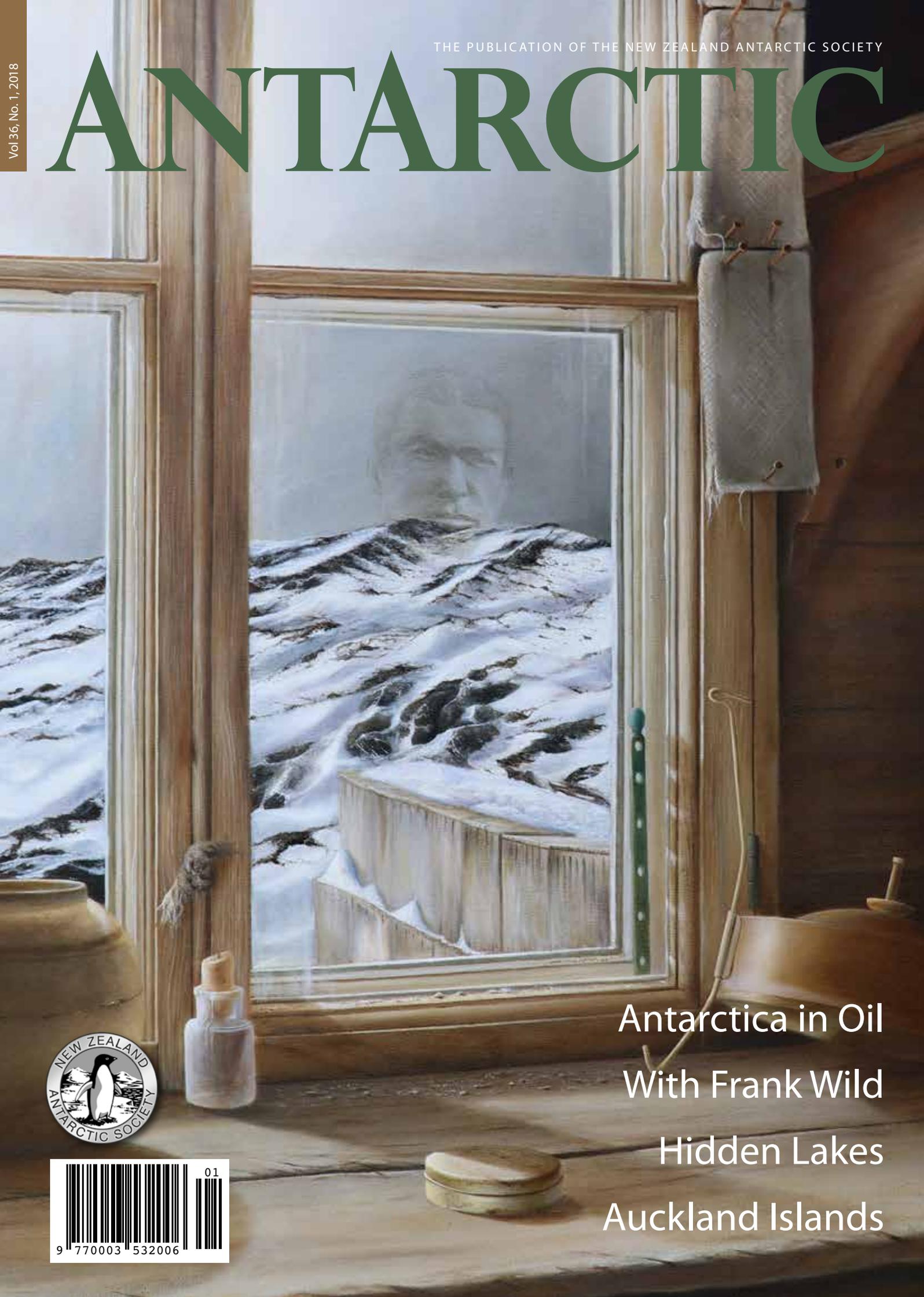


THE PUBLICATION OF THE NEW ZEALAND ANTARCTIC SOCIETY

ANTARCTIC

Vol 36, No. 1, 2018



Antarctica in Oil
With Frank Wild
Hidden Lakes
Auckland Islands





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www.antarcticsociety.org.nz

ANTARCTIC

is published quarterly by the New Zealand Antarctic Society Inc.
ISSN 0003-5327

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Antarctic magazine
New Zealand Antarctic Society
PO Box 404, Christchurch 8140, New Zealand
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The deadlines for submissions to future issues are 1 May, 1 August, 1 November, and 1 February.

PATRON OF THE NEW ZEALAND ANTARCTIC SOCIETY

Professor Peter Barrett, 2008

NEW ZEALAND ANTARCTIC SOCIETY LIFE MEMBERS

The Society recognises with life membership those people who excel in furthering the aims and objectives of the Society or who have given outstanding service in Antarctica. They are elected by vote at the Annual General Meeting. The number of life members can be no more than 15 at any one time.

Current Life Members by the year elected:

1. Robin Ormerod (Wellington), 1996
2. Baden Norris (Canterbury), 2003
3. Randal Heke (Wellington), 2003
4. Arnold Heine (Wellington), 2006
5. Margaret Bradshaw (Canterbury), 2006
6. Ray Dibble (Wellington), 2008
7. Colin Monteath (Canterbury), 2014
8. John Parsloe (Canterbury), 2014
9. Graeme Claridge (Wellington), 2015
10. David Harrowfield (Canterbury), 2016
11. Robert Park (Canterbury), 2016
12. Alec McFerran (Canterbury), 2017
13. Frank Graveson (Auckland), 2017
14. Mike Wing (Auckland), 2017

ELECTED OFFICERS OF THE SOCIETY

National President: Linda Kestle
North Island Vice-President: Vacant
South Island Vice-President: Margaret Bradshaw
National Secretary: Gigi Green
National Treasurer: Lester Chaplow
Immediate Past-President: Mariska Wouters

BRANCH CHAIRS

Auckland: Linda Kestle
Canterbury: Shirley Russ
Wellington: Robin Falconer

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NEW EMAIL ADDRESSES

Calling New Zealand members and subscribers affected by Vodafone cancellation of email services: if you previously used a Vodafone, Clear, ihug, or Paradise email address could you please urgently advise our Membership Team – membership@antarcticsociety.org.nz – of your new email address.

Cover photo: "Shackleton" – oil on canvas, by Sean Garwood. The painting was inspired by reading about Sir Edmund Hillary and his enlightening encounter with the ghost of Sir Ernest Shackleton during his first visit to *Nimrod* Hut. The painting features the north-east window adjacent to the Mrs Sam range. *Photo: Sean Garwood.*

Photo above: "Serenity – Shackleton's arrival" – oil on canvas, by Sean Garwood. The painting features Shackleton's ship *Nimrod* arriving at Cape Royds. The painting was crafted purely from imagination after the artist had read several books describing Shackleton's eventual chosen cape. *Photo: Sean Garwood.*

From the Editor

Eagle-eyed readers may have noted two new Life Members in the December edition of *Antarctic* (listed inside the front cover). Our congratulations to Frank Graveson and Mike Wing, both of Auckland, who were elected as Life Members at the Society's Annual General Meeting, held at Wellington in October 2017.

An interesting three months here, and recognition for *Antarctic* magazine with the feature article from our December 2017 issue, *What does the United Nations Paris Climate Agreement Mean for Antarctica?*, being supplied for download from the SCAR website.

This issue we have another long lead article: a follow-up on Morton Moyes, by Richard McElrea; this time from the Mawson expedition of 1911–14, entitled *With Frank Wild: Morton Moyes and the Australasian Antarctic Expedition, 1911–14*. (Note: generally, we are not seeking articles of this length, but please contact the Editor if you do have a longer article.)

Rowley Taylor recounts a hastily put together expedition to the sub-Antarctic, in *Memories of the Auckland Islands, 1954*; and John Dow writes the *Rennick Team Members Celebrate the Fiftieth Anniversary of their Expedition*.

A few *Antarctic Snippets* catch us up on some recent events. *Antarctic* magazine appreciates the heads-up received from readers on many of these items.

Sarah Bouckoms reports on the *Explorers Club Film Festival* held recently in New York, and lists some of the New Zealand polar films that have been shown there. Staying with the arts, and following up on a snippet from our June 2017 issue, Sean Garwood writes of his experiences as a member of Antarctica New Zealand's Community Engagement Programme in *Antarctica in Oil*.

On a topic that has intrigued me for some time, Margaret Bradshaw writes about Lake Vostok, in *Hidden Lakes Below the Antarctic Ice Sheet*;

Finally, a little fun on the back page exploring book *Dedications*; an item in a book that we often skip over.

Lester Chaplow

The Secretary advises...

It is my pleasure to inform you that, via a robust nomination process, Dr Linda Kestle has been elected as president of the Society.

Linda is of good character and has been a fine office-holder in the Society in several different roles, and we look forward to the year ahead with her at the helm.

Best regards – and congratulations Linda!

Gigi Green

From the President

Happy New Year.

I hope you are all now re-energised after your summer break; a time to relax, to reflect and to plan for the coming year(s). From my perspective as the newly confirmed president of the Society, it is a new year, a new National Council, and a full Antarctic Society schedule for 2018 – commencing with the first National Council meeting, in mid-March, to not only confirm and action a range of focussed yet diverse projects, but also to hold the first of a series of Council-run Project Workshops this year, as we keep our eye not only on December 2018 but also January 2033 down the track.

The first workshop will focus on communications, given the expanded range of ways we can now get the word out there and interact more immediately and inclusively with members and vice versa: via the new Website, *Antarctic*, and Facebook; exciting times as we embrace and implement the new technologies and media options alongside our traditional modes.

As always, we welcome your ideas and willingness to get involved in your local NZAS branch, whether by suggesting and/or attending events, bringing along potential new members and/or being a committee member, or offering to be a champion of a particular NZAS Branch project. All the best.

Linda Kestle

With Frank Wild: Morton Moyes and the Australasian Antarctic Expedition, 1911–14

By Richard McElrea, QSO

Left: Captain Morton Moyes, OBE, with his Polar and other medals, June 1980. Photo: Richard McElrea. Above: "Wild's party at the Western Base, Queen Mary Land, 1912." Back row (L-R): Charles Harrison (biologist), Morton Moyes (meteorologist), Andrew Watson (geologist), Archibald Hoadley (geologist), Evan Jones (medical officer). Front row (L-R): Alexander Kennedy (magnetician), Frank Wild (leader), George Dovers (cartographer). From: *High Latitude*, by J. K. Davis, Melbourne University Press, 1962.



Captain Morton Henry Moyes, who died in Sydney in 1981 aged 95, was the last survivor

of the eight men of the Australasian Antarctic Expedition (AAE) Western Party, led by Frank Wild, who spent a year at a base on the Shackleton Ice Shelf.¹

When I met Moyes in a rest home in Australia in June 1980, he recounted that Douglas Mawson's choice for the main base at Commonwealth Bay was "quite a good landing place. There aren't too many places around there where you can get near the land at all." The ship

put in there on 8 January 1912.² It soon became known as "The Home of the Blizzard."

Setting up the Western Party

The Western Party sailed from Commonwealth Bay on SY *Aurora* 11 days after arrival to establish their base. They expected to voyage about 500 miles to a place known as Sabrina Land, but they found there was no sign of any land.³ Moyes said, "We went over 1200 miles before we saw land and that was very lucky too as the captain [J. K. Davis] had just decided that we must come back to Australia." Moyes recalled Davis

1 See "Morton Moyes served twice with Mawson", *Antarctic* 9(8), 1981, p. 289 (Ed. J. M. Caffin). Moyes was the second-to-last survivor of the expedition as a whole. Eric Webb, a New Zealander then living in England, had been an Associate of Civil Engineering of Canterbury University College (now the University of Canterbury) before joining the AAE as "Chief Magnetician". He was at the Main Base and accompanied the Southern Sledging Party (as described by Mawson). Moyes, who had been corresponding with Webb, told me Webb's career was not in New Zealand. "He came back over here [to Australia] and during the war was in charge of an Australian engineering division where he won the D.S.L. and M.C. and then he went to England..." Webb subsequently worked on hydroelectric schemes throughout the world, and died on 23 January 1984 (archiveshub.jisc.ac.uk: Eric Norman Webb collection, Scott Polar Research Institute, University of Cambridge).

2 This was the same vessel that Moyes later sailed on in December 1916 as part of the *Aurora* Relief Expedition. Refer: "The man who shared a cabin with Shackleton: Morton Moyes and the *Aurora* Relief Expedition, 1916–17", *Antarctic* 35(4), 2017, pp. 60–62.

3 Sabrina Land: "That portion of the coast of Antarctica, lying between Cape Waldron, in about 116° 02' E, and Cape Southard, in about 122° 05' E." (United States Board on Geographic Names, *Gazetteer No. 14, Geographic Names of Antarctica*, January 1956, p. 269). J. K. Davis noted: "A British expedition under John Balleny has long been credited with having seen land in March 1839 in about 117° E." Davis, who would be without peer in making the assessment, considers "it seems doubtful whether what Balleny saw on 2 March 1839 was indeed land at all." (J. K. Davis, *High Latitude*, Melbourne University Press, 1962, f.n. at p. 177).

had just enough coal left to take the ship out of the ice pack. Davis's account of the difficulties of navigating this uncharted ice coast is told in his book, *High Latitude*. A series of storms between 24 and 28 January drove *Aurora* "some distance to the northward . . . at times the wind was so violent and the sea so heavy that the vessel would not answer her helm."⁴

Moyes recalled they were blocked from reaching land by thick ice pack "for about 20 miles out". They then saw "this big ice shelf sticking out from the land". In his diary Moyes states: "Wild said too crevassed to land, but all decided to chance it".⁵ Davis succeeded in bringing the ship to the edge of the ice shelf at a point where access up a snow ramp was possible. Wild led a party and clambered onto the ice shelf with the aid of some "boards".

Davis sets out the sequence that followed. Wild reported land was about 17 miles away but the surface was blue glacier ice not unlike the Beardmore Glacier, and he considered that excellent winter quarters could be established six hundred yards inland from the edge of the shelf. He felt sure it was a stable feature. He urged Davis "to establish the western base there and then".

Davis was far from convinced, but decided to allow the stores and hut material to be off-loaded, reasoning that "if in the meantime anything happened to prove this position unsuitable [he] would re-embark the men and return to Australia forthwith."

From 15 to 21 February 36 tons of stores and 12 tons of coal were unloaded and, with the help of a "flying fox", hoisted to the cliff top. Davis referred to the "all out effort on the part of all hands". Moyes in his diary records how they worked from 8 a.m. till 10 p.m. every day. "Stores to be sledged over 300 yards floe & hauled up a 100 ft cliff . . . Sailors sledge to the foot [of the cliff] & team of 6 of us haul up. All too tired to drop."

Davis then went ashore and accompanied Wild to the hut site. Davis wrote: ". . . the more I saw of it the more risky it seemed to me to leave a wintering party near the edge of a floating ice-shelf, twenty miles from land".

Almost 70 years later, Moyes told me: "Finally Captain Davis agreed that Wild knew more about that part of the world than he did and unwillingly he agreed to let us [remain] . . . All the gear was ashore and then the ship just left us there."

The task ahead was daunting for all concerned. The eight-man party would be isolated for a year. Rudimentary wireless once erected would offer some chance of communicating with the main base, and possibly with Australia and the outside world. On the voyage south Mawson had formed a five-man party to establish a wireless relay station on Macquarie Island. The relief of Wild's men depended on Davis getting the ship back to the ice tongue on the remote Antarctic coastline, ice conditions permitting. All of this weighed heavily on Davis.

Wild and his men erected tents at the hut site. Moyes told me: "We lived in the tents for a couple of weeks whilst half the team started building the hut and the rest of us sledged the timber with all our gear from the edge of the cliff . . . about half a mile inland . . ." His diary records that a blizzard on 26 February "broke up rest of floe & aerial tramway to the cliff, so only just landed in time . . . Temperature at night [minus] 12° F equal to 44° below freezing point." The diary entry for 28 February goes on to say: "Hut skeleton up & all in, sleeping on the floor, mattresses still on the cliff." Moyes' diary then records on 13 March: "Cliff fell & smashed rest of floe at 8 a.m."

A diary entry for 3 March highlights the dangers of their environs. "In afternoon had a trip on skis for the 1st time. Lost one leg on a hidden crevasse about 60 ft deep & widening downwards." Just two days earlier Moyes noted that when bringing in supplies, "Had some close shaves at the 'Blue Devil'. 5 crevasses appearing on our track now."

Autumn sledging

Mawson had chosen "a company of seven tough University graduates" for Wild to lead and to train "in the ways of Antarctica".⁶ Moyes recalled that with autumn approaching "Frank Wild said, 'Well, I want to show you some sledging before winter comes', so leaving two men to complete the hut he took the rest of us towards the land."

The sledging from 13 March until 6 April was frequently in blizzard and drift, over crevassed terrain and at times "simply murderous in soft snow". Moyes suffered a badly frostbitten finger. Days held up in wet bags were enlivened by impromptu concerts and singing. They struck a blizzard that kept them in camp for six days from 21 March. Moyes said that when they got back to

4 *High Latitude*, p. 176.

5 Mitchell Library, State Library of New South Wales, <http://acms.sl.nsw.gov.au>, entry for 14 February 1912. Additional to my interview with Moyes, and other stated sources, the diary is the source of much of the material for this article. In his diary Moyes frequently refers to the leader as "Mr. Wild." In 1911, Moyes was aged 25 years and Wild 38 years.

6 Mawson to K. Graham Thomson, 24 June 1952, quoted in Philip Ayres, *Mawson: A Life*, Melbourne University Press, 1999, p. 63.





Frank Wild, leader of the AAE Western Party, on night shift in "The Grottoes".
Photo: Mitchell Library, State Library of New South Wales.



"Midwinter's dinner in Queen Mary Land, 1912". L-R: behind – C. A. Hoadley, G. Dovers, A. Watson, C. Harrison, F. Wild; in front – S. Jones, M. Moyes, A. Kennedy. From: *The Home of the Blizzard*, by Sir Douglas Mawson, Heinemann, London, 1915.

Australia "we found out that in those six days were Scott's men dying in their [camp] about 2,000 miles away."

An "awful experience" on the night of 24 March resulted in the tent occupied by Moyes, medical officer Evan Jones, and biologist Charles Harrison being blown to one third its size and becoming half full of snow. Moyes in his diary states they thought they "would not get through". Jones was pinned under a flap covered in snow and later needed strychnine for exhaustion. Moyes lay close to him, crushed under a mound of snow over a metre deep, which had entered through the ventilator. When Harrison got up to adjust the ventilator he could not get down again and had to sit up, unable to move for 16 hours. Everything was wet and they could not eat for many hours. Finally Jones managed to get out and remove some snow.⁷

After extreme sledging conditions that must rank with the worst of that era they got within a short distance of the hut, only to be snowed in again. Their bodies became crushed by the weight of snow. Moyes wrote:

Gradually the tent bellied in on us, & the snow ran down & the weight increased very gradually. Sensations were weird as it came up the body to chest & head & finally above, & the weight increased & seemed to press the ribs together.

Moyes was determined to get to the rear section of the tent and a small open space. Forsaking his sleeping bag he took "1½ hrs to wriggle up 2 ft", where he lay exhausted for some time. He managed to get Jones up to

the space. They later found Harrison, who had rolled out of the tent and lain for hours in the blizzard, "cold but well". Moyes' diary records: "Never want another experience like the last 26 hrs, practically foodless, sleepless, cramped & under heavy snow for 8 hrs."

Frank Wild with geologist Archibald Hoadley and surveyor George Dovers in the other tent also had a harrowing night, with the space in the tent severely limited by "the combined pressure of wind and snow". When the storm moderated they saw the tent of Moyes, Jones, and Harrison had collapsed, and rushed to assist "and were horrified to see Harrison in his bag in the snow".⁸

Winter at "The Grottoes"

Memory of these near-calamities had receded by the time I met Moyes, who merely said they got back to the hut after being caught in a second blizzard. Moyes recalled it was Good Friday.

I'll never forget that, because Frank Wild never gave an order – he acted as if he was a chairman of a committee. The only time he made a direct order was the next night. We had dinner and Frank Wild said: "Tomorrow we start winter routine. Church Service at 10.30." I'll never forget that – the old sailor.

Sunday services took place whenever possible through most of the year, led by Wild or Moyes. Moyes told me they were without a Bible,⁹ which had been unintentionally offloaded with other books at either Macquarie Island or Adélie Land. Moyes, however, had a prayer book from which hymns would be copied,

7 The men in the other tent also had "a very bad night". Wild records: "The wind was chopping about from south-east to north and blowing a hurricane. One side of the tent was pressed in past the centre. . . . Then the ventilator was blown in and we had a pile of snow two feet high over the sleeping bags. . . . There were two hundredweights [approximately 100 kgs] of snow on us. . . ." (F. Wild, chapter XIX, in Sir Douglas Mawson, *The Home of the Blizzard* (vol.2), London, Heinemann, 1915, p. 59).

8 *Ibid.*, p. 62.

9 Moyes' diary indicates he had access to a Bible some months later.



"Camp near the Hippo nunatak, Queen Mary Land". From: *The Home of the Blizzard*, by Sir Douglas Mawson, Heinemann, London, 1915.

sometimes by the night-watchman using a jelly-graph. Moyes explained the process:

A lot of jelly stuff was put in a long tin. You wrote on the paper with a kind of purple ink. The paper was then put on top of the jelly, leaving an imprint. You [put] a sheet of foolscap on and rubbing it down and taking off the copies from the jelly.

However, Easter Sunday was not their first church service. Moyes' diary of 3 March records: "Had a grand little Service at 12 a.m. [Archibald] Hoadley on Harp. Had prayers. Venite, last psalm. 'Now thank we all our God' & 'Eternal Father'. Very nice and liked by all." They held another service a week later before sledging commenced.

Moyes recalled that the "20 foot" (six metre)-square hut, named "The Grottoes", was comfortable over winter. At times his hurricane lamp would blow out as he inspected the meteorological screen every four hours. They were missing the sewing machine intended for the hut, and so two or three hundred food bags "for sugar and salt and tea and all that kind of thing" were sewn by hand.

His diary records how the hut required constant digging-out after being blocked up by snowdrifts, as did stores and the dogs. Before long the hut became all but buried in snow, with egress by means of a ladder to a raised trap-door leading to the surface above.

Moyes' diary makes interesting reading as to activities in and around the hut over the ensuing months of winter. In addition to his meteorological duties he took his turn as cook and nightwatchman and at other tasks, such as cleaning the hut. Digging snow was an almost

daily activity, and by the end of March extensive caverns had been excavated for stores in the drifts around the building. A near-calamity from fire was averted after Jones had a mishap with an acetylene lamp.

Leisure time, which generally commenced after lunch, involved extensive reading, animated discussions, musical recitals (such as on flute and piccolo), wrestling matches, and games of chess, bridge, poker, and the like. One entry records two rounds of golf with Wild! Midwinter dinner included speeches, toasts, and a gramophone concert.¹⁰ Moyes' birthday on 29 June featured "a fine dinner, & speeches & songs . . . Dovers made out a fine menu card."

Early-season sledging to the east

Moyes was a member of a six-man party with three dogs that set out on 22 August to lay a food depot to the east. This was positioned some 84 miles from base near a landmark named "the Hippo".¹¹

Again they suffered many difficulties with the tents in extreme winds. He wrote on 23 August: "Had longest

10 A memento of that day in the form of a wine bottle "engraved with a diamond", was found on a beach at Tuggerah, New South Wales in May 1927. The engraving included a picture of a penguin, a ship resembling *Aurora*, and a message: "Midwinter's Day, 1912, Shackleton Glacier, Antarctica. Frank Wild, A. L. Kennedy, S. Evan Jones, C. Arch. Hoadley, Charles T. Harrison, George Dovers, A. L. Watson and Morton H. Moyes." The 1927 newspaper report (Hobart *Mercury*, 26 May 1927) suggested the bottle may have been on *Aurora* during its final voyage after it sailed from Newcastle, New South Wales in June 1917, bound for Chile and not heard of again.

11 F. Wild, chapter XX, in Sir Douglas Mawson, *The Home of the Blizzard* (vol.2), London, Heinemann, 1915, p. 80.



night on record. Wild, Jones & self in 3 man bag in one tent. All had very cold feet & yarned from 3 a.m. . . . Temp[erature] when we got up was 34°F & we had a very cold time starting . . .” Moyes told me of a nearby avalanche in the night. “We suddenly heard this dreadful noise . . . we heard the thump and the ice [would] shake.” In their “bed-socks” the men ran “about 50 yards” from their tents. “Although the sound was very close we realized that it wasn’t quite that close. We were about a quarter of a mile away from the edge of the land. The next morning we could see blocks of ice as big as a house [had] come over the edge.”

Severe winds blew down one of their tents. The surface was “blue ice” such that they could not travel over it in heavy wind. “We had to look around to see if we could get a place to dig a trench but we couldn’t even find that. Everything was ice!” They finally dug out a crevassed area and sheltered there for five days.

The discomfort of camp did not diminish. On 12 September he wrote: “So bad in bags we left in a snowstorm altho’ not able to see 10 yds. Had many heavy falls on slippery sastrugi . . . and great trouble keeping the sledges apart . . .” They arrived at the hut three days later.

Spring sledging westwards

Moyes was also part of a five-man team that set out on 26 September to lay a depot to the west, across sea-ice, described by Wild as “an expanse of old, fast floe”.

They found their route blocked by “a badly broken glacier – Helen Glacier – on the far side of which there was open sea”.¹² Moyes told me they “had a very bad time there because before we knew where we were the ice floe that we were on was so thin . . . it’s a very nasty feeling.” From there they had to take a very circuitous course towards land and back in an easterly direction. Wild states: “They had very rough travelling, bad weather, and were beset with many difficulties in mounting on to the land-ice, where the depot had to be placed.” Their distance from the base at this point was “only twenty-eight miles” and the altitude was “one thousand feet above sea-level”.

They were delayed by a 17-day blizzard on the ice cap. Jones records: “Although Harrisson and Moyes were no more than 20 feet from us, the noise of the gale and the flogging of our tents rendered communication impossible.” The cap on the tent used by Moyes and Harrisson “was slowly tearing with the pressure of the

¹² Ibid., p. 86.

wind and snow on the weather panels . . .”¹³ The other tent collapsed and Jones and his companions had to dig a hole and lower the tent into it. When the blizzard moderated they set out for base.

Moyes’ diary records their final day.

Back to the hut!!! Extraordinary day . . . not till 10 a.m. could we get away, & then in heavy drift & wind. Surface very slippery & heavy falls numerous. Sledge also sliding, although 2 men on back stopping it. Got on Ice & numerous crevasses after 3 miles, & had trouble. Finally had to let sledge go down a steep snow slope all pulling on it, & then it nearly got away which would have meant total loss. Jones and I found fair slope for land & floe 7¾ miles, so let sledge down, & then another mile we camped for lunch at 2 p.m.

Picked up depôt seal meat & rocks & left for hut at 3.20, all weary already . . . it was a heavy drag . . . Had a dismal tea by sledge side in cold, on hard biscuits, chocolate & sugar lumps. Hardly able to limp when we got up, from stiffness & cold but knew we had still 9 miles to go.

Three days overdue they met a search party nine miles from base and arrived there at midnight on 26 October. Moyes records of the final push for the hut: “Pulling very heavy, & very sore & stiff. Not able to lift our blistered feet . . .” The day’s activities concluded with “. . . ‘Sweethearts & wives’ in Port & just managed to fall into bed, sore & exhausted but happy”.

Nevertheless Moyes revived quickly and two days later “went to Snow slope ski-ing after lunch”.

Alone

With two parties due to leave the hut on extended sledging journeys in early November, Moyes was to remain at the hut with biologist Harrisson. Wild explained that Moyes was to carry on meteorological work, and Harrisson “biology and sketching”.¹⁴

However, the plan was changed. Moyes explained to me: “There was nothing for a biologist to do, not a bird for miles and miles . . . so Harrisson suggested he should take the little dog team Wild was leaving with us.” He added: “Wild like the others was not a great believer in dog teams, you know . . .” It was agreed Harrisson would accompany Wild’s party as far as “the Hippo” and then return.

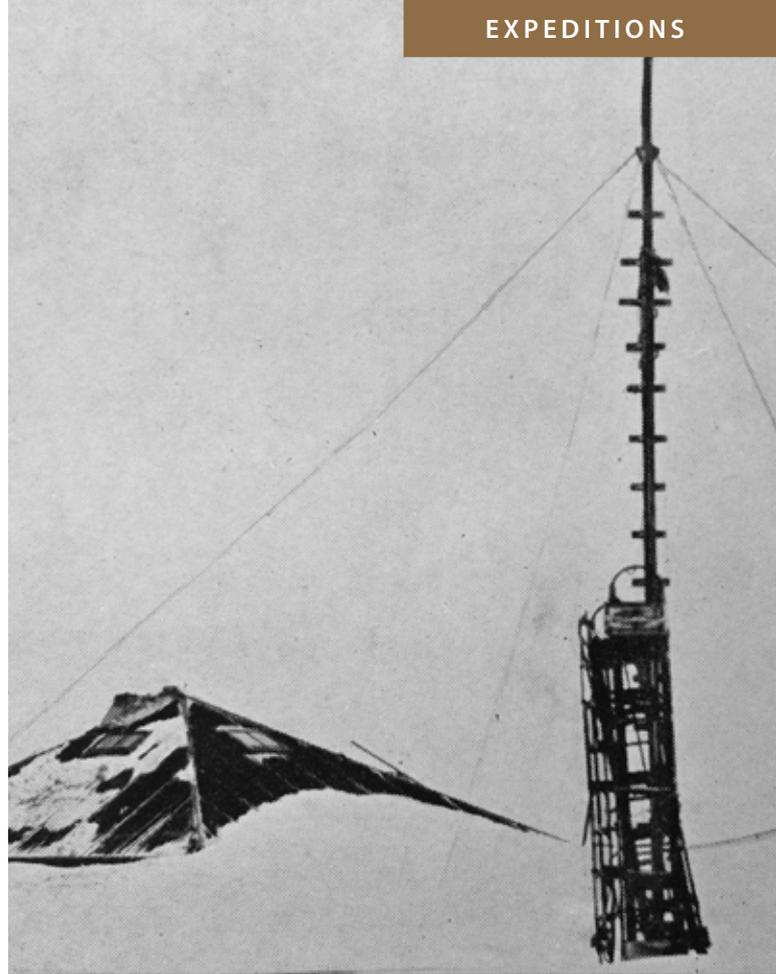
Moyes had long known he would remain at the hut. He told me: “I’d gone on all the earlier trips that I could to get all the sledging I could. I’d been in those three

¹³ Ibid., p. 87.

¹⁴ Ibid., p. 88.



"In the veranda of the Western Base hut." From: *The Home of the Blizzard*, by Sir Douglas Mawson, Heinemann, London, 1915.



"The Western Base hut – 'The Grottoes' – in summer." Photo: S. E. Jones. From: *The Home of the Blizzard*, by Sir Douglas Mawson, Heinemann, London, 1915.

parties knowing that I would have to stay at the hut in the summer time." However he was not so pleased he would be left alone.

On 29 October Moyes noted: "Harrison takes dogs & helps W[ild's] party to Nunatak . . . so I'll get the doubtful pleasure of 2 to 3 weeks in solitude here, without even a dog." Wild records the distance Harrison would have to sledge back alone as "100 miles".

Wild's party set out on 30 October, leaving four men at the hut. "Seems strange to lose all these men for 3 months & also see them dying out as a feint [sic] speck on the white endless glacier." Jones' western party finally left on 7 November after weather delays. Moyes wrote: "All alone here and the silence is immense."¹⁵

Moyes' diary covers the solitude of the weeks that followed, and the daily activities he undertook to keep himself usefully occupied. Within 24 hours he noted: "Afraid I've had enough of my own society already. Forget how to talk soon . . ." On 3 December he wrote: "The Silence is so painful now that I had a continual singing in my left ear, much like a Barrel Organ, but it's the same tune all the time."

¹⁵ In 1980, Moyes recalled Wild agreed to Harrison's proposal as Moyes would only be by himself "for two days" because of Jones' party leaving six days after Wild's party. This differs from Moyes' diary entry of 29 October quoted above. Importantly, he recalled Wild "just told me he just didn't want me to go away from the hut area by myself".

A typical day's routine started with cooking a hot breakfast, although often the fire was out by morning, leaving the hut at times below freezing level and water frozen in the basin.

Moyes continued his meteorological observations in all weather. On 21 November a "Hurricane-Tornado" struck such that he was "in deadly fear lest the windows over my head will be blown out during the night . . . Went out twice with difficulty due to weight of snow on hatch, & scarcely able to go across the wind." And the following day: "Had a hard job getting outside today & drift very heavy."

Whenever weather permitted he would go outside for extended periods for recreational or task-related activities. Late in his isolation he noted: "These days inside seem very long, in fact it is strange what a difference a few hours on the floe makes."

He became proficient enough in the use of ski to venture out to local landmarks. Thus on 8 November he took "a ski run round the floe". A few days later: "Had a few ski runs on the slopes after lunch, but no fun by oneself, so took a walk over to Icy Cape. No seals about."

The hunting of seals and other wildlife was because of concern about the possibility of spending a second winter on the ice shelf. Moyes told me: "We were worried that if the ship couldn't get back in there next year we'd have to have a big store of food." When the

ice in the bay broke away in December he went there and killed seals and then hauled the seal meat up the cliff to place it in a cave. In all, he said he only caught three or four seals.

His diary records he spared a seal “in ecstasies over the birth of son & heir”. The occasional penguin (emperor and Adélie) was also part of the grim harvest, as were skua gulls that he shot. However, on 22 December he wrote: “. . . spared 2 Skuas which were flying round, being Sunday”.

Moyes undertook various jobs around the hut (although not generally on a Sunday), such as repairing leaks caused by thawing snow, or recovering stores. The hatch door exit from the hut gave difficulties. On 29 November he wrote: “The hatch has sunk so that I was unable to push it up tonight to get out, because of weight of snow on top. In pressing up with my back I broke the ladder in half & had a nasty fall.”

He would read, but the fare was limited. “History & Science very interesting, but I’d like a good novel for a change, the shops here don’t stock them.” He would take and develop plate photographs, sometimes having difficulty with the plates jamming in freezing conditions. One of the plates that he developed, of a moulting penguin, “are among the best of the snow photos I have seen yet . . . He still has a University Hood of old feathers on his back, but thinks no small beans of himself.”

He would wind the chronometers. Weekly routines included a solo toast to “Sweethearts & Wives” with a tot of whisky, and reading the Evening Service on Sundays.

Moyes much anticipated Harrison’s expected return. His non-arrival caused him extreme anxiety. On 16 November he noted: “No sign of Harrison with telescope from the top of wireless mast.”

On 24 November: “Harrison out 26 days & no sign.” The next day: “Harrison must be short of grub. I’ll have to move out after him, if he is not back in 3 days.” Moyes gathered up a full sledge of provisions and food for “a little over 5 weeks”. He surmised that one possibility was “he may have gone on with E[astern] party” but thought this was “not probable.” Delayed because of adverse weather, Moyes notes in his diary of 6 December: “Still here . . . looks like a start tomorrow although cannot see what good I’ll do by going.”

The available diary does not cover the period from 7 to 12 December. Moyes told me he went out “only about 25 miles because there were only two places on

the trip out to the depot where there could have been trouble with crevasses . . . So I went there and scouted around for a couple of days . . .” He became so snow-blind he had to return to the base. His diary records other times over the period of his isolation when he suffered these symptoms, such as on 2 January: “Eyes got very sore in the glare again today & I don’t like using the cocaine too often.”

Two days after his return he had a “fine fright” when he mixed up a cup of water with a cup of “fairly strong Formalin” and drank two mouthfuls of the latter.

On Christmas Eve he wryly notes: “Don’t think I’ll hang up my stocking, looks like asking for presents.” A certain light-heartedness also is apparent in the following:

Most enjoyable New Year’s Day . . . Much snow got past my patent impassable doorway . . . I spent a blithesome evening shovelling it & tossing it up the hatch . . . No one can say I made a beast of myself for the New Year. A plate of semolina . . . 2 scones at 4 p.m. 1 sausage & about 6 beans with a little jelly & ¾ of tinned pear at 7.30 p. m. . . . I didn’t notice much public rejoicing for 1913.

On 6 January, after almost 10 weeks alone, he heard the sound of human activity.

At 12.30 seemed to hear “the Capital Ship” tune, which sounded so real I rushed outside, & nearly crazy with delight saw a sledge party approaching with all flags set. Joyfully I counted 4 men & stood on my head, recognizing that Harrison must be one . . . Feel like a 2-year old tonight after my 10 weeks loneliness. Gave them a jolly fine feed all day.

Moyes explained to me what he learnt from the returning party.

When they got out to the depot they found that the sledge they had left there was missing. It had been stood up in a trench and built up with blocks of ice but the blizzard that caught us that night and made us get underground – the gust had caught that sledge before they fixed it and blown it away. So Wild had the decision to make – he had to take Harrison out with him on his trip or bring Harrison back to the hut first. And as that would ruin most of the big summer trip he decided to take Harrison with him and leave me by myself!

Wild wrote of Moyes: “He looked well, after his lonely nine weeks, but said it was the worst time he had ever had in his life.”¹⁶

16 F. Wild, chapter XXI, in Sir Douglas Mawson, *The Home of the Blizzard* (vol.2), London, Heinemann, 1915, p. 107.



"The relief of Wild's party, the *Aurora* approaching the floe at the Western Base, February 1913." Photo: F. Hurley. From: *The Home of the Blizzard*, by Sir Douglas Mawson, Heinemann, London, 1915.

Relief

Wild's party was relieved by Captain Davis and *Aurora* on 23 February.¹⁷ Moyes notes in his diary:

Jones rushed in about 10.15 to say Aurora in sight. We all put on our harness, loaded sledges & had 3 good loads at floe edge when ship came in. Bad news awaited. Mawson's party overdue & he struggled in late, Mertz & Ninnis being dead . . . We sledged without a stop all day, & got gear & some provisions on board by 9 p.m. when we set sail homewards! . . . Got a good mail . . . and spent most of next day reading it . . .

17 In his 1962 book, Davis refers to a mass of ice known in 1911 as the Termination Ice Tongue in the vicinity and which appeared to keep the Davis Sea relatively clear of ice "and allowed us to approach the shore". He states it may not have been a tongue of ice shelf but in fact "a single berg of huge proportions", which has since completely disappeared. With that, ". . . the ice conditions have entirely changed and no one has been able to approach Wild's old base by sea since the occasion of our second and last visit in [February 1913]" (*High Latitude*, p. 184).

A regret, still remembered 67 years later, was that in the haste to evacuate he left his watch under his bunk.

Moyes told me that once on board he ". . . had a good old bath first. It was good to get back to get some different type of food too." As he climbed aboard "somebody leaned over the ship and yelled to me 'your brother's just made a century for South Australia.' He played for South Australia before the war . . ."¹⁸

On being part of Mawson's expedition of 1912, Moyes concluded: "I'm very glad I was in it not only because it was something pioneering but it was a great life and I met a lot of fine chaps too, very kind fellows." ♣

18 Alban George ("Johnny") Moyes, (1893–1963), later journalist and test cricket commentator. There was also an older brother, John Stoward Moyes, (1884–1972), later an Anglican bishop (Denis Fairfax, www.navy.gov.au/biography/commander-morton-henry-moyes).



Memories of the Auckland Islands, 1954

By Rowley Taylor

Members of a small hastily organized scientific expedition in March 1954 were the first to visit the Auckland Islands since wartime coast watchers had been withdrawn in 1945. Rowley Taylor recalls the event.

I well remember my first voyage into the Southern Ocean, on MV *Holmlea*. She was under charter to the Australian National Antarctic Research Expeditions to repatriate a sick radio operator from Macquarie Island – over 1,900 km south-west of Wellington.

John Holm (Holm Shipping Company's General Manager) and Robert Falla (Director of the Dominion Museum) had decided that the ship would land two scientists at the Auckland Islands (700 km short of Macquarie) to study the wild rabbit population, and re-embark them on return from Macquarie. Also, the crew would sample seawater and would cast drift cards overboard for the New Zealand Oceanographic Institute.

Rabbits had been introduced to Enderby Island by Sir James Clark Ross's Antarctic expedition in 1840. Charles Enderby, Lieutenant Governor of the short-lived Auckland Islands colony, put more on Rose Island in 1849, and others were liberated direct from Australia in 1864. These rabbits were of various breeds and could possibly have different pathogens from those on the New Zealand mainland. In those days, Department of Scientific and Industrial Research (DSIR) studies of rabbits were aimed at controlling the pest – a huge conservation problem throughout New Zealand.

Originally only Dick Dell (Dominion Museum) and my immediate boss, Peter Bull (Animal Ecology Section, DSIR, and an expert on rabbit parasites), were invited. My job was to organise the camping and scientific equipment. I packed enough food and emergency rations for three weeks, two .22 calibre rifles for collecting rabbits, and a .303 – in case wild cattle were a problem.

Less than two days before sailing, Peter became ill – and as I was available and familiar with the rabbit study I was asked to take his place. Fortunately, he recovered quickly – but then the captain, John Holm, knowing my enthusiasm, agreed to carry three passengers.

Holmlea left Wellington direct for the Auckland Islands on the evening of 12 March. The weather was good: light easterly winds, some fog, and long, moderate swells. I spent most daylight hours watching the many seabirds that followed the ship. My companions were experienced ornithologists with considerable sea time, and they kept a log of the seabirds seen and the latitudes at which they appeared. Apart from trips across Cook and Foveaux Straits, this was my first ocean voyage. I knew my coastal birds and some oceanic species, such as royal albatrosses, giant petrels and Cape pigeons, from lunchtimes spent wandering the Wellington waterfront – but most of the mollymawks and smaller petrels were strangers to me.

The Auckland Islands were not sighted until evening of our third day at sea (15 March) and this led to some anxiety, as the successful timing of the voyage depended



The shed and boat on Enderby Island, November 1954. Photo: K. A. Wodzicki.



Rabbit skins from Enderby, showing various colour patterns. Photo: R. H. Taylor.



Our camp on the morning after landing, March 1954. Photo: P. C. Bull.

on *Holmlea* departing this same night. If she waited until morning, it would mean arrival in darkness at Macquarie Island and a consequent delay there. The entrance to Port Ross was eventually located and *Holmlea* stood in, not daring to slow on account of the rapidly fading light. The anchor was dropped off Sandy Bay, Enderby Island, at about 8 p.m. The surf boat was lowered and soon we were ashore on the beach, in total darkness, among dozens of noisy sea lions. Most were young males, who at this late stage of the breeding season had taken over the pupping grounds from the beachmaster bulls and breeding cows. They challenged all interlopers and we had to repel a few with sticks of driftwood.

There was an easterly swell running and during unloading the heavy boat dragged her anchor and broached side on. While getting the equipment above the surf we waded to push her bow seaward, and into deeper water where the motor could be engaged. The chief engineer had jumped out to help and when finally the boat was held by oars just outside the breaking waves his thigh waders were full of water. The second mate, in charge, did not realise the situation and called to the Chief to swim, as they could not risk going back on the beach. The Chief's protests were not heard above the surf, so he had no option, and when he reached the ship and was pulled aboard he was exhausted. By now soaked and shivering, we made several trips by torchlight, carrying gear to the old castaway boatshed behind the beach. Finally, we could change clothes and regain some warmth.

The boatshed, built in 1886, was of corrugated iron, had a 5 ft ceiling and no door, and housed an old 18 ft ship's boat built of kauri and apparently unused for over 50 years. All spare space around and under the boat was open to sea lion traffic. We ejected the few pups in residence and stowed our gear. The only place to sleep that first night was inside the clinker boat. Its beam was about 5 ft, but a V-shaped hull meant the area of level floorboards was narrow and rapidly tapered towards the bow. As the tallest, I slept in the middle, with the others on each side. We spent a long uncomfortable night – I was squashed by Peter and Dick rolling in on me, and

kept awake by sea lions calling and moving under the boat. Transverse seats stopped one turning over, and the shed's roof beams some 18 inches from one's face caused a feeling of claustrophobia. No one rose till dawn because of the tight squash.

The morning was cold but fine, and we were soon out photographing our wild surroundings. The scene is still vivid in my memory. On the beach were dozens of Hooker's sea lions and two young elephant seals; also several giant petrels and southern skuas scrapping over a seal carcass. Above the sandbank behind the beach it was like a magical golf course with dozens of strangely coloured rabbits feeding on close-cropped sward and scampering in and out of bare sand hollows reminiscent of bunkers. Sea lions lay about and yellow-eyed penguins occasionally waddled from the fringing deep-green rata forest towards the ocean.

Foggy rain set in by mid-morning, and this continued all day with strong winds and periodic downpours. Clad in oilskins I started hunting rabbits and quickly learnt that any left in the open were promptly ripped to bits by scavenging skuas. There was much sign of wild cattle and I spooked a lone bull at the forest edge. When back at camp I helped Peter with autopsies. All of the 50 rabbits shot that day were weighed, measured, and checked for parasites, diseases, and breeding condition. Vertebrae and tibia bones were saved to estimate their age. Being descended from a fancy domestic breed, the rabbits were of various colours, the young being born black and their coats changing later, gradually in patches, to silver-grey.

On dragging the boat out of the shed to improve our living conditions a few whaling and sealing artifacts were unearthed – including harpoon heads and flensing knives. The tools, nails, cooking pots, and supplies left for castaways were in a poor state, for they were stacked against the walls, and the edges of the corrugated iron roof had rusted away. We spread a large tent fly over the rear of the shed and cleared out the mess left by the sea lions, then built a low barricade of boards across the front to keep them out. At the back we made a sleeping





Dick Dell awaiting *MV Holmlea's* return, March 1954. Photo: P. C. Bull.



Wild cattle on Enderby Island, January 1966. Photo: R. H. Taylor.

area on the wooden floor. We had torches and a kerosene pressure lamp for lighting, and cooked outside on a small wood fire – or during heavy rain we brewed up on a single-burner primus. We found signs of rodents, so night rat traps were set.

By next morning one house mouse had been caught. They had first been reported from the Auckland Islands by Charles Wilkes in 1840. From the nearby stream Dick collected specimens of a native freshwater fish (*Galaxias*). In clearing weather we set off across the island, traversing short grassland, wind-twisted southern rata forest, dense scrub, and open moorland, to the northern coast, encountering rabbits, sea lions, yellow-eyed penguins, nesting royal albatross, red-crowned parakeets, bellbirds, tui, and pipits. Our route led us along high cliffs, past colonies of nesting Auckland Island shags and a breeding pair of light-mantled sooty albatross, to Derry Castle Reef. Antarctic terns flew and screamed overhead.

The reef is the northern-most point of the Auckland Islands and where the *Derry Castle* was wrecked in 1887. Only 8 of the 23 crew survived. There were still bits of wreckage lying about and a mass grave marked by a wooden plaque. The reef was also a roosting area for migratory seabirds; we identified golden plover, banded dotterel, eastern bar-tailed godwit, turnstone, and knot. Twenty-five feral cattle of Ayrshire/shorthorn breed were seen – descendants from farming ventures in the 1880s. Despite tales of their ferocity told back in New Zealand, they were shy and ran off when disturbed.

A return trip to the north coast, rabbit observations, shooting, and autopsies took up the following day. Our last day ashore (19 March) was fine with a northerly breeze. We explored the island's western end until the ship's return. Once embarked in the surfboat we had a very wet trip to neighbouring Rose Island – to collect a further 22 rabbits. They were of the more familiar grey colour, but most had patches of white fur. At 7.30 p.m. the *Holmlea* set a course for Dunedin. The voyage was memorable for the rolling of the vessel and the sea-sickness endured while crouching on the

deck skinning and dissecting the Rose Island rabbits. *MV Holmlea* finally reached Dunedin on 21 March.

Our research found that Auckland Island rabbits were genetically and ecologically very different from mainland New Zealand ones. The breeding season was shorter and litters smaller as a consequence of the harsh environment. Skeletal analysis showed the rabbits lived longer, almost certainly due to lack of human control. Several parasites and diseases found in Europe and New Zealand were absent. Those missing required multiple hosts (such as dogs or certain snails), or had long non-parasitic stages (making it hard to survive a prolonged sea voyage). Although we learned much about rabbits, there was no sudden “breakthrough” for rabbit control.

This short expedition kindled a lifelong interest in sub-Antarctic and Antarctic research. I was back at the Auckland Islands with a larger DSIR expedition in November 1954 and have since returned many times, most recently in 2012. The old lifeboat disappeared in the late 1950s – stolen by Bluff fishermen. The boatshed is still there – but was enlarged in 1963 as a store for scientific expeditions. The wild cattle were shot out in 1990 when rabbits were removed from Enderby and Rose Islands by aerial poisoning, which incidentally also eliminated the mice. On Enderby, the vegetation has changed dramatically, with native tussocks and megaherbs invading large areas of previously closely grazed sward; and many birds have increased (particularly southern royal albatross, Auckland Island snipe, and banded dotterel), but a few, such as Auckland Island shags, Auckland Island tits, and New Zealand falcon, appear to have declined. Non-breeding southern elephant seals still visit the Auckland Islands. Hooker's sea lions remain a spectacular part of Enderby Island's fauna, and over the last 60 years numbers have fluctuated between 400 and 600 breeding cows. New Zealand fur seals were extremely rare on Enderby or Rose Islands in 1954, but hundreds now haul out there. This reflects the major increase in fur seals presently occurring throughout Australasia. 🐾

Rennick Team Members Celebrate the Fiftieth Anniversary of their Expedition

By John Dow

Members of the original 1967–8 Rennick Glacier geological expedition to Northern Victoria Land recently celebrated in Nelson the fiftieth anniversary of their expedition. It was an opportunity to reconnect and to reflect on how their Antarctic experiences as young men had opened up new opportunities and influenced their lives.

In the summer of 1967–8 the NZARP Northern Field Party set out from Scott Base (via ski-equipped Hercules) for the lower Rennick Glacier to undertake reconnaissance geological mapping in what was then one of the least-explored parts of northern Victoria Land. The party comprised Dave Massam (leader), Maurice (Morrie) Sheehan (deputy leader), John Dow and Vince Neall (geologists), and Grahame Champness and John Glasgow (field assistants).

After put-in between the Quartzite Ranges on 11 November the expedition spent 10 weeks mapping a large area along the east side of the lower Rennick Glacier, from Evans Névé in the south to more than 170 kilometres to the north coast of Victoria Land, including the Bowers and Freyberg Mountains and the Morozumi Range. This was one of the last of NZARP's great overland sledging expeditions and was designed to complete reconnaissance-scale geological mapping in the far north of Victoria Land.

Geological work concentrated on mapping a thick sequence of lower

Paleozoic volcanic and sedimentary rocks in the Bowers Mountains, which subsequently attracted significant international research attention once the sequence was recognised as an important component of the ancient continent of Gondwana. This sector of northern Victoria Land also contained a nearly complete sequence of West Antarctic rock types, including the old pre-Cambrian basement as well as extensive exposures of Permian continental Beacon Supergroup sediments and the impressive cliff-forming Ferrar Dolerite sills that intrude them.

The November 2017 fiftieth reunion brought back together four members of the original Rennick team in Nelson, New Zealand. For some it was the first time they had met since leaving the Ice all those years ago, so there were plenty of photos and mementoes to share, as well as memories of peaks climbed, crevasse disasters averted, sledging adventures, and a monumental Christmas re-supply fiasco.

The reunion was also an opportunity to review progress that had been made in the geological understanding of northern Victoria Land in the 50 years since their first map was published. The initial follow-up research had been undertaken by New Zealand geologists, but much of the more recent field work has been done by Italian, German, and Korean geoscientists. Their work has allowed



Rennick Field Party preparing to depart Scott Base November 1967. (L–R): John Glasgow (field assistant), Dave Massam (leader), John Dow (geologist), Neal Hamilton (New Zealand Antarctic Society), Vince Neall (geologist), Morrie Sheehan (deputy leader), and Grahame Champness (field assistant). Photo: G. Champness.

for paleo-geographic reconstruction of the south-west Pacific portion of Gondwana and for direct correlation of the Bowers Mountains sequences of rocks with similar rocks in New Zealand, Tasmania, and south-east Australia. It's not so surprising then that a small gold deposit was found in 2005 by Italian researchers near the Dorn Glacier in the northern Bowers Mountains in rocks that have been correlated with similar sequences of gold-bearing rocks in the Stawell area of Victoria, Australia.

The original Rennick Party members combined a mix of geological and mountaineering backgrounds as was typical of Antarctic reconnaissance field teams of the time.

On completion of the expedition, they continued in a mix of their chosen careers within Antarctica, New Zealand, and overseas. This fifty-year reunion was a chance for reflection on how their Antarctic experience provided confidence and encouragement and influenced so much of their lives thereafter. 🏔️

Antarctic Snippets

Antarcticans become Members of the New Zealand Order of Merit

In the New Years Honours List 2018, Neville Peat and Father Barry Scannell have been appointed as Members of the New Zealand Order of Merit (MNZM); Peat for services to conservation, and Father Scannell for services to the community and heritage preservation. Peat was Information Officer 1975/76 (summer), and Father Scannell was Postmaster 1975/76 (winter over).

Matthew England Awarded 2017 Tinker Muse Prize

Matthew England, Scientia Professor at the University of New South Wales, has received this prestigious award for his “sustained and seminal contribution to Antarctic science through profound insights into the influence of the Southern Ocean on the continent and its role in the global climate system.”

He was also recognised for his significant leadership roles in international programmes such as the Climate and Ocean – Variability, Predictability, and Change (CLIVAR) project and the Climate and Cryosphere (CliC) project of the World Climate Research Program, where he has demonstrated a strong commitment to collegiality, capacity building, and the global impact of Antarctic science.

For more information see www.museprize.org

Kiwi to Choreograph Antarctic Ballet

As part of Antarctic New Zealand’s Community Engagement Programme, Corey Baker and Madeleine Graham travelled to Scott Base to spend time with researchers and scientists before creating and performing the first public dance work in Antarctica. While there they made a short film called *Antarctica: The First Dance*. On their return, Baker is creating a one-act ballet, *Last Dance*, for the RNZ Ballet’s *Dancing with Mozart* season, which starts in Wellington in May before touring New Zealand.

Inspiring Explorers 2018

After a huge number of applications the New Zealand Antarctic Heritage Trust (NZAHHT) have now confirmed their Inspiring Explorers for 2018 and look forward to announcing them publicly in early March. The team will travel to Greenland in May to attempt

a crossing of the ice cap on skis, hauling sleds for over 500 kilometres. This trip will honour Fridtjof Nansen, icon of polar exploration. Nansen completed the first crossing of the Greenland ice cap 130 years ago (1888). He was a defining influence on the polar explorers of the 20th century such as Captain Robert Falcon Scott, Sir Ernest Shackleton, and Roald Amundsen.

NZAHHT write: “We are excited to take these four young New Zealanders and Australians on this expedition to connect them with the history and spirit of exploration. They will then share their story to inspire others to go out and explore the world.”

The Last 36

Following its showing at the New York Polar Film Festival (see previous article), the New Zealand Antarctic Heritage Trust have released online *The Last 36*; their short film from the Trust’s Inspiring Explorers’ Expedition traversing South Georgia by Shackleton’s route. Honouring the centenary of Shackleton, Worsley, and Crean’s famous crossing of South Georgia Island this film shares the journey of three young explorers selected by the Trust to attempt the crossing in late 2015. Honouring each of the nationalities from the original expedition (English, Irish, and New Zealand) the explorers reflect on the last 36 hours Shackleton and his men faced as they raced over the island to try to raise the alarm to save the rest of the stranded *Endurance* expedition team. An epic survival tale and harrowing journey, it endures today as a story of remarkable leadership and teamwork.

As you will see in the film, South Georgia lives up to its reputation as one of the world’s most beautiful, harsh, and remote places. Watch the film on the Trust’s website and read more about the three Inspiring Explorers here: <https://www.nzaht.org/pages/the-last-36>.

Book Release

Bob Norman has released another memoir, entitled *94 Not Out: Tales of an engineer*. Largely tales drawn from a very full life, it contains a short section, “Images of Antarctica”, and Bob has given *Antarctic* permission to reproduce some of these items in future issues. The book is available from the author. Contact details are available on request from the Editor. 📖

Explorers Club Polar Film Festival

By Sarah Bouckoms

The Explorers Club Polar Film Festival has just completed its sixth year hosting in New York a myriad of films from the polar regions, with the goal of raising polar awareness through submissions comprising both shorts and full-length feature films. The themes range from adventure to conservation, and the films range from educational programmes to artistic spoken poetry. The cinematography includes claymation, drone footage, GoPro, and high quality professional cameras.

With New Zealand being such a hub to the Antarctic world it makes sense that productions from several Kiwi film-makers have been featured over the years. They include such films as Anthony Powell's *Antarctica: A year on ice* and *Thin Ice*, the production team for which included Simon Lamb and Peter Barrett. The festival has also showcased student work, including productions from Daniel Price and Richard Jones, who made shorts while doing graduate work around Scott Base during their studies at the University of Canterbury and Victoria University of Wellington. Richard Sidley has had several contributions over the years, of stunning footage from the sub-Antarctic islands and more. This past year the festival showed Craig Cary's *Miers Valley Time Lapse*, and a major showcase of the Antarctic Heritage Trust premiering their films from the Inspiring Explorers programme: *The Last 36*, and *Mt. Scott*. Nigel Watson and Mark Stewart were able to travel to the Explorers Club headquarters to show their films and partake in a Q&A session. They had previously met the current Explorers Club President, Ted Janulis, when he visited Scott Base and the historic huts in December 2017.

The Explorers Club is a great way to connect with polar people so far from New Zealand: people from around the globe with a common love of cold, icy places. The club has always had strong ties to the polar regions; its seven founders were all initially members of the Arctic Club of America. It was through their Arctic Club meetings that they decided that there was more to explore than just the polar regions, and their ideas became the foundation of the club's mission, which is to explore land, sea, air, and space. Today, the club still has a taxidermied polar bear at the top of its



L-R: Mark Stewart, Sarah Bouckoms, Ted Janulis, Nigel Watson.
Photo: Jeremy Hirschhorn.

stairs, as well as Peary and Henson's 1909 North Pole Expedition sled above the Clark Room where the films are showcased and some original Ponting photos lining the halls. Sir Edmund Hillary was Honorary President of the Explorers Club for many years and there is a strong connection between the club and New Zealand. If anyone has a film to submit for future years please be in touch with a co-chair – the author, Stefan Kindberg, or Milbry Polk – at polarfilmfestival@explorers.org, or submit on FilmFreeway. 📧

Kiwi Films at the Festival

2018:

The Last 36 – An expedition across South Georgia Island, and Mt. Scott – An expedition to the Antarctic Peninsula – AHT

Miers Valley Time Lapse – Craig Cary

Antarctic Waters – Jimmy Muir

Wild Antarctica – Aliscia Young and Richard Sidey, music by Inga Liljeström

2016:

Wild Alaska – Aliscia Young and Richard Sidey, music by Inga Liljeström

2015:

Speechless – Richard Sidey
Thin Ice – Simon Lamb

2014:

Office of Rock and Ice – Richard Jones
The Ice – Dan Price

2013:

Antarctica: A year on ice – Anthony Powell



Antarctica in Oil

By Sean Garwood

It's 0200 hrs 29 November 2015 and I'm lying in a top bunk at Scott Base trying desperately to sleep. So many thoughts bouncing around in my head. This has all happened so quickly. My long-held ambition to visit the historic huts of Shackleton and Scott has finally come to fruition thanks to Antarctica New Zealand and its Community Engagement Programme.

My proposal was to photograph and sketch all three historic huts. On my subsequent return to Nelson I would then work on a series of detailed oil paintings, which would culminate in an exhibition. The exhibition would be a visual narrative in my classic realism style, which is exactly what an artist would have employed during the time of the explorers in Antarctica. I anticipate this would take two years of full-time painting and preparation for the exhibition.

After arriving at each hut the most challenging aspect I found was where to start. As you will be aware, time in Antarctica is crucial. It's a case of get in, get the job done and get out. No mucking around and no second chance. So I'm thinking to myself, "Don't muck up Sean,

as you won't be coming back for a second go." Mind you, I did have thoughts as to how a return may be possible (I'm still working on it).

From an artist's perspective, I needed to section off the inside of each hut with a general photo of each section, then proceed to take photos of subjects that became the focus of my attention in each section. This required working around the clock: 30 hours on each hut without a break, with just some food now and again.

My camera equipment was very basic, with a Sony RX100, and an RX400 as a backup. No messing around with lenses; after all I didn't have to have perfect images, as I needed the photos only for reference. I wouldn't be painting exact copies of the photographs, as I believe copying a photograph is not morally correct. My main concern was the batteries. I thought how embarrassing it would be to run short on batteries due to the cold. With nice warm pockets I needn't have worried. Good for hands too, I might add.

Although I had a sketch book it just wasn't practical to spend much time on one subject. I did manage to

Above: Crafting Shackleton's *Nimrod* Hut.
Photo: Isabella Garwood.

Right: "Thank You Mrs Sam" – oil on canvas. The iconic Mrs Sam range that surely must have been Shackleton's shore party's best friend. Photo: Sean Garwood.





sketch, but very, very quick drawings. If I wanted to record the subjects and leave each hut well satisfied that I had the required material and had left nothing behind, then a camera was the only practical solution. Standing in front of an easel, painting, is just not practical. Too cold, and no time.

I departed Antarctica extremely satisfied that I had my images. I was paranoid about losing them, so I backed them up four times while at Scott Base. No, five, as I also left them on a hard drive at Scott Base.

Here I am back in Nelson. Reality sets in. Pressure's on. What if I can't do this? After all, there have been artists in the past who have visited Antarctica and drawn a "blank canvas". No problem at all. The subjects, sixteen in all, blended well. I also wanted to include a painting of Scott's *Terra Nova* sailing through the well-documented brutal storm they encountered in the Southern Ocean, and Shackleton's ship *Nimrod*'s arrival at Cape Royds. Drawing on my past maritime career, including many years sailing through the Southern Ocean, painting these was an absolute pleasure.

Following the methods used by the old masters I took on average one month to complete each carefully rendered painting. I found the texture of each subject fascinating, whether it was the smooth wind-blasted timber of the huts, or the worn leather of the boots. I like to think of the paintings as timeless images that evoke a feeling of romantic nostalgia.

Throughout the painting process it was a pleasure to liaise with Nigel Watson and Francesca Eathorne at Antarctic Heritage Trust. I consider it to be an absolute honour and privilege to have the work selected by New Zealand Post for the 2017 Historic Huts of the Ross Dependency stamp issue. I cannot thank Antarctica New Zealand enough for giving me the opportunity to visit the historic huts.

The Christchurch exhibition was extremely well attended. Yes, all the paintings were sold, but more satisfying as an artist is to witness the emotional response from people, with several moved to tears. Although the paintings are now gone, prints and books are still available. Please visit my website to view the paintings: www.seangarwood.co.nz. 📍



"Blow The Wind Southerly" – oil on canvas. Drawing from my time spent in the Southern Ocean, the painting features Scott's *Terra Nova* sailing through the ferocious storm in the Southern Ocean. Photo: Sean Garwood.



Hidden Lakes Below the Antarctic Ice Sheet

Vostok Station from the air.
Photo: Nicolle Rager-Fuller.

By Margaret Bradshaw

Antarctica is an enormous, high continent, with a land mass buried beneath a thick ice sheet that is flowing outwards under its own weight.

During the early exploration of Antarctica and attempts to reach the South Pole, the high polar ice cap was a major problem. At that time no one had any idea what lay below the ice, and people had to be content with sampling outcrops along its fringe.

We now know that the land surface below the ice is extremely rugged. In some places high mountain ranges are completely buried by ice, such as the Gamburtsev or “Ghost” Mountains, which can be seen only as geophysical images.

Between 1959 and 1964, a Russian seismic survey measuring ice thickness near Vostok Station suggested the presence of a large lake c. 4,000 m below the ice surface, with an area of 12,500 km². This unseen feature was named *Lake Vostok*.

The existence of large amounts of water below the ice was not a surprise, for by the end of the nineteenth century Russian scientists had been theorising that the tremendous pressure exerted by the thick ice sheet would promote melting at its base. But it was Russian geographer Andrey Kapitsa who was the first to use the seismic records to indicate the presence of a large subglacial lake.

The lake was confirmed by British airborne radar surveys in the

early 1970s and later by a satellite-based radar array (ERS-1). The lake was found to be 250 km long and 50 km wide at its widest point, and is subdivided by a subaqueous ridge into two separate basins: a 400 metre-deep northern basin and an even deeper southern basin (800 m). Its bottom lying 500 m below sea level. Lake Vostok is almost the same size as Lake Ontario and remains the largest known subglacial lake in the world.

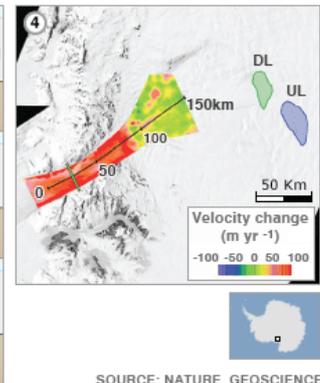
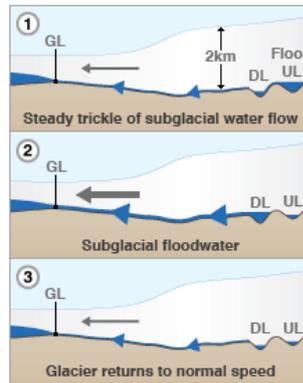
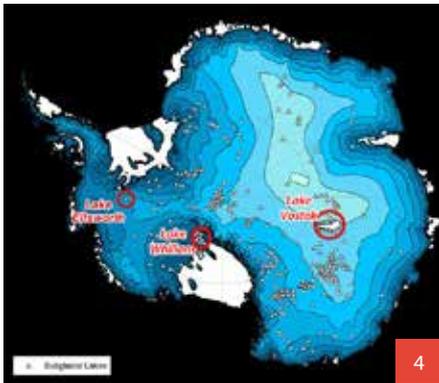
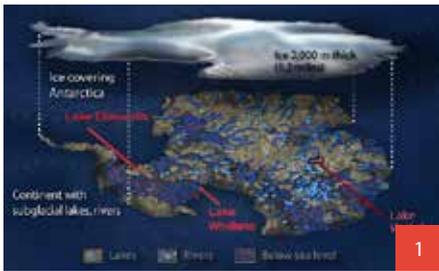
The coldest temperature on earth (-89 °C) was recorded at Vostok Station in July 1983, and the surface of the ice sheet there is close to -60 °C, even in summer. But deep below the station the base of the ice sheet is melting as a result of the pressure of the thick overlying ice as well as thermal heating from the earth’s interior. The pressure of the ice (approximately 350 atmospheres) has lowered the freezing point to -3 °C and being 4,000 m below the ice surface, the lake is in total darkness. The lake appears to occupy a rift valley, which may have existed before the development of the East Antarctic Ice Sheet c. 15 million years ago.

With modern technology, scientists have been able to make significant discoveries about the hidden world of the ice–water interface of Lake Vostok deep below the ice surface. Zones of melting have been identified at the base of the ice sheet at one end of the lake, as well

as zones of refreezing (accretion) at the other end. A thickness of 70 m of sediment at the bottom of the lake has also been recorded. In 2005 a joint Russian, German, and Japanese programme demonstrated that Lake Vostok experiences measurable lunar tides that displace the ice sheet above by c. 40 mm.

The American SOAR Programme (Support Office for Aerogeophysical Research) identified that the polar ice sheet was moving across Lake Vostok at a rate of c. 4 m per year, which means that the new ice accreted by lake water is moving steadily away from the Vostok area. Because of this, it is estimated that the entire volume of the lake is being replaced every 13,300 years, discounting the earlier idea that the lake had been isolated below the ice cap without change for 15 million years.

The ice above the lake was drilled from Vostok Station by a joint Russian, French, and US team in 1998. This ice core (3,623 m) became one of the longest in the world, and provided a record of changes in the earth’s atmosphere over 420,000 years. The bore stopped at about 100 m above the ice–lake interface so that the freon and kerosene used for drilling did not contaminate the lake. Samples of accreted ice from this level contained microbes, indicating that life could exist in this extremely hostile, totally dark environment.



1. Antarctic subglacial lakes and rivers with the ice sheets "lifted". *Photo: NSF.*

2. The orbiting satellite ICESat contains a laser altimeter that can measure small variations in height of the Antarctic ice surface, thought to reflect movement of water below the ice. *Photo: NASA.*

3. The Byrd Glacier is the fastest-moving glacier in the Transantarctic Mountains, reaching speeds of up to 825 m per year. The ice stream is 24 km wide and 161 km long. *Image: NASA (Partial image from Landsat7 satellite, 1999).*

4. Location of subglacial lakes in Antarctica (triangles) with Lakes Vostok, Whillans, and Ellsworth ringed in red. *Image: Daily Mail, Australia.*

5. RADARSAT image of Lake Vostok basin. *Image: NASA.*

6. Satellite image (right) showing the two subglacial lakes in the upper Byrd Glacier catchment. The diagram to the left shows how overflow from the lakes lubricated the Byrd Glacier and increased its flow by 10 per cent between December 2005 and February 2007 as measured by ICESat.

Russia drilled an even deeper hole to the top of the lake (3768 m) in 2012, but when the drill was retrieved, lake water under pressure moved 100 m up the bore and froze. When Russia returned the following season to sample this frozen lake water and found thousands of microbes, many scientists became concerned that it had been contaminated by drilling substances and modern microbes and was not pristine.

Russia re-drilled the last 500 m of ice above Lake Vostok in 2015 through a parallel borehole and used a special 50 kg probe to ensure that the collected water (1 litre) did not become contaminated. International biologists have since isolated 3,500 microbial life forms from this sample.

The Lake Vostok results stimulated enormous interest in the likelihood of other lakes below the ice cap. By 1973 an inventory had recorded the discovery of 17 lakes through radio-echo sounding (RES).

By 2016, following the wide use of satellite radar altimetry (ERS-1) the list grew to 402 subglacial lakes below both the East and West Antarctic Ice Sheets. Although Lake Vostok remains the largest lake yet discovered (12,500 km²), 90° E Lake (2,000 km²) and Sovetskaya Lake (1,600 km²), are both in the same general region.

The only other lake that has been drilled and sampled is Lake Whillans, which lies 800 m below the lower part of the Whillans Ice Stream in West Antarctica. It was discovered in 2007, and compared with Lake Vostok the lake is quite small, with an area of 60 km² and an average depth of only 2 m. Drilling began in 2013 using a hot water drill that produced a 30 centimetre-diameter ice core. Through this drill-hole scientists collected the first undisputed clean water sample from an Antarctic subglacial lake and were also able to core the bottom sediments. In the

water they found a thriving fauna of microbes (4,000 species).

Two years later (2015) another hole was drilled further down the Whillans Ice Stream where it grounded on the sea floor. They discovered live fish, crustaceans, and jellyfish living in total darkness below the adjacent ice shelf.

Both the Lake Vostok and Lake Whillans records of subglacial life have provided insights into where life might exist elsewhere in the Solar System, in particular on the moons Europa (Jupiter) and Enceladus (Saturn), which have large amounts of water beneath icy crusts.

Laser altimetry of the ice sheets measured from ICESat (Ice, Cloud and land Elevation Satellite) shows that the ice surface above some subglacial lakes is constantly changing in height, possibly reflecting migration of water from lake to lake via rivers that appears to accelerate glacier flow downstream. Lakes that





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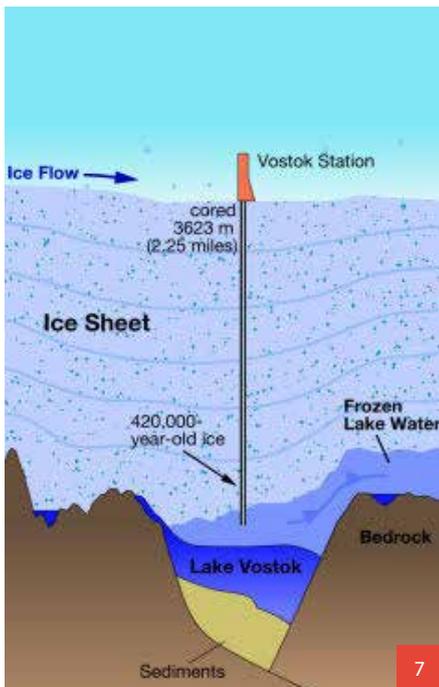
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DESIGN: Gusto Design

PO Box 11994
Manners Street
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PRINTED BY: Format Print, Wellington

This publication is printed using vegetable-based inks onto Sumo Matt, which is a stock sourced from sustainable forests with FSC (Forest Stewardship Council) and ISO accreditations. *Antarctic* is distributed in flow biowrap.



7. Diagrammatic section of Lake Vostok showing lake basin, area of newly accreted ice at bottom of ice sheet (pale blue), and the drill line below Vostok Station. Image: *Atlas Obscura*.

fill and drain below the ice are called *active* lakes and tend to be associated with fast-moving ice streams.

A good example of active lakes was recorded in the Byrd Glacier, which is flowing at 825 m a year, making it the fastest glacier draining the East Antarctic Ice Sheet through the Transantarctic Mountains. Two subglacial lakes have been identified in the upper region of the catchment, one higher than the other. Between December 2005 and February 2007, ICESat measured the speed of the Byrd Glacier increasing by 10 per cent, and rapid changes in ice surface elevation. This was explained by the lake furthest up valley overflowing into the lower lake, which then overflowed down the Byrd valley, lubricating the base of the glacier and increasing its rate of flow. Many other examples of active lakes have been found, usually associated with the fast-moving ice streams in West Antarctic and in Queen Maud Land. £

COMING IN APRIL:

The last sunset of summer at New Zealand's Scott Base is set for 1.34pm on Tuesday, 24 April, with the next sunrise due at 12.19pm on Sunday, 19 August. Our thoughts are with the winter-over team.

Dedications

So often when we read a book, we note or already know the author and the title – perhaps on a recommendation, or from a reading list – but do we always note the publisher or the edition? Different editions often have different text and/or illustrations. We note the contents, and perhaps look at the bibliography. We check out the illustrations, the captions, and maybe the references.

One thing, however, that *I* rarely read is the dedication. Until now. Many dedications are “To Mary”, or “For mum”, but have a read of these – obsequious, respectful, loving, dutiful, boring, thankful – and next time you are reading a book, look for that special person who warrants a special dedication. *Ed.*

To the Hon. Levi Woodbury,
Secretary of the U. S. Navy,
the following pages are
respectfully inscribed, in
Testimony of the High Respect
entertained for his talents and
virtues, by the author.

Benjamin Morrell,
A Narrative of Four Voyages. 1832.

To my Mother, who wanted her Father's work recognised.

Janet Crawford, *That First Antarctic Winter*. 1998.

For Margaret
Bradshaw, one of
the great heroines
of modern Antarctic
exploration.

John Long, *Mountains
of Madness: A Journey
through Antarctica*. 2000.

To my comrades who
fell in the white warfare
of the South and on the
red fields of France
and Flanders.

Sir Ernest Shackleton,
South. 1919.

To her who christened
the ship and had the
courage to wait.

Fridtjof Nansen, *Farthest North*. 1897.

To the brave men and women who risked their lives
to save me. And for the many, behind the scenes, who
worked and prayed and supported. To those who stayed
with me during the dark days. Here is my heart.

Jerri Nielsen, *Ice Bound*. 2001.

To the boy scouts of the
world who enshrine the
best spirit of adventure.

L. C. Bernacchi, *Saga of the
"Discovery"*. 1938.

To my countrywomen, the happiest of their sex, born
in a land of liberty, educated in a knowledge of virtue
and true independence, single by choice, or wedded with
their own consent, friends to the brave, and patrons to
the enterprising, this humble narrative of a long voyage,
with some incidental remarks, is respectfully and
affectionately dedicated, by their obedient servant.

Abby Jane Morell,
Narrative of a Voyage 1829–1831. 1833.

To my wife's best friend,
Mother, and to the memory
of the men who died on
the South Polar Trail.

Ernest E. Mills Joyce,
The South Polar Trail. 1929.