

THE PUBLICATION OF THE NEW ZEALAND ANTARCTIC SOCIETY

ANTARCTIC

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Seals

By Hiriwa Johnson

*Swimming in the water below,
eating fish and penguins,
able to live in one of the
coldest places on earth,
lowering into the water
ready to hunt, swimming away
from their predators.*





Contents

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7. Bill Cranfield (Canterbury), 2003
8. Randal Heke (Wellington), 2003
9. Bill Hopper (Wellington), 2004
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11. Arnold Heine (Wellington), 2006
12. Margaret Bradshaw (Canterbury), 2006
13. Ray Dibble (Wellington), 2008
14. Norman Hardie (Canterbury), 2008
15. Vacant



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Note from the Editor

This is a very full issue so the usual Antarctic Update has been moved to the next edition. I would like to recognize the very exciting news that Baden Norris, Antarctic historian, was awarded the New Zealand Antarctic Medal for his services to Antarctic history and conservation. In 2006 he had been honoured with a Queen's Service Order for services to the community. This very well deserved award given to this humble and extraordinary man is celebrated by all the New Zealand Antarctic community.

You may notice that this issue is overflowing with poetry. I was reading a newsletter from the Phillipstown School in Christchurch one day and noticed some wonderful poetry written by the students. I approached the school and asked if any students would be interested in writing some poems about Antarctica. Teacher Gray Cleveland had an enthusiastic response and in due course I received 18 poems written by students aged between nine and 11 years old. Antarctic Arts Fellow and poet extraordinaire Bernadette (Bernie) Hall read through the poems and made some comments which will go to the students.

Her comments included the following: *"I do compliment all the writers on the lovely clean, clear lines of their poems. Obviously a lot of work and time had gone into producing 'the best words in the best order' which is one of the definitions of poetry itself. Big congratulations to all the writers and to their teachers. The poems have given me a lot of pleasure and I'm sure they'll do the same for many other people too."*

Three poems particularly stood out for Bernie. These are *Seals* by Hiriwai Johnson, *Antarctica* by Shanara Bishop and *Antarctica* by Gabrielle Good. Bernie said that *Seals* made her *"feel as if I'm back there in Antarctica, watching the movements of the Weddell seals"* while Shanara's poem had wonderful words offered the *"sound effects"* experienced on the Ice. Gabrielle's poem Bernie described as *"elegant"* and with a good sense of humour – letting the penguins *"wobble"* and *"waddle"* across the page.

While initially only a few poems were intended for publication, the quality was so good that we will be publishing them all. Hopefully some of these young students will go on to become the Antarcticans of the future.

I hope you enjoy this very poetic issue of Antarctic.

Natalie – editor *Antarctic*.



Antarctic season open day, Christchurch 1950s. Photograph shows a Lockheed P2V Neptune with the Douglas C-54 Skymaster in the background. Image courtesy David O'Malley, Christchurch City Libraries.

Antarctica

by K-lee Crisp

Ice melting ice floes
Ice snow like crunching sugar
Blinding glistening white

Antarctica

by Brooke Rae

In Antarctica
Penguins waddling around
Seals sunbathing on ice bergs
Icy cold water
Babies stumbling around
New born hatching out of eggs

Icy Antarctica

by Katelyn Chapman

Ice and snow
Icebergs are floating away
Antarctica is freezing
Snow is really white
Penguins waddling around
Adult penguins and their chicks

Antarctic

by Jayden Gifford

Shivering cold
Nervous penguins at the ice edge
Orca whales waiting
While ice floes

Antarctica

by Blake Charlett

Freezing cold water
Big blubbery leopard seals
Seals diving, playing

Antarctica

by Joesph

Ice bergs are floating
Cold, icy, white freezing weather
Antarctica is cold

Freezing Antarctica

by Veronica Huata

Ice cold temperature
Ice melting on a summer day
Clear sky shining on water
Cool breeze in the air
Seals lying on ice floes
Cute lazy little seals

Finding the *Terra Nova*

By Leighton Rolley, Marine Technician aboard *RV Falkor*

In August 2012 during routine functional performance testing of equipment on the Schmidt Ocean Institute's flagship *RV Falkor*, the team aboard discovered the *SS Terra Nova*, a whaler, sealer and polar exploration ship that sank off the southern coast of Greenland in September, 1943, after being damaged by ice.

The *RV Falkor* voyage aimed to sail from Newcastle, UK to Nuuk, Greenland while testing multi-beam mapping echo sounders on the way. This was in preparation for further voyages planned for 2013. The equipment performance tests included a shallow water survey off the southern coast of Greenland to assess the echo sounder's performance in complex topography.

The site was selected for both scientific and historical reasons. Scientifically it enabled testing of ship's mapping capabilities at seafloor depths between 10 and 1800 meters, and the glacial activity in the area created distinct and prominent seafloor features. Because of the glaciers, the Schmidt Ocean Institute survey team expected to see mixtures of deposits from soft sediment to gravel and boulders deposited by icebergs and glaciers. Different seabed compositions enable testing of the reception quality of the high/low back scatter signals by the multi-beam system. Icebergs common to the area leave significant gouging marks on the seabed, which would also effectively test bathymetric mapping data.

In addition to the test site meeting multiple scientific criteria, the region was also familiar to Schmidt Ocean Institute Marine Technician Leighton Rolley, who had read that the polar exploration vessel *SS Terra Nova* was reported lost off Southern Greenland in 1943. With all the topographical considerations and with the secondary possibility of using a wreck as a calibration reference for the sonar equipment, the Schmidt Ocean Institute had prioritized this location as the optimal spot for this round of tests.

Using historical sources as a guide the approximate estimated position of the wreck was used as the central point for the test survey. An area roughly five nautical miles around this position was selected for the survey to encompass various features, shallows and slopes necessary to evaluate the sonar performance. The bathymetric data produced by the equipment during the trials was of very high quality, substantially

exceeding expectations. As anticipated, numerous iceberg strikes and gouges were observed on the seabed along with striking features not listed on the existing nautical charts.

On the first line of the calibration survey, on-board survey expert Jonathan Beaudoin from the University of New Hampshire had noted a feature on the seabed which remained initially unidentified. Upon completion of the main calibration exercise, SOI technician Leighton Rolley and Jonathan reviewed each of the many potential targets identified during the 12 hours of surveying, and the target was noted as a strong candidate for further investigation. Multi-beam data expert Jean Marie from Ifremer analysed the feature in more detail, finding its length (57 m) to match the reported length of the *Terra Nova*.

Encouraged by the similarity in length, the acoustic survey team post-processed the collected multi-beam data to verify the observed feature. A shorter survey from several angles reaffirmed the possibility that the team had found a wreck. During the earlier stages of the voyage the Schmidt Ocean Institute marine technicians developed a weighted camera package to film the plankton net trawls conducted by scientists aboard *RV Falkor*.

This camera package (Simple High Resolution IMaging Package, or SHRIMP), a solid metal frame with two attached cameras and three to four dive flashlights for light to document the planned plankton net tows. As the location of the possible wreck lay within the depth range of the SHRIMP, the Schmidt Ocean Institute team decided to use the camera to take a closer look.

The package dropped to a position just above the target to help identify the nature of this 57 m long feature observed in the mapping data. Camera tows across the top of the target showed the remains of a wooden wreck lying on the seabed. The camera footage also identified the funnel of the vessel, next to the wreck. The forecandle of the vessel appeared to be

“peeled” upwards to the port side and at an angle from the rest of the ship. The team compared the funnel image with historical photographs of the *SS Terra Nova*. All observations jointly identified this wreck as the sunken *SS Terra Nova*.

The permit for the instrument testing off the southern coast of Greenland was issued to the Schmidt Ocean Institute by the United States Department of State. When the permit was issued, the U.S. Department of State requested that the Schmidt Ocean Institute did not release information about any possible wreck discoveries that may occur as a result of the sonar testing unless authorized to do so by the U.S. government.

In compliance with this requirement, upon the discovery of the wreck, Schmidt Ocean Institute first informed the U.S. Department of State. Following consultations with the appropriate authorities in the United Kingdom and Denmark governments, the U.S. Department of State authorised the Schmidt Ocean Institute to release the information about the discovery. The exact location or depth of the wreck will not be disclosed to protect the historically important site where the *Terra Nova* lies.

The discovery of the lost *SS Terra Nova*, one of the most famous polar exploration vessels, was an exciting achievement – in addition to exceeding the scientific aims of the voyage.

Editor’s note: This is a shortened edited version of the original article written for the Schmidt Ocean Institute by Leighton Rolley, Marine Technician aboard RV Falkor and edited by Genny Biggs. 📄



Simple High Resolution IMaging Package (or SHRIMP) with mounted high definition cameras and underwater flashlights ready for deployment on RV Falkor aft working deck. Image courtesy Schmidt Ocean Institute.



Photograph of the Simple High Resolution IMaging Platform (or SHRIMP) in operation under the water during the survey to ascertain the identity of the *SS Terra Nova*. Image courtesy Schmidt Ocean Institute.



Schmidt Ocean Institute marine technicians and crew mount GoPro cameras on the SHRIMP in preparation to its deployment to ascertain the identity of the *SS Terra Nova*. Image courtesy Schmidt Ocean Institute.

Radio Ham on Ice, the Fulfillment of an Engineer's Ambition

By Kelvin Barnsdale ZL3KB

In early 2011 I was asked by Gateway Antarctica if my group at the Geospatial Research Centre, University of Canterbury could build and support a geo-referenced video package for an instrument called the "HEM bird" which measures Antarctic sea ice thickness. Despite our group having no time or money, it was somewhere I had always wanted to go, so the answer had to be yes!

Although I had most of 2011 to build this equipment, procrastination and other work caused the project to be put together at the last minute, with most of the equipment being built in my garage. Actually it was two garages, as I moved house halfway through the build, having been "red zoned" in Christchurch following the February 2011 earthquake.

The HEM bird is a torpedo shaped instrument suspended under a helicopter and flown across the sea ice at a height of 15 m. It transmits a magnetic field which sets up an eddy current in the saline sea water under the ice, and the re-radiated quadrature magnetic field is detected by the instrument, giving the distance to the saline layer. The video package I created was to catch a ride on the HEM bird by hanging like saddle bags around it, capturing video images of the sea ice below, and recording precise position and attitude of the bird.

Amateur Radio on Ice

I am a member of the Christchurch Amateur Radio Club. My trusty FT857D and wire dipole has come with me around the world and visited many exotic places, so I had to make plans to take them south as well. The first preparation was to ask Antarctica New Zealand for formal permission to operate from the Scott Base area, and a form was submitted. This was promptly returned with the required signatures of permission. The other job was to investigate a special call sign for my expedition, and Debbie at NZART HQ quickly and efficiently arranged a ZL5KB call for me.

Most of the communications between Scott Base and the outside world takes place through a satellite data link, with backup on Iridium phones. Local communication around the base is via several VHF repeaters, one being on Mt Erebus which dominates the local scenery, and VHF handhelds can be used anywhere across a radius of 50 km of sea ice in McMurdo sound. There are also extensive HF links for communication to outlying and deep field bases. McMurdo Station has its own communications network. Fortunately, there is no cell phone network down there!



Radio operating from radio shack (fish hut), talking to Christchurch.



Sea ice thickness measurements.



K063a team, Kelvin Barnsdale on right.

Getting Acclimatized

Our flight to Scott Base was provided by Antarctica New Zealand on a USAF C17 Globemaster aircraft. The passengers have inward facing seats along the walls of the fuselage, with the centre of the aircraft occupied by large pallets of freight. Despite having to wear all the “extreme cold weather” clothing in case of a crash, there was plenty of room to move around, and we could even go up to the flight deck for a chat with the pilots, which is a rare treat in these security sensitive days.

It takes a week or two to acclimatize to the Antarctic environment, and one major aspect is the dryness of the air, and static electricity. All phones have grounding plates which the user must touch first, as static discharges have been known to destroy phones or even take the whole exchange out. Dry skin caused painful splits in my fingers, but on the plus side any equipment or clothing brought in from the field dried out in minutes.

Acclimatizing to the 24-hour daylight is also difficult and takes several days, and yes they do adopt New Zealand daylight saving time down there! Working in the evening I would suddenly start to feel tired, and checking my watch showed it to be two in the morning. I came to realise that in normal life darkness has some influence on when we feel tired. Getting to sleep at night was very difficult too, especially in the early days there, in fact all the days seemed to merge one very long day, and sleeps were like afternoon naps.

A total of around eighty people were at Scott Base, – each does his/her chores in the kitchen on a rota basis and everyone washes their own plates, and loads and unloads the dish sterilizer. Every Saturday there is a base meeting where we get allocated some small jobs to help keep the base running smoothly. All areas of the base are maintained at a constant 19 deg C, so we could move around in just tee shirts and shorts. The food provided by the base resident cooks is fabulous.

A few days after my arrival at Scott Base I made acquaintance with the telecommunications technician Hayden Short. He was very helpful but relatively new to the position, and was still learning how all the systems operated. After checking that my transmit frequencies were not going to clash with the local HF channels, we discussed various amateur radio operating arrangements, including the use of a spare wideband vertical antenna they have on base.

In the end we decided it was better not to interfere with the existing equipment (if it ain't broke, don't break it), and we hung my 40 m inverted V dipole on the tower above the base radio workshop. This gave access to a very comfortable operating shack with the feeder coming through the door joint, but the tower with its un-insulated steel guy wires of the tower were far from ideal, as they caused the antenna to be effectively shorted out and the resonant frequency went very high.

A King Arrives

Early in our time there, the base had a visit from the king of Malaysia and his entourage, totalling around 10 people. This was an important part of the trade negotiations between our two countries, so the base staff had to make a good job of accommodating his highness. Being a Muslim, his meat had to be halal which was impossible for the mess cooks to serve as all their food is shipped months in advance. The administrators solved this problem by making the menu vegetarian for the duration of his stay, and in the end all went very smoothly. By chance I had breakfast with the King, who turned out to be a really nice guy, and we had a chat about the South Magnetic Pole being in the general direction of North from Scott Base.

A Shack of my Own

I needed to find a place to operate away from the main buildings where I could put up the aerial on its own mast. A few days later I befriended the scientists Barbara and Cliff Evans who used a nearby hut for their research into Antarctic fish. They agreed I could use the hut, and there was space outside for a small mast. There was one aspect of the hut that was very unusual for Scott Base; it had a window that opened, so the antenna feeder could enter the hut easily. Hayden found me a length of scaffolding, to which I added a 3 m bamboo pole, making the mast a barely acceptable 7 m tall. From this I hung an inverted vee 40 m dipole, the ends of which were attached to shovels in the snow. With the pole buried 1 m into the snow, it needed no guys. There is a trick to make instant foundations down there – pour some water around the mast base and it freezes into a block.

Back to Work

Before the scheduled helicopter flights, we worked in the area of McMurdo Sound sea ice, moving around using Skidoos and measuring the snow depth and sea ice thickness with nothing but a tape measure and drill, and some of these were long days. We completed forty three measurement sites over a 50 x 30 km area, each with five ice measurements and sixty snow depth measurements. Many sites aligned with overhead passes of the CryoSat satellite which measures sea ice height from space, and our measurements acted as ground truth. As a safety check we had to contact Scott Base every hour when travelling on the sea ice, and when your watch is under five layers of clothing it is hard to keep track of time. Travel was mostly safe as the ice was around 170 cm thick, but it could get quite thin near cracks, so extra care was needed when crossing them.

The video equipment I had built fitted onto the HEM bird instrument without drama, even though I had not seen the bird until I got down there, and as a result of last minute discussions I changed one of the cameras to be forward facing to see the horizon. Bad weather delayed the scheduled flights, and then we were delayed further by a cracked window in the helicopter, which demanded a special glue to be sent from the USA. Eventually everything came together and we had four good flights in two days of perfect weather. I was lucky enough to be “navigator” on one flight which gave fantastic views of the sea ice of McMurdo Sound, icebergs, glaciers and surrounding snow covered mountains.

First Contacts for ZL5KB

The first night of amateur radio operations showed 40 m was not a good band for working DX, but by listening around, the 20 m band appeared to be more promising. So the next night I shortened the dipole to operate on 20 m, and worked Jason ZL3JAS in Christchurch, Ivan VK5HS, Brian VK2UT, an Argentinean and a German in Berlin. A few days later I heard two Americans talking on USB, so I politely butted in as I was sure they would appreciate a contact with the Antarctic. The first ham, NU1O was from Massachusetts, but did not seem excited with the contact with Scott Base. It turned out his colleague in the QSO, KC4USV, was operating from McMurdo station, just 3 km away from me! It is a small world.



Forward facing camera on HEM bird over sea ice edge.

Contact with Home

On my last night at Scott Base I made contact with my club Branch 05 in Christchurch and exchanged reports with Des ZL3AK and David ZL2ARY, with his son Oliver ZL3ODJ and daughter Rose ZL3REJ, also Andrew ZL3AJT. The highlight of the evening was to contact my two sons at the club, Liam ZL3LB and Aidan ZL3APB, with my wife in the background ZL3notyet. The club station was running 400 W which made it easy for me, but they struggled to hear me with 100 W on 20 m and I suspect we could have done better on 15 m, which shows the solar activity is improving.

Although work did not allow much time for amateur radio during my visit, and had very few contacts, it was rewarding to contact “the outside world” from this isolated spot by radio, and gave me a sense of what it was like before satellite communications had taken over. The hut “owners” Barbara and Cliff became very interested in my activities there, and Cliff even started talking about getting his ham ticket.

The visit was an awesome experience, which is a word I rarely use, and I feel very lucky to have had the opportunity to go there. I hope to use the experience to show my school electronics club students what can be achieved in the career of electronic engineering, and ham radio. 📡



HEM bird take off. All images courtesy Kelvin Barnsdale.

Letters from Randal Heke

Veteran of Scott Base 1956 – 1957

Robert Falcon Scott's Expedition to the South Pole 1910 – 1912

The year 2012 was a significant year in the Antarctic history for the 29 March 2012 marked the 100 year centenary of the death of Robert Falcon Scott, Antarctic explorer on his tragic return from the South Pole.

His companions Edward Wilson, Lawrence Oates, Henry (Birdie) Bowers and Edgar Evans walked man-hauling sledges from Ross Island up the Beardmore Glacier on the Polar Plateau under the most extreme cold conditions, to arrive at the South Pole on 17 January 1912. These five hardy explorers were seeking to be the first to reach the South Pole and just imagine their disappointment and frustration to find the Norwegian Ronald Amundsen had already reached the Pole and hoisted the Norwegian flag.

On the return journey the men suffered from frostbite, blindness, weakness, lack of food and medical supplies and from intensive cold conditions. The death of Lawrence Oates has passed into history when he walked to his death – *"I am just going outside and may be some time"*.

Scott, writing his last message in his diary in his tent under a dim lamp wrote these last words before he died: *"Had we lived I would have had a tale to tell of the hardihood, endurance and courage of my companions which would have stirred the heart of every Englishman."*

The bodies of those who died were left where they were found and those members of the expedition left Ross Island erected a cross on Observation Hill which carried these immortal words: *"To strive to seek to find and not to yield"*.

Let us remember and commemorate the death of Robert Falcon Scott, 100 years ago.

New Zealand's station in the Ross Dependency "Scott Base" is named after this legend of Antarctic exploration and discovery and we as a country have retained our close relationship with the name of Robert Scott.

Scott's Last Expedition to the South Pole

With the news that the exhibition of *Scott's Last Expedition* was coming to New Zealand and the Canterbury Museum was an event I was eagerly looking forward to. I have read extensively about the journal and the hardships Scott and his team suffered in their quest to reach the Pole and return to Cape Evans on Ross Island. We now know only too well the result of that expedition and it was fully illustrated and recorded in the exhibition in Christchurch. The exhibition was extremely well presented in an exciting and realistic way to those interested in Antarctic history and the attempts by both Roald Amundsen and Scott to reach the Pole.

Of particular interest was the sad commentary towards the end of Scott's life when he knew the depot with vital supplies was reachable but he was too weak and fatigued to travel any further. His last words in his diary described his failing moments and he realised the end was near.

Well done to the Antarctic Heritage Trust and Canterbury Museum who in partnership with the Natural History Museum, London presented an excellent and outstanding display and commentary of this epic journey. Without going into detail it was an exhibition worthy for those mildly or fully interested in Antarctica or to those who have read and become fascinated with the heroics of such brave and courageous men.

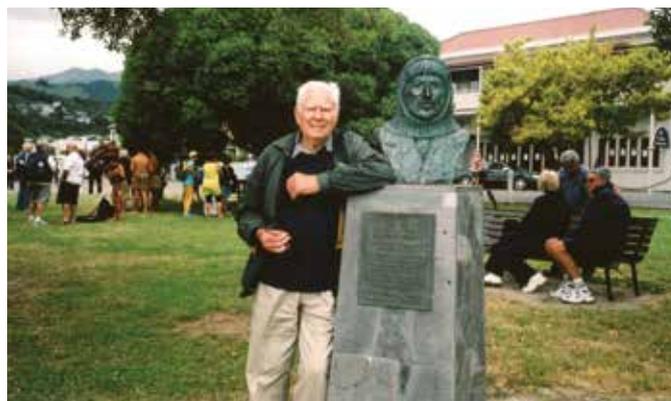
While in Christchurch to see the exhibition I was shocked and dismayed to see the condition of the Robert Falcon Scott statue following the earthquakes. There it lay in several pieces below a photograph of how it once stood beside the Avon River in the heart of the city. I was later to see the site where the statue once proudly stood which had become part of a de-construction site overgrown with grass and its history seemingly forgotten.

While principally travelling to Christchurch from Wellington to view *Scott's Last Expedition* I did have the opportunity to spend a day at the Ellerslie Flower Show in Hagley Park – a wonderful display of flowers and landscape designs shared by thousands of people at the show.

One afternoon I and my friend Patsy visited Bill and Helen Cranfield who live in South Brighton – both they and their house felt the effects of the earthquake last year. Bill was a pilot with the Antarctic Flying Wing with Ed Hillary's Antarctic expedition and it was great to have an opportunity to discuss and reminisce about those days with the expedition at Scott Base. Bill and Helen suggested a drive to Sumner to see the effects of the earthquake and the extent of the damage to the houses and surrounding cliffs in the area and it was just beyond belief to see what had occurred as a result of the earthquakes. I also toured the "red zone" by a special designated red bus and it was just overwhelming to see the damage and destruction of so many well-known buildings.

So what a weekend, a flower show, to see at first hand the damage caused in Christchurch City by the earthquakes in 2011 and the opportunity to see the exhibition of *Scott's Last Expedition*. The exhibition closed at Canterbury Museum on 30 June 2013.

Continued on page 49.



Randal Heke with bust of Frank Worsley, Akaroa. Image courtesy Randal Heke.



Giant amphipod. All photographs courtesy of and copyright to Oceanlab, University of Aberdeen, UK.

Discovery of Supergiant Amphipods

Until recently it was generally thought that the largest amphipods in the world could be found in Antarctic waters. Scientists exploring life in the deep sea off New Zealand have now disproved this assumption.

Amphipods are a type of crustacean which increases in number as you go deeper into the ocean. Typically deep sea amphipods are two to three centimetres long with the exception of the larger 'giant' amphipod found in Antarctica. This exception is mirrored in other marine life in Antarctica where 'gigantism' is not unusual. The supergiant amphipods now discovered however dwarf the Antarctic giant.

The supergiants were discovered unexpectedly in the Kermadec Trench, north of New Zealand by scientists from the University of Aberdeen and the National Institute of Water and Atmospheric Research (NIWA), who led a joint UK/New Zealand expedition to the area. Also aboard NIWA's research vessel, the *RV Kaharoa*, were scientists from the Museum of New Zealand/Te Papa Tongarewa and Whitman College, USA.



Alan Jamieson with one of the supergiant amphipods.

The expedition used specially designed ultra-deep submergence technology, deploying a camera system and large trap to depths ranging from 6900 to 9900 metres. The team was originally aiming to recover specimens of the deep sea snailfish, which had been photographed at low depths but not been captured since the early 1950s. The team were distracted from their successful capture of seven snailfish by the discovery (hidden amongst 100's of normal sized amphipods) of several amphipods 10 to 14 times larger than their fellows.

The voyage leader, Alan Jamieson from the University of Aberdeen's Oceanlab, recalled "At the moment the traps came on deck we were elated at the sight of the snailfish as we have been after these fish for years. However, seconds later I stopped and thought 'what on earth is that?' whilst catching a glimpse of an amphipod far bigger than I ever thought possible".

These new sightings and specimens of the supergiant amphipod represent both the biggest specimen ever caught (at 28 centimetres long) and the deepest they have ever been found (7000 metres deep).

When the team redeployed their equipment on the same site later in the expedition they failed to photograph or capture a single specimen. The supergiants were there one day and gone the next. NIWA scientist Ashley Rowden commented that the find illustrated just how little was known about New Zealand's deep sea habitat.

The challenge for the scientific team is to determine whether these new samples are the same species as those from other areas of the world. Additionally they will try and establish why, out of the hundreds of species of deep-sea amphipods, these ones have evolved to be so large.

Hopefully future expeditions will help scientists understand these supergiants – one of the most enigmatic creatures in the deep sea.

The expedition was predominantly funded by the Foundation Total in France, with additional funding from NIWA. 🇺🇰

Continued from page 47.

Editor's notes: When Randal visited Christchurch the site of the Scott Statue (Scott Memorial Garden) was in the red zone part of the central city – no access allowed except by demolition crews and the area became dishevelled. The site is now accessible as the red zone has decreased and the Christchurch City Council gardeners have restored the garden complete with the empty plinth waiting for the statue to return.

Scott's Last Expedition won Best Temporary or Touring Exhibition at the prestigious 2013 Museums and Heritage Awards in the United Kingdom.

Frank Worsley's Memorial – Akaroa

I recently went on an overseas cruise liner the Diamond Princess, 116,000 ton, a ship with facilities, decoration, food and comfort equal to any first class hotel.

With its stabilizers out, keeping the ship on a relatively equal keel, we rode across the Tasman Sea from Australia with little effect of becoming seasick or to prevent loughing or walking around the several decks. After a day berthed at Port Chalmers and taken by buses on sightseeing trips and major attractions in Dunedin the ship sailed later in the day for our next port of call – Akaroa.

Sailing slowly up the Akaroa Harbour on a beautiful sunny morning with bush covered hills on either side it was a picturesque sight as we entered this lovely safe harbour and seaside town. I was particularly interested to see the sculptural memorial to Frank Worsley, that intrepid Antarctic explorer who in his lifetime was Ernest Shackleton's captain of the ship *Endurance* and who was the navigator for Shackleton when they sailed the small boat the *James Caird* from Elephant Island to the Island of South Georgia, a distance of 800 miles.

The trauma and experiences of the crew who suffered extreme cold and rough sea conditions is very well described and illustrated in John Thomson's book the *Biography of Frank Worsley*. A book details the life of Frank Worsley from early upbringing to the time he travelled with Shackleton to the Antarctic and the adventures that followed to the end of his life.

Frank was born in Akaroa and his name and memorial is well known to the local people and his history and association with Akaroa is displayed in the local museum.

Frank Worsley died in his home town of Bamford, England on 1 February 1943, three weeks short of his 71st birthday.

For me, being an Antarctic and a survivor to read the inscription on the sculpture and to see his rugged face covered by a woolly hat facing towards the Antarctic and the South Pole will be something I will long remember.

Editor's note: The Worsley exhibition at Akaroa Museum is currently not accessible as the Museum has been closed due to the Canterbury earthquakes. Akaroa Museum is currently partly open to visitors. The Museum has developed a Frank Worsley Heritage Trail in Akaroa which lets people walk around significant sites in Worsley's life including the school he went to and the site of his mother's grave. Trail guides are available from Akaroa Museum. 🇺🇰

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Wallace George Lowe

(15 January 1924 – 20 March 2013)



The last surviving member of the team which first conquered Everest in 1953 died in 2013 at the age of 89. New Zealander George Lowe was part of the team that helped Sir Edmund Hillary and Tenzing Norgay to become the first to reach the top of the world's highest peak on May 29 1953. Lowe was the first to meet Edmund Hillary as he descended from the summit of Mt Everest and heard the now famous words

– “Well, George, we knocked the bastard off.” Following his Everest climb, Lowe went on to take part in the Trans-Antarctic Expedition of 1957-58, contributing to the first successful overland crossing of Antarctica via the South Pole.

He later made expeditions to Greenland, Greece and Ethiopia, before settling in England and becoming an Inspector of Schools with the Department of Education and Sciences before his retirement in 1984. George Lowe was considered a hero and example for many people. Huw Lewis-Jones who wrote the introduction to George's book *Letters from Everest* described Lowe as a “gentle soul and fine climber” who did not seek the limelight. Lewis-Jones said of Lowe that “He was involved in two of the most important explorations of the twentieth century – Everest, and the first crossing of Antarctica – yet remained a humble, happy man right to the end. That's an inspirational lesson to us all.”

George Lowe was born in the farming community of Hastings, North Island, the seventh of eight children, and seventh child of a seventh child. His father was a fruit grower and kept bees. He got his queen bees from the Hillary family in Auckland. Lowe became a school teacher and spent his holidays climbing in the Southern Alps, where he first met Edmund Hillary. Climbs with Hillary and others in the Alps led to the Himalaya in 1951, where he and three companions made the first ascent of Mukut Parbat. At the village of Rhaniket they picked up their mail, including a telegram from Eric Shipton inviting two of them to join an expedition to Everest's south side. The telegram “turned four amiable New Zealanders, relaxing in the hill station lounge, into four tense tigers, caged, self-seeking, eying each other with jealousy,” as Lowe wrote in his memoir *Because it is There* (London, 1959). As Lowe and Ed Cotter were broke they had to stay behind and watch as Hillary and Earle Riddiford departed.

A year later, thanks to Hillary's recommendation, Lowe was invited to join the British expedition to Cho Oyu (8,201m), a tough rehearsal for the 1953 attempt on its neighbour, Everest. It remained unclimbed but Lowe and Hillary took consolation in an outstanding first crossing of the Nup La pass from which they descended secretly into Tibet. The two New Zealanders had earned their ticket to join the expedition to Everest next year.

The expedition led by British Army Colonel John Hunt aimed to conquer the 29,028 feet mountain in 1953, days before the coronation of Queen Elizabeth II. As a keen photographer Lowe created a documentary about the expedition called *The Conquest Of Everest*. It was nominated for an Academy Award for Best Documentary Feature. He made a second film called *Antarctic Crossing* after taking part in the Trans-Antarctic Expedition detailing the first successful overland crossing of Antarctica.

Lowe retained his interest in Nepal after the Everest expedition, working with Edmund Hillary on supporting Sherpa's living near the mountain and building schools and hospitals for the people living in the region. He founded the UK arm of Hillary's Himalayan Trust which his wife Susan also supported.

George Lowe is survived by wife Mary and three sons from his first marriage to Susan Hunt. ❧



George Lowe on the South Col of Mt Everest 1953. Image from *Letters from Everest*, page 18.

Joseph Charles Farman

(7 August 1930 – 11 May 2013)



Joe Farman. Image by David Rose: The Telegraph/Rex

Joe Farman was the leader of a small group of scientists whose research showed that the ozone layer was being rapidly depleted over the Antarctic. The ozone layer is a protective skin that filters the sun's ultraviolet rays. The paper his team published in 1985 on the ozone layer led just two years later to the signing of the Montreal protocol – a treaty phasing out the use of chlorofluorocarbons (CFCs), the chemicals used in aerosols and other applications that were reacting with the ozone.

Although earlier work scientists in the 1970s had shown that CFCs could react with ozone, there was no empirical evidence that such destruction was actually happening and initially it seemed that fears about the ozone layer were unfounded. When Farman ran his first readings from a primitive Dobson spectrometer, wrapped in a quilt in the Antarctic in the early 1980s, he thought the instrument must be wrong. The readings suggested a drastic drop in the levels of ozone above the South Pole. He got a new machine, but it gave similar results. The following year the dip was even bigger. According to Farman the machine "... just went haywire [and] the levels really fell away." Almost half the ozone layer seemed to have vanished and so he checked data as far back as 1977, but then believed the discrepancy to be above Halley Bay only, leaving other areas unaffected. The following year he and his team took measurements 1,000 miles north-west of Halley Bay. There, too, there was a large decline. Farman decided it was time to publish his data.

The study by Farman and his colleagues revealed that levels of ozone above the Antarctic had fallen by about 40 per cent between 1975 and 1984. They demonstrated that the hole was not a natural occurrence but the result of reactions triggered by CFCs in the stratosphere. Convinced, after nearly five years of careful research, Farman, Brian

Gardiner and Jonathan Shanklin published their findings in the journal *Nature* on 16 May 1985. The results, showing a 40% drop in ozone, were explosive. It transpired that NASA had failed to find the drastic drop because, although its satellites and instruments had detected the absence, its software was set to ignore such unusual readings.

In the teeth of strong opposition from the chemicals industries – which protested that the cost of replacing CFCs was too much to bear – the Montreal protocol forced a massive change. Crucially, Farman had the support of Margaret Thatcher, a former chemist who championed his work and the Montreal protocol. Her support started when Farman worked for the British Antarctic Survey, which had been threatened with savage reductions and possible closure under the previous government's cuts. Thatcher saved the research establishment, ring-fencing its budget.

Farman was born in Norwich and as a child enjoyed cycling. He won a scholarship to Corpus Christi College, Cambridge, where he studied natural sciences. On completion of his degree Farman joined De Havilland, then a major aircraft manufacturer. In 1956, he saw an advertisement for physicists to work in the Antarctic. Appealing to his sense of adventure Farman applied and got the job. He continued to work for many years first in the Falkland Islands Dependency Survey and then the British Antarctic Survey. He spent two winters in the Argentine Islands, Antarctica and served as Base Commander from 1958-59.

Farman returned to Antarctic research after a break of some years – disparaging what he perceived to be the luxury 'modern' scientists enjoyed. Once, in 1990, having set out on foot to retrieve some instruments, he was surprised to see a helicopter from another research centre land near him and offer him a lift. His reply is unrecorded. After retiring from the British Antarctic survey age 60 he joined the Cambridge University chemistry department.

Farman won the Polar medal, the Society of Chemical Industry environment medal, the Chree medal and prize, and membership of the United Nations Global 500 roll of honour. He was appointed OBE in 1988 and CBE in 2000. He is survived by his wife Paula. ♀

Antarctica by Juliano

*At night it's windy, Antarctica is so cold
Ice bergs form at night*

Letters from Everest: a New Zealander's Account of the Epic First Ascent

By George Lowe

Book reviewed by Natalie Cadenhead

In many ways this initially appears to be a simple low-key book – a collection of letters good for dipping into on a lazy afternoon. Very quickly however, you get caught up in the personal tone and precise details which George records – somehow pulling you into his journey and taking you along with him (behind the scenes so-to-speak) on the climb. Each letter is infused with the delight and joy George felt in being part of the expedition team.

The book works in part because of the frequency of the letters. George wrote to his family regularly and this allows the story to flow without obvious gaps. It would have been wonderful to receive one of these letters and to pass on the information to friends – often knowing the progress and challenges of the expedition before the newspapers could print their accounts. George's sister Betty back in New Zealand, perhaps aware of the future distinction her brother and the expedition would be held in had a system for when she received a letter. On receipt of a letter Betty would carefully reproduce her brother's words by hand, in case the original should go astray, then enlist the help of a local lady to type additional copies for distribution to George's friends and family – over 20 people received these updates. Light hearted passages in the letters include George's apologies to his mother for his accurate and complete transcription of the “earthy” language used by expedition members.

The ascent of Mount Everest in the summer of 1953 can be considered one of the twentieth century's great triumphs of exploration. In these letters each stage of the journey is described making it obvious that it was a team effort which

led to the two men finally reaching the summit of Mt Everest. The letters bring each team member in to clear picture and shows the strong friendships which developed during the expedition. Of equal interest are the accounts concerning the political decisions and implications of who should be the team to reach the top and as a kind of side-bar the war between journalists to get the scoop on the ascent. George seems to notice, be involved in and record every aspect of the expedition. These meticulous accounts range from descriptions of the plants and animals they encountered to the challenges of acclimatising to work at high altitudes and testing the oxygen equipment.

Many of the letters are multiple pages long – written using a biro warmed up in his sleeping bag. As well as a method for keeping his family informed of progress they also act as a kind of letter-diary – a good safeguard in case of disaster on the expedition and him not returning home.

The photographs which are scattered throughout the book are a delight and illustrate well the descriptions in the letters. One of my favourites shows four of the team piled into a tent – three completely asleep while Evans relaxes with his pipe. It is interesting to compare post-success accounts of the achievement with this book. While accounts written after the event sometimes seem to be flavoured with the assumption of success, in George's letters the reader gets to feel first-hand the doubts and uncertainties of the expedition members that they will reach their goal. The letters contain lots of humorous anecdotes of incidents during the expedition and its immediate aftermath – George's accounts of the

rivalry amongst journalists to beat the correspondent from *The Times* newspaper to the story of the ascent descends to comedic farce at times.

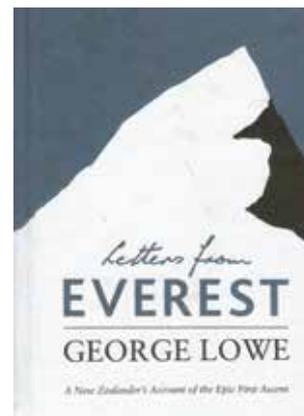
While some of the content of the book has been quoted in other publications the vast majority of this material has never been published. *Letters from Everest* contains George's private letters from February 1953, beginning with his arrival in Bombay, and ending in Delhi three months later.

Sixty years after Mount Everest was first climbed this unique book of letters celebrates, in a very personal way with clear and elegant writing, the conquering of this daunting mountain. With exclusive access to the private archives of pioneering New Zealand climber George Lowe, this is a welcome tribute to an unsung hero. Sadly, George Lowe passed only weeks before the anniversary of the expedition. Recommended reading for anyone interested in mountains, exploration, or extraordinary adventure and achievement. \pounds

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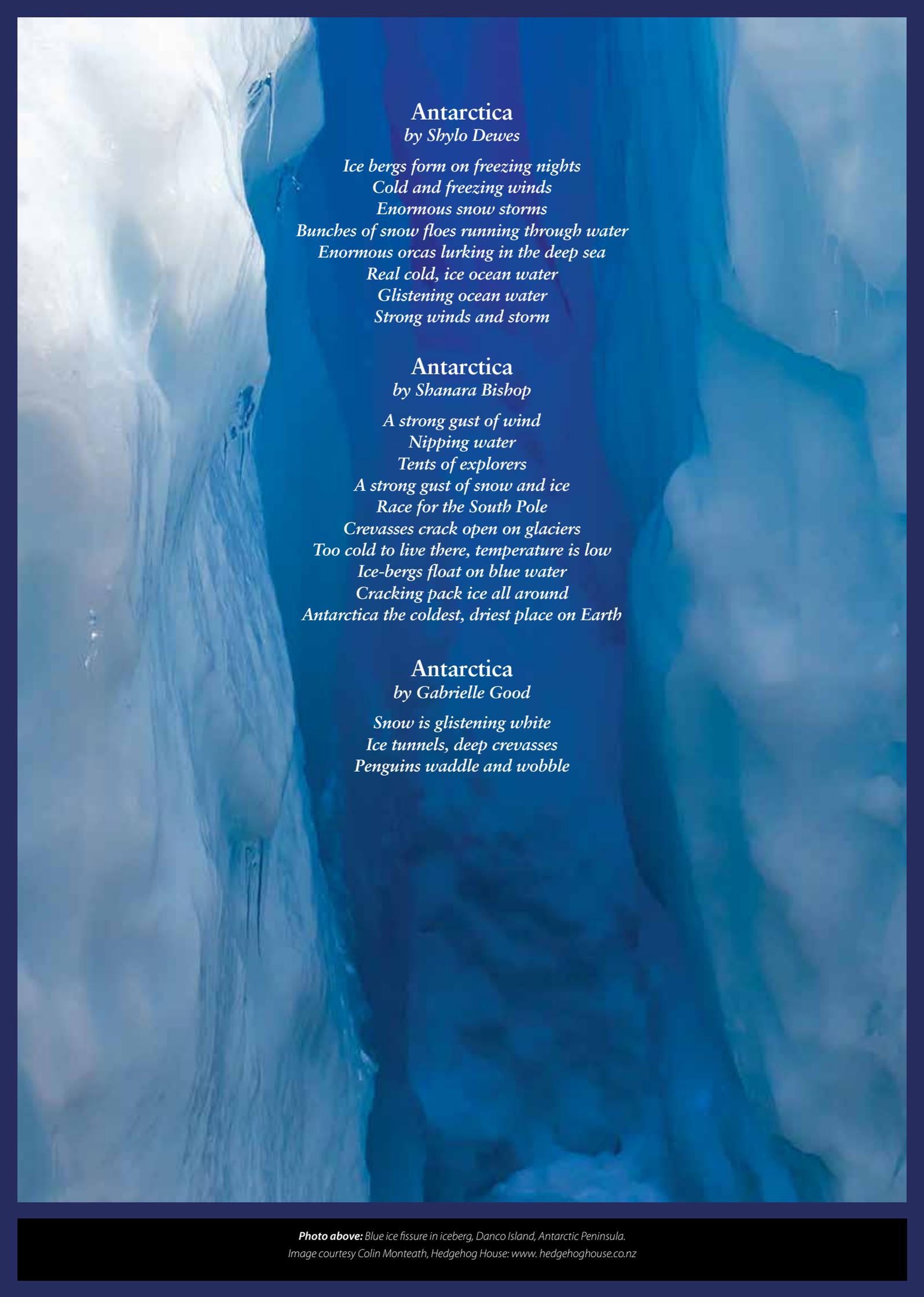
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Antarctica

by Shylo Dewes

*Ice bergs form on freezing nights
Cold and freezing winds
Enormous snow storms
Bunches of snow floes running through water
Enormous orcas lurking in the deep sea
Real cold, ice ocean water
Glistening ocean water
Strong winds and storm*

Antarctica

by Shanara Bishop

*A strong gust of wind
Nipping water
Tents of explorers
A strong gust of snow and ice
Race for the South Pole
Crevasses crack open on glaciers
Too cold to live there, temperature is low
Ice-bergs float on blue water
Cracking pack ice all around
Antarctica the coldest, driest place on Earth*

Antarctica

by Gabrielle Good

*Snow is glistening white
Ice tunnels, deep crevasses
Penguins waddle and wobble*