enough new ice forms. Again we are quarrying the plateau ice for domestic water. The young of snow petrels, skuas and penguins, are large and fluffy. Almost daily the ice-cliffs calve bergy bits and sometimes respectable offspring to clutter up the potential shipping lanes."

Doglines had been formed. Rocks in the approaches to the aircraft hangar site, revealed by the disappearance of the pressure ice, had been blasted away.

"Kista Dan" encountered severe blizzard conditions in the Davis Sea on February 1. The ship wedged her bows into a large ice-floe head on to the gale and kept her engines running to maintain her position. Ice, driven by the gale, soon became tightly packed all around the ship. The weather improved on the 3rd and 4th, and efforts were made on Sunday to manoeuvre the ship through the ice towards open water only a few miles ahead. Five hours working succeeded in advancing it only 100 yards.

On the 9th Captain Petersen adopted the tactics of backing the ship some distance and charging the ice in battering fashion in an attempt to force a passage. After 12 hours of this operation about 300 yards of progress was made, and the slow forward movement was continuing. The open water could be sighted about a mile ahead of the ship.

Release was aided by explosive charges, while all hands were engaged poling and digging ice away from the sides. The ship's winches, cables and ice anchor were also brought into play. Open water was reached on the night of February 11, after the ship had passed through a belt of pulverized ice of the consistency of a concrete mixture.

"Kista Dan" took a north-easterly course through 30 miles of open water. Early on February 12 she encountered the main ice belt, which was negotiated without difficulty. Open ocean on the northern side was reached at 4 p.m.

#### ARRIVED MAWSON

On February 17 "Kista Dan" was able to head in towards Mawson in the teeth of a bitterly cold 45 m.p.h. south-easter. Captain Petersen skilfully and rapidly brought the ship through surrounding islets to anchor in Horseshoe Harbour at Mawson at 1115 hours.

As the wind had moderated the launch was unloaded, then pontoons on to which the Beaver aircraft was lowered and towed safely ashore. Two dukws then commenced general unloading, while R.A.A.F. men built a wind-deflector fence to protect the aircraft until the hangar was completed. The weather was clear and sunny with a cold wind off the ice-cap.

### Argentines Leave

It was reported from Buenos Aires on January 19 that Thule Island in the South Sandwich group had been evacuated by the Argentine ice-breaker "General San Martin" because of volcanic activity on the neighbouring Bristol Island (58° 59' S. 26° 30' W.). Mount Darnley (3,600 feet) on Bristol Island, was reported to be in eruption in 1935; previously it was thought that all volcanic activity had ceased.

### Nations Confer

The leader of the French Antarctic expedition to Adelie Land, M. Bertrand Imbert, said on his arrival in Paris on February 14 that an international Antarctic conference will be held in Paris next May.

Representatives will attend from Britain, the United States, France, Australia, New Zealand, South Africa, Russia, Japan, Argentine and Chile.

Its purpose is to co-ordinate scientific work which up to now has been undertaken separately by the national expeditions.

### Antarctic Stamp

France has issued a Madagascar 15-francs stamp with a bar across "Madagascar" and an overprint in two lines of red capital letters "Terres Australes et Antarctiques Francaises".

## Sledging Continues From Hope Bay

Most F.I.D.S. news is again from Hope Bay which is the main sledging base. Several sledge journeys have been undertaken during the past few months, continuing the survey work south of Hope Bay and reconnoitring new routes from the east coast of Graham Land up on to the plateau in order to carry the survey westwards. The longest of these journeys took almost three months to complete and covered 900 miles.

On their way back to base one of the field parties found a group of about 2,000 crab-eater seals lying dead on the sea ice in Crown Prince Gustav Channel. A special journey was organised in early November to collect specimens, in order to try to ascertain the cause of death.

Survey work has also predominated at the new bases, Horseshoe Island (Base Y) from which parties have sledged north to the Bourgeois Fjord locality, and Anvers Island (Base N). It is reported that Base Y has been visited by emperor penguins—presumably from the nearby Dion Islets rookery at which parties from Base E carried out biological work in 1948 and 1949.

The survey of Coronation Island in the South Orkneys has been initiated by parties based on Signy Island (Base H). Biological work is being continued at Signy, and a Weddell Seal count was carried out in September.

In the South Shetlands a new base hut has been built to replace the existing one (Base G) at Admiralty Bay, King George Island.

At Base F, the geophysical station in the Argentine Islands, the solarimeter has now been installed and seemed to be satisfactory when given a trial run.

The **Aerial Survey** party at Deception Island have now started flying their photographic sorties, but the amount of coverage obtained will depend largely upon the weather conditions encountered.

The **South Georgia Survey** party (leader, Duncan Carse) has had a

successful season and hopes to complete the survey of the island by April. Provisional maps have already been prepared and these will eventually be published as part of the Falkland Islands Dependencies series.

### Ships

The R.R.S. "John Biscoe" arrived at Port Stanley on November 27th having been delayed at Montevideo while repairs were carried out on one of the generators. She is being assisted this season by the R.R.S. "Shackleton" which sailed from Southampton at the end of December and is now touring the bases. The "Shackleton" is a diesel cargo-type Swedish vessel which was purchased and refitted by F.I.D.S. last year. She is comparable in size to the "Biscoe" (about 1,000 gross tons) but has much greater cargo capacity and accommodation for about 20 passengers.

### Publications

A new edition of the 1: 500,000 series of maps covering the Dependencies is being prepared, and the 1: 200,000 series (hitherto unpublished) is being redrawn for publication. Nineteen sheets of the latter are already available.

F.I.D.S. Scientific Report No. 13: "The Elephant Seal—II, General, Social and Reproductive Behaviour" by Dr. R. M. Laws, is also now available.

## N.Z.'s Polar Research Committee

With a view to ensuring continuity of research work in the New Zealand administered Ross Dependency, a committee of the Royal Society of New Zealand has been set up to serve as an advisory body. The committee will compile data as a guide to future research projects in the area and will advise on priorities. It will deal with matters outside the scope of the Trans-Antarctic Expedition (N.Z.) Inc. (the Ross Sea Committee) and outside the period with which the New Zealand I.G.Y. Committee is concerned.

Members of the new committee are: Dr. C. A. Fleming (Chairman) and Prof. L. R. Richardson (Royal Society of New Zealand); Prof. Darcy Walker (University of New Zealand); Dr. R. G. Simmers (New Zealand Antarctic Society); Mr. R. W. Willett (Geological Society of New Zealand); Mr. D. Garner (New Zealand National Committee on Oceanography); Dr. R. A. Falla (Ross Sea Committee); Dr. T. Hatherton (Observer for the I.G.Y. Committee).

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## Macquarie Island

The "Kista Dan" reached the Australian station on Macquarie Island on December 10 with a relief party of 15 under New Zealander Ian Adams. Six Border Leicester ewes and a ram, as well as ducks, geese and hens, were landed on the island. There is believed to be enough vegetation on the northern end of the island to maintain a small flock of sheep. One hundred and fifty seedling trees (willows, birch, pines, holly and hawthorn) were also taken.

The men of the previous party arrived back in Melbourne on December 21. The party jokingly reported that the only casualty during their year on the island was

## Chilean Flight

A Chilean flotilla which has been relieving garrisons, delivering supplies, etc., returned to bases at Punta Arenas on February 20.

A flight from Punta Arenas to the Chilean base, Aguirre Cerda, on Deception Island took place on 28 December in a Catalina flying-boat OA-10. The flight was 675 miles, and took 6 hours 47 minutes flight. The aircraft returned to Punta Arenas on the following day, with 6 hrs. 26 min. flight, also without any mishap. This was the first successful flight made by the Chilean Naval force, but a previous—unauthorized—attempt had been made by Lt. Luis Alberto Marin in a North-American, which had to return because of bad weather.

The flight in the Catalina was in charge of Squadron Leader Captain Humberto Tenorio, of the Air Arm of the Chilean Navy. There were five others in the aeroplane. Squadron Leader Tenorio has since been promoted to a high command because of his exploit.

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## Marion Island

Work is proceeding very well on the reconstruction of the South African station on Marion Island, and it is confidently expected that it will be completed in April.

It has been agreed that the Union will maintain a weather station on Gough Island, after the Gough Island Scientific Survey has been withdrawn, until the end of the I.G.Y. The buildings and equipment of the survey will be taken over in April when a frigate of the South African Navy will visit the island. During I.G.Y. it is hoped to make daily upper-air soundings.

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New Zealander D. K. Grant, of Christchurch, who had to have a splinter removed from his thigh!

## Campbell Island

The M/v. "Holmlea" left Wellington on December 1 and, after picking up further stores and building material at Lyttelton, left for the south on December 5. Southerly winds caused a day's delay, but the weather at Campbell Island was, for a start, satisfactory for unloading, overcast but calm. Two days of gale force winds followed but all the stores were got on shore without loss.

The material included a supply of piles, from 15 to 35 feet in length, to form the foundations for the three new buildings to be erected on the peaty soil. The Ministry of Works supplied simple but effective pile-driving equipment for this purpose. The sites have been excavated, and work is continuing under the two carpenters, J. D. Jamieson and D. Harrison.

Mention should be made of the friendly co-operation of the American "Operation Deepfreeze". The "Greenville Victory" landed three tons of stores on the island in December, and on February 24 the "Glacier" on her second journey south took in six or seven tons of stores.

Four of the men on Campbell Island spoke to "Antarctic" by radiotelephone on March 7. They told of excursions from the base mainly to the southern parts of the island, to study and photograph the wild life. Royal and Sooty albatrosses have been closely observed and during the hatching period especially regularly photographed. All the Royal hatchings fell within the 10-day period, February 17-27. There were no exceptions among thousands of birds. The Sooty chicks were hatched in late December, and are already as big as their parents. Both sorts of albatrosses are very tame and allowed the observers to examine both eggs and chicks without the slightest concern. A small

rookery of yellow-eyed penguins was visited, but these shy birds were hard to photograph.

A sea-elephant which decided to use the island launch as a sun-bathing beach got its head through a rubber tyre which was being used as a fender. This provided a field day for the photographers, one of whom was in water up to his waist to secure a good shot.

Great interest was aroused by the arrival of American naval vessels and friendly visits were interchanged. The Americans were most helpful. Fortunately no-one on the island required to take advantage of the dental and medical attention made available. Advantage was taken of the large turkey left behind.

Several planes of the "Deepfreeze" New Zealand-Antarctic flights were heard, over the island or out to sea.

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## Iles de Kerguelen

The relief ship "Gallieni" left Madagascar on October 25 and reached Port-aux-Francais, Kerguelen, on November 2. The disembarkation was completed in four days. The "Gallieni" on her return voyage carried 10 sea-elephants, 30 penguins and four skuas for the Paris museum and the Antwerp zoo.

An expedition under the command of Colonel Genty of the Air Force and comprising 30 men has left for Kerguelen to study the conditions for the establishment of an airfield. The party is expected to remain on the group for six weeks.

Satisfactory results have been obtained in connection with the experimental rearing of reindeer, minks, sheep, pigs and ponies, with the exception that so far, save for the sheep, no births have been observed. It should be noted that all the animals came from the northern hemisphere. A further effort to introduce myxomatosis has

ended in disappointment. An attempt is now to be made to infect the rabbits by using lice as carriers.

#### REINDEER IN THE ANTARCTIC

"The Polar Record" (September 1955) confirms the report in "Antarctic News Bulletin" (March 1955) that reindeer have been introduced into the Kerguelen Islands. Two pairs were taken from Lapland by air and were set free almost immediately. It is hoped that they will acclimatize themselves and become the basis of a reindeer stock in the islands. Reindeer have been well established on South Georgia since 1911, when three bucks and seven does were brought from central Norway. There are now several hundreds on the island.

It is also no longer true to say that "there are no penguins in the Arctic". The newspaper "Lofotposten" reported on July 5 1954, that a penguin had been seen by a farmer at Selsoyodden in Hamaroy. A writer in the Norwegian Whaling Gazette while admitting that penguins and auks may easily be confused, thinks that the farmer may have been right in his belief that it was a penguin he saw. Nine king penguins were released in Lofoten and Finnmark in 1936, and in 1938 some birds of smaller species were released. There have been several reports up till 1949 of penguins being seen in various parts of north Norway.

#### ERRATUM

"Antarctic News Bulletin", No. 20, December 1955, p.200, line 60: Mr. J. J. Millar was boson on the "Discovery" during the Banzare Expedition of 1929-30.

## Japan Prepares For I.G.Y.

Japanese officials and scientists are making preparations to carry out their part in the multi-nation survey of the Antarctic region.

Detailed plans were drawn up and duties assigned soon after the Japanese Government's acceptance of the request for Japan to make observations on the Prince Harald coast at 35° E. Long.

An advance observation corps composed of approximately 40 members (observation and camp staff) will depart in the early part of November 1956, and will arrive in the Antarctic in the latter part of December.

The corps will land on the Prince Harald coast in the early part of January 1957, set up camp, including the installation of observation apparatus, and will begin partial observations.

The observation corps composed of approximately 50 members (camp and observation staff) will depart in the early part of November 1957, and will land on the Prince Harald coast in the early part of January 1958. When the camp has been set up the corps, except for approximately 30 members (camp and observation staff) who will remain, will leave for home, conducting oceanographic surveys en route, and arriving back in Japan in the middle part of April 1958.

A special committee of the Science Council of Japan has recommended Professor Takeshi Nagata, a 42-year-old geophysicist of Tokyo University, to head the expedition.

The 2,208-ton vessel "Soya" is being converted into a modern scientific research ship fitted with the latest equipment and strengthened for ice work. The vessel will probably have to force a way through a 60-mile ice-barrier to reach the Prince Harald Coast. Two helicopters, a Bell and a Sikorsky, will be carried.

## Notes From An "Endurance" Diary

The final portion of the diary of Harry McNeish, carpenter on Shackleton's "Endurance, from the manuscript in the Alexander Turnbull Library, Wellington. The previous entry was merely the date "Tuesday, May 2nd". At that time the "James Caird" had been at sea since April 14th.

### Monday, 8th—

I hove to in N.W. gale; we sighted the land last night and stood out to sea again. We have been driven in on the land by the gale and had a hard struggle to clear it by beating off under-reefed mainsail jib and mizzen. We were only about two hours standing on the starboard tack of the land when the wind veered round to S.W.—a fair wind so we put about and steered W. by N. for the night. At daybreak on the 9th the land was in sight again and as we had only three pints of water left Sir Ernest decided we should make for a haven of sorts to replenish our water, and while trying to beat up King Hakon Bay we had a trying time with heavy squalls and darkness coming on. We ran into a little cove just inside the point, got our gear and stores out and dumped the ballast and tried to pull the boat up. But as we were all about done up we left her rolling in the surf for the night with one man on watch. The Boss found a cove and drove us into it for the night. Then after trying to sleep in our wet clothes we were called out at 3 a.m. as the painter had carried away. We tried then to turn the boat over to roll her up the beach but it was too much for us so we had a good hot hush and stood by until daylight.

### Wednesday, May 10th—

We decided to make the boat lighter so as we could handle her and make for the head of the bay, and half the party go overland for assistance as we have one man done up and has been from the first night we left Elephant Island, so I have started to take to three stroke of one put on at Ocean Camp the

week after we left the ship. The Boss and Creen went over the hill and found some albatross nests with young on them and the skipper went up and brought down an old and a young one. We stewed the old one and had it for lunch and it was a treat. Then we had our nut food and a hot drink and turned in for the night.

### Thursday, May 11th—

I am still busy at the boat. All hands have been gathering dry tussock grass for the floor of the cave. The Boss and skipper have fixed up the sails at the mouth and there is a good wood fire going and our wet clothes drying. We have not been as comfortable for the last five weeks. We had three young and one old albatross for lunch with one pint of gravy, which beats all the chicken soup I ever tasted. I have just been thinking what our companions would say if they had food like this.

### Friday, May 12th—

I am still busy at the boat, Whilst the skipper does the Nimrod and brings home the food Vincent lays down by the fire and smokes sometimes coming out for more wood while the Boss and Creen look after the cooking and McCarthy is my assistant. We had four young birds for lunch, then we think of hard times.

### Saturday, May 13th—

I am finishing the boat today. We are going in the morning if it is fine. We had another big lunch.

### Sunday, May 14th—

It has been blowing and raining all night, so we had to postpone our journey until better weather. We

turned out at 8 a.m. and had hush. The Boss and skipper went away for a walk round the bay, if possible to find a place with seals to keep us in food and fuel while they are going overland. I went on top of the hill and had a lay on the grass and it put me in mind of old times at home sitting on the hillside looking down at the sea. McCarthy picked up the boat's rudder which we lost the night we arrived. Vincent is still laying down by the fire keeping it going and always smoking. We are having two meals only today as we are getting bucked up again and we have only 80 biscuits which are wanted for the overland party.

Here McNeish's diary ends. The overland party left on May 19 and reached the whaling station at Husvik 36 hours later. Next day McNeish, McCarthy and Vincent were picked up by a whaling vessel.

Shackleton had left McNeish in charge of the remaining men, and wrote the following letter on the end pages of the diary.

"May 18th 1916, South Georgia".

Sir,—I am about to try and reach Husvik on the East Coast of this island for relief for our party. I am leaving you in charge of the party consisting of Vincent, McCarthy and yourself. You will remain here until relief arrives. You have ample seal food which you can supplement with birds and fish according to your skill. You are left with a double-barrelled gun, 50 cartridges, 40-50 Bovril sledging rations, 40 Streimer's nut food. You also have all the necessary equipment to support life for an indefinite period. In the event of my non-return you had better, after winter is over, try and sail round to the East Coast.

The course I am making towards Husvik is E. magnetic.

I trust to have you relieved in a few days.

Yours faithfully,

E. H. SHACKLETON."

McNeish died in the Wellington Hospital on September 24th, 1930, at the age of 64. He had been in the Ohiro Home for some years. He was accorded a naval funeral.

## Onassis Charged

The Federation of Norwegian Whaling Companies claims that the "Olympic Challenger" expedition, owned by the Greek, Aristoteles Onassis, did not observe the rules of the International Whaling Convention in the Antarctic in the 1954-55 season, although pledged to do so. The Companies state that the Onassis fleet captured blue whales during the forbidden period, January 7-21, took 759 humpbacks outside of the permitted February 1-4 period, and did not cease whaling until March 29, 10 days after the official closing date. Outside the stipulated hunting period it is claimed that the Onassis ships took 837 whales, estimated to have given a production of 33,000 barrels of oil. The expedition is also charged with capturing blue whales of 57 feet (minimum allowed 70 feet), fin whales of 42 feet (minimum 57) and humpback whales of 23 feet (minimum 35).

## Bookshelf

Mario Marret; "Antarctic Venture", London, William Kimber, 218 pages, ill. N.Z. price £1/2/.

This is the story told by its leader of the French expedition in Adelie Land, 1952-53. When fire destroyed the base at Port Martin during the relief, seven men stayed on at Pointe Geologie with hastily improvised accommodation and inadequate stores, in order to carry out the planned study of the Emperor penguins 100 yards from the rookery itself. During the winter a perilous 50-mile journey was made across the sea-ice to salvage much-needed material, including two weasels, from the burnt-out base. Four men sheltered in the weasel cabin, 3ft 6in. by 9ft. 6in., during a three-day blizzard when even between the gusts the wind shrieked at 80 m.p.h., while the sea-ice cracked both before and behind them.

Marret describes this, and many other arduous and sometimes perilous adventures, with verve and humour. It is a very human story he tells, and the reader lives through these days of high endeavour with the explorers. The description of the life and habits of the Emperor penguin is naturally one of the main features of the book. But "Antarctic Venture" is a well-balanced story told with clarity and wit, and is a noteworthy addition to the library of Antarctic exploration. One could wish for a more extensive map, but the 19 illustrations add considerably to the reader's enjoyment. L.B.Q.

William H. Kearns and Beverley Britton: "The Silent Continent", London, Victor Gollancz; 237 pages, ill. N.Z. price £1.

The American authors of this history of Antarctic exploration describe it as "a collection of stories"

—all true—about the Silent Continent and the men who have fought it". Much greater attention is given to American explorers than to others: Wilkes is given 23 pages, while d'Urville, the contemporary Frenchman, is dismissed in 30 lines and Ross the Englishman in 18, except for a larger attack on him for his attitude to Wilkes. This lack of balance is accompanied by a partisan handling of historical facts. Palmer is acclaimed in a whole chapter as the discoverer of Antarctica, while Bransfield's claim to this distinction, at least deserving of serious consideration, is brushed aside with the barest of mentions. There is an incredibly inadequate four-line account of Scott's great pioneer southern journey, and several definite mis-statements.

But many of the great exploits are freshly and racily described. Nowhere else, perhaps, is there readily available so good an outline of Byrd's four expeditions. One of the most interesting sections of the book is the description of the plane crash during "Operation High-Jump"; co-author Kearns was one of the crew of nine who "hit a cloud full of rocks", and this is a well-told personal experience.

A useful feature is the "chronology of exploration", but there is unfortunately no index. L.B.Q.

Ken Dalziel: "Penguin Road," Sydney, Angus and Robertson, 80 pages, ill. N.Z. price 13/6.

Here is the ideal present for the Antarctic enthusiast's children. Ken Dalziel was radio-supervisor on Australia's Heard Island in 1953, and this delightful book is based on the letters he wrote for his own two children, describing the life on the island and especially the "goings-on" of the penguins. Lively illustrations by Frank Norton as well as photographs add considerably to the entertainment value of a very

attractive book which Junior may have some difficulty in getting out of Dad's hands until Dad has finished reading it.

Admiral Lord Mountevans: "The Antarctic Challenged", London, Staples Press, 191 pages, ill. N.Z. price 16/-.

The title of the latest book by this veteran of Antarctic travel will intrigue many whose interest in the South Polar regions has been quickened by the important part New Zealanders are now playing in this field. To those who would gain at least a superficial knowledge of the history of Antarctic exploration his book will provide a means. The author traces briefly the achievements of the early navigators from the time of Vasco da Gama in 1497 to the Belgian expedition under Gerlache in 1897-98. Several chapters deal with the Scott and Shackleton expeditions and, not unnaturally, Captain Scott's erstwhile second-in-command deals in greater detail with the expedition in which he played so important a part. The epic journey of Shackleton's ill-equipped Ross Sea party concludes what has been termed the "Heroic" era of polar exploration. New Zealanders have a similar part to play to that of Captain McIntosh and his men and this part of the book is of more than passing interest. Admiral Byrd's expeditions which introduced the "Mechanical" age and the American Navy venture which introduced the "Operation" age are included, and the book ends with an account of the Norwegian - British - Swedish Expedition of 1949-52.

To the serious student of Antarctic history the book does not introduce anything new and in a measure repeats what was written by the author in an earlier book, "The Desolate Antarctic". The author should at least have avoided including in the illustrations to "The Antarctic Challenged" some of those which appeared in the previous book.

N.L.D.

## Whaling Season

Nineteen pelagic whaling expeditions are operating this season, the same number as in 1954-55. The Dutch factory-ship "Willem Barendsz" has been replaced by a new vessel with the same name. There are 257 catchers compared with 233 last season.

The pelagic expeditions were not permitted to take blue whales before February 1, or fin and sei-whales before January 7. In 1954-55 the opening date for blue whale catching was January 21. The taking of humpback whales was restricted to four days, February 1-4, and was forbidden altogether between 0° and 70° W. The maximum catch allowed is 15,000 blue whale units, 500 units less than in the two previous seasons. The sector between 70° and 160° W., closed for a number of seasons, is, by a decision of the Moscow Conference in July last, open for baleen whaling for the next three years.

It is reported that the Russian "Slava" expedition will be investigating ice conditions and carrying out hydrological, meteorological, and other investigations. Captain A. N. Solynik said in an interview that their investigations would assist the Soviet Antarctic Expedition. The two expeditions would exchange meteorological information. The research vessel "Gorbatsj" was to accompany the whaling expedition.

## WHALE MARKS RECOVERED

A report in Norsk Hvalfangst-Tidende lists 13 whale-marks recovered from the Antarctic during the 1954-55 season. Seven of the marks were fired by the "Enern" in 1953-55, but the other six were pre-war "Discovery" marks, three of them fired over 20 years ago. No whales in which marks were found had moved any remarkable distance to east or west.

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