Insights into the Second Voyage of the *Terra Nova*, British Antarctic Expedition, 1910-13, from the Diary of A.B. William McDonald

Anne Hunter
2007

Abstract
Able Seaman William McDonald, my paternal grandfather, sailed on the Second and Third Voyages of the British Antarctic Expedition. He kept a diary of the Second Voyage, 1911-12, in which he recorded the progress of the *Terra Nova* as it battled the ice conditions in McMurdo Sound, re-supplying stores and equipment to the support and scientific parties of Captain Scott’s Last Expedition. His brief notes of the first two months are complemented by relevant information to form a colourful picture of his role in polar exploration.
Aims
The aim is to document the background and first two months of the Second Voyage of the British Antarctic Expedition, 1910-13, from a sailor’s perspective. This report is based on the diary account written by William McDonald. Supplementary photos and maps are included, as well as more general references and detailed descriptions of particular topics taken from other documentation of the voyage.

This paper forms part of a long term plan to publish a full account of the Second Voyage at a later date, and as such, is a work in progress. For this reason I request that this paper is not put into public domain for the next two years.

The Second Voyage left Lyttelton on 15th December 1911, returning on 3rd April 1912. It has not been well documented, as the main characters were already in Antarctica, and Scott had a financial agreement\(^1\) with the Central News Agency to supply written accounts to them first. In addition, when crew members signed on, they also agreed “not to keep a diary or photos”.

Structure
I am presenting this paper in the form of the first two parts of the proposed book.

Part 1:  
A Granddaughter’s Perspective  
Biography of William McDonald  
The British Antarctic Expedition 1910-13  
Between the First and Second Voyages  
The *Terra Nova*  
Roll Call

Part 2:  
Covers the first two months of the Second Voyage, departing from Lyttelton on 15th December 1911, to 15th February 1912 when the Western Party was embarked. Consists of the diary entries on one page, with corresponding description on the opposite page. Supplementary photos and maps are inserted where appropriate.  
References  
Conclusion

(For the proposed book, Part 3 will be added. This will be the continuation of Part 2, from the diary entries of 16th February 1912 to 3rd April 1912 when the ship’s arrival in Lyttelton ended the Second Voyage; corresponding description and references; and maps of improved quality.)

The diary has been reproduced as it was written, so spelling and punctuation have not been corrected. For the proposed book I will consult a design specialist. Presentation of the diary may then consist of entries within a box frame, and corresponding description below or around it.

References are recorded at the end of this paper. I have referenced passages by footnote, as this method is less obtrusive for the purposes of a book. Newspaper articles generally do not include the name of the author, as these were not published at the time.
The time allotted within the GCAS course does not allow me to give the full picture of the Second Voyage, as small amounts of information are scattered through many different sources.

Method
I have researched material pertaining to the Expedition, including diaries of fellow shipmates and Expedition members, published accounts, and other material relating to the ship and equipment. I have had discussions with family members and museum staff.

Acknowledgements
Alan McDonald, my father
Baden Norris, Emeritus Curator of Antarctic Collection, Canterbury Museum, Christchurch
Professor Bryan Storey, Gateway Antarctica, University of Canterbury, Christchurch
Antarctica New Zealand, Christchurch
Documentary Centre, Canterbury Museum
Aotearoa New Zealand Centre, Christchurch City Library
Contents

Part 1:  
A Granddaughter's Perspective
Biography of William McDonald
The British Antarctic Expedition 1910-13
Between the First and Second Voyages
The Terra Nova
Roll Call

Part 2:  
Second Voyage: Log of the Barque Terra Nova on a Voyage from Lyttelton, New Zealand, to the Antarctic

Corresponding Information:  
Departure of the Second Voyage
Soundings, Diatom ooze
Ship's cat, Christmas Day and Sunday Services
The Indian Mules
New Year's Day 1912, Patent log
The Northern Party
Watering ship, Ice terms
Trimming coal
Petrels, penguins
Seals
Ballast
Expedition members
Disembarking at Cape Evans
Western Party

References
Conclusion
Part 1
A Granddaughter’s Perspective

Antarctica was born in me, but throughout childhood it was fostered by the diary, an old typewritten account of ‘Grandad going to the Antarctic with Captain Scott’. I could not fathom out why the Terra Nova zig-zagged round McMurdo Sound, or why the crew spent so much time ‘sledging provisions’. I enjoyed the entry which recounted the rescue of Nigger, the ship’s cat, and wept over his later loss. But where was the mention of Captain Scott, Evans, Oates, Bowers, and Wilson? I gradually pieced together the complete tale of the British Antarctic Expedition 1910-13, but it left me with many more questions, and the disappointment that Grandad probably never met Scott at all.

Over the following years of marriage and nurturing a family, the knowledge of the diary and the little piece of rock, which he had brought back after a visit in 1963, simmered gently in my mind. As I approached my 50th year, I felt compelled to retrace his steps, to see where he had really been. Away I sailed on a tourist expedition to the Ross Sea. For three exciting weeks our ship was a speck in the Southern Ocean and environs. There were fierce storms, where we experienced 45° rolls and waves of up to 15metres. I pictured the sailors hauling on ropes and stoking the fires. There were brilliant sunny days where we cruised serenely beside a huge tabular iceberg in a deep blue sea and spotted whalespouts. There were magical late evenings where the sun glowed red, and one night illuminated the water droplets on a pod of orca as they dipped through the water. There were magnificent icescapes and throughout the trip, a huge sense of space, silence, and history. We were a hushed, humbled group that stepped into the old huts, and on looking around at the equipment and stores, I understood why Grandad had taken so long “sledging provisions”. Much to my disappointment, our group did not have time to go up Observation Hill to see the memorial cross erected for the Polar Party. Grandad had helped make it, according to a newspaper article some years later.

Rather than cooling my passion for Antarctica, the trip seemed to highlight it, and I began to delve more deeply into the diary.

Each page records the daily activity on board the Terra Nova. The nautical terms pose a few problems for this landlubber, but I am grateful for the help given me by Baden Norris, Emeritus Curator of the Antarctic Collection, Canterbury Museum.

To gain a wide background knowledge of Antarctica, I successfully applied for a position on the Graduate Certificate in Antarctic Studies course at Canterbury University, 2006-07. The associated fortnight on the Ice gave me practical experience in living in the polar environment and opportunities to visit some historic sites. Standing beneath the cross on Observation Hill was a memorable occasion. From here I looked out towards Minna Bluff, imagining the doomed party safely returning. Now when I read the historical accounts, I know exactly where Hutton Cliffs and Castle Rock are, and a great deal more about both them and the ice conditions that beset the expeditions of the Heroic Era all those years ago.

It is nearly a century since the British Antarctic Expedition, 1910-13 started out. In the last few years there has been recognition of less well-known participants, such as the Northern Party, and I would like to fill one of the remaining gaps: the role of the Terra Nova and her crew during the Second Voyage.
Biography of William McDonald

William McDonald was born in Glasgow in 1892 and went to sea as Cabin Boy at age 15 years. Early work was on coastal traders, followed by the Western Ocean run taking immigrants from his home port of Glasgow to America and Canada. A spell on a three masted barque to Adelaide and Melbourne, before going back to London on a big four master, “round the Horn in 125 days.” While in London, he caught the enthusiasm of the thousands of men applying to take part in the British Antarctic Expedition, 1910-13. Young William was told that he stood a better chance of selection if he applied from New Zealand. So he worked his way over, and took employment on the Hesperian and TSS Maori, until the exciting arrival of the telegram from Lieutenant Pennell – “probable vacancy if care to join, Pennell”. William, now usually known as ‘Bill’, had signed on the SS Kaiapoi and could not give the required notice to leave her as she was about to sail. Pennell then asked the skipper to release him, allowing Bill to join the Terra Nova for a three month survey voyage in northern New Zealand, followed by the Second and Third Voyages of the B.A.E.. He was nineteen years old, one of the youngest members. On return, he adopted New Zealand as his home.

The telegram from Lieutenant Pennell (McDonald family)
In between the two voyages to Antarctica, Bill sailed on another survey for the New Zealand Government. After the Third Voyage, he worked his passage back to London for presentation of the Polar Medal in July 1913.

Returning later that year on the SS Athenic, he applied for employment with H.M.Customs. Nothing definite was forthcoming, so by coincidence, he rejoined the Kaitapoi. On arrival in Auckland he received a telegram, advising him of a position with the Customs Department. The skipper was not at all sympathetic as the ship was sailing for Sydney that day, and he left it to Bill to find another seaman. Bill “came on deck and first man I saw on the wharf was Charlie Williams, he was looking for a ship, he certainly found one.” (Charlie Williams was Able Seaman on the first and third voyages.)

Bill joined the Customs of Lyttelton in 1914, married Mary (Polly) Duncan Scott Dawson in December of that year, and two days later went away with the 3rd Reinforcements to Gallipoli. After four months he “stopped a bullet”, eventually recuperating in France. But the wound was troublesome, and he returned to New Zealand in 1917, rejoining Customs Department until retiring in 1954.

Polly and Bill raised four children: Enid, Bob (Robert Falcon Scott McDonald – the ‘Scott’ name belonged to Polly), Alan, and Ruth. Marriages and nine grandchildren followed – I am the second child of Alan. Sunday afternoon visits saw a line-up of ‘be seen and not heard’ grandchildren on the red roll-armed sofa in Polly and Bill’s house. A welcome diversion was an Adelie penguin in a glass case, guarding a couple of eggs. One egg was cracked; would the chick never hatch, we wondered? Was that the “first penguin” that Grandad shot, according to his diary? The living room walls were hung with Antarctic pictures: Osman the husky dog, the telegram summoning the crew to receive the Polar Medal, and a photograph of the crew leaving Buckingham Palace after the ceremony.

Several crew members made Lyttelton or Christchurch their home, including Bill Burton and Mortimer (Mac) McCarthy. Bill, Bill Burton, and Mac McCarthy assumed status as the only surviving members of the B.A.E. in Christchurch. In 1963 they returned to Antarctica as guests of the US Navy. Sailing in comfort on the Arneb, the trio at ages 70, 74 and 84, enjoyed a wonderful trip. An expedition to Antarctica in the early 1960s by the New Zealand Federated Mountain Clubs named a mountain after each of them. Mt McDonald lies in the Freyberg Range, inland from Cape Hallett.

In the Lyttelton Museum, amongst the memorabilia of former shipmates, lie Bill’s Polar Medal and the Geographical Society’s Medallion, his Terra Nova hat band, and a number of other items. His dusty boots lie forlornly in the corner of the replica Heroic Era hut displayed in Canterbury Museum. Following on through the display there are many more exhibits, depicting nearly a hundred years of polar travel since young Bill’s Antarctic exploits.

Bill McDonald died in Christchurch in 1978, aged 86. Shipmate Bill Burton paid him this tribute, a usual farewell to a competent sailor:

“He was bred and born to the sailor’s trade, Hemp to the core and cable laid.”
William McDonald
A.B., Terra Nova
1911. (McDonald family)

Veterans of Captain Scott's last expedition back in the Antarctic. Mr. M. McCarthy (left), Mr. W. McDonald (middle), and Mr. W. Burton looking at a 1918 copy of "The Weekly Press" during a visit to Scott's hut at Cape Evans. The men were members of the crew of the Terra Nova, which took a visit to Scott's hut at Cape Evans. This visit was a result of their visit to New Zealand in 1910. They revisited the Antarctic as guests of the Americans.

United States Navy Photograph.
The British Antarctic Expedition, 1910-13

Following his return\(^2\) from the Discovery Expedition, Scott was bestowed with promotion and honours, although he was probably hoping to have another attempt at reaching the South Pole. His lectures attracted large numbers of people, and his book, “The Voyage of the Discovery” was successful. Yet he brooded over the relief-ship controversy and other problems until the worst one of all came in 1909: the news that Shackleton had marched within 97 miles of the Pole. Shackleton had also gone back on his word, and made camp at Cape Royds near the Discovery’s old base, because adverse weather prevented him from landing where he had planned. Shackleton’s heroic failure resulted in admiration and a knighthood, and drove Scott into making his second expedition.

Scott’s British Antarctic Expedition, 1910-13 was announced on 13\(^{th}\) September 1909, with the main objective being “to reach the South Pole, and to secure for the British Empire the honour of that achievement”. Scott also planned to “take advantage of his unique position and opportunities to study natural phenomena”. At about the same time there were plans for American, Japanese, and German attempts at reaching the Pole.

Various Empire Governments gave substantial grants, but raising the funds required was again difficult, and Scott was still campaigning as the Terra Nova headed to Australia and New Zealand. In Melbourne he heard that Amundsen was heading for Antarctica as well.

Amongst the men selected\(^3\) were thirteen scientists (although not all were pure scientists) – indicating Scott’s determination that this journey should have academic respectability. If he had taken fewer men he could have saved money on them and on their equipment. But the enthusiasm of the young scientists enhanced the atmosphere of the expedition, and the work that they produced laid the foundations for Antarctic science. The Polar Party was still hauling their precious rock collection to the end.

There was meticulous planning for the scientific and polar parties. First, the winter quarters were established early in January 1911, and then supply depots laid before the winter. A ‘Western Party’ explored the Dry Valley area, and an ‘Eastern Party’ were to winter over in King Edward VII Land. However, when the Eastern Party found Amundsen in the area, they decided to land at Cape Adare instead, thus, in February 1911, becoming the Northern Party. Three members made an horrific winter journey to Cape Crozier in an attempt to solve the puzzle of the Emperor penguin life history. The Polar Party and support teams set off around the end of October, 1911.

The Terra Nova, after landing the Northern Party, left for New Zealand. She was to return the following summer, 1911-12, with extra stores and provisions – including new sledges, more dogs, and 7 mules\(^4\). All going well, she would ferry the scientific parties to different locations for short periods, pick up the victorious Polar Party and everyone else, and bring them all back to New Zealand. If that did not happen, she was to make a third voyage in 1912-13 to complete the Expedition.
Between the First and Second Voyages

The *Terra Nova* returned to Lyttelton on the 1st April 1911, safely ending the First Voyage. She had battled her way into the deep south, survived storms and pressing pack ice, unloaded the stores, ponies, dogs, and materials for the huts at Cape Evans and Cape Adare. She had farewelled Captain Scott and his party, promising to return the following austral summer. Now she had earned a spell in dry dock for some well-deserved maintenance.

On 10th July, the *Terra Nova* headed north on a New Zealand Government survey. Under the command of Lieutenant Pennell, the crew included William McDonald, who had just signed on. Between the Three Kings Islands and Cape Maria van Diemen, a series of soundings was made to correctly chart the 100 fathom line. Seven hands were employed to take each sounding, usually a five minute procedure. The ship was stopped about every twelve minutes for this purpose. After dusk, dredging was often carried out, with a “fine collection of marine floating life” obtained by biologist Lillie.

On one occasion, rough weather and choppy seas prevented the crew returning from Great King Island when the whale boat could not be brought in close enough. The sailors had to swim back to the *Terra Nova*, while the theodolite and other gear was hauled aboard on a line.

When the *Terra Nova* reached Lyttelton in mid-October, the crew was instructed to take fourteen days leave, after which preparations would commence for the Second Voyage.

Mid-November saw the ship back in dry dock, where her hull was scraped and cleaned, and given “a good coating of tar below the waterline.” Shipwrights put in strengthening beams and made repairs where necessary. The crew overhauled the running and standard rigging and did general refitting. ‘Coaling’ was to start within a few days: 500 tons of Westport and Blackball coals was to last the distance to the Antarctic and back.

On 26th November, Pennell took the ship out to sea for two days to make compass adjustments and magnetic observations.
The *Terra Nova*

Scott’s ship of his 1901-04 expedition, the Discovery, was unavailable for the 1910-13 expedition, so the *Terra Nova* was bought and refitted. The *Terra Nova*, a three masted barque, was already familiar to Scott, as she was one of the relief vessels sent to rescue the expedition members when the Discovery was frozen in.

Built in Dundee in 1884 for the Arctic whaling fleet, the 744 ton *Terra Nova* had an oak hull fourteen inches thick. Her bow was solid wood, nine feet thick with iron sheathing to cope with ice conditions. Her dimensions were: length 187 ft, width 31 ft, and depth, 19 ft. She had one funnel, a single screw propeller, and a foremast at the bow, a mainmast in the centre, and a mizzenmast at the stern (rear). The foremast and mainmast each supported three square-rigged sails: main sail (lowest), topsail, and topgallant sail. The staysail is a triangular fore and aft sail extended on a stay (support rope).

The *Terra Nova*, as a member of the Royal Yacht Squadron, Cowes, flew the White Ensign. This was partly a matter of prestige, as it cost the expedition a considerable entrance fee, but made the naval members feel at home. The practical advantages, though, meant that she was exempt from Board of Trade regulations for merchant ships (she had been registered as a steam yacht); so the Plimsoll mark was “painted out”, and the stores crammed aboard.

Nautical terms:
Poop=stern
Aft=nearness to stern
Abaat=nearer to stern
Port=left, if looking forwards  Starboard=right
Stem=main upright at bow, to which sides are joined.

Knots: unit of ship’s speed equivalent to one nautical mile per hour

Navigation through the ice pack was planned from high up in the crow’s nest, a barrel lashed to the main topmast, with a rail and canvas windshield extending two feet above its upper rim. The officer of the watch would ‘con’ the ship, shouting directions to the helmsman on the poop, ninety feet below. Dennistoun wrote of climbing up to the “Crows nest at 130 ft – “thundering good exercise, splendid view, very snug comfy place.” And later, on 1st January, “the rigging frozen and icy and the swell was not nice – you feel it far more up aloft of course – but I wanted to fly my pennant from the *Terra Nova* on New Year’s Day in the Antarctic.”
Roll Call

The crew signed the following document.¹¹

Agreement and Account of Crew

"....on a voyage from London to the Antarctic Regions calling at any port or
ports....expedition shall be under the sole control of the Commander, and the Master.
Officers and crew hereby agree to obey all lawful commands....all matters shall
thereupon devolve upon Lieutenant E.R.G.R. Evans who is appointed second in
command....Each member of the crew takes part in the hazard of this expedition as
regards his person and his property entirely at his own risk. Every member of the crew
shall assist in unloading, transferring and taking on board stores and goods and
erecting and pulling down any structure on shore..... and will do all work required to
further the cause and object of the Expedition. Any of the Crew shall if required leave
the said ship and remain in Antarctic regions with the wintering party....

"And it is further agreed that neither Officers or Crew shall write or divulge any
information either documentary or otherwise concerning the Expedition which they
may acquire whilst serving under this Agreement, nor shall they take photographs or
sketches, nor make any collection of specimens or other articles including wild
animals and their skins.....provisions contained in this clause shall remain in force for
a period of two years after the return of the Expedition to the United Kingdom.
It is further agreed that all clothing provided to the Crew belongs to and shall remain
the property of the Commander.

"And the Crew agree to conduct themselves in an orderly, faithful, honest and sober,
manner, and to be at all times diligent in their respective Duties, and to be obedient to
the lawful commands of the said Master...."

Watches

The ship’s watches¹ were divided into seven duties: noon to 4.00 pm: afternoon
watch. 4.00 pm to 6.00 pm: first dogwatch. 6.00 pm to 8 pm: second dogwatch. 8 pm
to midnight: first night watch. Midnight to 4.00 am: middle watch or midwatch. 4.00
to 8.00 am: morning watch. 8.00 am to noon: forenoon watch.

Second voyage crew (diary of William McDonald)

Seamen
Williamson, Thomas S.         Petty Officer, R.N.
Parsons, Frederick            Petty Officer, R.N.
Bailey, Arthur S.             Petty Officer, 2nd class, R.N.
Skelton, James                Able Seaman
McDonald, William             Able Seaman
Paton, James                  Able Seaman
McLeod, Thomas F. Able Seaman
McCarthy, Mortimer Able Seaman
Leese, Joseph Able Seaman
Heald, William L. Late P.O., R.N.
Balson, Albert Leading Seaman, R.N.
Mather, John Hugh Petty Officer, R.N.V.R.
Cheetham, Alfred B. R.N.R., Boatswain

Stokers
McKenzie, Edward A. Leading Stoker, R.N.
McGillon, Thomas Fireman
McDonald, Angus Fireman
Brisendon, Robert Leading Stoker, R.N.
Burton, William Leading Stoker, R.N.

Engineers
Williams, William Chief Engine-room Artificer, R.N., Engineer

Carpenter
Davies, Francis E.C.

Cook and Steward
Archer, W.W. Chief Steward, late R.N.
Neale, W.H. Steward

Biologist
D Lillie

Secretary
F Drake

Pennell, Harry L.L. Commander, R.N.
Rennick, Henry E.de P. Lieutenant, R.N.
Bruce, Wilfred M. Commander R.N.R.

Caretaker of dogs & ponies
Dennistoun, James R. In Charge of Mules in Ship

13 Siberian dogs, 7 India transport mules
Crew members: W. McDonald at back right
(McDonald family)
ACCREEDMENT AND ACCOUNT OF CREW.

A. 3.

The crew are to be accounted for in an orderly, faithful manner.

And the crew are to be accounted for in an orderly, faithful manner.
LYTTELTON TOWARDS CAPE ADARE

SECOND VOYAGE

Log of the Barque Terra Nova on a voyage from Lyttelton, New Zealand, to the Antarctic.

Lat.
43.52 S.
Long.
173.13 E.                                Friday 15th December 1911

Left Lyttelton at 6.15am, quiet send off. Fine weather, made all sail at Midday, shortened sail at 4pm. Furled everything except fore and afters at 7pm. Dogs and ponies doing well.

Sat.
16th. Took in all sail at 1.30am. Made all sail again by 8am. Weather fine. Light S.W. breeze.

Sun.
17th. Crew engaged variously. Lat. 45.25 S. Long. 172.28 E. Fine weather; head wind, took in all sail at 5am. Took a sounding at 6am, depth 1300 fathoms. Being Sunday no unnecessary work is done, Church Service held on Quarterdeck at 9.30am. Let all Staysails at 1pm. Sounded again at 6pm, depth 600 fathoms, conditions unchanged up to Midnight.

Mon.
18th. Lat. 47.44 S. Long. 173.25 E. Fine weather, calm sea, took soundings at 8am, found bottom at depth of 130 fathoms. Wind headed us at midday so stowed all our sails, crew engaged variously. Sounding taken at 5.30pm, depth 230 fathoms. Nothing else of note. Lat. 49.40 S. Long 171.45 E.

Tues.
19th. Fine weather, made sail 4am, shortened sail 5.30am, took soundings at 9am, bottom at 288 fathoms, slight snowfall at 10am, took in and furled all sail at Midday. Weather unsettled during remainder of day. Lat. 51.48 S. Long. 172.18 E.

Wed.
20th. Fine weather, heavy southerly swell on water. Ship rolling heavily, made fore and aft sail at 8am, took soundings at 9am, depth 363 fathoms, crew engaged variously, ponies and dogs doing well. Hauled down sail to swing ship at 5.30pm and set sail again at 6pm. Took sounding at 8pm depth 1700 fathoms. Nothing else of note up to midnight. Lat 53.35 S. Long. 173.06 E.

Thurs.
21st. Fine clear weather, very cold, all fore and aft sail set, took soundings at 9am, depth 3000 fathoms, crew engaged variously, ship rolling heavily, wind freshening towards midnight. Nothing else of note. Lat. 55.16 S. Long. 173.02 E.
Fri.
22nd    Fine weather, sea calm, made all square sail at 3.30am. Wind dies away at 4am, clewed up all sail. Ship rolling heavily, crew engaged variously, set all sail at midday to fresh breeze from the S.W. Furled mainsail at 6pm. Took soundings at 7pm, depth 2900 fathoms, we have the misfortune to lose 2800 fathoms of sounding wire through the latter breaking. Furled all sail at 8pm. Lat. 57.30 S. Long. 174.30 E. This is the probable date that Capt. Scott will reach the South Pole.

Sat.
23rd    Fine, clear, cold weather, made sail at 7am. All sail set by midday to S.S.W. wind. Took in and furled all square sail at 4pm. Lat. 59.6 S. Long. 177.
Sun.
24th   Cold, fine weather, all fore and aft sail set, church service held in cabin at 9.30am. At about 12.15pm rather a commotion was caused by the cry, "away life boat's crew" the ship stopped and went full speed astern for about 100 yards, all hand ran aft, where we found that "Nigger" the ship's cat, had fallen overboard in trying to elude one of the dogs, the lifeboat was sent away, the crew were, Balson, Paton, McLeod and Skelton with T. Williamson, coxswain. They succeeded in rescuing the cat, the whole evolution, from the time the alarm was given till the boat was hoisted occupying about 14 minutes, there was rather a big swell on at the time, "Nigger" seems little the worse for his submersion. No unnecessary work is done today. All hands engaged from 4 to 5pm shelling peas for Christmas Dinner, wind freshening, sea rising towards midnight. Latitude. 60.39 S. Longitude. 178.39 W.

Mon
25th Dec
Christmas Day

Strong wind, rough sea, all fore and aft sail set, sighted our first iceberg at 2am, passed another berg on ? at 4am, passed another one on Starboard Bow at 7am. Church service held in cabin at 9.30am. heavy snowstorm at 11am, being Christmas day no unnecessary work is done, all hands received, Cigars, Cigarettes, Fruits, Cake, sweets, Beer etc. Large Conical shaped iceberg in sight at 11.30am, passed same at 2pm. Wind gradually rising as day advances, sea rough, ship taking water aboard, very cold. No change in these conditions up to midnight. Lat. 62.10 S. Long. 184.23 E.

Tues
26th  Boisterous weather, with occasional heavy snowfalls, numerous icebergs in sight, crew engaged variously, staysails all set, ship entered stream ice pack about 4pm. Wind and sea greatly moderated. Very cold. Great ice pack in sight at 6pm, ship stopped to take soundings at 8.30pm. Depth 1801 fths. Steaming slow all night as weather is foggy with occasional snow. Lat. 63.31 S. Long. 186.37 E.

Wed.
27th  Fine, clear, very cold wind, with snow at intervals, numerous icebergs in sight, passed a huge berg at midday, estimated length about a mile, crew engaged variously, all fore and aft sail set, dogs and ponies doing well. Cut the Cake today, general verdict is "Excellent". 5.30pm passing through lane of ice pack which stretches from E to W, as far as eye can see, 7.55pm stopped to take soundings. Depth 1120 fathoms, nature of bottom. Diat oozes. 8.40 pm swung ship for variation of Cardinal points, 8.55pm, proceeded, passed several icebergs, weather worse, one showing signs of "screwing", pack very rotten and large lanes between. S 13 deg. E  Lat. 64.56 S. Long. 184.30 E. Dist 9101 miles.
Thurs 28th Clear cold weather, passing through light rather rotten pack, with big lanes between, but getting gradually closer, about a dozen bergs in sight, one tabular, about 1½ miles long. Pack getting close, but still pretty small. 8.55am stopped for soundings, 7800. Sounding unable to be completed owing to ice closing in on ship and fouling sounding wire. 9.50 proceeded. Mules taken out of stalls and exercised on deck, stalls cleaned and disinfected. Midday pack as in morning but of fresher aspect, 13 bergs in sight, mostly worn and weathered. Dog watch, pack becoming less rotten, closer with fewer lanes. Floes still fairly small, not exceeding 30 to 50 ft square, few bergs, small and much weathered. Crew engaged variously all day, no sail set. Latitude 66.20 S. Long. 177.11 W. We have now 408 miles before we reach Cape Adare. 8pm pack very dense. Distance made good 91 miles.

Fri 29th Clear, cold weather, stopped engines at 2am on account of heavy pack, much heavier than on previous day, floes of larger area, covered with recent snow. Two small bergs in sight (tabular), crew engaged icing ship, took in four tons of water, exercised dogs on ice floe. Midday:—floes very close together, average height above water, one foot. Conditions impassable for ship, hummocky appearance, only two bergs in sight, both very distant, took soundings in afternoon 2177 fathoms. Midnight. Latitude 66.46 S. Long 182.12 E. Distance made good 32 miles.

Sat 30th Conditions same as Friday, crew engaged trimming coal, exercising mules, clearing rudder from floes, in pack.

Sun 31st Weighed ice anchor, hoisted 7F.T. Staysail at 4.30pm. Set lower topsails at 5am, set foresail at 5.45am, proceeded at 8.45am, 50 revolutions, hoisted main upper topsail 9.20am, pack breaking up under N. wind, rotten but fairly heavy lanes appearing in all directions. Forenoon, pack in floes from 100 feet square, no icebergs in sight. 2pm furled main upper topsail, pack varying very much in size, but fairly heavy. First dog. Pack very rotten, narrow lanes, some this years floes in pack. Midnight.
Monday.
1st January 1912

Midnight to 3am, pack rotten and thin covered with snow. Many lanes, pack very heavy at edges, one small berg in sight, about 20 ft high. 3.30 pack rotten but very thick; probably bay ice one floe quite 20 ft thick 3.30 left pack. Confused swell on water, set fore and aft sail at 7am. Set square sail at 11am, clued up all square sails at 2.30pm, wind falling no ice. Dogs. Passing through thin lanes of small loose pack - passing through rotten bay ice in pack form. No bergs. During last three or four days numbers of "snowy petrels" have kept company with ship, these birds are pure white, a little smaller than a pigeon, and are only to be seen in antarctic regions. Cape pigeons, Penguins, Seals are numerous. Latitude. 68.44 S. Long 178.55 E. Distance to Cape Adare 270 miles. The sea is thickly strewn with small rotten fragments of very heavy ice, some showing signs of considerable pressure. Nothing close enough to call real pack. No bergs.

Tuesday.
2nd. Easterly wind, all fore and aft sail set, yards braced round to port torch at 3am, no ice. 9.30am stopped and sounded in 1887 fathoms with bottom of volcanic rock, proceeded at 10.20am. course, S 5 deg E. (standard) afternoon: - all fore and aft sail set, no ice: - 9.15pm. Sighted land bearing S.S.E, shortened sail and hauled in patent log at 9.40pm, stopped and sounded at 10pm in 1300 fathoms, proceeded at 10.42 and streamed patent log. 11.10pm set all fore and aft sail, no ice, Lat. 70.02 S. Long. 175.31 E. (midday)
Wed. 3rd.

Two small isolated bergs in sight, all fore and aft sail set, took in all fore and aft sail at 5.00am. Off Cape Adare at 9.0am. Looking for lead through pack 11.30am one mile North (true) of Camp Ridley, heavy pack all round the Moraine, and more setting out from Bay. Communication with shore being impossible, ship hauled out and stood off beyond pack. Very heavy pack off Cape Adare and entrance to Robertson's Bay, with many large bergs and much pressure.

Later: - Pack quickly moving with out going stream, very heavy, many new floes. 1pm, trawling for biological specimens with agassiz, heavy pack moving with tide. 5pm, Let go starboard Anchor in 7 fathoms on North Moraine of C. Adare, Boats communicate with shore and commenced embarking stores. 6.30pm, boats returned owing to ice pack closing in, weighed anchor and proceeded as required to keep ship in clear water. We had much satisfaction in learning, on going ashore, that the men were in the best of health and had done some very valuable work, after being camped at Cape Adare for over 12 months. Midnight, steaming as required to keep in clear water.

ROBERTSONS BAY

Thursday.

4th. Waiting for Pack to clear inside Robertson's Bay, trawled with Agassiz in 60 fathoms, crew icing ship from floe during forenoon. 1.45 proceeded to enter pack to close Camp Ridley, pack inclined to separate, lanes forming. Came to with starboard anchor in 7 fathoms at 4.30 on north side of moraine, eddy round point keeping space on north side of moraine clear of ice, otherwise bay is filling rapidly with ice, all boats ashore embarking gear and party: - 7.20 having embarked the six men and the main part of stores, we weighed anchor, and proceeded to leave Robertson's Bay, and to penetrate pack, pack outside Robertson's Bay very heavy. Cape Adare abeam at 9.20pm, ships head N 6 deg E. 11.25pm steering east, (standard). Midnight pack extending 5 or 6 miles from shore, very heavy in parts. Pack ice in every direction as far as eye can see, Midnight sun is beautiful to night. (Borchgrevink's Hut, Hanson's Grave)

OUTSIDE ROBERTSONS BAY

Friday.

5th Jan. Cape Adare bearing S 28 W. Ships head S 70 deg E, Pack loose but heavy and firm, cleared pack at 2.30am, ship skirting outer edge. Cape Adare, bearing S 86 deg W, ships head S 77 deg E, stopped and took sounding at 8.50am, depth 282 fathoms (?coral) no ice proceeded at 9.15am. Running with pack on starboard hand, fairly loose generally at 11am. Noon, passing narrow strips of heavy bay ice, showing signs of much pressure. Stopped and took soundings at 1pm, in 292 fathoms, proceeded at 1.20pm, ship passing round, and through lanes of loose heavy pack, stopped and took soundings at 5.40pm, 308 fathoms (mud) proceeded at 5.45pm running with pack 1 to 2 miles on port hand. Passed belt of pack at 9.30pm, clear till 10.35, took soundings 280 fathoms (mud) intense pack course altered to N 70 E to avoid pack. Midnight.
Saturday.
6th  Skirting edge of ice pack, one iceberg in sight, passed through belt of pack at 3.35am, stopped and took sounding in 291 fathoms. Skirting pack on starboard side till 5.50am, then pack right ahead. Swung ship for variation at 8am. Running with pack on both hands, moderately heavy ice, floes medium from 20 to 50 yds in diameter, fairly close with empty spaces and lanes?. Took soundings at 11am, 289 fathoms (mud) proceeded at noon, entered pack at 1.50pm. Loose pack of heavy bay ice, mostly recent but partly decayed. Clear of pack at 3pm, sounded 4.30pm, 252 fathoms (gravel), proceeded 4.30pm, entered pack 6.15pm, pack of fresh bay ice, growing thicker as shore is approached, proceeded to clear pack at 8.40 pm, we are now one mile due south of position at 7.30pm. Midnight running with pack on starboard hand steering S 45 deg E.

Sun
7th  Light S.W. wind, pack of solid floes averaging about 3 ft thick, with older ice occasionally, cleared pack at 2am, line of pack all along Western horizon at 4am. Swinging ship posn from 5.25 to 6am - running with pack on starboard hand, fairly heavy but with lanes and spaces in parts, stopped ship and sounded at 7.40am, in 228 fathoms. Forenoon, pack heavy with lanes, loose on the outskirts. Stopped and took soundings at 2.35pm in 203 fathoms, (rock) and proceeded at 2.45. Sighted Franklin Island at 3pm. Running with pack on port hand, and rounding pack, took soundings at 6.25pm depth 251 fathoms, proceeded at 6.52pm, steering S 72 deg E. Stopped and took soundings at 10.55 in 270 fathoms (mud), proceeded at 11.55 S 9 deg E, heavy fog over water at 11.20 so slowed ship down to half speed. Midnight passing occasional rotten pack, and scattered bits of pass glacial ice?, there are occasional patches of peculiar yellow spume on water. The dogs and ponies are doing well, although they are beginning to look rather "scraggy". Lat. 75.15 S Longitude. 168.37 E (midday).

Monday
8th.  Passing through loose detached ice, small generally with few large bergy bits all fairly rotten and soft. Ran up to large heavy floes of new ice 6 to 10 ft thick, so stopped ship 2.10am. Proceeded at 8.25am. Pack loose but heavy, some large floes, one about 5 miles by two. Stopped and took soundings at 11.5am, 365 fathoms, we are now in allmost clear water. Proceeding at 12 noon. Position of pack about, took soundings at 2.18pm 400 fathoms, proceeded at 2.28, took soundings at 5.0pm, 642 fathoms, proceeded 5.20, we are now running alongside the famous Drygalski Glacier, a marvellous accumulation of ice, starting at the top of Prince Edward Mountain and running at least 40 miles to sea, with wonderful regularity. One would allmost suppose it had been modelled by man, height about 160 ft. Took soundings at 7.30 in 414 fathoms (pebbles), proceeded at 7.42. At 9.0pm we made fast alongside fast sea ice in vicinity of Evan's Cove, Terra Nova Bay and landed Mr Campbell's party of six men, who are going on a six week sledging journey for Meteorological observation. Started away at 10.45pm - crew exercised dogs on ice. Midnight, killed my first penguin.
TERRA NOVA BAY

Tuesday 9th
Proceeded at 12.40am, loose pack floes small and not very solid, heavy pack in distance all round, set fore and aft sail at 5.50am. Down fore and aft sail at 7.40am and came to alongside ice floe and commenced watering ship, proceeded at 5.56pm, as required to elude pack ice, heavy snow. Stopped for snow to lift at 7pm. Took soundings at 8.10, 362 fathoms, proceeded at 8.20. Eastern Extreme of Drygalski Glacier bearing S 4 deg E. Passing through large sheet floes of ice some over a mile in length, solid in parts where screw? has taken place, stopped at 11.35 on account of snowstorm making lanes invisible. Midnight.

Wednesday 10th
Proceeded at 2.50am, skirting pack, some large floes but not very solid, stopped at 8.10am to obtain a seal, proceeded at 8.35. Pack in strips of fairly heavy floes, at 10am. Stopped by pack at 12.5 noon, took soundings, 303 fathoms (mud), engaged trimming coal, banked fires. Latitude 76.3 S. Longitude 165.55 E.

Thursday 11th
Ship fast in pack, all hands trimming coal – midday, set head sails, foresail and F. Lower topsail. Pack breaking up considerably, but still very solid probably ice of all ages mixed together, pack opening up with wind. 10.40pm, proceeded slow ahead, proceeded at ½ speed at 10.50, occasional stoppages for very heavy floes. Lat 76.2 S Long 165.55 E.

McMURDO SOUND

Friday 12th
Cleared ice pack at 1.30am heading N 35 W centre ?large of pack very heavy, new bay ice, after clearing pack at 1.30am, skirting edge of pack, passing through many bergy bits, swung ship at 7.15 for variation of cardinal points only, stopped at 9.7 and sounded in 403 fathoms, proceeded at 9.18, braced up starboard tack, furled all square sail, set all fore and aft sail at 10.10, took in all sail at noon. Heavy pack to west, to all appearance close. Ship passing through narrow streams of ice, stopped and took soundings at 1.25pm 418 fathoms, proceeded at 1.33. Skirting edge of pack, very hummocky. 3pm at edge of pack stretching as far as can be seen into McMurdo Sound and towards the Western Shore. No open water visible in either direction, exercised mules on deck, stopped at 10.50pm and sounded in 487 fathoms. Banked fires.

Saturday 13th
Banked fires, waiting for ice to open, brought fires forward at 3am proceeded 3.30am, trawling for Biological specimens, stopped and banked fires 3.30pm, proceeded at 5.45 at 40 revs? to keep clear of pack and close Cape Bird, passing through heavy pack, evidence of pressure on floes, proceeded at 50 revs? at 10.10pm. Stopped and sounded at 10.30pm 308 fathoms, proceeded at 10.45pm as required for rounding Cape Bird, took soundings at 11.30pm, in 240 fathoms, pack very heavy in parts.

Sunday 14th
Skirting edge of pack, heavy bay ice, one or two small bergs and good deal of slush. Dredging in 250 fathoms, finished dredging and stopped at 1.30am, proceeded as required for penetrating pack at 9am, pack of very heavy bay ice, all bay full except near Bird Peninsular, fast ice encountered 9 to 10 miles north (true) of Cape Royd. 11.30am made fast to fast ice and banked fires, church service held in Cabin at 9.30am. Being Sunday no unnecessary work is done, ice breaking up in vicinity of ship at 10pm.
Monday
15th  Same conditions prevail up to midday, when we let go from floes and proceeded, but have to make fast again at 12.45 noon. The ice being heavier than we anticipated, engaged icing ship from floe, and trimming coal, ice beginning to break away at 10pm, so fires were brought forward at 11.30pm. Latitude 77.15S Longitude 166.6 E at midday.

Tues
16th  Let go from ice floe at 1.0am. Dredging with agassiz but ran into too deep water at 2.30am so hauled in trawl, took soundings at 2.45pm in 478 fathoms (mud) and proceeded to westward to inspect pack. Made ship fast to ice again near old position. Fast ice in bay to 7 or 8 miles north (true) of Cape Royds. Sound almost clear of ice within 2 or 3 miles of Bird Peninsula, but all western side as far as can be seen is heavy pack. Crew engaged trimming coal. (Watch only).
Latitude. 77.15 S. Longitude. 166.0 E.

Wednesday
17th  Ship frozen in, hands engaged trimming coal, took soundings at 10.30am 418 fathoms (mud). Exercised mules on deck during afternoon. Latitude 77.22 S. Longitude 165.22 E.

Thursday
18th  Proceeded at 1am, as requisite for closing Granite Harbour, pack at 1am of fairly light floes but after 2.0am very heavy and new bay ice even surface and fully 5/6th submerged, mainly up to 25 or 30 yards diameter, fairly loose however, and allowed us slight headway until 4.0am, when we stopped and banked fires, pack being too heavy to proceed, hands trimming coal, pack of heavy bay ice all fresh fast ice, 1 mile to westward.

Friday
19th  Pack as on Thursday, hands trimming coal, tried to proceed at 1pm, but failed to move in pack so stopped and banked fires at 1.40pm, exercised dogs on floe during afternoon.

Sat.
20th  Hands trimming coal and cleaning ship, exercised mules on deck from 1 to 2 pm, brought fires forward at 2 pm and proceeded at 2.55 pm to gain open water, stopped again at 5.25 pm, banked fires, pack having closed up again.
Latitude 77.11 S. Long. 164.13 E.

Sun.
21st  Condition unchanged up to 11.35 am, when we proceeded at half speed, fast ice extending 5 to 7 miles offshore, on Western side of sound, otherwise pack of heavy uniform floes of bay ice, extending in every direction as far as can be seen from crows nest except for open water showing in McMurdo Sound in line with Mount Discovery, from ships position. Particularly bright ice blink to N. (true), pack apparently being pressed in fast ice in this direction working way through pack at Midday, very heavy bay ice, floes from 10 to 20 feet thick, entered open water at 5.10 pm, stopped and took soundings in 221 fathoms, (mud) proceeded at 5.20 pm, at half speed, to examine pack in direction of Cape Evans. 7 pm. Middle of sound clear of ice except for lanes from the fast ice against the Western shore to about 12 miles from shore. From here to Cape Bird and N & S along that side as far as can be seen is heavy pack, floes showing moderate pressure. 7.40 pm stopped for soundings 261 fathoms, proceeded at 8.0 pm N33 W 50 revs. Latitude 77.16 S. Long 164.42 E. I have much pleasure in recording here that I got rated to able seaman today. 11 pm All entrance to McMurdo Sound can be seen to be full of pack, so we secured to fast ice, and banked fires.
Mon. 22nd. Conditions unchanged up to 10.30, when our hawser parted so we took soundings in 359 fathoms (mud) and proceeded slow at 11 am, proceeded at 50 revs at 11.55, made ship fast again at 12.30 noon in previous position. Lat. 77.26 S. Long. 165.17E. Crew engaged trimming coal, able seaman McLeod met with a slight accident during the afternoon, while trimming coal in the Bunker. A basket of coal was accidently dropped on top of him from deck, inflicting severe bruises on the head. He was medically treated by Lieutenant Pennell, and he did not find it necessary to go off duty.

Tues. 23rd. At 6 am the ice to which we were secured broke away so we proceeded to examine pack in direction of Cape Royds and then proceeded towards Granite Harbour. Took soundings at 9.30 am in 207 fathoms (mud), and trawled with agassiz set dredge. Swung ship at 12.30 noon for Horizontal and vertical vibrating needles. Heavy pack as before across entrance to sound, centre of sound clear from pack ice to fast ice, proceeded towards main pack at 3 pm and secured ship to sea ice at 4 pm, and commenced watering ship at 4.30. Fast ice on this side showing much pressure, the whole surface being covered with ridges of broken floes, thrown up on the ice. Perceptible swell on water all the afternoon and during 1st dog, ice began to breakaway rapidly to southward of ship, finished watering ship at 9.30, boilers and tanks being full, took soundings alongside in 141 fathoms (gravel). Lat. 77.13 S. Long. 164.18 E (noon).

Wed. 24th. Let go from ice and proceeded as required at 1.20 am to close Granite Harbour, fast ice running N. & S. (true). Pack comparatively loose, but of fairly heavy floes, opening and closing with tide. Dense fog at 3.40 am so stopped and made fast to sea-ice of Granite Harbour. Head of Granite Harbour distant 30 miles, fog lifted at 4.30 am so proceeded and made fast to fast ice at 8 am, exercised dogs on ice at 10 am. While taking soundings Lieutenant Rennick had the misfortune to jam his left hand in machine, sustaining rather severe injuries. Brought fires forward at 12.20 noon as the ice appears to be breaking away in large quantities in Sound, let go from ice and went ahead with engines at 12.50 but secured again at 1.30 pm, being unable to make any headway, exercised mules on deck during afternoon, proceeded slow at 8.40 pm to clear pack, took soundings at 9.30 pm in 146 fathoms, (hard) proceeded and dredged with agassiz, obtaining a good haul of marine life, stopped at 11.30 pm, shut steam off engines.

Thurs. 25th. Fires banked, ship drifting up to 3.50 pm when we are getting too close to pack ice so proceeded towards Granite Harbour to examine ice. 4.0 pm, in Lat 76.56 S Long. 164.12 E off pack about 3 miles from edge of fast ice which therefore extends 17 to 18 miles from general trend of Coast to Northward, pack extends from fast ice towards Beaufort Island as far as can be seen. McMurdo Sound is clear of real pack but large number of floes drifting down North, apparently there has been a big break away of fast ice, took soundings at 4.15 pm in 159 fathoms (mud), trawled with agassiz, obtaining many unique biological specimens, and proceeded to Southard to clear floes drifting from that direction. Cleared ice pack at 11.52 pm, and steered for C. Royds.
Fri.
26th  Passing through much jumbled pack, afterwards smallish lead pack from 2 to 3 ft thick. At 8 am we secured ship alongside fast ice to Northward (true) of Cape Royds. At 10.45 am the ice can be seen to be breaking away in large sheets as far as can be seen, so fires were brought forward, and we proceeded to Southard (as possible) at 11.45 am. The ice is now drifting out of McMurdo Sound, first in very small floes about 3 ft thick, later in very large floes, some as much as 1 mile in diameter. Ship proceeding through lanes in level floes, but is stopped and made fast to large floe at 3.20 pm, all lanes having closed up, got under way again at 7.30, but are brought up by large flows at 8.30 pm, made fast again.

Sat.
27th  Let go at midnight, and proceeded short distance to escape ice pressure, stopped and made fast again at 0.50 being unable to get further, ship fast to very large floe about 2 ft thick and over 2 miles in diameter, floes with lanes (partial) and cracks all round, all moving seaward, laid out another ice anchor ahead at 6 am, anchors drew at 8.5 am, so steamed slow to keep ship in comfortable position, and maintain position in lane, 2 very large bergs visible to seaward. Ice all on the move at midday and changing position so put out ice anchor, occasionally steaming up to it, to ease strain on hawser as weather is very squally, proceeded again at 10.16 pm, making for open water, stopped at 11.30 pm and set fore topmost staysail and fore lower topsail, stopped by large floe at midnight, a few very large floes around us with few very narrow lanes, much broken pack on horizon.

Sun.
28th  Very large sheets of ice over a mile in diameter and from 2 to 3 ft thick, practically no lanes, but open water can be seen about 3 miles away towards Cape Bird and Beaufort Island, ice all travelling Northward: - Foresail and fore lower topsail set. Furlied sail at 9 am. Divine Service at 9.30 am. Braced head yards round and set fore lower topsail at 11 am, set spanker at midday. Laid out ice anchor furled sail at 5.15 pm, there being no way on ship, laid out 2nd ice anchor at 8.15 pm, and braced yards, sound condition unchanged up to midnight.

Mon.
29th  Very little movement in ice, ship fast to large floe, two anchors, proceeded slow at 8.50 am, but get held up again, all hands out on the ice clearing passage for ship, very heavy floes, close together, some of considerable size. Proceeded short distance and get jammed again, all hands rolling ship: - all hands assemble in the waist, running from one side to the other at intervals, making the ship roll and so crushing her weight on surrounding floes, noon. Granite Harbour bearing N 68 E, secured ship again at 12.30 noon. Exercised mules on deck. The position we have just vacated is now surrounded by immense floes 4 to 6 ft thick, on east side of this area, are lighter floes much broken up but many still of very large size, several large icebergs visible, proceeded again at 4.40 pm, watch engaged clearing ice from ship's path, stopped and laid out ice anchor at 8.5 pm. I may note here that we had a very narrow escape from being crushed in the ice, only very prompt action on the part of Officers and men saved the ship. Latitude 76.44 S Longitude 164.30 E.
Tues.
30th. No apparent movement in ice, watch engaged clearing lane of loose floes and removing projecting edges from sides of lane. Proceeded towards Cape Bird at 6 am, forcing our way between two large floes, at 9.30 am ship leaves lane and enters smaller and lighter pack, watch engaged clearing passage for ship, at 10.30 am we passed an iceberg 75 ft high, slightly tilted. Midday, passed through loose pack all fairly small but some very heavy bits occasionally, cleared ice pack at 3.20 pm, proceeded 60 revolutions steering N 35 E, secured ship alongside floe at 5.10 pm and iced ship for boilers, took soundings at 5.40 pm in 309 fathoms (mud), proceeded as requisite at 6.50 pm for closing Granite Harbour. Beaufort Island Bearing E N (true) 22, on south side of main pack which we have just left. Pack between Beaufort Island and Cape Bird as seen from this position, but clear to horizon to Southard and westward. Set Fore & aft sail at 8.10 pm, took in Fore & aft sail at 9.20 pm, closed pack of Granite Harbour. 9.28 pm eased to 40 revs. 9.30 pm outer edge of ice pack is 30 miles from head of Granite Harbour, bearing west (true), but pack is just narrow strip, fast ice being a mile or so inside it, being impossible to reach Granite Harbour, we cleared for Cape Evans 60 revs. Set fore & aft sail at 11.45 pm, no pack after altering for Cape Evans. Latitude 76.41 S. Longitude 164.26 E.

Wed.
31st. Furled fore & aft sail at 2 am, passing through isolated bits of pack and skirting streams of very heavy rotten ice, fairly loose. Pack between Cape Bird and Cape Royd extending 2 or three miles into centre of McMurdo Sound. Pack again encountered about 2 miles North of Latitude of Cape Royds, the fast ice (near C. Royds) coming to about 1 mile North of the Cape, took soundings at 8 am in 416 fathoms (mud), proceeded alongside fast ice and made fast at 8.10 am therefore in centre of sound at edge of fast ice in latitude 77.30 S Long. 165.30 E. 2 miles south of latitude of Cape Royds. Noon, pack setting on ship, so proceeded and made fast again at 12.15 noon. Banked fires, edge of fast ice about two ft thick, level surface, hard snow, pack setting along edge of fast ice from Cape Royds, heavy rotten floes of no very great size, pack setting on ship at 2.20 pm, let go and proceeded further west, made fast again at 2.30 pm, pack gradually setting on ship so weighed anchor and proceeded as requisite, stopped at 8 pm to keep ship clear of pack, sound ed in 441 fathoms. Diat Ooze. Landed on ice during afternoon and killed large crab eater seal, which we found to be eating his coat so was worthless for anything.

Thurs.
1st Feb. Ship drifting, loose pack of small heavy floes, small isolated ice-bergs in pack, engines as required to keep ship clear of pack, crew engaged trimming coal, pack moving a little with tide, but on the whole, pressing against fast ice, fast ice as yesterday. Exercised mules on deck during afternoon. Latitude 77.28 S. Longitude 165.35 E.

Fri.
2nd Ship drifting, engines as required to keep ship clear of pack, proceeded slow at 10.30 am, stopped and took soundings at 11.40 am in 439 fathoms (mud, stones). Ice in much same condition as Thursday. In the afternoon we made an attempt to capture a "killer" whale, but unfortunately the harpoon broke, on the discharge of whale gun, probably due to intense cold. Engines as required for closing fast ice. Latitude 77.24 S. Longitude 165.32 E. The main depot of the expedition can now be clearly seen on Cape Evans, a string of flags was observed to be flying from the hut, but it was impossible to distinguish what they meant as distance was too great.
Sat.
3rd    Made ship fast to ice-edge about 2' SW (true) of Cape Royds, ice at edge about a foot thick and fairly soft. 3 am, pack coming west from Cape Royds, entirely filled bay, ship lying in eddy and was not surrounded until main body of pack had passed outside her, once surrounded, all stationary, pack generally small 4 to 6 ft thick, covered thickly with snow. We can now just discern the roof of Shackleton Hut above Cape Barrens. Mount Erebus is observed to be ejecting heavy clouds of smoke. We are now about 7 miles off the hut. About 5 am two sledges were seen to be coming towards the ship, they got alongside about 6 am one containing Demetrey and Dr Atkinson, the other Mr Myers and Dr Simpson, each sledge was drawn by a team of 7 dogs. They brought the orders left by Capt Scott before his departure south. We were very pleased to hear that they were all in perfect health, and had only one mishap of any consequence, namely, the loss of six ponies through the ice giving way beneath them. Capt Scott and two others had a very narrow escape from being drowned. A party escorted Capt Scott and staff as far as Beardmore Glacier which is 250 miles of the South Geographical pole. From here Capt Scott continued his journey accompanied by 7 others, as there is only four men to be in the final dash for the pole. Capt Scott will probably send four men back, when about 100 miles off the pole. This party is due back in the Depot between 5th and 12th of this month when we will hear the latest. All hands engaged all day taking a Ballast, as we are lying a full two miles from Ross Island it is very hard work drawing sledges across the ice which is covered with about 1 ft of snow.

No dogs going south, ponies destroyed at foot of Beardmore Glacier

The Ballast is very heavy being the matter ejected from the volcano Mount Erebus. All hands recalled to the ship at 4 pm, as a huge iceberg is setting down on us, fires are drawn forward. Rather an interesting event took place about 7 am this morning when "Fluffy" one of our cats gave birth to five kittens, three died later.
Sun. 4th. Ship in same position, it not being found necessary to move. Divine Service held at 9.30 am. At 11 am a party left the ship for the Hut at Cape Evans taking with them six of our dogs. They returned to the ship about 2 pm after a rather tedious journey on ski, leaving the dogs ashore. Mr Nelson, (biologist) accompanied our men back to the ship, he will probably stay aboard to-night as there is a rather dangerous crack in the ice about two miles off shore.

Mon. 5th. No change in ship's position, bergs to N.W. (true) moving in tideway and colliding with much noise, ice pack passing from E to W, about two miles off, a few small icebergs with it, towards midday the ice is to be seen breaking away in small patches, engines slow ahead, steaming to anchor ship and about three miles of flee broke away owing to a strong southerly Buster. Later, hove to, under easy steam and spanker. Midnight. One of the kittens died.

Tues. 6th. Hove to under spanker, engines slow ahead, and as required to clear floes, furled spanker at 2.30 am, braced main yards to starboard tack, braced yards round and put ship on port tack at 4.0 am, pack drifting out of sound, with several small bergs, one large tabular berg close in to Bird Peninsula. Hands working in hold.

Wed. 7th. Steamed up to fast ice again, and made fast about ¾ miles off the hut, and proceeded to disembark dogs and mules, all landing in perfect condition, hands engaged during rest of day slogging stores ashore, doing on an average 4 journeys, 24 miles about, which is pretty good going with loads averaging 150 lbs per man over very hummocky ice.

Thurs. 8th. Turned to at 6.45 am and continued landing stores, nothing of importance occurring, finished work at 8 pm. Mount Erebus emitting dense clouds of smoke in the evening, this has generally been noticed to be the forerunner of a Southerly Gale. Slight northerly swell on water, ice cracking in all directions to within about 400 yards off the hut.

Fri. 9th. Conditions unchanged, hands engaged slogging, slight southerly wind, ice breaking away in vicinity of ship.

Sat. 10th. Commenced work at 6.30 am and continued up to 9 pm, (slogging) wind rising towards midnight, several large ice-bergs off Cape Royds. One tabular, large floe about a mile square, broke adrift from fast ice.

Sun. 11th. Weighed ice anchor and got under way at 5 am to keep clear of ice which is being blown out of sound by heavy northerly gale, hove to and engines as required to keep clear of ice during remainder of day. Divine Service at 9.30 am, no unneccessary work carried on today.
Mon.
12th   As the gale has considerably lessened we made fast once again to fast ice about 1-3/4 miles off the hut, and continued our work disembarking stores and slogging them ashore, we have three men unable to take part in this work, owing to stiffness in two cases and a sprained foot in the other. Able Seaman Paton, while on his way to the hut came across and captured a fine large Emperor Penguin, but was rather taken aback when the Captain took charge of it for the "expedition". He vows he will never catch another.

Tues.
13th   Commenced work at 6.30 am and continued up to 3 pm when we proceeded along the edge of the sea ice, our reason for getting this way was—Dr Atkinson and Demetrey are to make their way across the fast ice to Hut Point, each to have charge of a dog team. The ship is to keep them in sight until they are safely across the ice. At Hut Point they will probably meet the party which accompanied Captain Scott to within 150 miles of the Pole and all being well will proceed themselves to meet Captain Scott on his way back and conduct him to the Hut again. Hands stopped work at 9 pm. Ice cracking and breaking up in vicinity of ship.

Wed.
14th   Continued sledging at 6.30 am, but owing to ice breaking away in large floes, only made two journeys and got underway at 3.30 pm and made for open water off Cape Royds, when we stopped and drifted, with engines as required to keep clear of ice. Strong northerly wind with occasional snowfalls.

Thurs
15th   Got underway again at 1.30 am and headed for fast ice to continue stores, but on arriving there we found the ice in a very bad condition, so steamed away for Butter Point which is on the western side of McMurdo Sound. We are in hopes of landing some stores at the Depot there and taking the western party of men aboard the ship. This party consists of Mr Taylor, Mr Gran, B Ford, and Mr Debenham, who have been surveying all the western Mountains. We arrived at Butter Point about 8 am and proceeded to land stores at the Depot. Here we found a note left by Mr Taylor, saying they had passed by on the morning of the 14th and were making their way towards Hut Point (Discovery's Hut) having seen nothing of the ship since the 20th January and thought something untoward had happened to her. We got under way again at 10 am and made our way slowly along the Coast and sighted the party at 11.30 am and succeeded in taking them and all their gear aboard without mishap. All the party were in the best of health and spirits and were very glad to be aboard ship again. Proceeded at 12 noon for Cape Evans, but could only go slow owing to heavy blizzard from south. Wind rising as day advances.
Part 2

Diary of A.B. William McDonald, Second Voyage of the *Terra Nova*
Cape Adare and environs
Map showing early Antarctic exploration, published 1909 (McDonald family)

*Terra Nova* in the pack ice (Canterbury Museum)
Departure of the Second Voyage

Two days before departure, friends of the crew visited the vessel, many of them bearing “comforts” for the Antarctic and homemade foodstuffs, such as Christmas cakes.

Next day, the wharf was bustling with activity. General stores, perishable foodstuffs and 150 carcases of frozen meat were loaded. The seven Indian mules and thirteen Siberian dogs sailed from Quail Island in the Purau, and boarded the ship to the delight of a large number of spectators on the wharf. The animals “now presented a very healthy appearance”, according to The Lyttelton Times the following day.

The first plan for the voyage was to head to Cape Adare and pick up Lieutenant Campbell and his Northern Party, who were landed there in February 1911. Next, the Terra Nova would proceed south along the coast to embark Debenham and his Western Party, who were to have been in the vicinity of the Drygalski Glacier carrying out biological and geological research. The ship would then make for Cape Evans, “and should Captain Scott be successful in his dash for the Pole, and return in time, the main shore party will be taken on board….and the Terra Nova’s return may be…. about the end of April. The return of the Terra Nova to New Zealand will be looked forward to with the utmost interest, not merely because of the friendships that have been made with the crew from time to time, but more so from a scientific point of view. With Japanese, Norwegian, and British expeditions in the field, with the object of making a dash for the Pole, the contest may prove an exciting one….Captain Scott’s expedition was well equipped for the great task before it.”

Early in the morning of the 15th December, huge volumes of smoke rose from the Terra Nova’s funnel, signifying an imminent departure. The engineers topped up the fresh water tanks with another fifty gallons, and then called for every available bucket, can and tin to be filled as well. Amongst the yelping of the Siberian dogs on the decks, “one could hear the tapping of the keys of the typewriter. The appearance of a well-filled mail bag showed that the crew had had a busy night with their mails, but this was their last opportunity of writing for many months.”

The crew shook hands with the few enthusiasts on the wharf, the gangway was taken ashore, and shortly after six the tug ‘Lyttelton’ escorted the old whaler from her berth. At the call of the Mayor of Lyttelton on the tug, three hearty cheers were given for the plucky explorers. On the cliffs below the Godley Head lighthouse, two ladies waved consistently, their identities revealed by the telescope. Another hearty “three cheers” resounded as the tug turned homewards with three short blasts from her whistle. The Terra Nova dipped her ensign and steamed steadily on her voyage to the Antarctic. At a quarter to eleven the signalman at Adderley Head reported that she was out of sight.
Sounding

Soundings on the Terra Nova were taken using the Thomson machine, which had been donated by its inventor William Thomson (later Lord Kelvin), and James White. The weighted end was a brass tube with a valve, connected by metres of piano wire wound on to a reel by machine. The tube, covered with tallow, would sink vertically to the mud in the sea bed and bring up several inches of deposit. Sometimes thermometers were attached to measure sea temperature at different depths.

Dennistoun noted that hauling in the wire only took a quarter or half an hour using the machine, rather than at least two hours manually.

Fathom=approximately 1.8m (2 yards or 6 feet)

Diatom ooze

Diatoms are microscopic algae found in both freshwater and marine ecosystems. “Diatom ooze” was the well-named blob of Globigerina which was brought up in the sounding tube or tow net.

Lillie, biologist, found that in the Ross Sea, many of the diatoms had not decomposed. 48 samples were taken on the Second Voyage: an increasing amount of plankton was found as they journeyed south. “The diatoms became so numerous as to choke the meshes of the net after it had been fishing only 5 minutes. In the middle of the pack ice the diatoms were much less, possibly due to ice floes shutting out sunlight or to an alteration in salinity caused by melting of the ice.”

Scott observed that “a tow net is filled with diatoms in a very short space of time, showing that the floating plant life is many times richer than that of temperate or tropic seas. These diatoms mostly consist of three or four well-known species. Feeding on these diatoms are countless thousands of small shrimps (Euphausia); they can be seen swimming at the edge of every floe and washing about on the overturned pieces. In turn they afford food for creatures great and small: the crab-eater or white seal, the penguins, the Antarctic and snowy petrel, and an unknown number of fish.” He assumed that the fish were plentiful, as the men captured one on an upturned floe, and saw several, each about a foot long, swimming away under a floe. “Seals and penguins, and probably skuas and petrels, capture the fish.”

The Agassiz trawl was an 8 feet net, developed by Alexander Agassiz (1835-1910)
Ship’s cat

Nigger the cat was an accomplished sailor, having survived the voyage from London prior to the initial voyage of the British Antarctic Expedition. One of the crew had made him a little canvas sling to sleep in. Dennistoun\textsuperscript{18} mused that Nigger had many wives and many foes in Lyttelton. He was a lucky cat on this occasion, rescued and revived with a little whisky, but his luck ran out towards the end of the Second Voyage.

Christmas Day and Sunday Services

On Christmas Day, “Frankie” (Davies) led the singing of ‘Noel’, ‘Wenceslas’, and a third hymn. There was a lesson and a few prayers, before presents were opened. The dogs received an extra biscuit, and the mules had bran mash for lunch.\textsuperscript{10}

All hands received 2 pint bottles of beer, 50 cigarettes, 25 cigars, oranges, apples, nuts, and sweets. After Christmas Dinner, which included turkey, plum pudding, and mince pies, there was a sing-song under the foc’sle. It was a jolly evening, with everyone merry and bright. Lieutenant Bruce and the 2\textsuperscript{nd} Engineer (Horton) played banjos, and there were “one or two decent voices”.\textsuperscript{19}

A short Church Service was held every Sunday where possible. Hymns were sung, sometimes to the accompaniment of the gramophone. Two gramophones had been donated by the Gramophone Company: one for the Terra Nova and one for the Cape Evans hut. The record collection included hymns and popular singers.\textsuperscript{20}
The Indian Mules

The ‘ponies’ were mules. On the first voyage, nineteen Manchurian ponies had been taken to the Ice, but only ten remained at the start of the journey to the Pole. They had suffered from the long voyages firstly to Lyttelton, then through the stormy Southern Ocean, before enduring the harsh climate of Antarctica. When Oates recommended that mules would be more suitable than ponies, Scott wrote to the Indian Army Headquarters, requesting seven to be sent on the Second Voyage.

The Indian Government donated the mules and equipment as their contribution to the Expedition. The mules were a cross between an ass and a hardy Tibetan pony, all of different colour. Indian Army Transport had trained them on the snow slopes of the Himalayas, and put them on rockers for a few hours each day to get them used to ship motion. The Lyttelton Times wrote that “Their outfit has been carefully selected. Their rugs are of thick felt, faced with waterproof canvas. The leg coverings are of felt, faced with leather. Eye shades, and head pieces, with smoked glass goggles, have been made for them as a safeguard against snow blindness. The head collars and shackles are lined with thick felt, and the tethering chains are of weldless steel wire, covered with thin felt and leather.”

On one of his frequent visits to the Dennistouns of Peel Forest Station in South Canterbury, Captain Harry Pennell mentioned that he needed someone to take care of the mules on the voyage south. Jim Dennistoun volunteered, and headed to Quail Island in Lyttelton Harbour where there was board and lodging for the expedition members. “You understand, I hope, that we are unable to pay you, though, of course any expenses incurred would be paid by the expedition….money has slipped away….” wrote Pennell. There followed a list of clothing, footwear, linen, and blankets, and “2 coils of absolutely reliable alpine rope.”

Frank Davies, shipwright and carpenter to the expedition, built stables either side of the forehatch, between the galley and the ice house, which gave shelter from the seas.

Dennistoun wrote a colourful account of feeding the mules on board ship. Thrice daily, at 7.30, 12.30, and 6.30, he squeezed into a narrow dark passage tucked between the stores way down inside the ship. “At lunch they have plain oat sheaf chaff. Morning and evening they have ½lb of oats and ½lb of bran mixed with it per mule. They also get 1½lb of linseed oil cake (broken up) a day. And as much water as they like before each meal. They use ½ bucket each on average. I put this stuff in a big tin bath and mix it up well and then carry it up in 2 buckets – unless rolling pretty hard. I can manage two all right, especially now as I am getting pretty expert. Then there is a steep narrow ladder leading on to the deck and about 50ft to go to the stables…” “It is splendid to see them (the mules) as the ship rolls. They sway backwards & forwards on ship, draw in their heads and lean back against their tails; whilst those opposite put out their heads and sway forward to lean against their chests. As she rolls back they reverse their order.”
Mules continued

The mules were moved out on to the deck while their stables were cleaned and disinfected. They were very fit, behaving very quietly, and most rolled on the deck which was strewn with cinders. Lal Khan (Jack) was rather obstreperous and “refused to go back in, so the Skipper blindfolded him with a red handkerchief and many hands pushed him back.”

Since the ponies had suffered from sore tongues when their metal feed boxes became very cold, Davies had wooden feed boxes made for the mules. But the mules gnawed them down to the iron brackets, and he had to make more from empty cases. “I coated the boxes liberally with stockholm-tar to discourage them – they liked them better!” “Mules appeared more intelligent than the horses – up to all sorts of tricks and could kick in any direction. There was a distinct leer on their faces as they got one home. At night when the ship was quiet they would stamp on the deck of their stalls and make an awful din, preventing the watch from getting sleep.”

New Year’s Day

Dennistoun25 was woken by the members of the first and middle watches, who were making “a great din with tin kettles and a Norwegian Fog Horn – a fearsome thing-and other ghastly instruments of torture. I leapt out of bed thinking it was 4am, my watch. So my joy was great to be able to turn back to a warm bed for another 4 hours – a good omen!”

Patent Log

A patent log31 recorded the speed of the ship. It was shaped like a small torpedo with fins and spun round as it was towed from the stern. Revolutions were counted on a register. It became common from about the mid 19th Century.
Northern Party

The six men of the Northern Party were Lieutenant Victor L. A. Campbell, Raymond E. Priestly (geologist), G. Murray Levick (Surgeon), George P. Abbott (Petty Officer, R.N., Frank V. Browning (Petty Officer, 2nd class, R.N.), and Harry Dickason (Able Seaman, R.N.).

The Northern Party was originally known as the Eastern Party, with the intention of exploring King Edward VII Land. However, when the Terra Nova reached the Bay of Whales early in February 1911, everyone was astonished to find Amundsen’s ship alongside the fast ice. Amundsen encouraged Campbell to winter there, but Campbell decided against it, and instead, later that month, the Northern Party landed on Ridley Beach at Cape Adare. They erected a hut in which they spent the next eleven months, exploring and carrying out scientific work. Priestly, assisted by Browning, studied the Adelie penguins, and discovered large numbers of small red insects living amongst the moss or sheltering on the underside of small stones. Pennell recorded that the “Cape Adare party were on the most friendly terms, it was an interesting question as to whether they would be on speaking terms or not; but as a matter of fact they are on most harmonious terms.”

Dennistoun marveled at the “great towering peaks showing above the horizon. They were “Sabine”, “Minto”, and “Adams”, all about 10,000ft and the highest of the Admiralty Range. The sight of the eternal snows and all making me as crazy and excited as usual….The ice here goes in and out of the bay with the tide….Abbott having a very cold nasty bath…..(difficulty) in keeping his feet and holding the boat from being carried out with the backwash…..They landed Frankie and I and got back to the ship only just in time…”

Davies records the pleasure of seeing the flag flying above the hut. “The Terra Nova hove-to about 1½ miles from shore. Very heavy surf was breaking on the beach, and ice threatened to hole the boat. Only one boatload of stores and specimens was transferred to the ship, before the pack ice forced her out to sea again.”

Dennistoun and Davies spent the night on shore. Dennistoun continues “Campbell and I in (reindeer) sledgering sleeping bags in the open air as there seemed no room in the hut…..Breakfast at 8 of bacon and penguin eggs, kept in snow for 2 months. They are quite good but have a horrid clear white and rather pale slightly pinkish yolk. Biscuits and jam and butter…..(The men) look as brown as natives and awfully fit and very pleased to get away to further fields to conquer….”

Later, wrote Davies, the Terra Nova “managed to get within a mile of the beach, and men and stores were swiftly loaded before the ice closed in again. The pack was very heavy all along the coast.” Their collection of rock specimens was collected at a later date.
Members of the Northern Party outside the Cape Adare hut.

(Canterbury Museum Documentary Centre)

The Northern Party had only four days on board ship before disembarking at Evans Coves further south. A six week exploration was planned, and on 9th January 1912 they landed on Hell's Gate Moraine, about a mile north of Evans Coves. Pennell and the crew helped drag the heavy loads across half a mile of sea ice and up the steep slope of a snowdrift. They landed only a minimum of spare food since Campbell did not want to delay the ship. Planned pickup date was to be the 18th February. If only they had known how heavy the pack ice would be....

(Completion of journey in Part 3)
Victoria Land, Cape Adare, and Ross Island

(Royal New Zealand Navy 1994)
Watering ship

“No ship need suffer for want of fresh water in these seas,” wrote Ponting during the initial voyage in 1910. “When the sea is several feet thick, the brine is pressed or frozen out of the ice that floats above the water, leaving it almost saltless. But many floes are hummocked with old pressure ridges, or with fragments fallen from bergs; these hummocks we always found to be perfectly fresh.” An ice-anchor, “a ponderous, hook-shaped bar of iron, with a few barbs cut near its point”, was firmly placed in the ice, in a hole dug out with crowbars. The ship was made fast to the floe, and “everyone set to with a will, taking turns with the picks and shovels, and in a few hours we had shipped ten tons of ice, which as fast as it came aboard, was cast into iron tanks, and speedily converted into water by a jet of steam from the boiler.”

Ice terms

Tabular berg – flat topped iceberg, usually calved from an ice shelf.
Ice floe – piece of floating sea ice, more than two metres across.
Fast ice – area of frozen sea attached to shore.
Brash ice – small ice fragments from sea or glacier ice.
Sea ice – general term for frozen sea.
pack ice – general term for concentrations of floating sea ice. Can be very open or very closed.
Ice blink refers to the white glare on the underside of low clouds indicating the presence of ice, which may be beyond the range of vision.

Water sky – the dark appearance of the underside of a cloud layer when it is over open water.
Leads – break of open water in the pack ice, through which ships can force a route.
Trimming coal

Pity AB McLeod, having a basket of coal dropped on top of him. Coal was ferried from the main hold to the bunkers on the poop by basket or barrow. Davies’s "it was a heavy and constant job, and we had not a great number of hands, so a case of roping in every spare hand."

Adelie penguins on the fast ice near Cape Evans. The Terra Nova in the background

(McDonald family)
Snow petrel\textsuperscript{34} \textit{Pagodroma nivea}

The pure white snow petrels have dark eyes and a dark bill. They are about 35cm long with a wingspan of about 85cm. Diet is mainly krill, with some fish, squid, and carrion found in areas with pack ice. Snow petrels, along with South polar skuas, breed further south than any other birds in the world, in extremely harsh conditions. They nest in colonies in rock crevices, at elevations of up to 2,400 metres.

Cape petrel\textsuperscript{35} (pigeon) \textit{daption capense}

A little larger than the snow petrel, cape petrels are easily distinguished by their black and white upper wing pattern. They forage mostly in inshore waters. Between April and August they fly north to the sub-antarctic, returning in November to breed. They build simple nests on small ledges, and have a lifespan of 15-20 years.

Penguin\textsuperscript{36}

Adelie and Emperor penguins are found in the Ross Sea region. The Adelies \textit{(Pygoscelis adeliae)} are about 70cm tall, black backed with white chest and throat, and nest in ice-free areas. Their preferred diet is krill, the shrimp like crustacean found in abundance in the Southern Ocean ecosystem. Emperor penguins \textit{(Aptenodytes forsteri)} are about 120cm tall, black backed with white chest and a distinctive yellow patch around the throat and ears. They spend their lives in the pack ice, feeding on fish. The males incubate eggs through the winter, huddling together on the ice or snow.

Scott\textsuperscript{37} wrote whimsically: “The Adelie penguin on land or ice is almost wholly ludicrous. Whether sleeping, quarrelling, or playing, whether curious, frightened, or angry, its interest is continuously humorous; but the Adelie penguin in the water is another thing: as it darts too and fro a fathom or two below the surface, as it leaps porpoise-like into the air or swims skimmingly over the rippling surface of a pool, it excites nothing but admiration. Its speed probably appears greater than it is, but the ability to twist and turn and the general control of movement is both beautiful and wonderful.”
Seals

they may have been one or more of the following types:

**Weddell seal**\(^{38}\) *Leptonychotes weddelli*

Weddell seals have dark backs, and mottled and white undersides. An average size would be about three metres long, weighing around 450kg. They breathe and enter the water through holes in the ice, and include krill and fish in their diet. This species is the most southerly breeding of all mammals, and colonies are generally found on coastal fast ice areas.

**Crabeater seal**\(^{39}\) *Lobodon carcinophagus*

A Crabeater seal’s coat is mostly medium brown when new, but fades over the year to a pale yellow colour. An average size would be 2.5m long with a weight of 220kg. Diet consists mainly of krill, with some fish and squid. Crabeaters are found in the outer edges of the pack ice, preferring to exit the water on to ice rather than land. Older Crabeaters may have very scarred hides, possibly from attacks by Leopard seals or Orcas. The seal “eating its coat” may have been scarred, or perhaps it had irritating parasites on the skin.

**Leopard seal**\(^{40}\) *Hydrurga leptonyx*

The Leopard seal is about three metres long, weighs around 350kg, and has a light coloured coat with dark spots. Diet is made up of krill, penguins, young seals (usually Crabeaters), fish, and squid. Leopard seals inhabit the pack ice, and usually capture their prey in the water.

**Orca (Killer whale)**\(^{41}\) *Orcinus orca*

Around nine metres and weighing on average nine tons, the orca is distinctively marked in a black and white pattern. They usually hunt in packs for fish, squid, sharks, seals, dolphins, and even baleen whales, including the Blue whale which is more than three times its size. The Orca, however, has no known predator.

Scott’s comments\(^{17}\) on whales: “The killer whale (Orca gladiator), unappeasably voracious, devouring or attempting to devour every smaller animal, is less common in the pack but numerous on the coasts.....the great browsing whales of various species, from the vast blue whale (Balaenoptera Sibbaldi), the largest mammal of all time, to the smaller and less common bottle-nose and such species as have not yet been named. Great numbers of these huge animals are seen, and one realizes what a demand they must make on their food supply and therefore how immense a supply of small sea beasts these seas must contain.”
Ballast

Taking on ballast was arduous, given the two mile sledging distance between source and ship. Ballast ended up in Lyttelton, where much of it was transferred to Kinsey’s property on Clifton Hill. (Mr Joseph Kinsey was Scott’s agent in New Zealand.) Some of this ballast has recently formed the base of a bust of Worsley, captain of Shackleton’s *Endurance*, in Akaroa, New Zealand.

Expedition members

Demetri Geroff had been recommended as the dog driver when Meares purchased the sledge dogs in Siberia. Edward Atkinson was ship surgeon, and a parasitologist. He took command of the Expedition during the winter of 1912 in the absence of Scott (dead), Lieut. Evans (recovering from scurvy), and Campbell (trapped with the Northern Party on Inexpressible Island). Cecil Meares was in charge of the dogs and ponies which he had purchased in Siberia. George Simpson was the meteorologist. Simpson and Meares, along with Ponting (camera artist), Clissold (cook), and Anton (groom), returned on the Second Voyage. Edward Nelson was a biologist, with a particular interest in invertebrate zoology. Harry Pennell served as navigator and director of the ship’s magnetic work. He commanded the *Terra Nova* when Lieut. Evans became a member of the shore party.

Disembarking at Cape Evans

The dogs arrived in good condition, “big and fat”, but only two proved to be any good at sledging. They had come from Kamchatka in Siberia and spent time on Quail Island at the same time as the mules. Their presence in New Zealand had been kept quiet under Scott’s orders, to safeguard his own polar plans when he heard of Amundsen’s intentions.

Disembarking after seven weeks on board, the mules rolled joyfully in a patch of soft snow. Shipwright Davies was to build stables for them and an annexe for the hut. As the *Terra Nova* was about three miles from Winter Quarters (Cape Evans hut), it was a tedious journey sledging the materials and tools over the snow. When construction was nearly completed, a blizzard blew the *Terra Nova* out of the Sound, but the sledging of stores recommenced on the 12th February. Unloading was interrupted again on the 14th, with large ice floes threatening to trap the ship. By the 15th the ice was very broken up, and Pennell steered the ship across the Sound to pick up the Western Party.

Cherry-Garrard documents the difficult ice conditions of the season: the ship had “continual fights against the pack-ice, while the winds experienced were very strong. On 13th January the fast ice at the mouth of McMurdo Sound extended as far south as the southern end of Bird Peninsula: ten days later they found fast ice extending for thirty miles from the head of Granite Harbour.”
Western Party

Four men comprised the Western Party: Frank Debenham (Geologist), Robert Forde (Petty Officer, R.N.), Tryggve Gran (Sub-Lieutenant, Norwegian N.R.) and T. Griffith Taylor (Geologist)

The Western Party\textsuperscript{44} aimed to explore the geology of the coast and hinterland of Victoria Land between Butter Point and Granite Harbour. Scott wrote instructions to Taylor, the Leader: “You will depart from Butter Point with provision as under:-

11 weeks’ pemmican.
10 gallons oil.
18 weeks’ remainder.
25 lb. cooking fat.

and make along the coast to Granite Harbour…..in case of an early break-up of the sea ice and your inability to reach the rendezvous, the ship is directed to search the coast south of Granite Harbour……You will, of course, make every effort to be at the rendezvous at the proper time, January 15, and you need not be surprised if the ship does not appear on the exact date……”

Scott’s instructions for the commanding officer of the Terra Nova were to then land this group at Evans Coves, and pick them up again on February 15.

After setting off from Cape Evans\textsuperscript{45} on 14th November 1911, the party reached Butter Point late on the 17th. Around Granite Harbour they collected interesting rocks and fossils, and discovered lichens, moss, and small insects in an area which the Australians (Debenham and Taylor) loyally and appropriately named Botany Bay. They constructed an impressive building from granite blocks, with a roof made from a sledge and biscuit boxes, and some time later, seal skins as well. Towards the end of their allotted stay, they observed that the Mackay Glacier Tongue had moved nearly a yard a day since they fixed a stake in it a month earlier.

The Terra Nova was sighted on 20th January 1912 and several more times in the next few days. As there was no sign of the ice moving away and allowing the ship to reach them, the four men retraced their steps to Butter Point. A little further south, on the 15th February, the Terra Nova picked them up. Debenham\textsuperscript{46} takes up the tale: ‘Were to have landed at Cape Evans at once but before we got there it came on to blizz and did so for three days. By that time we were driven out of the Sound and Pennell decided to go north and pick up Campbell’s party at once. We went north but had great trouble with pack ice and stormy seas. One Sunday we spent tossing about yet we were tied up to a floe and were icing ship; hard and awkward work.

Long before we got near Mt Melbourne, where we were to pick up the Northern Party, heavy pack ice and made a dash through it – took long time, glad to see open water beyond…..new ice…got thicker until ship couldn’t move, so it was ‘Full astern’. The screw whooped up to 80 revs – not a move. Stuck 24 hours with the ice freezing hard all the time. Pennell had us….rolling the ship and with Williams sitting on safety valve the engine got up to 90 revolutions and we gradually bored through it. After about 18 hours we came through.’
References

5. Lyttelton Times, 19/06/11, ‘Work with Overhaul of Terra Nova Completed’, p 6
9. Primrose, JB, ‘Drama of Terra Nova’s visits to Lyttelton’, The Press, date unknown (c 1950-60)
10. Dennistoun, JR Diary, 1911-12, 25/12/11
11. MS95, Canterbury Museum Documentary Research Centre, Christchurch, NZ
12. Lyttelton Times, 14/12/11, ‘Terra Nova’ Taking on Stores’, p6
13. Lyttelton Times, 16/12/11, ‘Terra Nova Departure for the Far South’, p4
16. Dennistoun, JR, Diary, 1911-12
18. Dennistoun, JR, Diary, 1911-12 28/12/11
19. Davies, Francis E.C. Diary, ‘With Scott - Before the Mast’ 1911-12, 25/12/11
21. Davies, Francis E.C. Diary, ‘With Scott - Before the Mast’ 1911-12, 15/12/11
22. Lyttelton Times, 14/10/11, ‘Mules now on Quail Island’
24. Davies, Francis E.C. Diary, ‘With Scott - Before the Mast’ 1911-12
25. Dennistoun, JR, Diary, 1911-12, 01/01/12
27. Quartermain, LB, 1967, ‘South to the Pole’, Oxford University Press, GB, p 283
28. Pennell, HLL, Diary, 04/01/12
29. Dennistoun, JR, Diary, 1911-12, 04/01/12
30. Davies, Francis E.C. Diary, ‘With Scott - Before the Mast’ 1911-12 03/01/12
44 Evans, ERGR, 1957, ‘South with Scott’, Collins, GB, p157-165
45 Quartermain, LB, 1967, ‘South to the Pole’, Oxford University Press, GB, p 255-60

31 Norris, Baden, Emeritus Curator Antarctic Collection, Canterbury Museum (personal communication)

McDonald, Alan and family (personal communication and photos)
Conclusion

I have researched a number of books and manuscripts of The British Antarctic Expedition 1910-13. In this paper I have included entries from members of the Second Voyage who kept a diary intermittently, and from those on the initial voyage who detailed life and conditions on board the *Terra Nova*. There is still much more research to be done for Parts 1 & 2, to round out the activities of crew and ship as they interacted with the shore parties, and for Part 3 in completing the voyage.