

ANTARCTIC

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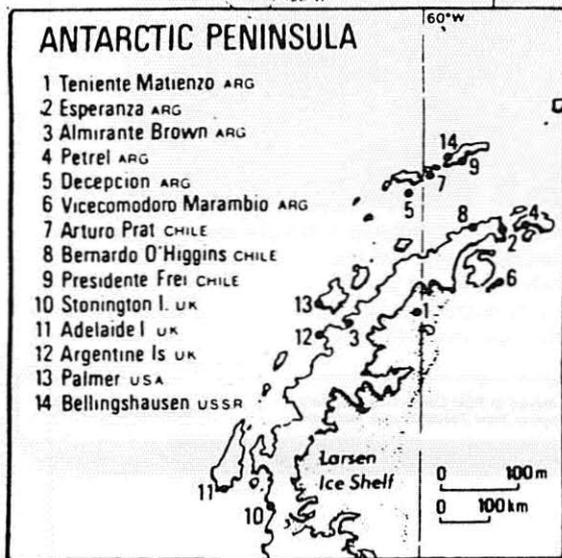
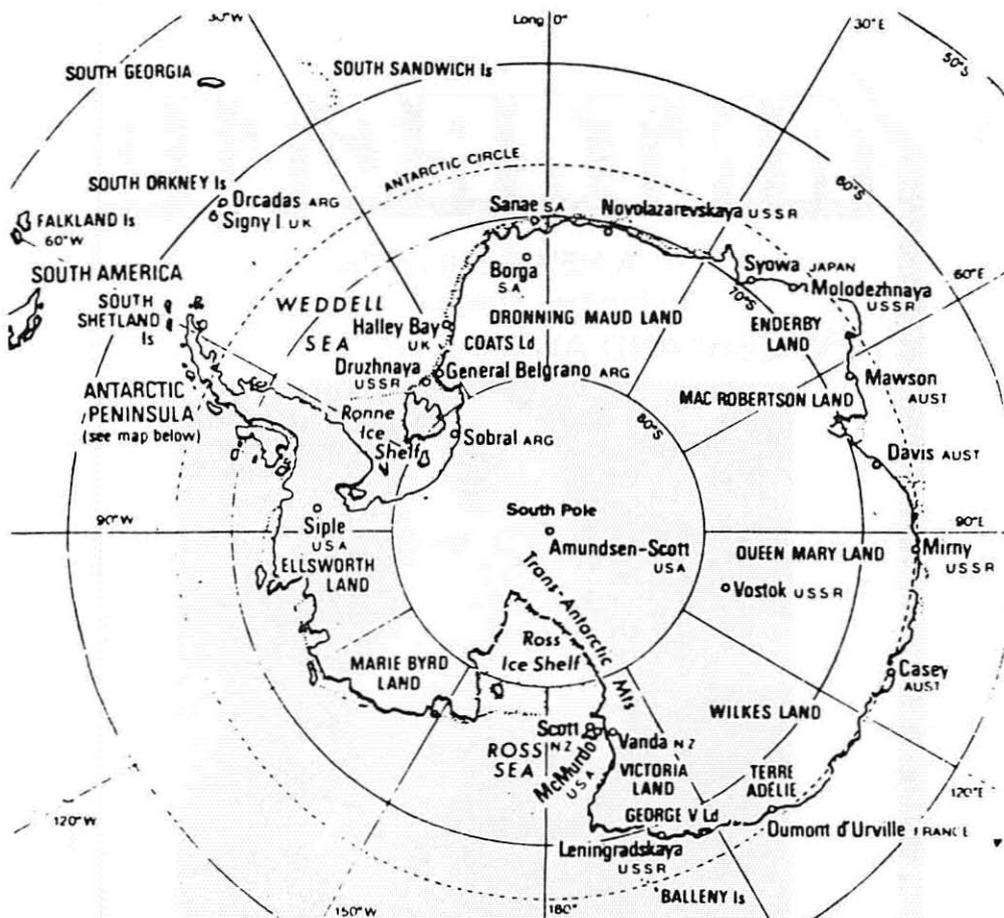
Albatros chick on an artificial nest incorporating automatic weighing equipment. The chick's weight is measured every five minutes and stored centrally on magnetic tape, providing information on growth, feeding frequency and meal size. Eight such nests have been built at BAS Headquarters and will be used again at Bird Island (South Georgia) in the 1985-86 summer.

Photo: P. Prince, BAS

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September 1985



ANTARCTICA

0 500 1000 Miles

0 500 1000 Kilometres

ABBREVIATIONS

ARG ARGENTINA

AUST AUSTRALIA

SA SOUTH AFRICA

UK UNITED KINGDOM

USA UNITED STATES OF AMERICA

USSR UNION OF SOVIET SOCIALIST REPUBLICS

ANTARCTIC

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NEW ZEALAND PLANS FOR SEASON

Radio tracking of Adelie penguins, further study of the effects of the volcanic loading on Ross Island and a pelagic litter survey are among the projects included in this seasons Antarctic research programme. Input over a wide range of earth, atmospheric, physical and biological sciences has been increased and will be covered by 52 laboratory and field events.

A special maintenance team will be at Cape Hallett again to minimise the effects of former human habitation at the joint US-NZ research station closed since 1973, and provide the best conditions for the rejuvenation of the site as a penguin rookery. They and the scientists are all members of the parties in the Antarctic Research programme for the 1985-86 season. Including support, logistic and construction activities this programme will call on up to 300 men and women.

New Zealand scientists will work this summer in the Beardmore Glacier area less than 400 nautical miles from the South Pole, at Cape Adare and on Ross Island. Others will work on the sea ice of McMurdo Sound, in the dry valleys of Victoria Land and on Mt. Erebus.

Research projects will be conducted by scientists and technicians from five New Zealand Universities – Auckland, Waikato, Victoria (Wellington), Canterbury and Otago. Others will come from Lincoln College, the Medical Research Council, the Carrington Technical Institute and Canterbury Museum.

The programme will also draw on staff from DSIR's Antarctic Division, Geophysics Division, Geological Survey, Ecology Division, Division of Marine and Freshwater Sciences, the Physics and Engineering Laboratory and the Institute of Nuclear Sciences.

Others will come from the Lands and Survey Department, the Meteorological Service, the Ministry of Works and Development and the Commission for the Environment.

An army construction team will again join staff from the Antarctic Division and the Ministry of Works and Development in the Scott Base rebuilding programme. Post Office Staff will operate the Scott Base Post Office and communications throughout the year and aerial installations will be checked by Post Office riggers during the summer season.

Scientists from Australia, West Germany, United Kingdom and the United States will be included in research to be conducted by Victoria University, the Physics and Engineering Laboratory and the Medical Research Council. Others will come from Japan and Sweden.

Vanda Station in the Wright Valley, 130 km from Scott Base, will be operated again this summer by three men. The leader is Peter Foster. This season's team will provide logistic support for New Zealand, United States and Japanese field parties and communications and meteorological information. Field stations at Cape Bird, Lake Fryxell in the Taylor Valley and huts in the Miers and Lower Wright Valleys will also be used by New Zealand field parties.

CONTINUOUS PROGRAMMES

All the continuous long term seismic, geomagnetic, ionospheric and meteorological programmes, will be maintained at Scott Base. The Meteorological Service will extend its solar radiation measurements with the installation of new equipment at the tower end of the Geophysical laboratory. This will improve diffuse, solar, and global radiation measurements which will be recorded on data loggers in the laboratory. The meteorological screen will be shifted to a new site some 50 metres from the laboratory.

Two new summer meteorological outstations from Vanda are planned for Lower Bull Pass and the Lower Wright Valley. These will record wind and temperature.

The pilot trace gas measurements project started last summer will be extended with more samples of fluorocarbons and hydrocarbons to be collected and the installation of analytical facilities in the Scott Base Laboratory.

LAKES AND STREAMS

Scientists from the Division of Marine and Freshwater Science Research Laboratory in Taupo will again examine the stream community structures and functions in the Dry Valleys of South Victoria Land. The study began three years ago. This season Drs Warwick Vincent and Clive Howard-Williams will work on the nutrient uptake and transformation in the algal communities of three contrasting streams. They will also quantify the photosynthetic characteristics of the communities and the deep phytoplankton populations of

Building programme

Rebuilding of Scott Base will be continued with the construction of the new light workshop complex. This is stage VI of the project. It will include the carpenter's shop, electrician and base engineer's workshop and machine shop. The construction will again be supervised by a team from the Ministry of Works and Development and the work which was begun in October will be undertaken by thirteen New Zealand Army engineers. The building should be complete by the end of January 1986; internal finishing and

installation of equipment is scheduled for the following summer season.

Last season the interior of Stage V, the Geomagnetism laboratory, was completed. It is 195 square metres and 127 square metres larger than the old laboratory and was occupied in stages from November 12, 1984. By the end of the season it accommodated equipment for seismological recording, and the magnetism, upper atmosphere, and meteorological programmes.

Lake Fryxell. In the field from November to January the team will work at Lakes Vanda and Miers and at the Walcott Glacier. They will be assisted by Gillian Wratt, an Antarctic Division field assistant.

Auckland University scientists Dr Steven de Mora, Stuart Campbell and Alan Grout will study the chemical and physical forms of trace metals in the waters of Lakes Fryxell and Bonny and the biological metal interaction in the biological community in the Lakes. Measurements will also be made of the baseline organolead levels in the atmosphere at Lake Vanda.

Among the scientists from other nations participating in the programme are five from the Japan Polar Research Association. Dr Tetsuya Torii and his team working from Vanda Station will continue their geochemical studies of the highly saline but fresh water lakes in the dry valleys. With him this year will be Dr Genki Matsumoto, Dr Katsumi Yoshimitsu, Mr Tetsuo Takeuchi and Dr Noriyasu Masuda.

SAMPLES FOR DATING

From late October to mid-November Dr Chris Adams and Pam Whitla from the Institute of Nuclear Sciences, DSIR, will collect rock samples from areas of the Wright Valley and near Lake Vida for dating by rubidium-strontium methods. This should assist in identifying the earlier phases of regional metamorphism before the emplacement of Granite Harbour Intrusives and the associated gneisses and migmatites.

Working from the U.S. Antarctic programme campsite on the Beardmore glacier 80°00'S 164°06'E and two field camps Paul Fitzgerald of Melbourne University and Ken Woolfe of Victoria University will collect

samples from the granite intrusions exposed in the area. Using fission track dating techniques on apatite at Melbourne University the samples should show the timing and rate of uplift. The results will be compared with similar work being undertaken in South and North Victoria land.

CLIMATIC VARIATIONS

Long and short term climatic variations in the Dry Valleys will be monitored again this year by Trevor Chinn and Peter Mason from the Water and Soils Science Centre, MOWD, Christchurch. They will be accompanied by Antarctic Division field assistant Warwick Potter who will be replaced by Rob Finlayson at Christmas. They will study the flow regime, record the temperature and collect sediment samples from the Onyx River, and measure the levels of nine enclosed lakes (Vida, Vanda, House, Joyce, Bonney, Henderson, Hoare, Fryxell and Don Juan Pond).

Longer term climatic variation study involves making mass balance measurements on the Heimdall Glacier and comparative ablation measurements at the margins of the inland Wright Upper Glacier and the coastal Wright Lower Glacier. An electronic water-level recorder system developed by the MOWD will be tested at some sites in the Dry Valleys and a brief study will be made of the equilibrium of the glacier margin at Cape Bird.

Dr Paul Mosley, also from the Hydrological Centre, and Antarctic Division field assistant Ralph Dickson will inspect and survey suitable sites in the Victoria, Wright, Taylor, Garwood, Marshall and Miers Valleys for the installation of special purpose water level recorders. They will also conduct a feasibility study on the use

of VHF radio telemetry from record sites to base stations at Vanda and or Scott Base. This work will facilitate the establishment of a network of monitoring, recorder and lake level survey sites in the 1986/87 season when it is planned to commence a five year programme which will provide information on the spatial variation of hydrological response in the Dry Valleys.

ICE STUDIES

Studies of the physical properties of sea, lake and glacier ice will be continued this summer by a team from the Physics and Engineering Laboratory, DSIR, and two guest scientists from Cambridge University. This long term project, led by Dr Bill Robinson, PEL, Wellington includes studies of strain characteristics of the sea ice and dynamics of the floating Erebus Glacier Tongue in McMurdo Sound.

This season Dr Robinson, and Arnold Heine of PEL will continue measuring the dynamic strain in sea ice induced by the landing and other movement of aircraft and of vehicles and by the movement of seawaves. Such measurements are directly related to the load carrying capacity and length of life of the sea ice runway. Drs Vernon Squire and Patricia Langhorne of Cambridge University, who have developed ice strain meters, will join the New Zealand team and record measurements for comparative purposes.

In January Arnold Heine and Dr Tim Haskell will service the strainmeters which were installed the previous season on the Erebus Ice Tongue.

Data on the dynamics of the tongue have been acquired over 15 years but none has been obtained over a 12 month period. Last season two strainmeters each with a designed

life of six years were buried two metres below the surface of the tongue approximately 3.5 km from the snout and 500 metres from the edges. They were connected by cable to a wannigan placed by the southern meter and are controlled by computer; the data is being transmitted to Arrival Heights by radio link and from there by telephone link to Scott Base. where it is stored on floppy disks for subsequent analysis at PEL. Recordings are made for 30 minutes every 12 hours; the batteries supplying power to the electronic and radio links being recharged by wind generator and solar cells. The meters were recording in June and although they switched off for a time they are now operating again and accurate measurements are being made of the effects of the sea swell on the glacier tongue.

The optical and electrical properties of sea ice will be further studied by Drs Bob Buckley of PEL and Joe Trodahl of Victoria University who are trying to determine the relationship between the scattering and attenuation of light transmitted through the ice and its structure. Measurements of the spectral transmission of light in sea ice will be made at several locations near the ice runway and the Erebus Glacier Tongue and the structure of the ice at those sites will be studied from core samples.

An all year study of the physical properties of sea ice will begin in January. Mr Greg Crocker, Cambridge University, will investigate fast-ice responses to wave and swell activity, throughout the year and monitor energy exchanges between the ice and the atmosphere. Ice salinity, density and fabric profiles and the properties of the ice surface and snow cover will be measured. The project

is a component of the British contribution to an International survey and study to determine the characteristics of Antarctic sea-ice for comparison with data already accumulated on Arctic sea-ice properties, ice dynamics, air-sea ice interaction and the role of sea-ice in climate.

ICEBERG DISTRIBUTION

The distribution of icebergs in the Ross Sea, their residence times and the drift of the distinctive Mackay Glacier bergs will be studied further by Denis Fowler from the Commission for the Environment assisted by Karen Williams. Flying in a north bound RNZAF C130 Hercules the team will take photographs of icebergs in the fast ice along the western coastline of the Ross Sea. Results will be compared with observations on iceberg presence during the previous season.

GLACIAL CHRONOLOGY

Between mid-December and late January core holes will be drilled at three sites in the Marshall Valley to obtain samples which should extend knowledge of the chronology of successive Ross Sea Glaciations documented by investigators over the last 15 years. The programme is sponsored by Waikato University and led by Dr Chris Hendy of Waikato and Dr Paul Robinson of the New Zealand Geological Survey, Wellington. Other members are Jan Clayton-Greene and Fiona Judd from the University. They will be joined by two Antarctic division drillers.

The site selected contains a sedimentary record of successive glaciations. A meltwater stream from the Rivard Glacier has eroded the till sheets filling the valley floor and exposing sections more than 2 km long and as deep as 15 m. Cores will be

extracted from beds not exposed to the surface in the valley where good prospects for preservation and dating exist. Core logging and sampling will be undertaken at Scott Base.

Sampling of the Ross Sea drift and lacustrine sediments in the Miers Valley and adjacent Koettlitz Glacier Valleys, begun earlier, will also be completed.

BIOLOGICAL STUDIES

Dr Brian Foster and T.J. (Tref) Barnett from Auckland University will conduct an exploratory zooplankton sampling programme to determine pelagic fauna types and their significance to the Ross Sea marine ecosystem with a specific focus on fish biology. Samples will be taken from a number of holes in the sea ice in the North-South transect approximately 10km west of Hut Point Peninsula. Periodic collections will be made to study the population interaction of zooplankton. The results will be compared with other world-wide studies of the role of zooplankton and fish in temperate inshore ecosystems.

Studies of fish feeding and cold adaptation will be continued by another team from Auckland University who this season will focus on sprint speed in fishes, predator prey interaction, neurophysiology in cold adaptation and macrozooplankton feeding in *P. Borchgrevinki*.

Led by Dr John Montgomery the team will comprise Drs John MacDonald and John Cargill and Mr Gary Housley. For the first time a limited number of dives will be made under the sea ice to observe fish feeding. The team will operate from Scott Base and from Cape Royds where fish tagging will be continued to provide data on sizes and populations.

The swimming ability of Antarctic fish will be further studied by a team from Canterbury University led by Dr Bill Davidson and comprising Craig Franklin, Malcolm Forster and Harry Taylor. They will be working in the Scott Base area and in the new wet lab. This year they will continue earlier investigations of the muscle structure of Antarctic cod (*Dissostichus Mawsoni*); collect benthic and pelagic fish for laboratory studies using a tunnel respirometer to record comparative swimming ability and measure metabolic rates. Bio-chemical analyses of glycogen usage and lactic acid buildup will be used to determine the utilisation of oxygen and the effects of gill damage, through possible freezing of tissue, on swimming ability and oxygen uptake.

Blood samples will be collected from Pycnogonids (sea spiders) to determine the composition, oxygen consumption, metabolic rates and nitrogenous excretion. Samples of blood will be returned to New Zealand for further analysis. Water turnover will also be investigated.

SEALS

Dr Graham Burrell, a scientist from Lincoln College will investigate the physiological processes in the Weddell seal which is exposed to constant daylight during the polar summer. Of particular interest is the timing of seasonal events such as reproduction which in many animals is influenced by melatonin, a hormone secreted in conditions of darkness. Melatonin implants will be placed in a number of pregnant seals and the response to the hormone measured. Dr Burrell will be assisted by Mr Sandy Sandblom of Christchurch.

Two recent outbreaks of disease in seals on the North East Coast of the United States caused by avian influenza like viruses raise the question

of whether seals world-wide are natural hosts of influenza viruses or whether they were recently infected from birds.

A team from the Medical Research Council led by Dr F.J. Austin and including Dr A.J. Robinson and guest scientist Dr R.G. Webster from St. Jude's Hospital, Memphis, Tennessee will be collecting blood and nasal samples from Weddell Seals, Adelie penguins and skuas near Scott Base and at Cape Bird in an attempt to obtain more information on the extent to which influenza viruses occur in isolated areas with limited mammal and bird life.

Laboratory tests will be conducted on the samples in New Zealand for viruses and antibodies and the results forwarded to the World Health Organisation which maintains a continuing interest in the relationship between human and animal virus influenza strains.

PENGUINS

Foraging patterns of female Adelie penguins will be further studied by Dr Lloyd Davis of Otago University who will be joined by Dr John Cockrem of Ecology Division, DSIR in Wellington, Dave Ward, also of Ecology Division but based in Havelock North, and Miss Yolanda Van Heezik of Otago University. The team will attach miniature transmitters to the backs of six female Adelie penguins, monitor their movements and establish foraging distances and patterns over a five week period at Cape Bird. They will also undertake additional research on metabolic rates and foraging habits, depths and speeds. Dr Cockrem will make further study of how the penguins 'biological clock' functions under conditions of constant daylight; blood samples will be collected and melatonin levels measured under laboratory conditions.

As part of New Zealand's contribution to the International Survey of Antarctic Seabirds (ISAS) another aerial photographic survey of penguin colonies along the Victoria Land coast will be made early in December from a Hercules during a flight from McMurdo Station to Christchurch. The project, which began in 1981, will be carried out by a team from the Ecology Division, DSIR, Rowley Taylor, Dr Peter Wilson and Bruce Thomas. They will determine the location of all penguin colonies and make a census of Adelie Penguins.

Another ISAS project will be the ground census of the Penguin colonies at Cape Bird and Cape Royds. Team leader for this years count is Mrs Lynda Logan of DSIR Christchurch. She will be accompanied by Mr John Fennell, Ecology Division, Darfield and Miss Rachel Brown of Christchurch. The count will be made during the last two weeks of November.

In January and February Dr Graham Wilson of the University of Canterbury with Rowley Taylor will conduct a ground survey at Cape Hallett to record any changes to the penguin population which may have occurred since the 1982/83 aerial survey of the rookeries in the area. The purpose of the programme is to determine man's long term impact on this colony following the closure of the station in 1973.

BEDROCK STUDIES

Bedrock studies in the McMurdo Region will be continued for the third year by scientists from Victoria University. This year the field team is Ken Palmer, Phil White and Ken Woolfe. They will be joined by Peter Dawkins an Antarctic Division field assistant. The team will undertake a detailed field and laboratory

investigation of the relationships between various granitoids and their surrounding crystalline basement rocks. This involves mapping in detail the distribution of granitic rocks in the central St. John's Range area of South Victoria Land and making a representative collection of the granite rocks for subsequent petrographic, microprobe and XRF (Xray Fluorescence spectrometry) analysis in the laboratory.

LOADING STUDY

The Ross Island Loading study begun in the 1982/83 season will be continued by Drs Tim Stern and Fred Davey of the Geophysics Division, Wellington and Georg De Lisle, BGR, Federal Republic of Germany. The team, accompanied by Antarctic Division field assistant Brian Smith, will make gravity and seismic reflection measurements to deduce the sediment thickness beneath the ice shelf. This will involve a traverse 300km across the ice shelf south-east of Mt. Erebus. The data will be used to study deformation associated with the loading of the young volcanic mass (Ross Island) on the lithosphere. Gravity measurements will also be made on Mt. Erebus.

SEISMOLOGY

Two bore holes will be drilled in the Wright Valley this season to house down-hole seismometers for a joint U.S. Geological Survey, N.Z. Antarctic Division and Geophysics Division project. Operations will begin in late October. The team, led by Jack Hoffman, comprises Kevin Jenkins, Wayne Little all of Geophysics Division Wellington, Max Williams, also of Wellington, Pat Cooper (MOWD, Westport), and Graham Brown (MOWD) Dunedin. The holes will be drilled approximately 4.5 km east of Lake Vanda.

Recording equipment associated with the programme will be installed in the physical sciences laboratory at Scott Base. Data from the seismometers will automatically be transmitted by radio telemetry, via repeater stations at Mt. Newall and Crater Hill, to the main laboratory at Scott Base where it will be stored for later onward transmission to the data collecting centre of the U.S. Geological Survey at Albuquerque in the United States.

The annual deformation surveys of the Mt. Erebus summit area will be carried out this year by Graeme Blick and Roger Williams of the N.Z. Geological Survey, Wellington. Peter Brailsford, an Antarctic Division field assistant, will be with the party.

This programme is in conjunction with the International Mt. Erebus Seismic Study (IMESS) a joint United States-New Zealand-Japanese programme. The purpose is to determine the nature and degree of deformation associated with various levels of volcanic and seismic activity which will

assist in the understanding of the mechanisms of large essentially basaltic volcanoes. Such understanding should result in the development of more reliable eruption prediction techniques. The field work consists of monitoring the small earth movements by geodetic surveys of marks established in 1980/81 and later seasons to record changes in activity.

THE PALAEOENVIRONMENT

Dr John Buckeridge, Carrington Technical Institute, Auckland, will investigate the biota (especially barnacles) of the Scallop Hill Formation, Taylor Formation and other associated horizons to reconstruct the palaeoenvironment and to provide information on the long range dispersal mechanisms of biota in the South Ocean during the Quaternary era. Accompanied by Bob Finlayson, an Antarctic Division Field assistant, he will spend eight weeks collecting samples in the White, Black Island and Brown Peninsula areas, at Cape

Survival training

Basic snowcraft and survival training is being provided from Scott Base again this season between October and January by New Zealand and American mountaineers. Last summer's team provided training for 450 men and women.

This summer the courses are run by Walter Fowlie (field leader), Peter Brailsford, and Brian Staitte, who are assisted for the fourth time by David Lasorsa, a United States Antarctic Research Programme mountain instructor. The field leader last season was Rob Hall, who also lectured to scientists and support staff at the Amundsen-Scott South Pole

Station. The two New Zealanders were Paul Bayne and Paul O'Dowd.

Training was given last summer for the Antarctic Division, DSIR, to American and New Zealand research and support staff, United States aircraft and helicopter flight crews, men from the New Zealand Army, and crews of Royal New Zealand Air Force aircraft. Thirty members of the West German GANOVEX IV expedition to Northern Victoria Land, and guest scientists from five countries also took part in the courses. Twenty-seven New Zealanders from the catering staff at McMurdo Station made the journey to Scott Base to attend the courses which were held between early October and late January.

Royds and in the Lower Wright Glacier.

SEDIMENT TRANSPORT

A specially designed and built underwater camera will be used by scientists from Victoria University to obtain representative photographs from several physiographic areas of the sea floor in McMurdo Sound — New Harbour, Cape Roberts and Granite Harbour. Scientists Alex Pyne, Andrew McPherson, and David Kelly will be joined by Antarctic Division field assistant Peter Dawkins. They will be looking for features that indicate sediment transport directions.

PELAGIC LITTER

Depending on available icebreaker support Dr Murray Gregory (Auckland University) and Dr Ian Owens (Canterbury University) will continue a survey of pelagic litter levels on the surface waters of the sector of the Southern Ocean lying south of New Zealand. They will map shore types of the Ross Dependency and survey the seaborne litter reaching the shores. The extent, character and significance of sub-tidal platforms identified in previous expeditions will be investigated, a survey of hydro-carbon pollutants on beach environments will be initiated and the study of high latitude beach forming processes continued. The programme will be undertaken in late January and early February.

VIPS, FILM CREWS, YOUTH GROUPS

Three film crew involved in obtaining film for a joint Television New Zealand/BBC natural history documentary of the environment, flora and fauna will visit the ice. Neil Harrow of the Natural History Unit in Dunedin will lead the project. He will be accompanied by

two technicians and an Antarctic Division field assistant. Part of the trip will be spent aboard a U.S. ice-breaker.

Two representatives of New Zealand youth groups will spend three weeks on the ice in January. They are David Roy, a 17 year old Boys Brigade Sergeant from Christchurch, and Alison Lindores, who is 18 and a Ranger at Ashburton.

In addition to spending time at Scott Base David Roy will join a party travelling to Butter Point to carry out maintenance on the drilling camp and Alison will accompany the New Zealand television/BBC crew filming for a natural history documentary.

VIP groups will again visit Scott Base, Vanda and some of the field parties. Members of these groups are invited as representatives of the New Zealand Government, RDRC, the New Zealand Universities, Vice-Chancellors Committee and government departments with interests in the New Zealand Antarctic research programme.

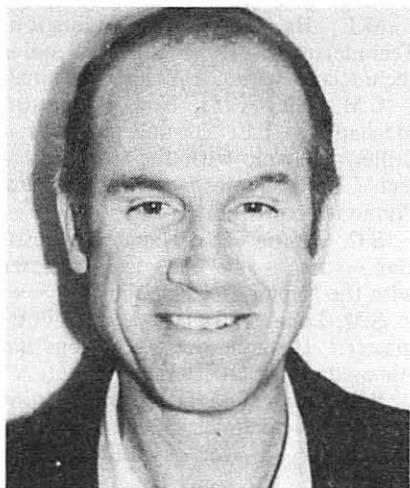
Further work on the clearing of the site of Hallett Station will be done this year by John Alexander, Whakatane, Norm Hill, Wellington, Richard Garlick of Christchurch and Allan Weal of Waihi.

In a combined Canterbury Museum and Antarctic Division Project a party will inspect the historic huts at Capes Royds and Evans and be landed at Cape Adare to carry out some maintenance on Borchgrevink's hut. David Harrowfield and Russell Skerton of Canterbury Museum and Gerry Turner of Lands and Survey will also make a detailed study of the temperative, humidity and wind effect on the hut at Cape Adare and carry out a beach profile survey and penguin census.

Summer staff

SCOTT BASE

P.L. Cresswell, Christchurch.
Officer-in-charge.



JOHN PARSLÖE

J.R. Parsloe, Christchurch. Deputy officer-in-charge. He is a 41-year-old ship's officer who served in the DSIR research ship *Tangaroa*, and then aboard the *Benjamin T. Bowring*, support ship for the British Trans-globe Expedition. In addition he has worked with the Norwegian research programme on Spitzbergen.

K.M. Glynn, Wellington. Stores officer.

D.L. Brice, Christchurch. Storeman.

A.P. Thomson, Linton. Plant operator.

D.A. Earl, Auckland. Radio operator.

A.A. Neels, Christchurch. Radio operator.

S. Bates, Auckland. Mess manager.

G.F. McGregor, Palmerston North. Chef.

I.E. Rice, Waiuku. Assistant maintenance officer (mechanic).

I.W. Lake, Te Anau. Assistant maintenance officer (carpenter).

Linda Harrison, Christchurch. Information officer.

Bronwyn Baiteary, Christchurch. General duties.

Barbara White, Napier. General duties.

D.I. Cowie, Christchurch. General duties.

R.C. Hoeskma, Palmerston North. Post Office technician.

Pauline Galyer, Mt. Maunganui. Post Office clerk.

Vivien Smith, Timaru. Post Office clerk.

VANDA STATION



PETER FOSTER

P.A. Foster, Waikouaiti. Officer-in-charge. He is a 39-year-old science teacher who has a B.Sc degree in chemistry from Otago University.

M.F. Bourke, Invercargill. Meteorological technician.

A.P. Sheppard, Christchurch. Field leader.

Winter team at Scott Base

Twelve men will winter at Scott Base through 1986. One of them, Mr G.B. Crocker, a Canadian-born glaciologist from the University of Cambridge, will be the first foreign scientist to winter at the base since 1959 when three Americans, one a glaciologist, worked there.

Mr Crocker will be at Scott Base from January to December under the sponsorship of the British Natural Environment Research Council in conjunction with the Antarctic Division and the Physics and Engineering Laboratory, DSIR. He will come from the Scott Polar Research Institute to investigate the physical properties of shore fast ice in McMurdo Sound during the winter for comparison with data already obtained on Arctic sea ice properties.

Next winter's leader Mr J.R. Rankin, knows Scott Base well. He will return there next month for his third winter as base engineer. He wintered there first in 1971, and again in 1977 when he was also officer-in-charge for the winter.

Of the 11 New Zealanders in the team seven are from the North Island and four from the South Island. The oldest is 54, and the ages of the others range from 23 to 29.

Members of the team are:

J.S. Rankin (54), Kumara. He wintered in 1971 and 1977 as base engineer, and is a contractor and engineer in his home town.

C.R. McDonald (27), Tokoroa. Assistant base engineer. He works at Kinleith as an instrument technician with N.Z. Forest Products.

R.W. Paterson (24), New Plymouth. Technician. He is a technician with

the Broadcasting Corporation in his own town.

D. Wilkinson (23), Wellington. Technician. He is a telecommunications technician with the Civil Aviation Division, Ministry of Transport, Wellington.

M.J. Harman (24), Wellington. Technician. He is an electronics technician with AM International.

C.M. Olley (25), New Plymouth. Mechanic. Last summer he was a driller/mechanic with the CIROS project. He is a mechanic with a New Plymouth construction firm.

S.C. Pardoe (25), Napier. Electrician. He is an electrical overseer with the Napier City Council.

S.M. Loney (25), Alexandra. Postmaster. He is a supervisor from the Alexandra Post Office.

P.S. Purves (29), Hamilton. Senior Post Office technician. He is a radio technician in the Hamilton Post Office.

S.J. Mosley (27), Auckland. Chef. He is a Royal New Zealand Navy Leading Cook in H.M.N.Z.S. Waikato.

R.A. Balm (25), Arthur's Pass. Field leader/dog handler. He holds a science degree and is a park assistant with the Arthur's Pass National Park Board.

A roundup of New Zealand News is sent to the winter team at Scott Base every week, and a monthly newsletter comes back to the Antarctic Division, Department of Scientific and Industrial Research. Last winter the 11 men at the base started their own weekly newsletter for Ross Island circulation only. It was called "The Pelgo Rumour", and was edited by one of the technicians Peter Turner. Although its life was short - 26 issues - it would claim readership at the South Pole. A copy was flown there just before the summer season ended.

Antarctic rescue team commended

Six New Zealanders and five Americans who took part in the rescue of a United States Navy equipment operator, James E. Porter, who was lost in a violent Antarctic storm near McMurdo Station last season, have received letters of commendation from the Secretary of the Navy (Mr John Lehman), for meritorious service. Porter, a Seabee (Construction Battalion) bulldozer operator, was caught in the storm while working at Williams Field on October 7, last year.

Members of the joint New Zealand/United States search and rescue team from Scott Base and McMurdo Station had to conduct a search on the sea ice in zero visibility with winds up to 60 knots and a wind chill factor of minus 51.1deg Celsius at great personal risk. Mr Lehman says in the letters that their courageous efforts, perseverance, and selfless dedication were in keeping

with the highest traditions of the United States naval service.

Of the six New Zealanders three were members of the 1984 winter team at Scott Base: Eric Saxby (O.I.C.), Rod Vardy (base engineer), and John Hoffman (mechanic). The others were Garth Varcoe, Antarctic Division buildings officer, Paul O'Dowd and Rob Hall (summer snowcraft and survival team).

An American mountaineer David Lasorsa, who was with the New Zealand survival team last season, was one of four men – the others were Rob Robbins, Jim Gilchrist and Randy Chambers – from Antarctic Services, the civilian support contractors for the National Science Foundation, who took part in the rescue. The fifth was David Bresnahan, senior NSF representative at McMurdo Station for the first part of the summer.

U.S. cargo haul by sea and air

To support the United States and New Zealand research programmes and two American stations aircraft carried 710.54 tonnes and 1352 passengers to Antarctica during the four months of the 1984-85 season. In the 1983-84 season 783.71 tonnes of cargo and 1310 passengers were carried south.

Between October 3 and February 20 aircraft made 88 round trips between Christchurch and McMurdo Station. Of these 71 were made by the U.S. Navy's VXE-6 Squadron which flew the National Science Foundation's ski-equipped Hercules aircraft. The flights were made between October 15 and February 20. Wheeled U.S. Air Force Starlifters made 17

round trips between October 3 and November 12.

Total cargo carried between New Zealand and Antarctica by the United States aircraft amounted to 862.69 tonnes. Of this total 152.14 tonnes was northward bound. There were 2755 passengers, 1352 southbound, and 1403 northbound.

More than six million gallons of aviation and diesel fuel for McMurdo Station and the U.S. Coast Guard icebreaker Polar Star was taken south by the fleet tanker U.S.N.S. Maumee. Last season the Polar Star was the only Coast Guard icebreaker operating in the Ross Sea area.

Only one voyage south was made

last season by the United States Military Sealift Command's newly-chartered cargo supply ship Greenwave which replaced the Southern Cross. It brought 308 tonnes of cargo from Port Hueneme, California, and took 3838.6 tonnes south for McMurdo Station and Scott Base.

This included food, equipment, building materials, and vehicles.

On its return trip to Lyttelton the Greenwave carried 1007.5 tonnes of cargo. This included vehicles for maintenance and overhaul in Christchurch and 24 containers of general cargo.

International:

Austrians plan to climb Mt. Minto

A first ascent of Mt Minto (4165m) in the Admiralty Mountains, Victoria Land, is planned by an Austrian Antarctic expedition which is expected to leave Vienna early in December this year. The five Austrians and their Dutch radio operator are reported to have arranged to be taken south by the Footsteps of Scott Expedition's support ship Southern Quest, and to return with the British party from Cape Evans early next year.

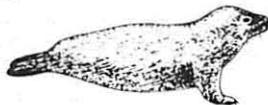
Mount Minto (71deg 47min S/168deg 45min E) is a lofty, mostly ice-free peak in the central portion of the Admiralty Mountains. It is on the south-west side of Robertson Bay, and about 80km from Cape Hallett. It was discovered in January 1841, by Sir James Clark Ross and named after the Earl of Minto who was First Lord of the Admiralty.

A New Zealand scientific and mountaineering expedition of seven members of the New Zealand Alpine Club was organised in 1968 to work in a largely unexplored area north of Mt Minto during the 1969-70 season. Mt Minto was the main mountaineering objective, and scientific work planned by the expedition included a topographical and geological survey.

But the project was abandoned because the Ross Dependency Research Committee and the Minister of Science did not approve the expedition as part of the 169-70 New Zealand research programme.

ANTEX 11, as the Austrian expedition is described, is led by Bruno Klausbruckner. The co-leader is Leopold Krenn (navigation), and the other members are Eduard Frosch (science), Werner Holzl (film cameraman), Bernd Saxinger (radio operator), and Sjoerd Jongens (radio operator/film cameraman) who is from Holland.

Some members of the present expedition took part in ANTEX I. Under the auspices of the Austrian Himalayan Society (OHG) they were in an Australian expedition of scientists, mountaineers, and ham radio operators which sailed to sub-Antarctic Heard Island aboard the converted whale chaster Cheynes II in the 1982-83 season. With one Australian climber they made an unsuccessful attempt to reach the summit of the island's active volcano Big Ben (2743m).



Dolphin fossil found in Antarctica

A large bone fossil discovered in marine sediments near Australia's Davis Station early this year has been identified as part of the skull of a now extinct species of dolphin. The identification was made by a New Zealand geologist, Dr Euan Fordyce, of the University of Otago, an authority on marine fossils. The fossil is thought to be about four million years old and appears to belong to a major new group of dolphins.

Discovered on February 9 near a lake margin on Marine Plain about 5km from Davis by Dr Patrick Quilty, the Antarctic Division's chief scientist, the fossil is believed to be the first of a vertebrate to have been found in East Antarctica. Marine Plain is part of the ice-free Vestfold Hills area formed some 18,000 years ago when the ice cover retreated but studies of the plain indicate that it is from four to

four and a half million years old.

Twenty bags of fossil fragments, many of them little slivers of fossilised bone, were sent to Dr Fordyce who was asked by the Antarctic Division to put the pieces together and say what creature they came from. Dr Fordyce has studied the fossil of a plesiosaur (prehistoric marine reptile) found at Shag Point, North Otago, and worked on whales and dolphins.

Dr Fordyce's task was to put together scores of pieces in a geological jigsaw puzzle. Assisted by technicians, particularly Mr A. Grebnieff, he spent six weeks of painstaking effort to produce the final picture.

Dr Fordyce describes the discovery as the only significant Antarctic fossil find for the last 40 million years. As such it is the only substantial fossil find from before Antarctica's last ice age which ended 10,000 years ago.

First Chilean flight to the Pole

Chile's flag was raised at the South Pole on November 30 last year by Squadron Commander Claudio Sanhueza Corvalan, chief pilot of the Chilean Air Force Twin Otter group which made an historic flight from Punta Arenas, Tierra del Fuego, to the Amundsen-Scott South Pole Station. As a result Chile joined five other countries - Argentina, Britain, Norway, West Germany and the United States - whose nationals have flown aircraft to the South Pole.

Two Twin Otter aircraft named *Libra I* and *II* made the flight to the

Pole in stages by way of Chilean, British, and American bases on the Antarctic Peninsula and in Ellsworth Land. They landed on the Pole skiway in broad daylight at 1.36 p.m., and began their return flight at 4.30 p.m. The operation, named *Polar Star*, covered a distance of 4627km from Punta Arenas to the Pole and back.

To prepare for the long flight a Chilean Air Force Hercules aircraft flew from Punta Arenas with a cargo of food, fuel, and survival and communications equipment, which was dropped along the route. Logistic

support depots were established at two Chilean bases, President Gabriel Gonzalez Videla, on the Antarctic Peninsula, Teniente Carvajal on Adelaïd Island, the British Antarctic Survey summer base, Fossil Bluff, the United States Siple Station in Ellsworth Land, the Ellsworth Mountains, and the Martin Hills. At these depots the Twin Otter aircraft received the fuel and equipment which enabled them to proceed on the next stage, and achieve their goal — the conquest of the South Pole. Chilean Twin Otters have refuelled at Siple Station in previous seasons but not

flown beyond it during operations on the continent.

Commander of the Polar Star project was General Mario Lopez Tobar, director of operations for the Chilean Air Force. He piloted the leading aircraft on the final stage of the flight to the Pole. In addition to Squadron Commander Corvalan the aircraft crews are Flight Captain Francisco de Diego Vinas, Lieutenants Ricardo Ruminot Saffirio and Leandro Serra Orellana (pilots), and Suboficial (warrant officer) Carlos Palacios Velasquez and Sergeant Jose Bermedo Villablanca (mechanics).

India charters larger ship

India, which has sent four expeditions to Antarctica since 1981-82, will send its fifth to Queen Maud Land towards the end of November. Dakshin Gangotri, the permanent station established at 70deg 05min 37sec S/12deg E in the 1983-84 season, will be extended this summer.

This season the Department of Ocean Development (DOD), which is responsible for the Indian research programme, has chartered a larger ship — the 21,128-tonne Swedish bulk carrier Thuleland. The first two expeditions used the Norwegian research vessel Polarsirkel, and in the 1983-84 and 1984-85 seasons the Finnish ice-strengthened Finn Polarix (6826 tonnes) was chartered.

Built in Gothenburg in 1977 the Thuleland is ice-strengthened. She has six cargo holds and five cranes. For Antarctic operations structural alterations will be made to provide helicopter decks and accommodation for about 80 scientists.

A larger ship was needed because Dakshin Gangotri will be expanded in future seasons. An area of 200

square kilometres has been earmarked for extending the station which is in the relatively ice-free Schirmacher Hills region about 18.5km from the Soviet station Novolazarevskaya. Three more buildings will be added to the main station complex which includes accommodation blocks, a biological laboratory, a meteorological observatory and a helipad.

As a base on the ice shelf in the Princess Astrid Coast area will still be needed to transfer materials inland to Dakshin Gangotri a larger ship equipped with cranes like the Thuleland is essential. Two Indian Air Force Mi-8 helicopters and two Indian Navy Alouette III helicopters provided logistic support during base construction in the 1983-84 season. Expansion of the station and plans for an ice runway for wheeled or ski-equipped transport aircraft are expected to call for the use of more helicopters which can be better accommodated on the Thuleland's flat deck.

This winter the station has been occupied by a team of 15 scientists

and support staff led by an engineer, Mr P. Kumaresh. Dr S.Z. Qasim, Secretary of DOD, who heads the research programme, announced in May that a traverse party from the team would attempt to reach the

South Pole early this summer. Since then there has been no indication that the journey of up to 2500 nautical miles to the Pole and back will be undertaken.

JARE 26

Third Japanese base in Queen Maud Land

Japan now has a third base in Antarctica. It is named Asuka Camp, and was established at 71deg 31min S/24deg 03min E in western Queen Maud Land near the Sor Rondane Mountains. The camp was built last summer by the 26th Japanese Antarctic Research Expedition (JARE26) and was occupied by eight geologists between late December and February.

By the 1987-88 season Japan is expected to make Asuka its third permanent station. The others are Syowa, on East Ongul Island in Lutzow-Holm Bay, which is 670km from Asuka, and Mizuho, 270km to the south-east on the inland ice sheet. Mizuho is 760km from Asuka.

A geological and geomorphological survey of the western part of the Sor Rondane Mountains was made in January and February by the party which worked from Asuka Camp. In addition field scientists worked at Breid Bay (70deg 15min S/24deg 15min E) on the Princess Ragnhild Coast 140km north of Asuka.

This winter members of JARE26 are continuing the glaciological research programme in eastern Queen Maud Land which was started in 1982. Ice core drilling to about 200m is being carried out at 74deg S/36deg E and 73deg S/40deg E. A team from Mizuho Station will make a traverse to the area around 77deg S/36deg E by way of the field camp at 74deg S/36deg E.

Last season's programme began officially on November 14 when 48 members of the JARE26 winter and summer parties left Tokyo on board the icebreaking research and supply ship Shirase. The leader of the expedition and of the winter party of 35 is a National Institute of Polar Research meteorologist, Dr Sadao Kawaguchi. A NIPR upper atmosphere physicist, Dr Hiroshi Fukunishi, is deputy leader of the winter party.

PENGUIN CENSUS

Scientists and support staff in the summer party come from the NIPR, the Maritime Safety Agency, the Geographical Survey Institute, and Kumamoto, Nagoya, and Kochi Universities. The winter party comes from the NIPR, the Japan Meteorological Agency, the Radio Research Laboratories, the Geographical Survey Institute, Maritime Safety Agency, Okazaki National Research Institute, the University of Electro-communications, and Yamaguchi,

Kyoto, Kochi and Yokohama National Universities, and Saga Medical College.

For last summer's support operations, marine research, ice reconnaissance, and a population census of penguins and seals around Lutzow-Holm Bay JARE26 used the Shirase's three helicopters — two Sikorsky S-61As, and one Bell 47GA.

Two fixed wing aircraft, a Cessna 185 and a Pilatus PC6 owned by the NIPR, which have been at Syowa Station since September last year, were operated by civilian pilots on inland flights until January this year.

RELIEF

From Tokyo the Shirase sailed to Fremantle which she reached in the last week of November. She proceeded first to Breid Bay and disembarked field scientists in mid-December. The transfer of JARE26 parties to Syowa began early in January by helicopter, and the official relief of the JARE25 winter parties at Syowa and Mizuho Stations was completed early in February.

In mid-February the Shirase returned to Breid Bay to embark the field party and then proceeded north. Calls were made at Port Louis, Mauritius, and Singapore on the way to Tokyo where the ship arrived in late April.

ROCKET FIRING

One of the major research projects this winter at Syowa is to co-ordinate observations of the polar middle atmosphere for the Middle Atmosphere Programme, an international project which began in 1982 and will end this year. Observations are carried out by a combination of remote sensing techniques from ground level and space craft, and in

situ measurements by balloons and rockets. This year two sounding rockets for upper atmosphere research and 11 meteorological rockets will be launched from Syowa.

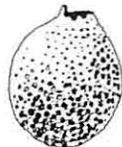
ENVIRONMENTAL PROJECTS

Environmental science projects are also being continued at Syowa by JARE26. These include limnological studies of fresh and saline lakes around Lutz-Holm Bay and sampling of soil algae and bacteria. The concentration of atmospheric carbon dioxide will be monitored continuously. Routine projects include aurora, ionosphere and geomagnetic studies, meteorological, seismological, and tidal observations, and the study of ground tilt.

Studies of biological processes in the coastal ecosystems around Syowa were among the major projects carried out by the summer party. These were started in 1982 in conjunction with the international programme BIOMASS (Biological Investigations of Marine Antarctic Systems and Stocks).

MARINE WORK

Marine scientists aboard the Shirase also measured chlorophyll content in the surface sea water, and made ecological studies of phytoplankton, micro-zooplankton, and benthic fish. As part of a physical and chemical oceanographic survey of the Southern Ocean measurements of vertical profiles of temperatures, salinity, and currents, were made regularly from the icebreaker.



Japanese oil survey off coast of Queen Maud Land

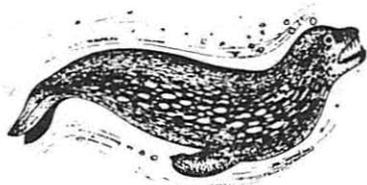
Marine geophysical surveys in the Norwegian sector of East Antarctica will be conducted this season by the Japanese Metal Mining Agency's geological survey ship *Hakurei Maru* under the sponsorship of the Japanese Agency for National Resources and Energy. Scientists from the technology centre of the Japan National Oil Corporation will carry out the surveys to complete a three-year programme which began in the 1982-83 season in the Wilkes Basin area of the Dumont d'Urville Sea off Adelie Land and in the Ross Sea.

Last summer geologists, geochemists, and geophysicists aboard the *Hakurei Maru* completed their marine geophysical survey in the Australian sector of Antarctica as far as Amundsen Bay (66deg 55min S/50deg E), Enderby Land, in two stages between December and February. The ship, commanded by Captain Hideaki Okumura, carried a research staff of 22 led by Dr Koichi Aoyagi, who is a geologist. Senior staff included Dr Shunji Sato (co-chief scientist), Dr Seiji Nakao (geologist/senior scientist), Dr Takemi Ishihara (geophysicist/senior scientist), Takao Saki and Manabu Tanahashi (geophysicists), Toshio Sunouchi (geologist), and Kunihiro Baisa (meteorologist).

Early in December last year the *Hakurei Maru* sailed from Fremantle Western Australia, on the first stage of the survey. She returned early in January and completed the second stage early in February. The research area was reported to be between 60deg and 90deg E and 60deg-70deg S.

In this area the scientists carried

out seismic reflection surveys, depth sounding, sub-bottom profiling, and bottom sampling. Other work included sonar radio-buoy refraction and gravimetric surveys and measurement of terrestrial heat flow.



Sibex Cruise

Marine scientists took part in SIBEX II, the second phase of the Second International BIOMASS Experiment, aboard the oceanographic research ship *Kaiyo Maru*, but not as part of the JARE26 programme. During the first leg of their programme the research area was 60deg to 70deg S and 60deg to 90deg W, the second leg covered between 65deg and 70deg S and from 30deg W to 10deg E.

With a research staff of seven the *Kaiyo Maru* left Tokyo early in October called at Honolulu, and sailed south on the first leg from Valparaiso late in November. She returned to Montevideo on Christmas Day, and reached the second leg research area early in January. After three weeks' work she returned to Port Elizabeth, South Africa, at the end of the month. A call was made at Singapore late in February and the

ship reached Tokyo in mid-March.

Leader and chief scientist on the cruise was a marine biologist, Dr Yuzou Komaki. Principal members of the research team were Drs Yoshinari Endo and Mikio Naganobu (marine biologist) and Dr Fukashi Fukui (chemist).

Projects in the research programme included an acoustic krill survey, a physical and chemical oceanographic survey, and a net survey of micro-necton and plankton. The scientists also made observations of seabirds, whales, and seals, and took samples of surface water.

BAS news

Programme continues to expand

The expansion of BAS, made possible by additional government funding from 1983-84 onwards, will continue throughout 1985-86. The 1984-85 budget of £11.5 million allowed staff members to be increased by 21 to 382 (the total includes the Air Unit and officers and crews of the two ships), most of the new posts being taken up by scientific and technical staff in earth sciences and marine life sciences. At the same time there was continued support for university-based research. Expenditure in 1985-86 will be about £12.85 million.

To provide for the expanding scientific programmes, general facilities and logistic support are also being increased. Rothera station, Adelaide Island (the centre for air operations) and the Cambridge headquarters are being enlarged in 1985-87, and Signy biological station is likely to be rebuilt in 1987-90. Rothera station will eventually provide accommodation for 72 during the summer (mostly field workers in transit), but the wintering complement will remain at about 14.

BAS will continue to maintain five permanent stations (Faraday and Halley geophysical observatories and Bird Island biological station), as well as Rothera and Signy), and will again operate two ships and three Twin Otter aircraft during the summer.

The aircraft are due to leave the UK

at the end of September. The ships will sail from Grimsby, RRS John Biscoe in mid-September and RRS Bransfield at the end of October.

The John Biscoe's first task will be – in late October – to establish a two-man geological field party on Livingston Island, South Shetland Islands, and take a number of earth scientists to Damoy, Wiencke Island, for onward transport by air to Rothera. In early November, ten men (geologists and assistants) will be taken to James Ross Island – near the northern tip of the Antarctic Peninsula. The Livingston Island party will spend two weeks on the island and will then be picked up again by the John Biscoe. They will later work at Anvers Island and Horseshoe Island, off the west coast of the Antarctic Peninsula. The James

Ross Island parties will spend nearly three months there and will then be picked up by HMS Endurance.

The John Biscoe will also take biologists to Bird Island, where three men have been wintering, and to several other localities around South Georgia including Grytviken and the isolated Annenkov Island. Various field huts and the botanists' reindeer enclosures on South Georgia will be checked and repaired as necessary.

In mid-December, the ship will proceed to Montevideo for the usual mid-season change-over of senior ship's officers and, at the end of the month, will resume work on the long-term Offshore Biological Programme. This season's project is to concentrate on the area around the northwestern extremity of South Georgia and will last about twelve weeks.

RRS Bransfield will be engaged in relief work throughout the season, but will also undertake some bathymetry with HMS Endurance in southern Marguerite Bay. As usual, her first task will be the relief of Halley. She is due to arrive in mid-December and will remain there for two weeks, during which time assistance will be given with the erection of a 30-m mast which will carry anemometers and thermometers for a stable Antarctic boundary-layer experiment in 1986.

The ship will next relieve Signy, South Orkney Islands, and will then go north to Montevideo, via Grytviken, for the mid-season change-over of senior officers and to take on more cargo and personnel. After this, she will assist in geological landings in the Antarctic Peninsula area and then



One of two current meters recovered in February 1985 from a rift near the southern ice front of George VI Ice Shelf where they had been deployed at a depth of 250 metres for a year. A tide gauge was also recovered. Data from them are now being analysed as part of a long term study of the ice shelf and its interaction with the water beneath - BAS photo

collect a consignment of building materials from Montevideo before going south to Rothera via Faraday.

Both ships will also visit the Falkland Islands three or four times during the summer. (BAS still maintains a small office at Stanley).

In addition to HMS Endurance transporting field parties and undertaking bathymetric work, her helicopters will assist BAS by carrying out aerial photography. The Willis Islands (west of Bird Island) and the South Sandwich Islands will be photographed for seal and penguin censuses, and Signy Island for botanical studies.

SCIENTIFIC PROGRAMMES

Geological field work in the coming season will, as usual, cover a wide variety of problems related to the Antarctic Peninsula. On James Ross Island, work will continue on the mid to late Cretaceous sedimentology and the biostratigraphy of the back-arc basin. A volcanologist will investigate the geochemistry of the late Cenozoic basalts of the island, and his work will be complemented by that of a collaborator working at Seal Nunataks (about 160 km to the southwest) and, later, on western Alexander Island. Structural geologists will resume investigation of possible basement rocks in eastern Graham Land and the supposed accretionary prism terrain of central Alexander Island. Two biostratigraphers will continue collecting across the important Jurassic-Cretaceous boundary sequence in eastern Alexander Island. Long-term investigations into the mineralization of the Antarctic Peninsula region will commence with a reconnaissance of Livingston, Anvers and Horseshoe Islands.

Field geophysicists will undertake gravity, total-field magnetic, ice thickness and seismic depth-to-bedrock

measurements over James Ross Island and Prince Gustav Channel which separates it from the Antarctic Peninsula. Airborne geophysics will include reconnaissance aeromagnetic surveys over parts of Marie Byrd Land, Ellsworth Land and southernmost Palmer Land. This is a continuation of a joint BAS-USARP project investigating the structure of West Antarctica and its geological relationship to East Antarctica.

The glaciologists' ice dynamics programme will comprise projects on the Ronne Ice Shelf and Rutford Ice Stream. Two men will traverse the ice shelf from the Rutford Ice Stream to the ice front, measuring movement and other parameters. Four men will continue work on the ice stream, measuring movement, ice thickness and tidal flexure at the grounding line. Both parties will be in the field for about three months.

ICE CHEMISTRY

The ice chemists are embarking on a programme of ice core drilling in the Antarctic Peninsula, and aim to achieve a 1,000-year record of past climate. Drilling in the coming summer will centre on Dolleman Island (off the east coast of the Antarctic Peninsula in lat. 70deg 37min S), where the ice is some 450 m thick. Ice cores will be returned to Cambridge for analysis of stable isotopes, microparticles and major anions and cations. A combination of shallow pit and core sampling, together with an optical survey of the ice dome, will be used to establish the flow regime around the drill site and to study the representativeness of the deep ice core. If possible, drilling will also be undertaken at one locality in the central area of the Ronne Ice Shelf.

As well as resuming work on the

Offshore Biological Programme, the biologists are continuing the long-term monitoring of birds and seals at Bird Island and Signy Island, and a wide range of marine, freshwater and terrestrial studies at Signy Island

and South Georgia. The medical officers will be carrying out a number of physiological projects, including one on thermal stress in divers. (Diving is undertaken by both the marine and freshwater biologists).

Mikhail Somov out of ice after 133 days

Trapped in the fast ice of the Amundsen Sea off Marie Byrd Land for 133 days from March to July the Mikhail Somov, flagship of the Soviet Antarctic fleet, was freed by the icebreaker Vladivostok with the help of the ice-strengthened cargo ship Pavel Korchagin. In 1977 she was held for 57 days off the Oates Coast.

Before the Mikhail Somov was first caught in heavy pack ice off the Hobbs Coast she had completed the exchange of winter teams and resupply at the Soviet permanent station Russkaya (74deg 46min S/136deg 51min W) at Cape Burks, using her two Mi-8 helicopters. But as the result of a storm on March 15 with ferocious gusts of wind up to 97 knots Captain Valentin Rodchenko found his ship's way blocked by heavy ice floes.

By the end of March the ship managed to make her way out of the danger zone but then became firmly held in the centre of a vast field of fast ice three to four metres thick. In April the Mikhail Somov was drifting south-east at the rate of six to eight kilometres daily. Early May brought darkness, gales up to 100 knots, and increasing ice pressure which tilted the ship one metre. The engines could not operate and the ship had no way for two weeks.

When Captain Rodchenko reported that the Mikhail Somov was held fast

in solid ice arrangements were made to take off 77 members of the 30th Soviet Antarctic Expedition (SAE-30) and leave 53 crew and scientists aboard. A meteorological research ship Akademik Shirshov was diverted from the Indian Ocean, and 43 men, including Dr Dimitri Maksutov, leader of the expedition, and Dr Boris Krutsikh, director of the Arctic and Antarctic Research Institute, were ferried from the trapped ship by helicopter and brought to Wellington on April 29.

In company with the Mikhail Somov when she was caught in the ice was the Pavel Korchagin which remained on station outside the danger zone to give assistance. She returned to Wellington on June 5 to refuel and sailed again on June 12, carrying one of the Mikhail Somov's helicopters and its crew brought back by the Akademik Shirshov.

On June 10 the 13,290-tonne icebreaker Vladivostok sailed from her home port, Vladivostok under the command of Captain Gennadi Antokhin. She carried everything

necessary to give maximum help to the Mikhail Somov. Captain Antokhin's mission was to get close enough to the trapped ship to ferry fuel and food by helicopter but only to attempt to break through the ice if conditions permitted.

FRESH SUPPLIES

After a call at Wellington where she took on more fuel and equipment, and fresh fruit and vegetables, including New Zealand kiwifruit, the Vladivostok sailed on July 5 to assist the Mikhail Somov — a voyage of 1780 nautical miles.

On July 15 the icebreaker reached the permanent ice edge. The Mikhail Somov's helicopter was borrowed from the Pavel Korchagin for ice reconnaissance and the Vladivostok began punching through 847nm of ice to reach the trapped ship.

Satellite pictures and reports from the two helicopters — one from the Vladivostok — which had only two to three hours of daylight for reconnaissance indicated that the Vladivostok would be able to reach the Mikhail Somov. She was 323.7nm away on July 20, working in poor visibility and cutting through ice one and two metres thick.

But to reach the Mikhail Somov took the Vladivostok 12 days battling against ice two to six metres thick, searching for open leads or patches of broken ice. There were times when the icebreaker was held for 10 to 12 hours a day, and once for 19 hours.

FIRST MAIL

By July 24 the Vladivostok was in ice 1.5m thick and was only 90nm from the Mikhail Somov. A helicopter took off with supplies and the mail for the 53 men aboard the ship, the first they had received for several months. They did not have to wait

much longer to see the icebreaker and the men of the rescue expedition led by Dr Artur Chilingarov.

Although the temperature was minus 35deg Celsius the crews of the two ships were on deck to cheer and wave to each other when the Vladivostok finally came alongside on July 27. All the lights on both ships were turned on, and the winter twilight was brightened by flares and rockets.

When the Vladivostok arrived the Mikhail Somov had only enough fuel for 20 days despite strict rationing. Even more welcome than fuel for the return voyage were the fresh fruit and vegetables ferried across the ice by helicopter. Other cargo included tents and survival gear in case the Mikhail Somov still had to be abandoned. Her crew had prepared for such an event earlier by building a hut on the ice near the ship.

FREE AT LAST

Free at last from the ice which had held her so long the Mikhail Somov was able to use a turning basin chopped out by the Vladivostok and follow her down the entry channel towards open water. But on July 30 the ships still had to make their way through 755nm of pack ice. A week later they passed 71deg S, the extreme boundary of the permanent ice, making slow progress in patchy ice, and with 539nm to go.

Six weeks after leaving Wellington the Vladivostok returned on the morning of August 19, her mission accomplished. She and the Mikhail Somov were welcomed by a howling southerly and about 25 of the city's Soviet community clutching umbrellas and waving flags.

Reference: "Antarctic", March/June, 1985. Pages 357-359.

Expedition to South Pole postponed

A British-Norwegian private glaciological expedition which planned to retrace Amundsen's route to the South Pole this summer, using two dog teams, has postponed the project for a year. The expedition, known as 90 Degrees South, was unable to arrange air transport from Christchurch to McMurdo Station, and then to the Bay of Whales, or provide for the establishment of five supply depots between the Bay of Whales and the Pole.

Leader of the expedition, planned since early 1980, and expected to cost about US\$577,000, is a Norwegian glaciologist, Dr Monica Kristensen, of the Norwegian Meteorological Institute. She has wintered for two years in the Arctic, and taken part in three expeditions to the Antarctic. Her co-organiser, one of the two British members of the team is Dr Neil McIntyre, of the Mullard Space Science Laboratory, University College, London.

Dr McIntyre, who completed his doctorate on the topography and flow of the Antarctic ice sheet at the Scott Polar Research Institute, is engaged at present in research into the application of satellite radar altimetry to polar ice masses. He has been on glaciological expeditions to British Columbia and the Himalayas, and to ice caps on Ellesmere Island and Nordaustlandet in the Spitsbergen Archipelago.

Third member of the team is Dr Bjorn Wold, head of the glaciology section of the Norwegian Water Resources Board. He has worked with several expeditions on Spitsbergen, and made glaciological traverses in Queen Maud Land during two summer seasons. The other British member is Nick Cox, who completed two tours of duty with the British Antarc-

tic Survey between 1975 and 1981, and has spent three seasons as a boat captain for the Cambridge University Spitsbergen Expedition.

Originally the expedition planned to start its journey of 662 nautical miles from the Bay of Whales in October and reach the Pole early in January. The programme provided for the laying of two supply depots on the Ross Ice Shelf between 80deg and 85deg S, one at the foot of the Axel Heiberg Glacier, another at the head of the glacier, and the last at Titan Dome, an ice dome on the Polar Plateau at 88deg S/165deg E.

ROUND TRIP

After establishing its base at the Bay of Whales (78deg 38min S/164deg 20min W) the expedition proposed to make a two-week round trip of 80.9nm across the Ross Ice Shelf to exercise and acclimatise the dogs (two teams of nine and four in reserve), undertake preliminary scientific work and survey the first part of the route. The main journey split into six trips between depots, was to be covered in 82 days at a daily average of 10.7nm.

On the first stage the party planned to cover a distance of 142nm across the Ross Ice Shelf from the Bay of

Whales to 81deg S in 16 days. The second stage from 81deg to 83deg S would take 13 days for the distance of 119.79nm. From 83deg to 85deg S was calculated to take 16 days for 119.79nm. Eleven days were set aside for the journey of 86nm up the Axel Heiberg Glacier from 85deg to 86deg S, and 13 days for another 119.79nm from 86deg to 88deg S across the Polar Plateau. The last stage of 119.79nm from 88deg S to the Pole was expected to take 13 days also, including two days for science at 89deg and 90deg S.

Including the journey to survey the first part of the route 22 days of the planned 82-day journey were to be devoted to scientific work. The science programme covered three glaciological projects to be undertaken along the route to the South Pole. They were: Flexural bending of the Ross Ice Shelf which is related to the stability of the West Antarctic ice sheet and the buttressing effects of some large ice shelves, among them the Ross Ice Shelf as a factor in preventing the disintegration of the ice sheet; collection of snow samples across the Polar Plateau between the Transantarctic Mountains and Titan Dome for later oxygen isotope analysis; and collection of ground truth for satellite imaging systems and radar altimeters.

MAIN PROBLEM

In the early stages of the expedition's planning a statement that Dr Kristensen and her party would return from the Pole to McMurdo Station in a United States ski-equipped Hercules aircraft diverted attention from the main logistic problem — how one woman, three men (plus a support team of two), 22 dogs in self-contained boxes with their own food and water, and five tonnes of

food and equipment, were to be transported from New Zealand to McMurdo Station, and the Pole party flown to its starting point. Even more important were the logistic demands for establishing five supply depots by a ski-equipped aircraft.

Media speculation, mainly in Britain, concentrated on how the expedition would return from the Pole if the United States was unable to provide air support. Little attention was paid to how the scale of assistance sought might relate to the United States Antarctic Research Programme (USARP) and its commitment to support of major research projects.

SCIENTIFIC APPROVAL

Although the expedition's plans and scientific aims gained the approval of such bodies as the Royal Geographical Society, the British National Committee for Antarctic Research (through the Royal Society), the Polar Regions Section of the Foreign and Commonwealth Office, and the Polar Office of the Norwegian Ministry of Foreign Affairs, the British and Norwegian Governments did not give it official backing. British Airways was approached by the organisers and arrangements were made for a charter flight to New Zealand with the Pole party, its support team, dogs and equipment.

In January United States, New Zealand, Norwegian, and United Kingdom representatives who were attending an Antarctic Treaty workshop at a scientific camp in the Transantarctic Mountains at the head of the Beardmore Glacier met informally to discuss the logistic support needed by 90 Degrees South to carry out its science programme. Among representatives at the workshop were Dr Geoffrey Larminie, of British

Petroleum Ltd, chairman of the expedition's advisory group, and Dr John Heap, head of the Polar Regions Section, Foreign and Commonwealth Office.

SCALE OF AID

As a result of the discussion the United Kingdom representative at the informal meeting advised Dr McIntyre that the United States was unlikely to provide assistance on the scale discussed without prejudice to its Antarctic research programme. Therefore the expedition's programme should be revised to reduce the required logistic assistance to a minimum.

When 90 Degrees South was unable to make firm arrangements for transport and air support approaches were made to the British and Norwegian Governments for assistance in negotiations with the United States National Science Foundation which finances and organises the Antarctic research programme. Their response owed much to the influential advisory committee, which included Sir Vivian Fuchs, Lord Shackleton, Dr David Drewry, director of the Scott Polar Research Institute, Mr Otto Norland, a Norwegian businessman with shipping interests, and a Conservative M.P., Sir Neil Marten, who is chairman of the Anglo-Norwegian Parliamentary Group.

SUPPORT SOUGHT

As a result the two governments addressed a Note to the United States State Department seeking certain assistance from the United States Antarctic Research Programme (USARP) on behalf of 90 Degrees South which wanted to reduce to a minimum the most time-consuming elements of its logistic support potentially prejudicial to the U.S. pro-

gramme. The two governments asked whether the U.S. authorities would be prepared, in principle, to provide the support requested if the expedition was able to make final arrangements for its remaining logistic requirements. But the governments made it clear that they had not funded the expedition's logistic elements and were not prepared to assume any financial responsibility for it.

In addition to its request for transport to McMurdo Station from Christchurch by November 10 at the latest the expedition wanted the use of radio communications at the station and accommodation and meals for the support team of two men. After its arrival at the Pole between mid-January and the first week of February next year the expedition asked to be flown back to McMurdo Station with its dogs and 500kg of gear. It was assumed that the United States would have taken the dog boxes back to McMurdo Station from the Bay of Whales and then flown them to the Pole. From McMurdo Station the party, plus the support team, asked to be brought back to New Zealand as soon as possible with its gear and dogs, and by any means available.

NOT OFFICIAL

These requests were discussed by the State Department with the NSF and the director of ITS Division of Polar Programmes, Dr Peter Wilkness, before a reply to the Note was prepared. Support for 90 Degrees South was then declined because it was regarded as a private expedition and its scientific programme was not part of any official programme.

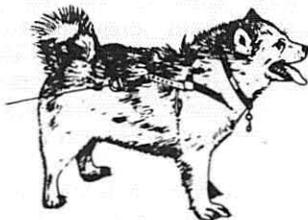
Private expeditions in Antarctica, whether American or foreign, receive no support or any other services from the United States Government. The Antarctic Policy Group, which

includes representatives of the State Department, Department of Defence, and National Science Foundation, has reconfirmed its policy which calls for a balanced programme of scientific research, co-operative activities with the Antarctic programmes of other governments, and full commitment of operational and logistics capabilities available to the United States Antarctic programme.

When the United States decision became known 90 Degrees South was planning to begin on October 16. A meeting of the advisory committee was held in London early in September to discuss a deadline for a decision on whether or not to proceed. Last-minute efforts to

obtain assistance were made, but a decision to postpone the expedition was made towards the end of the month.

Inability to obtain logistic support was not the only reason for postponement. Dr Kristensen has suffered concussion in a car accident in Norway; Dr McIntyre was recovering from an attack of glandular fever.



N.Z.er in North Pole expedition

Seven men and one woman will attempt to reach the North Pole early next year with dog sledge teams but no air or radio support. The expedition, which plans to leave Ward Hunt Island, the northernmost point of the Canadian Arctic on March 3, expects to reach the Pole in 60 days.

A New Zealand mountaineer and electronics technician, Bob McKerrow, now director of the New Zealand Outward Bound School, who wintered at Vanda Station in 1970, is one of the seven men. The co-leaders are Will Steger and Paul Schurke, who run a winter travel school in Minnesota, and the others are three Americans, Robert Mantell, Brent Boddy, and Ann Bancroft, Richard Weber, of the Canadian national ski team, and Jorg Mattner (West Germany).

Although the direct route from Ward Hunt Island is 765km the expedition expects to cover about 1200km over the pack ice and through the pressure ridges of the Arctic Ocean. It will use 40 huskies and

four sledges, and will navigate by sextant and chronometer. A radio beacon will be carried for emergencies and for confirmation by satellite that the expedition has reached the Pole.

In January and February the expedition will prepare for the Pole journey on Baffin Island. Then it will fly to Ward Hunt Island near Cape Columbia to begin the crossing of the frozen Lincoln Sea on March 3, the day which marks the end of the Arctic winter darkness.

To gain experience of travel on sea ice five members of the expedition, Steger, Schurke, McKerrow, Mantell, and Weber, drove their teams 1609km over the frozen Beaufort Sea in April/May from Inuvik, a Canadian field research centre near the south of the Mackenzie River to Point Barrow, Alaska. Steger, who breeds his own huskies, and has 21 years' sledging experience, made a solo trip of 2414km across the Northwest Territories to join his team-mates at Inuvik.

Microlites and Copepods

There are many extinct volcanoes in Antarctica but to date only five have been established as active. They are Mt Erebus on Ross Island, Mt Melbourne in Victoria Land, and three off the Antarctic Peninsula. One is on Deception Island in the South Shetlands, and two are on the Larsen Ice Shelf which runs along the Weddell Seaside of the peninsula. Of these one is 209 km east of the United States Palmer Station on Anvers Island.

* * *

Way back in 1963 the Soviet Union named a group of rock outcrops in Queen Maud Land after its Institute of Arctic Geology. Instituto Geologii Arktiki Rocks is internationally recognised but not a mountain named after another institute. Mt. Instituto Antartico Argentino (2135m) is in the Diamante Range which runs between 83° and 82° South towards the Filchner Ice Shelf. The range was first sighted during exploration flights in 1955 by General Herman Pujato shortly after the establishment of Argentina's first station, General Belgrano. It was named after the city of Diamante in the province of Entre Rios. The peak was named by the Argentine Navy task force unit which flew to the South Pole in January 1962.

* * *

Australians and New Zealanders were able to buy Antarctic krill as an ingredient of a Japanese frozen seafood marketed under the name of Sea Shanty's (sic) for a short time this year. Woolworth's super-markets in New Zealand advertised 350 gram packets of 10 Sea Shanty's for \$NZ3.99.

Two Scott Base veterans, Muff and his sister Karen, ended their working days on March 9 this year. Both were nine years old. The base husky population is now 16 adults and three pups. Herbie, Kiri, and Monty have joined their working elders and three born this year, Odin, Caspa and Tania were seven months old in September.

* * *

Antarctic snow toads had a field day with some of the final corrections for the March/June bulletin. Most important among them was an error on page 378. The name should have read Richard Walter "Dick" Richards.

* * *

A marble plaque on the memorial to Scott's last expedition which overlooks Port Chalmers has been wrongly inscribed for at least 30 years. When the Footsteps of Scott Expedition called at the port in the Southern Quest late in January a Dunedin resident, Mr A. Palmer, drew attention to the wrong date of the Terra Nova's departure, and suggested it should be corrected. The ship cast off at 2.30 p.m. on November 29, 1910; the inscription says November 19. Because the original plaque weathered badly after the monument was unveiled in 1914, it was replaced, probably before 1953.

* * *

A United States Coast Guard helicopter from the icebreaker Glacier was called on to deliver peanut butter and popcorn to the Polish station, Arctowski, on King George Island, South Shetlands, early this year. The Poles had not developed a sudden passion for two items; American scientists working with them missed their home favourites.

POLAR HISTORY

First Endeavour ends her days

H.M.N.Z.S. Endeavour, New Zealand's first Antarctic supply ship which took the New Zealand section of the Commonwealth Trans-Antarctic Expedition to the Ross Sea in 1956 has ended her days much later than expected by those who sailed in her. After five Antarctic voyages she was sold in 1962, renamed Arctic Endeavour and used in the Arctic sealing trade until 1982 when she sank in a Newfoundland port after springing a leak at her moorings.

When our pioneer supply ship was sold to the Royal New Zealand Navy in 1956 for £20,000 and commissioned as H.M.N.Z.S. Endeavour she was already a veteran with more than nine years of Antarctic service. She was launched in 1944 as an Ailanthus class net-layer and designated U.S.S. Satinwood.

Completed in August of that year the 900-tonne wooden vessel was handed over to the United States Navy and immediately commissioned into the Royal Navy as H.M.S. Pretext under the provisions of the Lend Lease Act. She was employed as a boom defence vessel during the war, handed back to the U.S. Navy late in 1945 and struck from the naval register early the next year.

In 1947 the ship was sold to the Falkland Islands Government and converted for service as a research and supply ship for the Falkland Islands Dependencies Survey (now British Antarctic Survey). She was renamed

John Biscoe, designated Royal Research Ship John Biscoe in 1953, and renamed R.R.S. Pretext in 1956.

On the first of her five voyages to McMurdo Sound H.M.N.Z.S. Endeavour was commanded by Captain H. Kirkwood, R.N., an experienced British ice captain. Her second voyage south was in the summer of 1957 and on her return she brought Sir Vivian Fuchs, Sir Edmund Hillary, and other TAE members back to civilisation.

When Captain Kirkwood returned to his Royal Navy duties he was succeeded for the 1958-59 voyage by Commander J.E. Washbourn, R.N.Z.N., and for 1956-60 by Commander R. H. L. Humby, R.N.Z.N. On this voyage the diesel-engined Endeavour carried sails, a large mizzen and a foresail, for the first time to stabilise her during oceanographic survey work.

Commander Humby took the Endeavour south for the last time in the 1960-61 season. She sailed north

A laconic entry, SCUTTLED, in the latest supplement of Lloyd's Register of Shipping, says the last word on the stout-hearted Endeavour. "British Marine News" reported late last year that having bought the Arctic Endeavour for her sealing licence, the new owner subsequently scuttled her. "Antarctic" is grateful to "New Zealand Marine News", journal of the New Zealand Ship and Marine Society, for the information and for material on which this article has been based.

on February 16, 1961 at the end of her final voyage to Antarctica. After refit in Auckland she made two voyages to Raoul Island in the Kermadecs, carried stores, dumped ammunition, and acted as a diving tender.

In late 1961 H.M.N.Z.S. Endeavour which had logged 40,000 nautical miles while in service with the R.N.Z.N. was decommissioned and advertised for sale. She was sold in 1962 for £9,980 to the Shaw Steamship Company Ltd, of Halifax, Nova Scotia. Renamed Arctic Endeavour she was fitted out for sealing in the Arctic when she reached Halifax in late January, 1963.

Satinwood, Pretext, John Biscoe, Endeavour, and Arctic Endeavour,

ended her life on November 11, 1982 when she sank at Catalina, a small port on the north-east coast of Newfoundland. She was later declared a constructive total loss. Her registered owners were the Mayhaven Shipping Company, a subsidiary of the original purchasers, which had two other sealers, Arctic Prince and Arctic sealer, both former Ailanthus class net-layers.

Six months later came the news that the Arctic Endeavour had been refloated and sold to Central Fuel and Building Supplies Ltd to whom she was delivered at Glovertown, Newfoundland, on May 22, 1983. Early last year she was reported to have been resold to J. Burry who acquired her to obtain her sealing licence.



H.M.N.Z.S. Endeavour at Lyttelton before her first voyage to McMurdo Sound in December, 1956.

Photo: "The Press", Christchurch.

Commander Humby once told the New Zealand Antarctic Society many years ago that the Endeavour's heart was in the right place but her bones

were weak. He was right about her heart; the little ship proved him wrong about her bones.

Byrd's papers acquired by Ohio University

Rear-Admiral Richard E. Byrd's personal papers and the records of his seven Arctic and Antarctic expeditions from 1925 to 1957 have been acquired by Ohio State University. The collection, bought from the estate of Marie A. Byrd, the explorer's widow, for US\$155,000, is expected to become the centrepiece of a memorial to Byrd.

When the executors of the Marie Byrd estate announced the selection of Ohio State University as the approved buyer, they cited the international reputation of the university's Institute of Polar Studies as a major factor in their decision. Dr David H. Elliott, director of the institute, says that the acquisition of this most important polar collection means the university is committed to achieving the long-sought goal of creating a fitting memorial to the great American explorer.

Filling more than 35 filing cabinets, the collection contains book manuscripts and financial records as well as the expeditionary records. It includes also such items as the logs and diaries of expeditions, correspondence between Byrd and other noted explorers of the 1925-57 period, his personal correspondence and other personal memorabilia relating to his polar achievements, and supply and shipping manifests for numerous polar voyages.

A leading authority on Byrd, Peter J. Anderson, who is assistant

director of the institute, says that cataloguing the collection is expected to take at least a year. The document collection will be available for scholarly research once the inventory and cataloguing have been completed.

"Antarctic" for teaching

Eight extracts from "Antarctic", the New Zealand Antarctic Society's quarterly journal, have been selected by the Commonwealth Schools Commission for inclusion in a set of teaching materials on Antarctica which will be available to Australian schools next year. The extracts, which relate to international co-operation in Antarctic emergencies, will be used in one of the books in the set, "International Relations in Antarctica", as part of "The Antarctic Project".

This project has been developed jointly by Australia and New Zealand as one of the activities of the Pacific Circle Consortium, an OECD educational programme between Australia, New Zealand, Canada, Japan, and the United States. An 18-part set of teaching materials now on trial in several Tasmanian and Queensland schools this year has been put together during the last three years by the Canberra-based Curriculum Development Centre and the Education Departments of Tasmania and New Zealand.

OBITUARIES

“Ike” Schlossbach dies after long Antarctic career

A retired United States naval officer, Commander Isaac Schlossbach, who took part in seven expeditions to Antarctica and one to the Arctic, died peacefully in his sleep on August 20 last year in the township of Wall, New Jersey, aged 93. He wintered three times in Antarctica, was an observer with Australian National Antarctic Research Expeditions (ANARE) in the 1955-56 season, and went south three times with Operation Deep Freeze, the last in 1960-61 when he was 70.

“Ike” Schlossbach graduated from the United States Naval Academy in 1915, went to the first submarine school in New London, Connecticut, in 1916, and in 1921 transferred to naval aviation. He was a fighter pilot when his naval career ended in 1931. But in spite of the loss of his left eye he continued to fly for many more years.

In 1931 Lieutenant-Commander Schlossbach, U.S.N. (ret'd) began his adventurous polar career. He served with Sir Hubert Wilkins as navigator and senior watch officer aboard the submarine Nautilus in the Wilkins-Hearst Expedition to the Arctic. The Nautilus encountered many problems but it did go under the ice at 80°N, travelling 32 nautical miles.

Two years later Schlossbach went south for the first time as one of the five pilots with Byrd's second expedition. Veterans of the expedition will remember fondly the pilot with the

bushy red beard, his tattered clothing held together with horse blanket pins and antenna wire, who crashed the Fokker monoplane Blue Blade, and later successfully repaired and flew the small Fairchild aircraft left behind by the first expedition (1928-30).

Schlossbach went back to the Bay of Whales as an executive assistant with the United States Antarctic Service Expedition (1939-41). He kept on flying there and when the United States entered the Second World War he managed to return to active duty, being sent to Labrador and Baffin Bay to build airstrips and bases for aircraft being ferried to Britain.

Pilots who served with the Royal New Zealand Air Force in the Solomons during the war in the Pacific may still remember Schlossbach. Someone who must have learned that he was a polar expert decided to transfer him to Guadalcanal where he served as commander of Henderson Field. He stayed there until early in 1944 when he cracked up another aircraft and all his ribs as well.

Then he left the Pacific for Argentina, Newfoundland. He remained there until VE-Day and was discharged with the rank of commander. Once again he turned to Antarctica for challenges and excitement. He sailed south as commander of the Port of Beaumont, Texas, and second-in-command of Finn Ronne's expedition of which wintered on

Stonington Island in Marguerite Bay, Palmer Land.

Schlossbach did no more flying as a pilot on his last four trips to Antarctica. But in 1968 when he was 78 he received an award for being the oldest pilot at a flying meeting. Since 1972 he had to live with pacemakers and his last years were spent in a nursing home.

* * *

One of the United States geologists who worked in Antarctica's dry valleys for many years was Robert Foster Black. His sudden death at 65 in

October, 1983, was not noted in Antarctic publications until last year. He began his dry valley research in 1959 and ended it in 1982, making detailed studies of ice wedge and sand wedge polygons and their growth rates. Internationally recognised for his permafrost studies Black started his professional career in 1941, worked for the U.S. Geological Survey, and was professor of geology at the University of Connecticut from 1970. Black Glacier (71° 40 min S/164° 42 min E) is a memorial to his work.

ANTARCTIC BOOKSHELF

ANTARCTIC DAYS WITH MAWSON, a personal account of the British, Australian and New Zealand Antarctic Research Expedition of 1929-31 – Harold Fletcher.

Angus & Robertson, London, Sydney and Melbourne, 1984. 240 x 155 mm. ISBN 0 207 14889 9, 313 pages, hardback, New Zealand \$29.95.

Harold Fletcher was 26 years of age when he joined the British, Australian and New Zealand Antarctic Research Expedition in 1929 as an assistant geologist. This BANZARE expedition was led by Sir Douglas Mawson, the Australian Antarctic hero and survivor of harrowing solo experiences 17 years earlier during the first Australian Antarctic Expedition to Commonwealth Bay in 1912-1914. Mawson had gone south with Shackleton, even earlier, in 1908. To some extent this book is a tribute to the memory of that great man, but it is also much more.

Over half a century has passed before Harold Fletcher has given us this edited version of his very copious diaries meticulously kept during both the summer cruises of the Discovery. During almost all of that half-century Fletcher had been employed by the

Australian Museum in Sydney as curator of paleontology eventually retiring as deputy-director in 1967. Apart from short articles, including one chapter in a tribute to her late husband by Lady Mawson only one book had ever before appeared on this expedition. It was Grenfell-Prices, "The winning of Australian Antarctica" published in 1967, a serious work on a topic which daily becomes more important as matters of sovereignty again arise with consideration of Antarctic resources.

The BANZARE expedition was planned around two cruises, the first in the summer of 1929-30 from Capetown south into the Indian Ocean via the Crozets, Kerguelen and Heard Islands to the continental ice and eventually back to Adelaide and Melbourne. The second, one year later from Hobart, sailed almost

directly south to Cape Adare, in New Zealand's Ross Dependency, then westward to and beyond Mawson's previous base in Commonwealth Bay and further westward around the complete Indian Ocean arc of the Antarctic continent. By late in February of 1931 the expedition had crossed the path of the previous year and more successfully explored the continental ice from the small seaplane which they carried aboard. Having followed the dubious procedure of annexation of this enormous section of Antarctica in the name of King George V and buried the proverbial bottle containing the proclamation to the sound of three rousing and hearty cheers they then sailed homeward for Hobart.

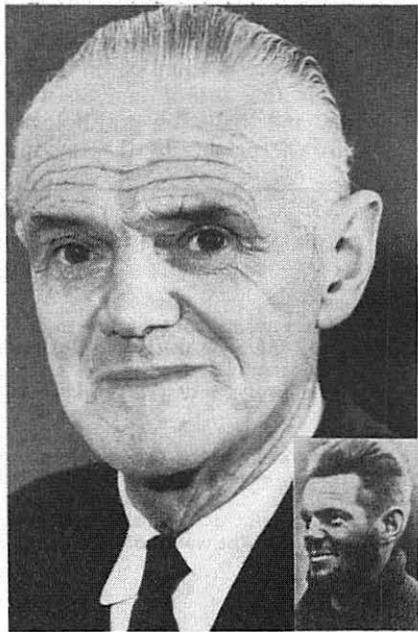
This says nothing of the stormy seas which were frequently encoun-

tered and nothing of their vessel the *Discovery*, designed and built thirty years earlier for Captain Robert Scott's National Antarctic Expedition of 1901-4. Frightfully underpowered and constantly threatened by potential shortages of coal the *Discovery* was often largely dependent on sail. The *Discovery* was known to have limitations, added to or because of which, some explicable decisions of her phlegmatic captain John K. Davies on the first cruise and the surprisingly unenterprising performance of Captain MacKenzie on the second, increased the trials of leadership.

One observation which should not be lost sight of is that this expedition took place in the gloomiest years of the great depression of the early thirties. This book does not mention



Dr Ritchie Simmers



Sir Robert Falla

Expedition members and fellow New Zealanders Dr Ritchie Simmers and Sir Robert Falla later became founder members of the New Zealand Antarctic Society.

The photograph of Sir Robert Falla is reproduced by courtesy of the National Museum and the insets by permission of the Mawson Institute and Angus and Robertson, Sydney.

that the whole ships company voluntarily accepted the second years' cruise on half the allowances paid for the first.

Of interest to New Zealanders is that this expedition saw for the first time the official inclusion in the scientific personnel of two kinsmen – young scientists who were destined to remain in the forefront of New Zealand's Antarctic scene for almost 40 years. Robert Falla, later Sir Robert Falla, was official ornithologist and Ritchie Simmers, later Dr Ritchie Simmers, was official meteorologist. Both men were to rise to the very pinnacle of their chosen careers, Sir Robert Falla as director of the National Museum and first chairman of the Nature Conservation Council and Dr Simmers as director of the Meteorological Service. These men, quite recently deceased, became foundation members of the New Zealand Antarctic Society founded in 1933.

Fletcher the author and assistant zoologist and Falla as ornithologist were thrown together by the day and

the week as they skinned the hundreds of specimens collected during the voyages. These were oceanographic voyages first and foremost hence the thousands of sampling stations and soundings recorded. If anything comes through it is the strength of Mawson, a geologist, who laboured to provide opportunities for his geologists.

Britain claimed sovereignty to this sector of Antractica by an order in Council in 1933. It included all that area south of 60 deg. South to the pole and between the 45th and 160th meridians with the exception of the small French sector of Adelie Land. This whole area amounting to one third of the Antarctic Continent was passed to the Australian Government to control and administer in 1936 and Australia has not accepted this responsibility lightly. Australia's concern is itself a tribute to Sir Douglas Mawson, as his Harold Fletcher's most readable and gripping account of the voyages of the 1929-31 BANZARE.

Whaling and Sealing at the Chatham Islands by Rhys Richards

"A most valuable contribution to New Zealand History. The research has been extremely thorough, with generous footnoting supported and assisted by an excellent bibliography and index . . . an excellent contribution to South West Pacific maritime history; it deserves a wide readership."

— Harry Morton, *New Zealand Listener*

"A comprehensive chronological record, Richards' work is an extension of the pioneering histories of Robert McNab, particularly his "Old Whaling Days" in 1913 . . . among the sealing and whaling records lies a good deal of social history as well . . . This book belongs in every collection concerned with sealing and whaling or the waters of New Zealand in general."

— Briton C. Busch, *The American Neptune, Peabody Museum, Salem, Mass.*

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New Zealand Antarctic Society Inc.,

The New Zealand Antarctic Society was formed in 1933. It comprises New Zealanders and overseas friends, many of whom have seen Antarctica for themselves and all of whom are vitally interested in some phase of Antarctic exploration, development or research.

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- Antarctic which is published quarterly in March, June, September and December. It is the only periodical in the world which gives regular up to date news of the Antarctic activities of all nations at work in the far south. It has a world wide circulation. (Airmail postage is extra.)
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