

THE PUBLICATION OF THE NEW ZEALAND ANTARCTIC SOCIETY

ANTARCTIC

RRP \$15.95

Vol 33, No. 3, 2015



The National Antarctic Programme of Japan



Contents

www.antarctic.org.nz

ANTARCTIC

is published quarterly by the New Zealand Antarctic Society Inc.

ISSN 0003-5327

The New Zealand Antarctic Society is a Registered Charity CC27118

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The deadlines for submissions to future issues are 1 November, 1 February, 1 May and 1 August.

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 and are restricted to 15 life members at any time.

Current Life Members by the year elected:

1. Jim Lowery (Wellington), 1982
2. Robin Ormerod (Wellington), 1996
3. Baden Norris (Canterbury), 2003
4. Bill Cranfield (Canterbury), 2003
5. Randal Heke (Wellington), 2003
6. Bill Hopper (Wellington), 2004
7. Arnold Heine (Wellington), 2006
8. Margaret Bradshaw (Canterbury), 2006
9. Ray Dibble (Wellington), 2008
10. Norman Hardie (Canterbury), 2008
11. Colin Monteath (Canterbury), 2014
12. John Parsloe (Canterbury), 2014

ELECTED OFFICERS OF THE SOCIETY:

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South Island Vice-President: Margaret Bradshaw
North Island Vice-President: Linda Kestle
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National Treasurer: Lester Chaplow
Immediate Past-President: Jud Fretter

BRANCH CHAIRS:

Auckland: Linda Kestle
Canterbury: Ursula Rack
Wellington: Daniil Ivshin



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Cover photo: Meteorite found 28 January 2013 by 54th Japanese Antarctic Research Expedition (JARE-54). It turned out to be the biggest found during that expedition. Photo © NIPR.

Photo above: Syowa Station. Photo © NIPR.

Back cover: Scott Base Antarctica. © *Antarctica New Zealand Pictorial Collection*.

From the President

This is a busy time of the year for national Antarctic programmes as well as the Antarctic Society.

The beginning of the busy summer season of Antarctic science is near. We wish the operational staff and science teams around the Antarctic continent a most successful season! We also welcome their contributions to *Antarctic* to keep our readers up-to-date with the range of science activity.

We are again delighted to continue the Scott Base volunteer programme for Society members introduced late 2009 by

Antarctica New Zealand. You will find application information on the back cover of this issue and we look forward to receiving your application by 18 September.

The Society's National Council has also been active behind the scenes. We are looking at ways to improve our services to our members. We are expecting to introduce an online store before the end of the year. Next year we hope to review our website's functionality. We are refreshing our oral history programme and always welcome financial contribution to assist

this work. We are also planning some national events for 2016. Our Branches continue to offer regular regional public meetings. We welcome new faces at these events and offers of help for Branch committees.

We look forward to seeing you at the Branch AGMs held in Auckland, Christchurch and Wellington late September – early October. The Antarctic Society's AGM will be in Christchurch on Saturday 17 October. Check out our website for events and AGM dates www.antarctic.org.nz.

Mariska Wouters

From the Editor

Do you know who Hilda Beatrice Russell was? In **The Final Tragedy: Remembering Hilda Evans**, we learn a little about this forgotten woman, her brief life, her marriage and connection to Antarctic history, her tragic death, and her lasting memorial.

This issue of *Antarctic* is an interesting mix: continuing some themes from previous issues, we continue our look at the work of Antarctic Treaty National Antarctic Programmes with a look at the **National Antarctic Programme of Japan**, and do some **Antarctic Mythbusting**. We have another article from a previous member of our Volunteer Programme discussing the specifics of **Painting Below Zero**, and **The Spoken Word** looks again at the Society's Oral

History Programme, which is explored in more detail with an outline of some of the early oral histories.

Antarctica New Zealand introduce us to ADAM – the **Antarctic Digital Asset Manager** – and our book review looks at John Thomson's revision of his Frank Worsley biography: **Shackleton's Fearless Captain**, and includes a giveaway offer to financial members.

Sadly, the Society has lost another Life Member with the passing recently of Malcolm Laird. His obituary will appear in a future issue. An obituary for David Geddes, a former head of the New Zealand Antarctic Programme appears on the Society's website at www.antarctic.org.nz/pages/history/obituaries.php.

Branch News

Wellington

Wellington branch held their annual midwinter event on 18 June. It was well attended by NZAS members, representatives of the diplomatic community, and guests from organisations associated with Antarctica. Mariska Wouters acted as MC. Bella Duncan delivered the Loyal Toast. We dialled up the team at Scott Base, and Tony Taylor presented a short talk and the toast to Present Parties. The folks down at Scott Base were having their midwinter dinner with the American team and they jointly presented the toast to Past Parties. Ambassador Torres of the Chilean Embassy led the other diplomatic representatives in a toast to the Treaty Nations.

The Final Tragedy: Remembering Hilda Evans

By Bill Conroy



The deaths of Captain Robert Scott and his companions in the blizzards and misery of the Antarctic wastes were not the last of those associated with the British Antarctic Expedition of 1910–12. There was one more life to be forfeited before the Polar expeditioners returned to London.

This story begins early in 1902 when an ambitious young Royal Navy lieutenant, Edward Ratcliffe Garth Russell Evans (known as Teddy Evans; later Baron Mountevans,) was seconded from the Royal Navy to be second

officer aboard the ship *Morning*. This ship joined *Terra Nova* as the two support vessels forming part of Scott's first foray into Antarctica: the *Discovery* Expedition. *Morning* sailed from London in July 1902 and reached Lyttelton on 16 November 1902.

While based in New Zealand, *Morning* made two trips to Antarctica. Prior to heading south on the second occasion, on 24 October 1903, Teddy Evans announced his engagement to a Christchurch girl, Hilda Beatrice Russell, daughter of T.G. Russell, a prominent

Captain Scott RN and Mrs Scott (LHS), The Lord Mayor and Lady Mayoress of Cardiff (centre), Lieutenant Evans RN and Mrs Hilda Evans (RHS). Photo courtesy of Dundee Heritage Trust.

local solicitor. Teddy returned to Christchurch on 1 April 1904, and on 13 April the couple were married in a fashionable naval wedding at St Barnabas Church in Christchurch. The reception was held at Quamby, the home of the bride's parents in the suburb of Fendalton, and the cake was cut with a naval sword. The presents included a handsome silver casket from the officers of the *Discovery*, *Morning* and *Terra Nova*. The bride was 20 years old and the groom 23.

By the middle of August 1904 Hilda was in London, and she was joined by her husband in October when the *Morning* reached her home port. In recognition of his service in Antarctica, Teddy Evans was awarded the silver Polar Medal, and he resumed his naval career. Hilda occupied herself by getting acquainted with her husband's family and becoming involved in London society.

In 1909 Evans was appointed second-in-command of Scott's second expedition to Antarctica (the *Terra Nova* Expedition, 1910–1913) and also captain of the *Terra Nova*. Despite the need for a close working relationship between the two men, Scott seemingly did not fully trust his deputy, and the situation was exacerbated by the fact that their respective wives had a difficult relationship. Kathleen Scott and Hilda Evans had nothing in common, except perhaps a mutual suspicion of each other's husband, and their relationship was a volatile mix. Whatever the causes of their mutual dislike, they were never resolved, and the pair remained hostile to each other for the duration of their relationship. In her book *A First Rate Tragedy*, Diana Preston comments that Lieutenant "Birdie" Bowers attributed the tension



WIVES and husbands: Capt. Edward Evans and Mrs Evans (left) and Dr Edward and Mrs Wilson. [Otago Heritage Books]

Wives and husbands: Capt. Edward Evans and Mrs Evans (left) and Dr Edward and Mrs Wilson, © Otago Heritage Books, copyright permission sought.

between the wives to jealousy. He regarded Hilda Evans "as a womanly woman of remarkable beauty and general charm who was everything that a wife should be" (p. 130). Apparently Bowers had a different view of the worldly and somewhat aggressive Kathleen Scott.

Captain Lawrence Oates, in a letter home, described a major clash between the women in New Zealand shortly before the expedition headed south:

*Mrs Scott and Mrs Evans have had a magnificent battle! They tell me it was a draw after 15 rounds. There was more blood and hair flying than you would see in a Chicago slaughter-house in a month. The husbands got a bit of the backwash and there is a certain amount of coolness which I hope they won't bring into the hut with them.*¹

It is interesting to reflect on the impact these women might have had on some of the major decisions affecting the expedition when they had the ears of their husbands.

On 15 June 1910 the *Terra Nova* left Cardiff and, after stops at Simons Town and Melbourne, reached New Zealand in late October. She sailed for the Antarctic, via Port Chalmers, on

26 November 1910. In October 1911 *Terra Nova* returned to New Zealand and, after a refit, sailed for Antarctica again on 15 December 1911.

When the expedition got underway in the Antarctic things did not go well with Teddy Evans. Early in December 1911 he went down with scurvy and when the relief ship arrived at the expedition base in January 1912 he was sent home to England, by way of New Zealand, where he spent close to twelve months to regain full health. Evans returned to Antarctica in January 1913 and, as a result of the death of Scott, took command of the Polar expedition and set about preparing for its return to New Zealand. *Terra Nova* arrived in Lyttelton on 15 February and she was readied for return to the United Kingdom by the middle of March under the command of Lieutenant Pennell. At the beginning of March 1913 Commander Evans (he had received a special promotion to that rank on 1 July 1912) and Hilda boarded the SS *Aorangi* in Wellington bound for Sydney. After a week in Sydney the couple boarded the SS *Otranto* on 12 March 1913 for the voyage home via a number of ports in the Mediterranean.

¹ Diana Preston, *A First Rate Tragedy*. (New York, Houghton Mifflin Company, 1999), p. 131

On Monday 14 April, when the *Otranto* was cruising along the coast of Italy, Hilda was taken ill with what later proved to be peritonitis. She was attended by the ship's doctor and a medical specialist who was travelling as a passenger on the ship. On the 15th an emergency operation was carried out, which seemed to have been successful, and when the ship reached Naples on Thursday Hilda was conscious. However, in the early hours of Friday morning, when the ship was at sea, her condition began to deteriorate and Hilda died at about midnight on 18 April. She was aged 29 years. Hilda was buried in Toulon, her pallbearers being officers of the *Otranto*.

Teddy Evans continued his journey home to a private and informal reception that included a welcome from Kathleen Scott. A London newspaper commented in part in the following way:

*Lady Scott, with true womanly sympathy, made a special journey to Charing Cross and waited for more than an hour in order to greet Commander Evans and to offer him in his time of sorrow a word of comfort and a welcome. The meeting between the widow and the widower was a touching scene.*²

On 16 May 1913 Evans met the King and was made a Companion of the Order of the Bath, the first of a torrent of medals, decorations and awards that he received throughout his glittering naval career. Evans remarried in 1916 and had two sons (his marriage to Hilda had produced no children). He died in August 1957 aged 75.

What of Hilda? No trumpets or drums for her. We can learn little about her from the books written about the Scott Antarctic

expeditions. Teddy Evans makes very few references to his late wife in his book *South with Scott*, published in 1921.³ The longest comment was: "It was many months before I could get about in comfort, but my wife nursed me back to health" (p. 10). He does not mention her by name and it is almost as though Hilda was airbrushed out of the story about Scott's two trips to Antarctica.

Hilda must have been a special lady. She strongly supported her husband in his Antarctic work and she did all in her power to ease the lot of the men of the expedition. Consider this comment from an obituary in the *Christchurch Press* on 21 April 1913:

*Always cheerful, always brave, in the face of wearing anxiety, she was a wonderful woman, and she was regarded with respectful admiration and affection by every member of the Expedition. She took a keen personal interest in every man, no matter how humble his rank or station, and she gave up much time and worked very hard to provide comforts for the men of the Expedition, and her numerous useful gifts to them were treasured as sacred things. ... [By the men] of the Expedition, and especially the officers and men of the Terra Nova ... the death of Mrs Evans will be regarded as almost a second disaster.*⁴

As well as a simple commemoration on her mother's headstone at the Linwood cemetery in Christchurch, Teddy Evans funded a memorial window of Saint Hilda, at St Hilda's Collegiate School, Dunedin. The window, and accompanying plaque, were unveiled in the school's chapel for Easter 1914, and later moved to the new chapel, where they remain today.

Requiem in pace, Hilda. 𐆿



Images top to bottom:

Saint Hilda, in St Hilda's Collegiate School Chapel, Dunedin. Photo courtesy of the school.

Plaque adjacent to Saint Hilda Window, St Hilda's Collegiate School Chapel, Dunedin. Photo courtesy of the school.

² *The Press* (Christchurch, New Zealand), 4 June 1913, datelined London 25 April 1913, p. 4

³ E. R. G. R. Evans, *South with Scott* (London: Collins, 1921)

⁴ *The Press* (Christchurch, New Zealand), 21 April 1913, p. 7

Antarctic Mythbusting

Neil Gilbert¹ and Alan D. Hemmings²

Is it your understanding that the Antarctic Treaty is “up for renewal” in 2048? And that the ban on mining runs out after 50 years? Media stories often suggest as much.

And yet these commonly held beliefs fall into the same category as Christmas card images of polar bears and penguins sharing the same ice floe – they could not be further from the truth.

Let’s unpick these misunderstandings in an attempt to set the record straight.

We will start with the misconception of an end-date for the Antarctic Treaty. The Treaty, which was agreed in 1959, has no end-date. Neither does the Environmental Protocol to the Antarctic Treaty, which was agreed more recently in 1991; nor indeed do any of the other instruments agreed under the auspices of the Antarctic Treaty. In the drafting of these instruments the negotiators did not foresee the need for these international treaties to expire.

However, the Antarctic Treaty does provide for its own review. In its Article XII the Antarctic Treaty sets out two principle aspects as to how it can be changed. Firstly it states that the Treaty can be modified or amended at any time provided that the proposed amendment or amendments are agreed by consensus.

Secondly, the same article of the Treaty states that 30 years after the date of entry into force of the Treaty (i.e. 23 after June 1991) any Consultative (voting) Party can call for a conference to “review the operation of the Treaty” and that at such a conference the Treaty may be modified by a simple majority of the Consultative Parties.

That June 1991 date coincided with the height of the debate around whether the Antarctic Minerals Convention should or should not enter into force – a contentious period in Antarctic politics. But even then there was no interest in modifying the Antarctic Treaty. No calls to do so have been made in the 24 years since. Whilst it would be entirely legitimate for any Party to call for a review conference in the future, Parties are acutely aware of the dangers of taking such action. Any attempt to open up for discussion even one element of the Treaty carries the risk of unravelling the entire Treaty. This in turn has the potential to undermine the Antarctic Treaty System as a whole.

Like the Antarctic Treaty, its Environmental Protocol has no “end” date. But it does contain very similar procedures that allow for its review and amendment. Like the Treaty the Protocol can be modified or amended at any time by consensus agreement among the Consultative Parties to the Antarctic Treaty. And after a set period of time – though in the case of the Protocol it is 50 rather than 30 years – any Party can call for a conference to review the operation of the Protocol. That 50-year mark will be 14 January 2048. This is usually the confusion behind speculation of an “Antarctic Treaty” ending in 2048.

If such a review conference were called, any proposed amendments need only be agreed by a simple majority of the Parties – though with the proviso that such a majority includes three quarters of the Parties that were Consultative Parties at the time of adoption of the Protocol back in 1991.

So, as we can see, both the Treaty and the Environmental Protocol have no expiry date, but can be modified at any time under certain voting conditions.

The misunderstanding over mining in Antarctica has been frequently caught up in the confusion over Treaty end-dates. The prohibition on mining enshrined in Article 7 of the Protocol is indefinite. The mining ban does not expire! It has no end-date! (Are we clear on that?) In fact the mining clause could not be simpler. It states that “any activity relating to mineral resources, other than scientific research, shall be prohibited.”

However, as we have just discovered all elements of the Protocol can be reviewed under two different scenarios – and this includes the mining prohibition. But the architects of the Protocol agreed that any future decisions to overturn the mining ban should not be as simple as a reversal from “off” to “on”. The Protocol provides that the ban on mining can only be overturned if there is in force a binding legal regime to regulate such activity in the region. What the designers of the Protocol had in mind was something like the Convention for the Regulation of Antarctic Mineral Resource Activities (CRAMRA) that was agreed in 1989, but has never entered into force. CRAMRA, or more likely (given CRAMRA was negotiated in the 1980s under a very different world order) a successor instrument,

1 Constantia Consulting, Christchurch

2 Perth, Western Australia and Gateway Antarctica, Christchurch

Continued on page 31 »

Exploring the Work of Antarctic Treaty National Antarctic Programmes:

The National Antarctic Programme of Japan

As a nation, Japan has long been involved in Antarctic expeditions. These began in 1910 with the Japanese Antarctic Expedition under the leadership of Lt. Nobu Shirase. Shirase and his crew sailed to the Antarctic aboard the *Kainan-maru* from Tokyo Bay in November 1910, given an enthusiastic send off by a crowd of 50,000 supporters. Japanese scientists were active participants in the International Geophysical Year 1957/58 and Japan is one of the original signatories to the Antarctic Treaty. The National Institute of Polar Research (NIPR), founded in 1973, is the body responsible for the management of the Japanese Antarctic Research Expedition (JARE). In collaboration with international research communities, NIPR has been pursuing cutting-edge studies on the earth, the environment, life, and space. It is involved in a wide range of activities in Japan's Antarctic research programmes, both temporally and spatially, through research that uses advanced-method, long-term monitoring observations and field and ocean observations. The Director-General of NIPR, Professor Kazuyuki Shiraishi, is the current Chairman of the Council of Managers of National Antarctic Programs (COMNAP).

The NIPR is opening up new frontiers in interdisciplinary research under the framework of the Trans-disciplinary Research Integration Center. Japanese scientists collaborate with many international partners. Every summer since 1958 the Japanese Government has dispatched one or two Japanese scientists to the expeditions of other Antarctic Treaty countries and invited one to three foreign scientists to join JARE.

In order to orchestrate international collaboration and relationships among Japan and its partner countries, the International Affairs Section was established at NIPR in 2006. This section conducts business in regards to Antarctic Treaty meetings and conferences, co-operative research scientific agreements with foreign institutes,

and international scientific exchanges. Developing first class polar researchers is a large part of NIPR's mandate. As a parent institute of the Graduate University for Advanced Studies (SOKENDAI), NIPR accommodates a five-year doctoral course for graduate students in the Department of Polar Science in the School of Multidisciplinary Sciences, thereby fostering the development of promising researchers with high-level research capabilities and skills for use in the field.

Japan has four Antarctic stations: Syowa, Mizuho, Asuka and Dome Fuji. Syowa, the largest of the stations, was built in 1957 and can accommodate up to 130 people in the summer and approximately 40 in the winter. Mizuho Station, which is currently closed, is 270 kilometres south-east of Syowa and has had intermittent occupation since 1970. Asuka Station was operational from 1984 until 1991 to support field work in the Sør Rondane Mountains. Dome Fuji Station was built in 1995 for the purpose of the deep ice-core drilling programme and for atmospheric observations.

With conducting science in Antarctica, comes the responsibility of environmental protection, which NIPR takes seriously, as demonstrated by its long-term monitoring programmes. Syowa Station in particular has an extensive programme that has been in place since 1957 to monitor changes in global and regional environments.

NIPR also promotes various outreach activities to educate Japanese citizens about its science through initiatives such as the Polar Science Museum, which opened in Tachikawa, Japan, in 2010. The Museum is used to educate visitors on the history and the current status of Polar research. There is also a public outreach programme sponsoring public lectures, exhibitions of Antarctic items both modern and historic, and Antarctic classes offered to school children.

More information on NIPR can be found at www.nipr.ac.jp or at www.comnap.aq/Members. 



Syowa Station during the long Polar night. Photo © NIPR.



Fifteen bronze dog statues outside the Polar Science Museum, Tachikawa, Japan. The display pays tribute to the Sakhalin huskies of the Japanese expeditions to Antarctica in the 1950s. Photo by M. Rogan-Finnemore.



S-17 air base near Syowa Station for Japan–German collaborative study on airborne geophysics in 2006. Photo by K. Shiraishi.



Aerial view of Syowa Station with the icebreaker *Shirase* in upper left. Photo © NIPR.

« Antarctic Mythbusting continued from page 29

would have to be negotiated and be in force before the mining ban could be overturned.

The Protocol is a complex instrument and likely to require periodic updating. However, it was designed so that its series of technical annexes could be updated individually (this has already been done for Annex II on Conservation of Antarctic Fauna and Flora in 2009), and new annexes added (an annex on Liability Arising from Environmental Emergencies was added in 2005, although it has not yet entered into force). This means that technical updating is less likely to trigger a general review of the Protocol.

Parties could call for a review of the Protocol at some point, if fundamental elements in the main body of the instrument no longer sustain general support. Plainly,

a reconsideration of the mining ban could trigger such a review. The likelihood of this happening is difficult to assess, and as we have noted even if this is the pathway some favour, overturning the ban is unlikely to be a simple process. Attempts to renegotiate a mining convention could take some considerable time. And given the need to kick the hydrocarbon habit if we are ever to stabilise the global climate, one would have to suppose that the international community should be having a rather serious discussion about the acceptability of mining Antarctica.

So – spread the word! If ever you hear the notion of expiry dates being discussed in the context of the Antarctic Treaty you are armed to bust the myth! ♣

Painting Below Zero in Antarctica – Is it Science or Serendipity?

By Linda Kestle



Mobile scaffolding – not the easiest ground conditions for meeting daily manoeuvrability. Photo courtesy of Linda Kestle.

Antarctica New Zealand and the New Zealand Antarctic Society signed a “Memorandum of Understanding” in 2009, and on four occasions two experienced painting maintenance volunteers have been rigorously selected from the Antarctic Society applicants to undertake painting maintenance work, at Scott Base, Antarctica.

The main focus of the December 2011–January 2012 painting maintenance programme for myself, and the other selected volunteer, was to prepare and repaint 24 exterior timber window frames. In terms of weather conditions, there was 24/7 daylight, and temperatures ranged from +2°C to -18°C, when wind chill was taken into account. The atmosphere was very dry, with humidity levels in the 35–40% range. Light southerly winds were

the daily “norm”. Rain never fell; instead there was snow precipitation for almost a week in early January 2012, and the occasional declaration of Condition 2 (very high – 80kph-plus – winds, freezing temperatures, and driving snow), meaning that anyone outside had to immediately head back inside Base.

After returning from the painting stint at Scott Base, I contacted the chief scientist at Resene Paints Limited to discuss the painting project, and establish whether there was a scientific rationale for why standard off-the-shelf Resene Supergloss Enamel provided a sound and successful outcome in theoretically unsuitable climatic conditions at Scott Base.

The climatic conditions in Antarctica are very different to those assumed when manufacturers are specifying solvent-borne paint application systems. The humidity levels in Antarctica are very low. Temperatures were never greater than +2°C for the duration of the month-long painting maintenance project on Scott Base in the December 2011–January 2012 period. How then might polar climatic conditions alter the “normal” application system and resultant finishes of a solvent-borne painting system in Antarctica?

In the paint specification literature, reference is made to in-the-field conditions, and how they might affect timing in regard to the application of paint:

Apply paints only when the

temperature of the surfaces to be painted, and the ambient air temperatures are between +10°C and +35°C. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; or temperatures less than 3°C above the dew point, or to damp/wet surfaces.¹

Paint films are designed to form at specific target levels. Whilst there are exceptions, solvent-borne enamels generally utilise relatively low molecular-weight polymers called alkyds, which contain reactivity by way of unsaturated oils, and are carried in hydrocarbon solvents. Film formation occurs when the solvent evaporates and is followed by a curing process involving chemical cross-linking via the oil unsaturation. Acrylic binders are quite different by comparison, as they are based on high molecular-weight polymers in the form of tiny thermoplastic spheres, dispersed and stabilised in a watery medium. Film formation is achieved when the water evaporates, allowing the plastic particles to approach each other, touch and coalesce (or fuse), into an intractable mass. There is no post-curing. The success of film formation is critically dependent upon the softness of the thermoplastic particle, which is, in turn, dependent on the temperature at the time of film formation.

In New Zealand, acrylic paints, such as those used at Scott Base in the 2011–2012 season, are typically designed to suit an mfft (minimum film forming temperature) of 10°C. If paints are applied below this

¹ *Masterspec Services for Paint Specifiers* (2010) and *Resene Ezyspec* (2010) for recommended preparation and paint systems for external timber joinery, at www.resene.co.nz/comm/services/masterspec.htm

temperature, film formation will be impaired, ranging from minor reduced strength and increased porosity at one or two degrees below the mfft, to catastrophic cracking and complete powdering at lower temperatures. The key to failure is the temperature being below the mfft at the time of film formation, not at the time of application.

So why has the painting at Scott Base been successful to date? According to Resene's chief scientist, the success may have been serendipitous. For whatever reason, a solvent-borne enamel was chosen as the topcoat, over an acrylic base, perhaps without recognition that it is unusual to "mix" such systems (enamel and acrylic). The common hydrocarbon solvent used in enamel paints is "mineral turps", which is a highly complex mixture of over 90 hydrocarbons, about 40 percent of which are in the "aromatic" grouping, where there is a small amount of toluene, and a larger amount of xylene. These two solvents are the most active of the aromatics present and comprise 15 percent of mineral turps. Whilst toluene and xylene are not chemically polar enough to be considered good acrylic coalescing agents, they do have some utility. The application of the enamel finishing coat over the partially film-formed acrylic undercoat would have allowed these solvents to flood through the porosity in the acrylic, softening the acrylic particles, and allowing a "post applied" film consolidation to occur, thereby creating a successful foundation. Once a paint film has been successfully applied to timber joinery

in the Antarctic, the conditions are surprisingly good for durability. Chemical change (including degradation, such as peeling, fading and flaking) slows down dramatically at low temperatures (in fact, Resene always keep colour standards in the deep freeze in order to maintain best colour stability). Antarctica has a low ultraviolet incidence, and the very dry Antarctic atmosphere removes water damage from the equation. By comparison, these twin aggressors usually account for a large proportion of the paint film degradation experienced in New Zealand.

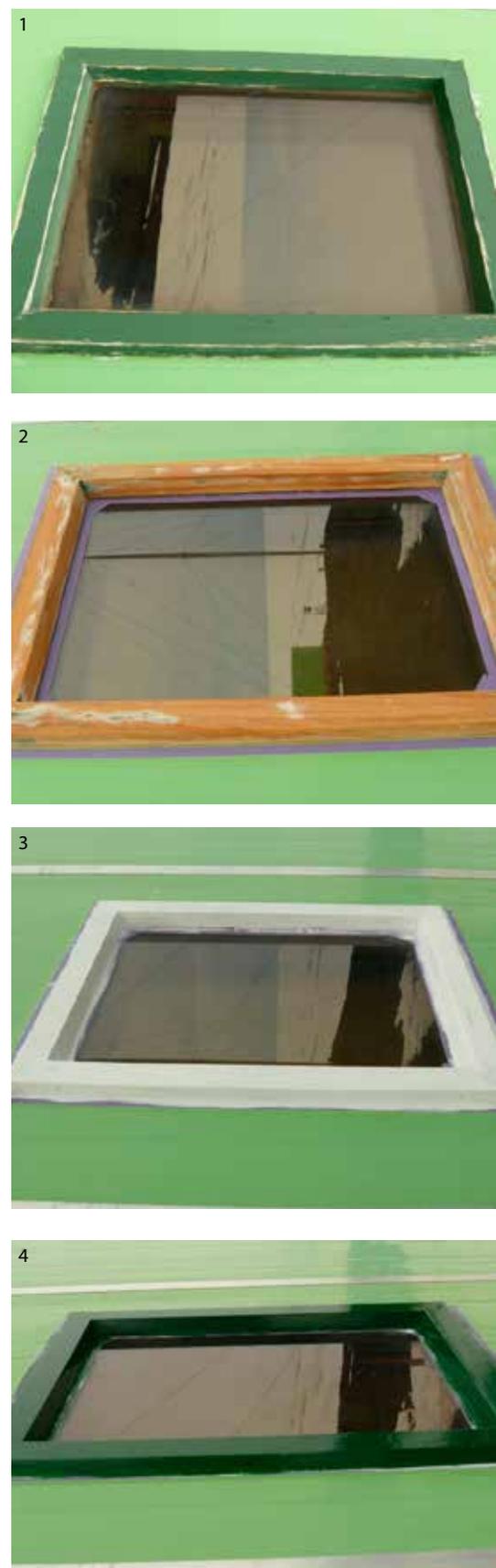
The objective of the original investigation was to establish the "normal" paint systems recommended for exterior timber joinery where ambient temperatures at the time of film formation ranged from +10°C to 35°C, and to then compare and document the experiences of painting exterior timber joinery in below-zero summer temperatures at Scott Base, Antarctica. Standard solvent-borne enamel paint was not meant to be applied below 10°C, according to the paint suppliers' recommendations; but it was, and it worked. Essentially, the scientific rationale determined that it was serendipity in part, and that the very low humidity levels in Antarctica allowed the film formation to occur as if it were in a "normalised" context.

The full research paper "Painting below zero – the Antarctic challenge", was published at the Australasia Universities Building Education Association Conference in Australia in 2013.² †

Volunteers wanted

If you would like to be a Society Volunteer, see the information on the back cover, or www.antarctic.org.nz/pages/projects/paint.php.

Applications close 18 September 2015.



The 4 stages – 1) state of window to be worked on; 2) after handscraping back to bare Tawa timber (note taping and cloths to meet zero environment harm requirements); 3) undercoated (acrylic primer undercoat); 4) topcoated (two coats alkyd supergloss). Photos courtesy of Linda Kestle.

² www.library.auckland.ac.nz/external/finalproceeding/Files/Papers/46530final00114.pdf

The Spoken Word: The Antarctic Society's Oral History Project

By Margaret Bradshaw

New Zealand has had a long association with Antarctica. It began in early whaling times, and continued with the provision of hospitable departure points for the historic expeditions of Scott and Shackleton. New Zealand men were supplied for the crews of these expeditions' ships, the most prominent being Frank Worsley of Shackleton's Imperial Trans-Antarctic Expedition.

In 1920, the British government proposed that New Zealand, at that time a British dominion, should exert a territorial claim to the Ross Dependency in Antarctica. New Zealand authorities reluctantly agreed, seeing it as a consequence of being part of the British Empire and lying due north of the Dependency. Thus, in 1923, the responsibility for the Ross Sea Dependency was formally passed to New Zealand through its Governor General.

From its inception in 1933, the New Zealand Antarctic Society became the main driving force within New Zealand to pressure the government into exploring and protecting the little known Ross Dependency. The Society wrote a letter in September 1953, strongly urging for the establishment of a permanent scientific station in the Dependency, to coincide with the International Geophysical Year (IGY) in 1957.

Not long afterwards (8 December 1953) the first announcement was made of a proposed crossing of Antarctica by Sir Vivian Fuchs from the Weddell Sea to Ross Island, which anticipated help from a New Zealand support team on the Ross Sea side as part of the Commonwealth effort. In early 1955 the Society was still urging a rather reluctant New Zealand government to support both the Commonwealth Trans-Antarctic Expedition (TAE) and the IGY, as well as to set up a committee to assist with the New Zealand participation. A few months later, the New Zealand government made a grant of £50,000 towards the TAE, and the Ross Sea Committee of the TAE was set up in Wellington, including such influential Society members as Robert Falla and Arthur Helm. This was a highly important event for both the Society and the nation, as it marked the initiation of New Zealand's Antarctic Programme

with the building of Scott Base, even though, at that time, the programme came under the umbrella of the British Commonwealth via TAE

In 1997 the Society celebrated the 40th anniversary of the establishment of Scott Base with a reunion in Christchurch. Before this event the Society applied for a Lottery grant for three supporting projects to coincide with the reunion: a 14-panel photographic display about the TAE and IGY, the publication of a book on Scott Base by David Harrowfield, and the recording of 10 oral histories of representatives of the TAE and IGY by oral historian Julia Bradshaw of Arrowtown. Sadly, when the oral project began, some important members of the Scott Base and support teams had already died – people such as Trevor Hatherton (IGY Leader), Bob Miller (Deputy Leader, Scott Base), Peter Mulgrew (radio operator), Harry Ayres (mountaineer), and George Marsh and Roy Carlyon (surveyors).

Since 1997 the oral history programme has continued to receive further Lottery grants (2004–5, 2012–14) together with contributions from Canterbury Museum (2006–8) and Antarctica New Zealand and private individuals (2010–11). Interviewing was taken over by oral historian Jacqui Foley, who was based in Oamaru.

To date, 48 oral histories have been recorded, including those of two high-profile Americans who had liaised closely with the New Zealand programme, and nine TAE and IGY wives who shared their memories and home experiences. All interviewees have been generous with their memories and experiences and seem to have enjoyed the process, taking the opportunity to dig out diaries and renew contact with old Antarctic friends. It is not just the facts of working in Antarctica at a time when New Zealand's experience down there was limited that are important to record; the interviews are also a permanent record of a person's voice and mannerisms, which say much more than the written word. These histories are treasures of the Society that document an important period in New Zealand's Antarctic involvement, and they will be available to all serious researchers for all time.

Over the next few issues it is intended to list the individuals interviewed and a bit about how they were involved in Antarctica. A full list of all individuals who have been interviewed is found on our website: <http://www.antarctic.org.nz/pages/projects/oral.php>. 



Antarctica New Zealand Digitises 60 Years of Antarctic History

By Jenny Ryan, Information Services and Applications Advisor, Antarctica New Zealand

Since 1957, New Zealand has sent photographers to Antarctica to record our activities on the Ice. The output, a mixture of slides, negatives, prints and film, was carefully stored at Antarctica New Zealand, where it survived earthquakes, two floods and plumbing catastrophes, among other things.

Accessing the collection was a time-consuming and tedious job, made all the more difficult by its sheer size. By the time Antarctica New Zealand decided to transfer the collection to Archives New Zealand in 2002, we had over 40,000 images. The issue of how to catalogue the photos remained problematic for the next 10 years. As early as 1998 it had been suggested that digitising the collection was the best way to preserve it – but that remained a pipedream: too expensive, too time consuming and just too hard.

Fortunately, technology moved on and eventually produced two key ingredients that changed everything: cheaper high-resolution scanning, and the Recollect software from NZMS, a brilliant, cost-effective cloud-based graphical database. Add in a new Chief Executive willing to green-light the project and a custodian passionately determined to see this awe-inspiring collection made available to the public online, and you have ADAM – the Antarctic Digital Asset Manager.

ADAM now brings those amazing images to the world: to scientists, Antarcticans, schools, the media and anyone with a love of history or Antarctica. It hosts images, science and event profiles, videos, and information on associated people. Thanks to Google Earth we have also been fortunate to be able to tag the locations of the images on Google Maps.

ADAM allows the knowledge of the public to add greater value to each resource it holds. Users can tag people in images, add their recollections and stories, and upload their own images to enrich our collection. Users are also able to download low-resolution images or access high-resolution versions for publications or research. The portal highlights our stunning visual record of New Zealand in Antarctica for the whole world and is now the largest collection of Antarctic imagery on the Internet.

This is not only a collection of New Zealand's Antarctic history; it also future-proofs our ability to manage our experience going forward, in real-time.

Begin your own Antarctic journey and visit ADAM today at www.adam.antarcticanz.govt.nz. 



Branch News

Auckland

This year's enthusiastic and innovative Auckland Committee of Linda Kestle, Brett Fotheringham, Myra Walton, Roger McGarry and Nichy Brown has met regularly to plan a varied calendar of events. In addition, Myra (Nat Sec) and Linda (NI VP/Akl Chair) were our representatives at the National Council meetings in March and August.

Among the events the Branch has held this year was the midwinter dinner on 18 June at the Royal New Zealand Yacht Squadron – great food, great venue. A short Antarctic quiz was run and networking was a real plus for the 16 or so gathered. A visit to HMNZ Dockyard at Devonport was offered in early August. Our most recent event was held on 13 August, when Pat Langhorne (Head of Physics, University of Otago) gave an animated and informative presentation entitled “Antarctic sea ice and ice shelves: 100 years of science”. There were 22 attendees, most of whom were members. Again, there were great questions from the attendees, avid networking and great refreshments.

We hope to have our 2015 National NZAS speaker Neil Gilbert (Antarctic environmental specialist from Christchurch) make a presentation within the next couple of months, and we will run the Auckland AGM sometime in September. 

Frank Worsley, Shackleton's Fearless Captain: The Biography of a True New Zealand Hero

By John Thomson

Reviewed by Ursula Rack

With the centenary of Shackleton's *Endurance* expedition approaching, John Thomson has revisited and revised his 1998 biography¹ of Frank Worsley – perhaps best known for his skills in piloting the *James Caird* from Elephant Island to South Georgia (24 April to 10 May 1916), leading to the eventual rescue of the entire crew of the *Endurance*.

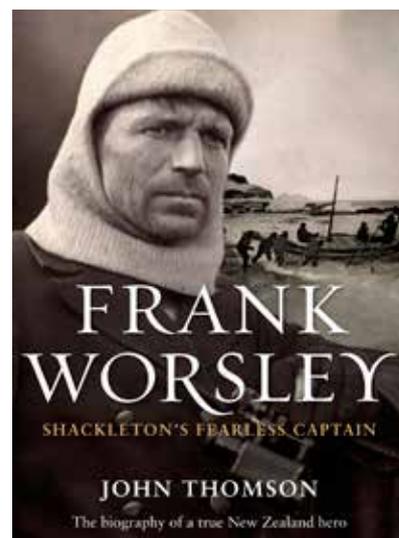
Frank Worsley is an unsung hero today, but he was once a household name in New Zealand and Britain. Born in Akaroa on 22 February 1872, Worsley showed an interest in adventure from an early age. He was intelligent, and was easily bored in a rigid school system. However, he passed his exams with high grades and was well grounded in a classical education, as well as being a good observer with a strong artistic ability. Worsley's first sea experiences were not very promising: he was seasick and once wished he "would go overboard" (p. 23). Overcoming these obstacles, he quickly acquired the seafaring skills that later allowed him to be the life-saving navigator on the epic voyage of the *James Caird*.

Along with Frank Hurley, the official photographer on the *Endurance* expedition, Worsley kept Shackleton's story alive. Worsley lectured at public venues all over Britain, focussing always on Shackleton's leadership and downplaying his own role in the expedition. Hurley's film *South* was released in 1933 and Worsley delivered the introduction and commentary in it. Worsley asked Albert Armitage for his critical review of the film. His response was:

"... the only criticism I have to make is in regard to your commentary, which is ... excellent. [...] But you are too modest in regard to yourself..." (p. 178).

During this time (c1934) he was also a treasure hunter on Cocos Island, following a request for assistance from the Treasury Recovery Ltd expedition. The expedition created a conflict with Costa Rica, which saw the endeavour as an intrusion. Ninety Costa Rican soldiers landed on the island, removing the party to Panama – creating an international affair, and thus ending any chances of finding treasure. Worsley apologised to the President of Costa Rica and after some negotiations all was resolved. A second attempt ended in 1935 because of lack of funding.

World War Two broke out and Worsley saw his chance to serve his country, Britain, in the Royal Navy. At 67, he was eventually given a command in the Merchant Navy. One of his duties was to blow up acoustic mines. From June 1942, Worsley was teaching at the Royal Naval College in Greenwich. Unfortunately his health was deteriorating and he died on 1 February 1943. James Wordie, the geologist on the *Endurance*



expedition, summarised Worsley's character in his obituary as a "man of action, always on the move and extremely alert, both mentally and physically..." (p. 199).

The content in this new edition is enhanced and the analysis of Worsley's character is better developed. One recognises the strong bond between the biographer and his subject, but the book is far from biased. This is a thoroughly researched biography and a very good source for future research. The photographic material is of high quality and enriches the book. It is a pleasure to read and to return to again and again.

Frank Worsley, Shackleton's fearless captain: The biography of a true New Zealand hero. By John Thomson. (Craig Potton Publishing), Nelson, 2014. ISBN: 978 1 927213 12 4. NZD 49.99

Giveaway

Antarctic has two copies of *Shackleton's Fearless Captain* to give away. To enter the draw, please write to "Shackleton's Fearless Captain", PO Box 404, Christchurch 8140, with your name and address. Financial members only please. Winning entries will be drawn 31 October 2015.

¹ Thomson, J. (1998). *Shackleton's captain: A biography of Frank Worsley*. Christchurch: Hazard Press.



www.antarctic.org.nz

New Zealand Antarctic Society Membership

The New Zealand Antarctic Society Inc was formed in 1933. It comprises New Zealanders and overseas friends, many of whom have been to the Antarctic and all of whom are interested in some aspect of Antarctic exploration, history, science, wildlife or adventure.

A membership to the New Zealand Antarctic Society entitles members to:

- *Antarctic*, the quarterly publication of the Society. *Antarctic* is unique in Antarctic literature as it is the only periodical which provides regular and up to date news of the activities of all nations at work in the Antarctic, Southern Ocean and Subantarctic Islands. It has worldwide circulation.
- Attend meetings, and educational and fun events that are held by the Auckland, Wellington and Canterbury branches of the Society.

The Editor of *Antarctic* welcomes articles from any person on any subject related to the Antarctic, the Southern Ocean or Sub-Antarctic regions. In particular, articles recounting personal experiences of your time in the Antarctic are welcomed. Articles may be submitted at any time to the Editor at editor@antarctic.org.nz. The Editor reserves the right to decline to publish an article for any reason whatsoever. Note that all articles will be subject to editorial review before publishing. Please see our advice to contributors and guidelines for authors at www.antarctic.org.nz/pages/journal.html, or contact the Editor.

Advertising, including inserts, is also welcome. Please contact the Editor for rates and bookings.

You are invited to join; please complete the membership application form:

Name:

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Students (with ID).....NZ\$40	International members
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NZ (Individual).....NZ\$70	New Zealand membership
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NZ Antarctic Society account details are: 02-0800-0685108-02 New Zealand Antarctic Society Inc. BNZ, Christchurch Branch	Please send your membership application form to: New Zealand Antarctic Society PO Box 404 Christchurch 8140 New Zealand
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Overseas branch enquiries should be directed to secretary@antarctic.org.nz, or to:

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Antarctic magazine correspondence, advertising enquiries, and article submissions should be sent to editor@antarctic.org.nz, or to:

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Enquiries regarding back issues of *Antarctic* should be sent to backissues@antarctic.org.nz, or to the National Treasurer at the above address.

Claims for missing issues should be sent to claims@antarctic.org.nz. Such claims can be considered only if made immediately after the subscriber has received the subsequent issue.

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.



Seeking Expressions of Interest Voluntary Work in Antarctica – Exterior Painting / General Maintenance Mid-December 2015 to Mid-January 2016

The New Zealand Antarctic Society and Antarctica New Zealand have entered into an agreement to provide an opportunity for two New Zealand Antarctic Society members to work voluntarily at Scott Base, Antarctica for approximately four weeks from mid-December 2015 to mid-January 2016.

The voluntary work will involve exterior painting and general maintenance tasking at Scott Base and will report to Antarctica New Zealand's Engineering Supervisor and work under the direction of the Scott Base Carpenter.

While formal painter/decorator trades qualifications are not necessary, previous experience painting and general maintenance is required. The successful volunteers will be expected to work safely outside on scaffolding.

The candidates must have the following:

- **Proven ability in exterior painting and general maintenance**
- **Current membership of the New Zealand Antarctic Society and be resident in New Zealand**
- **Strong Health, Safety and Environment values**
- **Sound decision making and work ethics**
- **Hold a current full Class 1 NZ drivers licence**
- **Hold a current first aid certificate valid for the duration of the role**
- **Demonstrate the ability to work safely & effectively without direct supervision**
- **Possess the personal qualities required to fit in socially and professionally with a diverse range of people**

The Volunteers are required to undergo all Antarctica New Zealand's induction processes prior to departure; including obtaining a medical clearance, providing a suitable Ministry of Justice check, pre deployment training and any role specific training deemed necessary.

Successful candidates are to provide a report of their activities to Antarctica New Zealand and the New Zealand Antarctic Society by the end of February 2016, and submit a short article about their experience to *Antarctic*.

An application form for this opportunity is available from the New Zealand Antarctic Society website www.antarctic.org.nz/pages/projects/paint.php.

If you are interested in applying for one of two positions please download and complete an application form and return it to any of the addresses marked "Volunteer Application". Previously successful candidates cannot reapply.

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Applications close Friday 18 September 2015

