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Navigation on Shackleton's voyage to Antarctica

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On 19 January 1915, the Imperial Trans-Antarctic Expedition, under the leadership of Sir Ernest Shackleton, became trapped in their vessel *Endurance* in the ice pack of the Weddell Sea. The subsequent ordeal and efforts that lead to the successful rescue of all expedition members are the stuff of legend and have been extensively discussed elsewhere. Prior to that time, however, the voyage had proceeded relatively uneventfully and was dutifully recorded in Captain Frank Worsley's log and work book. This provides a window into the navigational methods used in the day-to-day running of the ship by a master mariner under normal circumstances in the early twentieth century. The conclusions that can be gleaned from a careful inspection of the log book over this period are described here.

Keywords: celestial navigation, dead reckoning, double altitudes, Ernest Shackleton, Frank Worsley, Imperial Trans-Antarctic Expedition, Mercator sailing, time sight

Introduction

On 8 August 1914, the Imperial Trans-Antarctic Expedition under the leadership of Sir Ernest Shackleton set sail aboard their vessel the steam yacht (S.Y.) *Endurance* from Plymouth, England, with the goal of traversing the Antarctic continent from the Weddell to Ross Seas. *Endurance* was under the command of Captain Frank Worsley (Fig. 1).

What transpired has become an epic tale of survival from the heroic age of polar exploration. *Endurance* became trapped in the pack ice of the Weddell Sea until 27 October 1915 when she had to be abandoned before finally sinking on 21 November. After camping on the ice for 165 days, the crew reached Elephant Island in three small boats on 15 April 1916. On 24 April, Shackleton, Worsley and four others embarked on a perilous 800 nautical mile (1,500 km)

passage in the 22½ foot (6.9 m) *James Caird* to seek rescue from South Georgia. It is ultimately a tribute to Shackleton's leadership and Worsley's navigational skills that all survived their ordeal.

Captain Frank Worsley's original log books and related materials are now in the collection of Canterbury Museum. Recent papers have examined the contents of the logs in detail. Bergman et al. (2018) describe the navigational methods used and how they were applied to successfully complete the voyage of the *James Caird*. The log pages from that crucial period were transcribed and replicated with full annotation. Bergman and Stuart (2018) examined the navigational methods that needed to be employed during the long polar night while trapped in the ice pack of the Weddell Sea. Out of sight of land, lunar occultations



Figure 1. Frank Worsley c. 1910. Stefano Webb Studio, Christchurch. Canterbury Museum 2010.27.1

were used to determine Greenwich Mean Time (GMT) and rate the ship's chronometers. Stars took the place of the Sun for fixing latitude and longitude. Bergman and Stuart (2019) examined the Sun sights and their reductions as recorded in the log around 21 November 1915 to conclude that the location of the wreck of *Endurance* is further south than the position of $68^{\circ}39'30''\text{S}$ $52^{\circ}26'30''\text{W}$ stated in the log and is subject to uncertainties of several nautical miles in both latitude and longitude.

The remainder of the log book, recorded during the period of normal operation from 8 August 1914 to 19 January 1915 when the *Endurance* became trapped in pack ice, is by comparison unremarkable. It does, however, provide an engaging and important historical window into the real day-to-day operation of the vessel and the navigational techniques as they were actually used on a vessel under the command of a master mariner in the early part of the twentieth century. From the entries it can be

deduced how on-board clocks were adjusted as the vessel moved west and what procedures were followed in obtaining time sights for longitude.

Celestial navigation guided *Endurance* from Plymouth via Madeira to Tenerife, through Cape Verde to Buenos Aires, then further to South Georgia and on to Antarctica. Many of the methods that Worsley employed are not those used or taught today. The standard noon sights and time sights have been described in detail elsewhere (Bergman et al. 2018), but during this period of normal operation additional techniques occasionally make an appearance. These are described here.

The section 'Formulas and Observations' describes the collection of navigational formulas, positions of key landmarks and hydrographic observations from earlier Antarctic expeditions that Worsley chose to place on page 1 of his log book. The section 'Passage to the Antarctic' gives a general overview of the observations recorded in the log during the early stages of the expedition. 'Celestial Navigation' briefly summarises the types of astronomical observations that were made during this part of the voyage. The section entitled 'Time Management Aboard Ship' deals with how clocks were adjusted as the vessel shifted in longitude and the procedures followed for taking time sights. 'The Ship's Log' describes types of patent logs used to track the distance sailed. The section 'Double Altitudes' describes a method used on a few occasions whereby two observations taken at different times are combined to determine both latitude and longitude. 'Mercator Sailing' describes how the course and distance to waypoints were calculated during the ocean passages.

Formulas and Observations

Page 1 of log book (Fig. 2) declares:

*Lieut F.A. Worsley R.N.R.
commanding s.y. Endurance
on a Voyage of discovery to the Antarctic
Work Book*

This is followed by a collection of formulas, positions of landmarks and observations from

previous Antarctic expeditions of the sea ice conditions they had encountered. The nautical chart symbols for "Rock with less than 6^{ft} on at LW [Low Water]" and "[Rock] awash at LW" are also noted. A statute mile is 5,280 feet (1,609 m) and an Admiralty nautical mile (NM) is 6,080 feet (1,853 m) in length. The handy distance conversions, "kts = 5 mls - 53 ft." and "13 kts = 15 mls" are given in which "mls" indicates statute miles, or 5,280 feet, and "kts" denotes Admiralty nautical miles (NM).¹ The denomination "mls" is, however, used for nautical miles in the rest of the log book.

Like any navigator of the time, Worsley carried copies of the Nautical Almanac covering the expected period of the voyage and other "navigation books". These included an epitome that contained the methods, formulas and tables required for sight reduction and course and distance calculations. Table 1 shows the collection of formulas considered to be important and that were collected on the first page of the log book. The right hand column gives the algebraic expression to be evaluated and the left hand column gives the form as written in the log.

Distance to visible horizon in nautical miles	
Dist: horizon = sq: root height in feet + $\frac{1}{7}$ in miles	$D = 1.15\sqrt{h_f}$ $\approx \sqrt{h_f} + \frac{1}{7}\sqrt{h_f}$
Distance off in nautical miles	
Height in feet $\times .565 \div$ angle in ' = dist in miles	$D = \left(\frac{10,800}{6,080\pi} \right) \frac{H}{\alpha}$
Sailings	
Mercator	
Log D.Long - Log M.D.L = Tan: Co. Sec Co. + Log D.Lat. = Log Dist.	$\tan C = D.Lon./m$ $D = D.Lat. \times \sec C$
Parallel	
Sec:Lat + Log Dep = Log D.Long Cos.Lat + Log D.Long. = Log Dep. Log Dep. - Log D.Long = Cos:Lat	$D = Dep.$ $= D.Lon. \times \cos L$
Middle Latitude	
Cos:M.Lat + Log D.Long - Log D.Lat = Tan:Co. Sec:Co + Log D.Lat = Log.Dist.	$\tan C = \frac{D.Lon. \times \cos M}{D.Lat.}$ $D = D.Lat. \times \sec C$
Longitude	
ϕ 's W ^{ly} Hour Angle + ϕ 's R.A = R.A.M. (S.T. P II) R.A.M. - Acc ^D M.S.R.A. = M.T.S.	$LST = LHA + R.A.$ $LMT = LST - (GST - GMT)$
Meridian Passage	
ϕ 's RA - SRA. (Precedg:Noon) = Aprox Time - Acceleration = M.T. ϕ 's Mer. Pass	

Table 1. Formulas as they are written in the log book (left) and their algebraic equivalents (right).

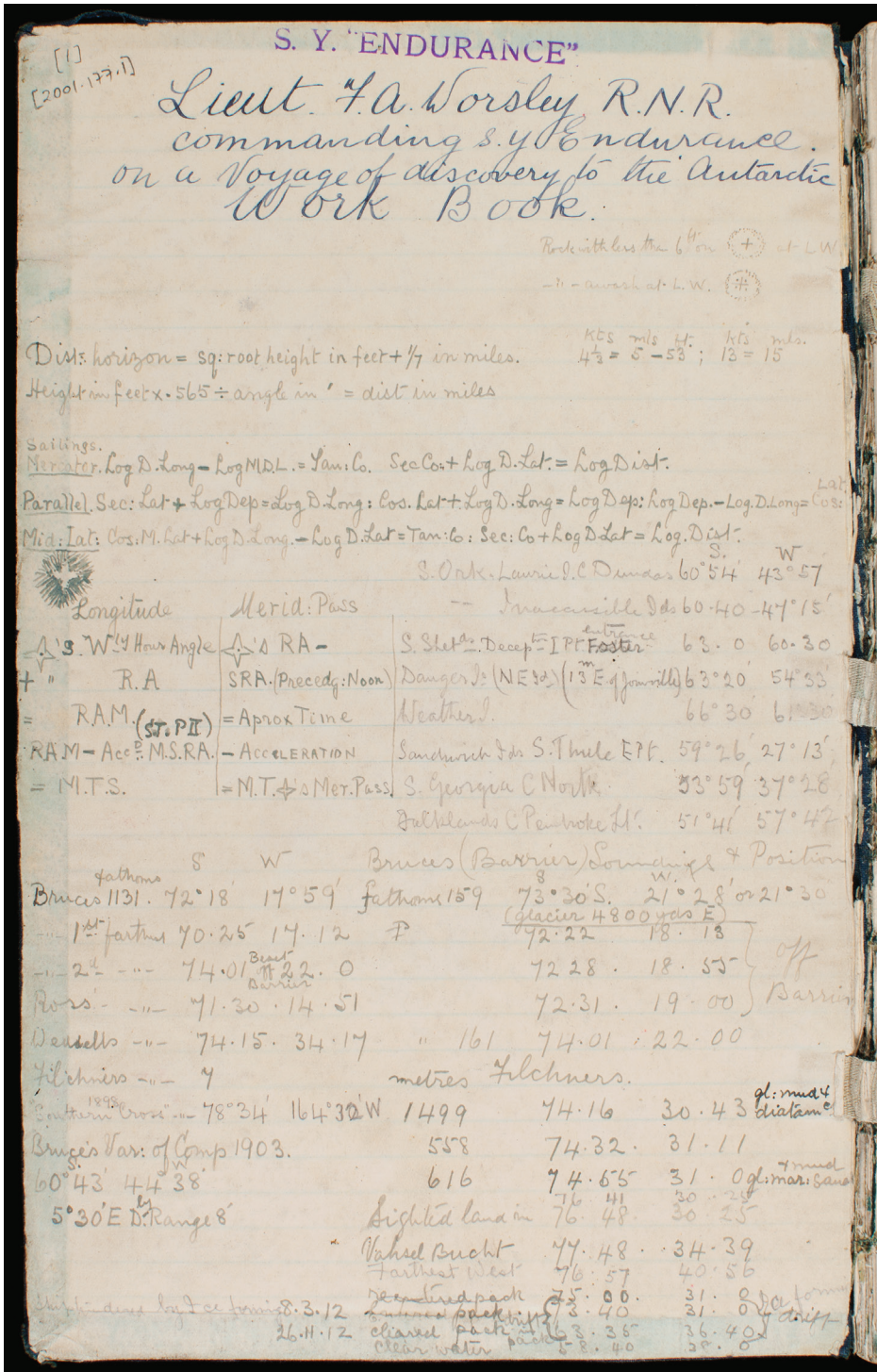


Figure 2. First page of Captain Frank Worsley's log and workbook giving a collection of navigational formulas, positions of key landmarks and hydrographic observations from earlier Antarctic expeditions. Canterbury Museum 2001.177.1

Unlike the noon sight and time sight reduction calculations (Bergman et al. 2018) the formulas listed might be needed from time to time but would not necessarily be used on a daily basis.

Distance to the visible horizon in nautical miles

This is the distance on the Earth's surface from the observer to the visible horizon. Conversely it is also the geographic range of visibility at which an object of known height may be seen by an observer at sea level. The height of the observer's eye in feet is denoted h_o . The distance of the horizon is primarily determined by the Earth's curvature but atmospheric refraction increases the distance over what is obtained from purely geometric considerations. The multiplicative factor of 1.15 may vary depending on the refraction model being used and is the one given in the *Admiralty Manual of Navigation* (1914: 64 Art.57.). The formula as written in the log is not analytically correct but may represent a rule of thumb that is considered 'close enough' that can be quickly evaluated without the need for multiplication or it may be shorthand for the correct formula.

The distance, D , to a lighthouse with a focal height of H_f feet above sea level that has just appeared on, or disappeared below, the horizon can be found by applying the formula to h_o and H_f and summing the results,

$$D = 1.15\sqrt{H_f} + 1.15\sqrt{h_o}$$

The height of the focal plane of the light is taken from published Light Lists or nautical charts.

Distance off in nautical miles

Using a sextant to measure the apparent angular height, α , of an object of known height, H_f feet, allows its distance off to be determined. The formula represents the application of simple proportions to relate the angle subtended by an object of known size to its distance from the observer under the approximation of small angles. The multiplicative factor, $10,800/\pi$ converts radians to minutes of arc and, as noted

previously, 6,080 is the number of feet in an Admiralty mile.

The formula can be used to determine the ship's distance from a coastal feature such as a lighthouse when its full extent is visible and its height is accurately known.

The formula does not apply for objects lying beyond the visible horizon. Worsley attempted to use it to determine the distance of Mount Percy on Joinville Island from Patience Camp on the Weddell Sea ice but rejected the result as being far too large (Bergman and Stuart 2018: 87).

The Sailings

The path of shortest distance between two points on the Earth's surface is the arc of a great circle, however, the course or direction to be sailed relative to true north varies continuously over the track making them somewhat complicated to follow. Mariners therefore favour a rhumb line or Mercator sailing in which the course remains fixed. Moreover, in many cases the extra distance involved is not significant. In practice over short distances, certain approximations can be applied which simplify and streamline the calculations. Each approximation defines its own particular 'sailing'.

The formulas are written in terms of logarithms, which is how they would have been evaluated in practice (Bergman et al. 2018: 27). In Worsley's formulas, Cos., Sec., Tan: is actually shorthand for the logarithms of these trigonometric functions that would have been extracted directly from tables. Other quantities appearing in the formulas, D.Lat., D.Lon., Dep., C, D, have been defined and discussed elsewhere (Bergman et al. 2018: 28).

Mercator Sailing

This is a path of constant course, C, between the point of departure and the destination and is plotted as a straight line on a standard Mercator projection chart. Such a chart has the property that it is conformal or angle-preserving, and hence bearings can be measured directly from it. In the log the full Mercator sailing calculation

is used to compute the course and distance over long tracks between waypoints while crossing the Atlantic to Buenos Aires, to South Georgia and on to the Antarctic.

M.D.L. stands for ‘meridional difference of latitude’ also known as the difference in meridional parts and sometimes denoted by m . The meridional part is proportional to the distance that a given parallel of latitude lies from the equator under a Mercator projection and its value in nautical miles would be obtained from tables in standard navigational texts of the time. For a spherical Earth, the meridional part for a given latitude, L , is

$$\text{MP}(L) = \frac{10,800}{\pi} \ln \tan \left(45^\circ + \frac{L}{2} \right) \quad (1)$$

where the factor $10,800/\pi$ is the Earth’s radius in nautical miles which are taken to subtend a minute of arc on the Earth’s surface. The M.D.L. for a track from latitude, L_1 , to latitude, L_2 , is $\text{M.D.L.} = \text{MP}(L_2) - \text{MP}(L_1)$.

The layout of calculations as they appear in the log is shown in Table 4.

Parallel Sailing

This is sailing due east or west along a parallel of latitude. It is useful if longitude cannot be reliably determined and was widely used when making landfall.

Middle Latitude Sailing

The scale of the Mercator projection varies with latitude but over relatively small distances that scale can be assumed constant. Middle latitude sailing uses the constant longitude scale factor derived from the average of the initial and final latitudes, hence the name. It is explained in detail in Bergman et al. (2018: 28).

The Middle Latitude formulas themselves are seldom used. They are seen in the log only in the calculation of course and distance between Elephant Island and South Georgia on 24 April 1916 just prior to setting off on the famous voyage of the *James Caird*. At other times, such as computing dead reckoning (DR) positions, traverse tables (Bergman et al. 2018:29) were used.

Longitude

Longitude by time sight of the Sun was a procedure that was performed at least once daily, weather permitting. The reduction procedure would be ingrained in the navigator’s memory and needed no special entry in this crib sheet of formulas. Longitude by time sight of a star or planet was done less often and the steps required are carefully set out. Examples of reductions of this type can be found in Bergman and Stuart (2018: 74) and the explanation there is given in terms of sidereal time, which is the natural time scale to adopt for sight reductions of stars and planets. The nomenclature that Worsley adopts was standard in navigation (Brown 1904) but to a modern reader may seem rather baroque.

R.A.M.

- = Right Ascension (R.A.) of the Meridian
- = Local Sidereal Time (LST)

M.S.R.A.

- = Mean Sun’s R.A. at Greenwich Noon
- = Greenwich Sidereal Time (GST) at Greenwich Noon

Acc^D M.S.R.A.

- = accelerated Mean Sun’s R.A.
- = GST
- = GMT + Acceleration + M.S.R.A.

M.T.S = Mean Time at Ship

The annotation (S. T. PII) indicates that the quantity M.S.R.A. can be found in the column labelled “Sidereal Time” on page II of the monthly pages in the Nautical Almanac (1914). In the above, Acceleration = $0.002738 \times \text{GMT}$, which accounts for the sidereal day being just $23^{\text{h}}56^{\text{m}}4.1^{\text{s}}$ long and hence sidereal time advances at a faster rate than standard solar time. Acceleration is obtained from tables by separately looking up the contributions for GMT hours, minutes and seconds and adding them together (Bergman and Stuart 2018: table 3).

In the above formulas, Greenwich Mean Time (GMT) is 0^{h} at noon which was the standard for nautical time keeping up to and including 1924.

The final formula gives an estimate of when a particular star or planet crosses the meridian and can therefore be used in a sight to fix latitude.

Only approximate times are initially required as ex-meridian corrections can be applied (Bergman and Stuart 2018: 73). When the exact time of meridian passage is required the acceleration is subtracted from the approximate result. In these formulas M.S.R.A. is abbreviated to SRA.

Soundings, magnetic compass variation and other observations made by earlier expeditions are given under the formulas. The referenced expeditions are:

Weddell: James Weddell 1823–1824

Ross: James Clark Ross 1839–1843

Southern Cross: Carsten Borchgrevink,
Southern Cross Expedition 1898–1900

Bruce: William Speirs Bruce, Scottish National
Antarctic Expedition 1902–1904

Filchner: Wilhelm Filchner, Second German
Antarctic Expedition 1911–1913

In addition it is known that Worsley had a copy of Nordenskjöld and Andersson (1905) but was dubious about the accuracy of its charts (Bergman et al. 2018: 33).

A position of 77°48'S 34°39'W is given for Vahsel Bucht, which is German for Vahsel Bay on the eastern edge of the Weddell Sea and was where Shackleton had planned to make a landing (Shackleton 1920).

Passage to the Antarctic

The Imperial Trans-Antarctic Expedition departed London's South West India Dock on 1 August 1914 (Worsley 1915: 3). After calling at Southend and adjusting the compasses, further stops were made at Margate and Eastbourne before arriving at Plymouth on 5 August. At noon on 8 August they departed Plymouth to begin the passage to Antarctica via Madeira, the Canary Islands, Buenos Aires and South Georgia.

Page 3 of the log records the shipboard events up to 12 August along with the ship's draft, weather conditions, the various species of starfish, sea urchins and bivalves trawled from the bottom, and sightings of humpback whales.

*Left S.W.India Dks London 9-30 a.m. Aug:
1st 1914*

*Draft F 12'.9". A. 13'.11" Called at Southend
adjusted*

*compasses. Margate & Eastbourne.
Proceeded Plymouth on
4th Aug. 5-30 P.M. Arr: Plym.^h 6 P.M. 5th
Aug.*

*Left Plymouth Noon Aug: 8th Sir Ernest
landed in Admirals*

*barge, ⚓ d Cawsand Thick weather & S.W.
gale. 9th Aug 4 a.m. pro-
ceeded on voyage (Draft F. 11'.7" A.13'.6")
against mod. SW gale.*

*2-30 P.M. Lizard N.3'. Put ship on port tack
set sail. 7-53 Wolf*

log 87

*Rk. S.E. 5' 10-25 Took dep^r St. Marys ^ bg
N48W.14' set co.S42° W. Error
18° W.*

*Aug: 10th light N^w airs High WS.W. swell.
10-35a.m. 48°.28' N. 6°56' W. Surf. Temp.
sample water & speed net*

*5.P.M. Shot Otter trawl in 70 fms. 180 fms
wire. Trawled*

*about 3^m & hauled in about 80fms (Echinus
acutus, Polyzoa (cellapora)*

*Ophiothrix fragilis, Ophiocoma nigra,
Luidia ciliaris, Pinna rudis*

*Specimens similar to Echinus acutus ground
E. of Rame Hd.*

*Aug 11th 7.5PM Surf. Temp & full speed
townet diatom sample
Several blowers (Megaplera) seen.*

*Aug 12th 10-25A.M. Surf temp, townets,
coarse, medium fine & very
fine.*

At 2.30 pm, the Lizard Lighthouse was sighted to the north and its distance determined by measuring its height as observed by sextant and applying the "Distance off in nautical miles" formula discussed in the previous section. At 7.53 pm, this procedure was repeated for Wolf's Rock Lighthouse when it lay 5 NM to

the southeast.

Worsley took departure off St. Mary's from the Isles of Scilly on 10.25 pm on 9 August 1914 and records the ship's log as reading 87 NM suggesting that it was probably set to zero at the anchorage in Cawsand Bay off Plymouth. The distance to Peninnis Lighthouse on St Mary's would have been found by noting the height of the eye when it disappeared below the horizon. Adding the geographic range of visibility of the lighthouse to the distance to the observer's horizon, both calculated using the "Distance of the visible horizon" formula, yielded 14 NM. The focal height of the Peninnis light is 118 feet (36 m) and working backward it is possible to determine the height of eye, h_p , that was being used in the calculation. The analytically correct "Distance of the visible horizon" formula in the form that it is given in the right hand column of Table 1 yields a height of eye above sea level, h_p , of around 2 feet (0.6 m), which from the deck of *Endurance* is unrealistically low. Applying the formula exactly as it is written in the log and in the left hand column of Table 1 gives h_p anywhere in the range of 6–11 feet (1.8–3.4 m), which is much more reasonable and suggests that this was the formula that Worsley was actually using in practice.

Inspection of the ship's log readings and course steered indicate that the bearing of N48°W is magnetic. The quoted 18°W error is the difference from the ship's compass reading from true and is dominated by the magnetic variation or declination. Residual deviation due to imperfections in the compass adjustment process had been reduced to within ½°.

Worsley lists the lengths of the various legs of the voyage on the second page of the log (Fig. 3). Also recorded is the time period over which each leg was undertaken and the actual distance sailed. The amount of coal remaining at key stages of the journey is also recorded.

The waypoints that Worsley used to chart a course for *Endurance* along with the periods over which they appear in the log are listed in Table 2. Their names are given in the form in which they can be found in the log and may

differ from the modern spelling or designation but in such cases the stated position allows the present day counterpart to be identified. Along with the location of the waypoint itself, the ship's position and date it first appears in the log is also listed. This information is used in plotting the rhumb lines in Figure 4.

In some cases different names are used for the same general location within the log page in Figure 3. These may be different again from the name used to refer to the waypoint in Table 2 based on the log entries. Thus Madeira/Funchal/Fora Island all refer to the same general location as do Tenerife/Santa Cruz in the Canary Islands and Saint Vincent/Bird Rock in Cape Verde. "Salvages" refers to a small group of islands between Madeira and the Canary Islands.

On 20 August 1914, at a distance of 120 NM from the Port Fora Islet waypoint for Madeira, double altitude sights and a latitude by Polaris are taken along with depth soundings.

There are no log entries for the period 21–25 August 1914 while the ship was in Madeira, but from Figure 3 it is seen that on 24 August *Endurance* made a short, 54 NM, side trip from Madeira to the Desertas Islands to the southeast and back to the Funchal anchorage, "Funchal anchorage 32°38'N 16°54'W" (Worsley 1915: 12). The expedition departed Madeira on the 25 August.

The next entry is on 26 August and is a double altitude sight giving a position about 50 NM north of the Salvages Islands and about 150 NM from Tenerife.

They departed the Canary Islands on 30 August and passed by Cape Verde on 5 September. No sights are recorded for that day but the noon position is given as 16°52'N 25°5'W. This is consistent with the account that the quartermaster gives in his diary, "At noon we passed St. Vincent Island, Cape Verde Is. passing about 100 yds. off the mouth of the harbour" (Orde-Lees 1916).

On 7 September, two days out from Cape Verde, Worsley calculates the distance between future waypoints and between the lightships or lightvessels, bearing the designation "L.V.", that would be encountered off the coast of

South America.

After passing Cape Verde, *Endurance* headed for Ilha da Trindade until 18 September, when the course was changed for "30' off C.S.Thomé". Trindade was passed far to the north on 21 September.

The log entry for 29 September contains a calculation of the distance from Buenos Aires to Port Stanley in the Falkland Islands but this track was never used.

On 3 October, at an observed latitude of $31^{\circ}39'$ S, a "Long by Sound^g" (longitude by sounding) is given as $50^{\circ}27'$ W. Both quantities are double underlined indicating they are the result of observation. The position is about 32 NM off the coast of southern Brazil. Although the depth is not recorded at the stated position it would have been around 55 fathoms (100 m).

Endurance stopped in Buenos Aires from 9 to 26 October during which time the ship's chronometers were rated. This would later prove crucial as, during the long period of entrapment in the Weddell Sea ice pack, it provided the only means of keeping track of their longitude until a

series of observations of lunar occultation were made (Bergman and Stuart 2018). The exact method used to rate *Endurance's* chronometers is not recorded in the log, however, it is known (Cifuentes-Cárdenas and Nicodemo 2009) that the Naval Observatory did provide a time signal by means of a timeball atop the Central Office of Hydrography that was dropped at 13 hours LMT for Argentina's official meridian through Córdoba. A radiotelegraph time service had also been available since 1912.

The expedition left Grytviken, South Georgia, on 5 December 1914 and in the log Worsley computes the course from Cooper Island lying at $54^{\circ}46'S$ $35^{\circ}32'W$ off the south eastern tip of South Georgia to Southern Thule. On 11 December, the log notes "Pack ice" for the first time. The information recorded around that time is limited to course, distance and position and a few brief notes, as indicated following the entry for 7 December 1914, when Worsley was, "Bitten separating dogs, unable to take observations for 3 weeks. Hudson & Greenstreet doing the navigation observations". No further

[2.]

S. Y. "ENDURANCE"
DISTANCES.

DIRECT DISTANCES.	AS SAILED	FROM.	TILL	STEAM TIME.	SPEED KNOTS.	COAL CONSUMED.
LONDON-PLYMOUTH 315	368	19 th Aug	19 th Aug			Coals leaving to the
PLYMOUTH-MADEIRA 1205	1262	9 th ..	21 st ..			London 122
FUNCHAL-DESERTAS & back. 54	54	24 th ..	24 th ..			
FUNCHAL - SALVAGES 163	164	25 th ..	26 th ..			
SALVAGES-TENERIFE 103	103	26 th ..	27 th ..			
SANTACRUZ - ST VINCENT 850	854	30 th ..	Sept-5 th			Coals arriving
ST VINCENT - B. AYRES 3836	4092	5 th - Sept	Oct 9 th			Monte Video
for MONTE VIDEO + 24						NIL
BUENOS AIRES - GRYTIKEN 1539	1564	26 th Oct	5 th Nov.			Coals leaving M.V. 15 th ton
CUMBERLAND & BEDFORD IN.						" arriving BA. 8 "
GRYTIKEN - LEITH Harb. & back.	28	20 Nov.	21 Nov.	Coal leaving Grytviken. 160 TONS.		" leaving Buino
GRYTIKEN, S.G. - WEDDELL Sea.		5 th Dec				Ayres 98 tons

Figure 3. Legs as sailed on the voyage of *Endurance* from London to Antarctica along with the amount of coal remaining at various stages. Canterbury Museum 2001.177.1



Figure 4. Mercator chart plotting daily noon positions track of *Endurance* in black with a selection of dates labelled for reference. Rhumb line courses to waypoints that were computed and followed along the way are plotted in red. Waypoints and stops are labelled and shown as red dots.

Waypoint	Location	Date	Ship's Position		Waypoint Position	
			Latitude	Longitude	Latitude	Longitude
Pt. Fora. I. Lt.	Madeira	10-Aug	49 ° 47 ' N	6 ° 0 ' W	32 ° 43 ' N	16 ° 39 ' W
Bird Rk.	Cape Verde	31-Aug	26 ° 14 ' N	18 ° 0 ' W	16 ° 55 ' N	25 ° 1 ' W
Trinidad I.	off Brazil	6-Sep	14 ° 28 ' N	25 ° 44 ' W	20 ° 30 ' S	29 ° 22 ' W
C. S. Thomé	Brazil	18-Sep	7 ° 22 ' S	28 ° 25 ' W	22 ° 10 ' S	40 ° 30 ' W
C. Frio	Brazil	28-Sep	22 ° 39 ' S	40 ° 48 ' W	23 ° 2 ' S	41 ° 59 ' W
C. S. Maria	Uruguay	29-Sep	24 ° 33 ' S	42 ° 41 ' W	34 ° 40 ' S	54 ° 0 ' W
Lobos I.	Uruguay	5-Oct	33 ° 28 ' S	51 ° 52 ' W	35 ° 2 ' S	54 ° 53 ' W
C. Saunders	South Georgia	28-Oct	38 ° 1 ' S	55 ° 3 ' W	54 ° 4 ' S	36 ° 32 ' W
S. Thule	Southern Thule	5-Dec	54 ° 46 ' S	35 ° 32 ' W	59 ° 26 ' S	27 ° 45 ' W

Table 2. Waypoints listed in the log and used in the passage to Antarctica giving the date and ship's position when they first appear.

observations or reduction calculations appear until 28 December.

The 'Barrier' or Antarctic ice shelf was sighted to the southeast at 4.30 pm on 10 January 1915 and sketches were made. In the following days, skirting the barrier, a number of soundings were made and the nature of the material brought up from the bottom is described in some detail. The log entry for 19 January 1915 records:

*Fast in pack. Course. S71°W. 23m.
To Vahsel Bucht S31°W. 85m.*

From then on *Endurance* would remain in the grip of the ice until being crushed and finally sinking on 21 November 1915.

Figure 4 shows the daily noon positions and track of *Endurance* in black during its voyage into the South Atlantic Ocean. Rhumb lines that were followed in the course of the journey are shown in red. Waypoints and ports of call are labelled and marked as red dots. On 9 September 1914, the track turns sharply east under the influence of the Equatorial Counter Current.

Celestial Navigation

During the voyage navigational sights were taken almost exclusively of the Sun and the first of these appears in the log on 10 August 1914. Along the way a few sights were also taken of

stars and the planet Venus.

A sight for latitude by measuring the altitude of the pole star, Polaris, was taken on the evening of 20 August approaching Madeira and yielded 33°54'N.

On 13 September, a round of sights of γ Draconis for latitude (Worsley 1915: 22) and Venus (Worsley 1915: 26) for longitude were taken while in the mid-Atlantic just north of the equator and may have been for practice. Despite its Bayer designation γ Draconis is the brightest star in the constellation of Draco and at magnitude 2.24 is quite prominent. It is one of today's 57 official navigational stars and referred to by the name Eltanin in the *Nautical Almanac*.

On 4 October, roughly a day's run off the coast of South America, a time sight was taken of Venus.

As could be expected, from the entries of the log, it is evident that noon sights of the Sun for latitude and A.M. time sights for longitude were the norm while underway. In the proximity of land, star sights, depth soundings and double altitudes were also used. Far from land no P.M. time sight was generally taken unless the A.M. sight could not be made.

Time Management Aboard Ship

As a ship travels east or west its effective time changes and the clocks must be regularly adjusted

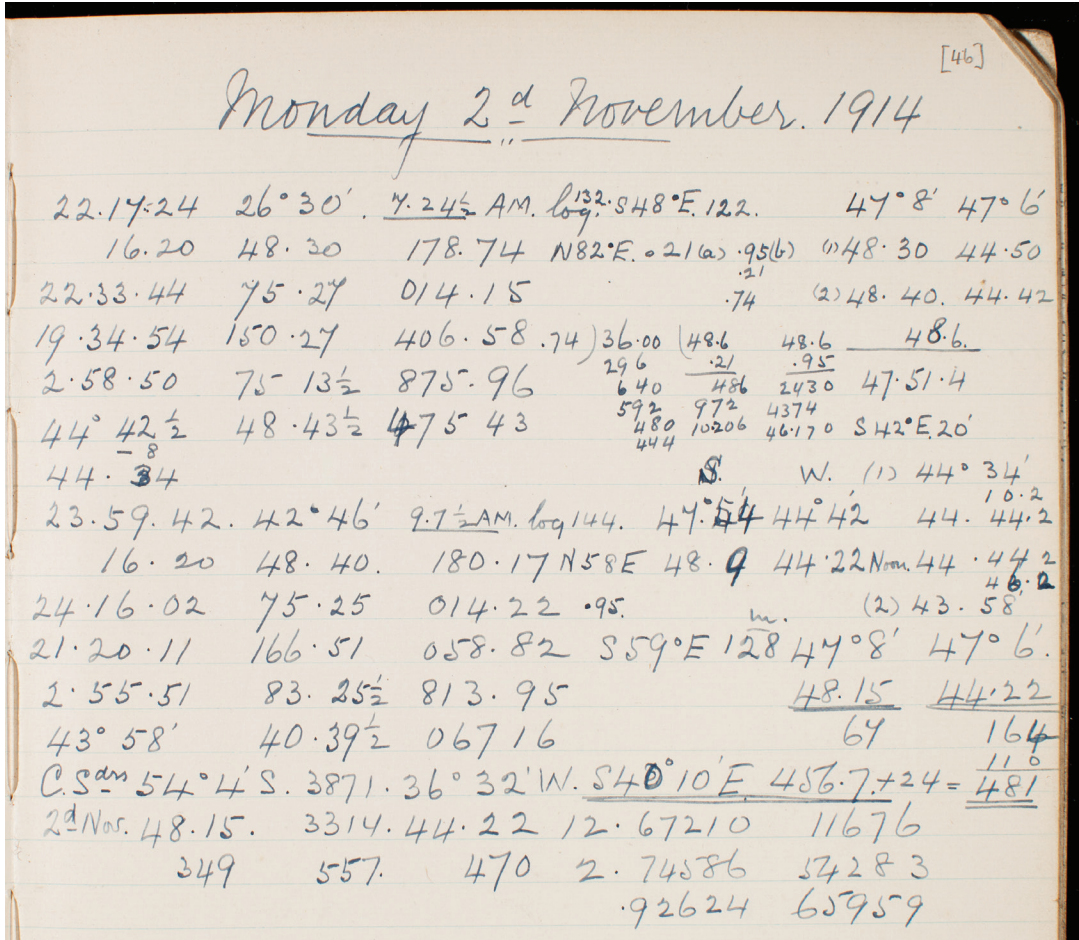


Figure 5. Log entry for 2 November 1914 showing a pair of time sights of the Sun that are combined as a double altitude fix for latitude and longitude. The last few lines at the bottom of the page show the Mercator Sailing calculation of the course and distance to Cape Saunders on South Georgia. Canterbury Museum 2001.177.1

to keep shipboard activities synchronized with the daylight hours. In contrast, the chronometers, of which there were 24 on board *Endurance* (Worsley 1998: 101), maintained GMT. They would only be very rarely reset and careful records were kept of their individual chronometer errors and rates. Most Sun sights in the log record both GMT and Ship's Time (ST). For example, the first time sight in the log entry for 2 November 1914 (Fig. 5) records GMT 22^h17^m24^s and ST 7^h24½^m. Comparing GMT with ST through the voyage gives insight into the procedure used to adjust the latter. It is evident that Zone Time (ZT) with integer

hour offset from GMT was not kept on board the *Endurance*. As ST is given to the minute and sometimes to half or even a quarter minute, it is obvious that ST did have significance.

In earlier times it was customary to set ST to 12 hours at Local Apparent Noon (LAN). Thus, when observing the noon sun for latitude, "8 bells" were struck when the Sun started to descend. At that time the ST was set to 12 hours. This management style was not appreciated in the galley, as the noon meal may not be ready in time when sailing eastwards, or risked getting cold when sailing westwards (Petersson 1973).

LAN does not necessarily exactly coincide

with the time when the Sun's altitude is at maximum due to its changing declination and the north-south component of a ship's speed (Wilson 1985) and this practice was therefore becoming less favoured as ship speed increased. A later practice was to change ST in the morning, aiming at getting ST = 12 hours at LAN. Then the noon sight observation would be made at exactly ST = 12 hours, irrespective of whether the altitude was rising or setting. Generally, the altitude is nearly constant for several minutes around noon and latitude obtained from it is relatively insensitive to the exact timing. This practice is described in *Admiralty Manual of Navigation* (1914: 93), but was replaced a few years later when *Admiralty Manual of Navigation* (1922: 295–297) prescribed ZT to be used as ST, a practice still used today.

The standard reduction procedure that Worsley used for time sights to obtain longitude (Bergman et al. 2018: 27) requires the observer's latitude, L , as input. In principle then the observed longitude obtained depends on how well L can be estimated. However, when the body being observed is on the 'prime vertical' (i.e. due east or west) the resulting longitude is completely insensitive to the value used for L . The log entries give enough information to compute the azimuth of the body when the time sight was taken and it is clear that some considerable effort went into ensuring they were made as close to the prime vertical as possible. At certain times of the year the Sun is very low in the sky or below the horizon when on the prime vertical. At such times taking the time sight as far as possible from the meridian minimises the sensitivity to the estimated latitude.

If the Sun is close to the prime vertical, the A.M or P.M. time sights yield the local apparent time (LAT) directly. A comparison with the ST noted for the sight immediately gave the actual error of the ship's clock. An estimate of the expected change in longitude up to noon was made and the ship's clock adjusted accordingly. This estimate was easy enough for steam ships able to keep constant course and speed, but often more of a guesswork for navigators of sailing

ships.

The LAT expressed in astronomical time gives the local hour angle (LHA). In this period it was customary to also express the LHA as a time in terms of hours, minutes and seconds. It is a simple matter to pre-calculate the hour angle when a body is at the prime vertical, through the relation, $\cos \text{LHA} = \cot L \tan \delta$, where δ is its declination.

Making a correction for estimated longitude change since the previous noon gave the ST for the A.M. Sun sight.

Astronomical LAT is, if less than 12 hours, equivalent to civil time P.M., otherwise astronomical LAT plus 12 hours is equivalent to civil time A.M.

The Ship's Log

The ship's distance travelled through water is read from the patent or taffrail log. During the passage from UK to Antarctica, log readings are noted from time to time. At least two patent logs were carried, one by Thomas Walker & Son Ltd, Birmingham, UK, and another by John Bliss & Co., Inc., New York. When both logs were streamed they were distinguished by Walker and Bliss, or just W and B. On certain days the log reading noted at the A.M. sight corresponds to the run from the previous noon, indicating that the log was reset to zero at noon. This is, however, not shown generally, and the notations of log readings are too sparse to allow any conclusions to be drawn on log management in general.

Double Altitudes

On some occasions it may prove to be impossible to take a sight around noon on a given day or more frequent updates to the observed position may be required such as when the ship is close to land. If two time sights are made separated in time by at least an hour and a half or two, then both the latitude and longitude at the time of the second sight can be determined. This requires that the DR course and distance is carefully tracked between the two sights. The

‘Double Altitude Method’ was used on 20 and 26 August, 7 September, 2 and 4 November and 7 December. In all cases the method was applied in relatively close proximity to land where accurate knowledge of position was crucial. A double altitude sight also appears on 28 December when Worsley was able to resume taking sights after recovering from being bitten by dogs.

The term double altitude covers a number of computational methods that either combine sights of two distinct objects made at the same time or two sights of the same object, typically the Sun, made at different times. The method that Worsley applied is described in Johnson (1909) where it is called the “Double Chronometer Method”. Johnson’s *On finding the latitude and longitude in cloudy weather and at other times* was first published in 1889 and on its title page bears the pronouncement that the look up tables contained therein are “(Supplied to H. M. Ships by Admiralty Order)”. At its heart the method closely mirrors a standard running fix that a modern navigator might perform by plotting a pair of lines of position (LoP) on a chart or plotting sheet and advancing the earlier one to account for the run of the ship. The vessel’s position at the time of the second sight is where the two lines cross. The difference is that in Johnson’s method the fix is obtained by calculation alone and no plotting is required.

Suppose a time sight is taken. The latitude L_0 is used in the sight reduction to find the longitude, λ_0 . The Sun’s azimuth at the time of sight is Z_1 and is recorded. Over a period of a few hours the ship’s run is noted and the position L_0, λ_0 is advanced to a new DR position L_2, λ_1 . A second time sight is taken and observation is reduced using the DR latitude, L_2 , to obtain the observed longitude, λ_2 . The Sun’s azimuth is Z_2 .

The positions L_2, λ_1 and L_2, λ_2 lie on lines of position, also known as Sumner lines, running in directions $Z_1 \pm 90^\circ$ and $Z_2 \pm 90^\circ$. Johnson’s method finds the intersection of these lines. The required position of the ship, L, λ , satisfies the equations

$$\frac{(\lambda - \lambda_1) \cos L_2}{L - L_2} = \tan(Z_1 \pm 90^\circ) \quad (2)$$

or equivalently

$$\frac{\lambda - \lambda_1}{L - L_2} = -\sec L_2 \cot Z_1 \triangleq m_1 \quad (3)$$

Similarly

$$\frac{\lambda - \lambda_2}{L - L_2} = -\sec L_2 \cot Z_2 \triangleq m_2 \quad (4)$$

The solution of the simultaneous equations (3) and (4) can be written in the form

$$\lambda = \lambda_1 - m_1 \left\{ \frac{\lambda_2 - \lambda_1}{m_2 - m_1} \right\} \quad (5a)$$

$$= \lambda_2 - m_2 \left\{ \frac{\lambda_2 - \lambda_1}{m_2 - m_1} \right\} \quad (5b)$$

$$L = L_2 - \left\{ \frac{\lambda_2 - \lambda_1}{m_2 - m_1} \right\} \quad (6)$$

Note that the two different arrangements of the expression for λ provide a check on the calculation.

The quantities m_1 and m_2 absent their signs are denoted (a) and (b) respectively by Johnson and are extracted from his Table II. As was common practice in navigational calculations, (a) and (b) are taken to be positive and rules are given to recover the information contained in their signs. The signs of the corrections for longitude is deduced from the requirement that Equations (5a) and (5b) yield the same value for λ . Combining this information with the bearing at which the sight was taken allows the sign of the latitude correction, the quantity in curly brackets, to be determined. As the sign of the cotangent function alternates around the four quadrants, the rules in this case could get rather involved. However, a fairly simple mnemonic device is provided to facilitate this. It requires writing down the letters corresponding to the cardinal directions, ‘N. E. S. W.’ in an order dictated by the particular circumstances of the sights and connecting two of them by a diagonal

line. This device does not appear in the log entry for 2 November 1914 (Fig. 5) but can be seen in the first double altitude calculation on 20 August and again on 28 December. It is illustrated by example in the double altitude reduction demonstrated later in this section.

The required azimuths, Z_1 and Z_2 , are taken from the tables in Johnson (1909) or elsewhere such as ABC tables (Lecky 1912).

Figure 6 shows the LoPs for the sights of 2 November 1914 as they might be plotted by a modern navigator. The dotted line is the LoP from the first sight before being advanced to intersect with the second. The red 'X' is the position that Worsley obtained by calculation. The correction obtained for the DR latitude for this particular sight is around 50' and is much larger than typically seen.

Table 3 replicates the double altitude sight reduction for 2 November 1914 following the

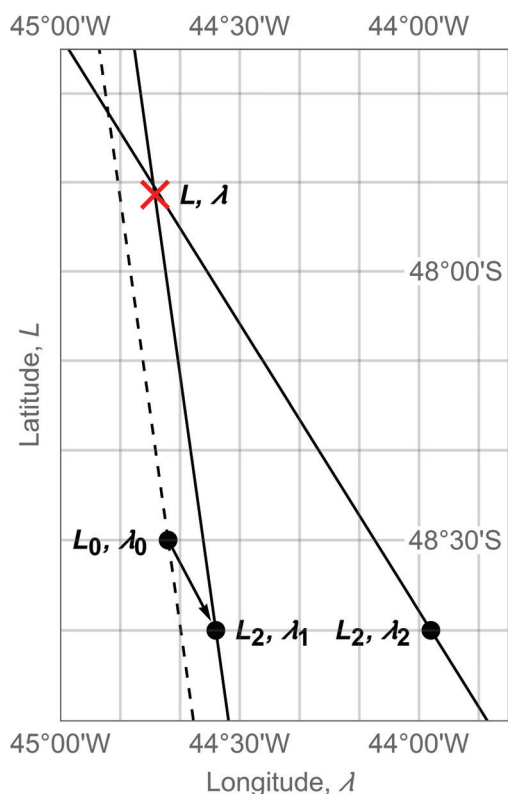
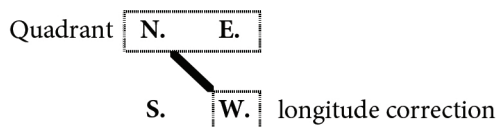


Figure 6. Plot of the Lines of Position used in the double altitude fix on 2 November 1914.

conventions set out above in which signs for the intermediate quantities have been retained. The calculations of these corrections appear on the log book page in Figure 5 to the right of the first time sight. The calculation of the correction for latitude is performed using long division, which is then used in long multiplication to obtain the longitude corrections. The reduction of the time sights that go into this calculation occupy the left hand side of the log page (Fig. 5) and a full explanation of these calculations can be found in Bergman et al. (2018). A demonstration of the method and notation that Worsley employed in carrying out the long division can be found in Raper (1840: 2–3). In that convention the quotient is written to the right of the ‘/’ symbol. The position obtained from the reduction of double altitude sights is quite insensitive to the initial estimate of latitude, L_0 .

In the calculation in Table 3, the signs of the corrections coming from Equations (5) and (6) have been kept for the convenience of the modern reader. Worsley would have followed the steps laid out by Johnson (1909). Noting that both sights were taken when the Sun was in the northeast quadrant he would conclude that the corrections to be applied to λ_1 and λ_2 in Equations (5a) and (5b) have the same name. They are therefore either both E or both W and only W produces the equal values longitude, λ .

To find the name of the latitude correction calls for taking either the first or second sight and writing down the quadrant in which the sight was taken. In the present case this would be ‘N. E.’ for both. Under these the complementary letters ‘S. W.’ are written. In this block of four letters a diagonal line is drawn from the name of the longitude correction, W, to find the name of the latitude correction as shown below.



The name of the latitude correction is therefore N. It can be seen that these procedures produce the same outcome as carrying signs

First Time Sight		
Latitude (L_0)	48 ° 30 ' S	
Longitude (λ_0)	44 ° 42 ' W	
Azimuth (Z_1)	N 82 ° E	
Run		
	10 S 8 E	
DR Latitude (L_2)	48 ° 40 ' S	
DR Longitude (λ_1)	44 ° 34 ' W	
Second Time Sight		
DR Latitude (L_2)	48 ° 40 ' S	$m_1 : -0.21$
Longitude (λ_2)	43 ° 58 ' W	$m_2 : -0.95$
Azimuth (Z_2)	N 58 ° E	$m_2 - m_1 : -0.74$
		$\lambda_2 - \lambda_1 : 36 '$
Position		Corrections
Latitude (L)	47 ° 51.4 ' S	$\leftarrow L_2 + 48.6 '$
Longitude (λ)	44 ° 44.2 ' W	$\leftarrow \lambda_1 - 10.2 '$
Longitude (λ)	44 ° 44.2 ' W	$\leftarrow \lambda_2 - 46.2 '$

Table 3. Double altitude reduction for the time sights made on 2 November 1914.

Destination	Latitude	Merid. Parts	Longitude	$\log_{10}(\text{D.Lon.})$	$\log_{10}(\text{sec } C)$
	L_2	$\text{MP}(L_2)$	λ_2	$\log_{10}(\text{M.D.L.})$	$\log_{10}(\text{D.Lat.})$
Position	L_1	$\text{MP}(L_1)$	λ_1		
	D.Lat.	M.D.L.	D.Lon.	$\log_{10}(\tan C)$	$\log_{10} D$
	$60 \times (L_2 - L_1)$	$\text{MP}(L_2) - \text{MP}(L_1)$	$60 \times (\lambda_2 - \lambda_1)$		

Table 4. Layout for Mercator Sailing calculations found in the log. The factor of 60 in the last line of the table converts degrees to nautical miles.

2 November 1914	Latitude	Merid. Parts	Longitude		
Cape Saunders	54 ° 4 ' S	3871	36 ° 32 ' W	2.67210	0.11675
Current Position	48 ° 15 ' S	3314	44 ° 22 ' W	2.74586	2.54283
	D.Lat.	M.D.L.	D.Lon.	9.92624	2.65958
	349	557	470		

Course, C S 40 ° 9 ' E
Distance, D 456.6 NM

Table 5. Replicated Mercator Sailing calculation to Cape Saunders on 2 November 1914.

through the calculation and does not depend on whether it is applied to the first or second sight.

Mercator Sailing

Mercator Sailing calculations correctly account for the changing scale of the Mercator projection as a function of latitude and therefore produce accurate results when the distance to the destination is relatively large. They are seen in the log whenever the course and distance to the current waypoint are being computed and always follow the same standard layout as shown in Table 4. As noted earlier, DR calculations relied on Middle Latitude sailing by means of traverse tables.

An example of a Mercator Sailing calculation is shown at the bottom of the log entry for 2 November 1914 while underway from Buenos Aires to Grytviiken. The destination is Cape Saunders, which lies at the northern entry to Leith Harbour on South Georgia.

This Mercator sailing calculation is replicated in Table 5. Here, and in other such calculations in the log, Worsley does not follow a consistent strategy for recording the integral part, or characteristic, of logarithms. They are nevertheless correctly handled in the overall calculation. In Table 4, an increment of 10 has been added to the value whenever a negative logarithm is encountered, which was standard procedure for the time, as described by Bergman et al. (2018: 27), and avoids the need to perform subtraction.

Summary and Conclusions

Captain Frank Worsley's log book from the vessel S.Y. *Endurance* has been examined in detail with the aim of understanding the navigational methods that were applied in practice in the running of a ship under the command of a master mariner in the early part of the twentieth century.

Coastal piloting off the southern coast of England relied on sextant measurements of the angular heights of lighthouses to determine

distance off. Departure was taken from the Peninnis Lighthouse on the Isles of Scilly by noting the moment that the light disappeared below the horizon, which gave its distance. Courses and distances to intermediate destinations and waypoints were computed based on Mercator sailings. Over the shorter distances required for dead reckoning of the ship's daily run, middle latitude sailing calculations, obtained from traverse tables, were applied.

Underway when relatively far from land, only a morning Sun time sight for longitude and noon sight for latitude were taken, weather permitting. Approaching 100 NM of land or other hazard, additional time sights and other navigational methods were employed. At such times double altitude sights that gave both latitude and longitude were made. An observation of longitude by sounding was made when approaching the coast of South America. A few sights are recorded using stars or planets but these were not the norm.

By computing the Sun's azimuth from the log entries, it is clear that time sights were normally made when the Sun was very close to the prime vertical. There, the longitude obtained is independent of the observer's assumed latitude. Time sights could also be made at other azimuths when the proximity to land required it or the altitude of the Sun was too low on the prime vertical.

The ship's clock, and therefore the time at which daily routines were performed aboard, was adjusted daily as *Endurance* sailed west. It appears that the clock was set so that 12 hours coincided with local apparent noon at the ship's expected position.

The log contains comprehensive lists of the positions of lighthouses and lightships in the vicinity of the ports of call.

Endnote

- 1 "kts" is an abbreviation for knots which is more accurately a speed in nautical miles per hour.

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The Systematist and the Starlet: The mystery of the honourees in Tom Iredale's scientific names

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Tom Iredale was one of the preeminent Australasian taxonomists of the twentieth century. He described more than 2,400 taxa; primarily molluscs but during his collaborations with Gregory Mathews also a large number of birds. It has long been frustrating for nomenclaturalists and those interested in the history of taxonomy that Iredale rarely gave the etymology for his nomenclatural acts. Using recent innovations in genealogy and family history we are now able to understand historical figures in more detail than they probably ever suspected we might. Examination of Iredale's personal life using these resources allows us to determine that Iredale's complex and rather surprising personal life was the source of many of his honorifics.

Keywords: honorifics, *Jeannia*, nomenclature, *Sternula nereis davisea*, taxonomy, Tom Iredale

Introduction

Tom Iredale was one of Australasia's greatest conchologists (studying molluscs through comparison of their shells) and a talented ornithologist. During his career he described at least 2,400 new taxa, but somewhat annoyingly, he almost never gave the etymology of the names that he used. Whilst cataloguing the type collection of Kermadec Island molluscs held in Canterbury Museum, which Iredale made at the beginning of his career, I made observations that not only give the source of the etymology for some of Iredale's names but also provide an insight into the private life of this complex and unusual man. Wayne Longmore, long-time Collection Manager of Birds at the Museum of Victoria, once related a story to me that also resonated:

Many years back John Disney [a doyen of Australian Ornithology] enthralled us with one of his stories about Iredale. Apparently one day at his suburban Sydney house he answered a knock on the door. The lady was requesting to speak with Tom, and when asked in relation to what they replied 'I am his daughter from New Zealand'.

Iredale had apparently had a second family over there and had never mentioned it to his second wife Lilian Medland nor any of his family.¹

The daughter was Ida Iredale, born in New Zealand to Iredale's first wife. With the abundance of resources available to the modern genealogist, I was able to suggest a solution to the intriguing mystery of just a few of Iredale's scientific names and contribute here information gleaned both from online sources and from the descendants of Tom Iredale himself.

Early life and time in New Zealand

Born in Cumberland in Northern England in 1880, Tom Iredale was a self-taught English naturalist. Details of his early life are sketchy but his father John (1832–1897) was recorded as a fruit merchant in the 1891 census.² Tom was apprenticed to a pharmacist from 1899 to 1901³ and used to go bird watching and egg collecting in the Lake District with fellow chemist William (Will) Carruthers Lawrie. According to R McEwen, he arrived in Wellington, New

Zealand in December 1901, and travelled at once on to Lyttelton and Christchurch. On his second day in Christchurch, he discovered that in the Foreign Natural History Gallery of Canterbury Museum, two of 16 English birds' eggs were wrongly identified – a Red Grouse egg (*Lagopus lagopus scotica*) labelled as sandpiper (*Scolopacidae*), and a moorhen (*Gallinula* sp.) labelled Water Rail (*Rallus aquaticus*).⁴ Whether pointing out these errors endeared him to the then curator F W Hutton is not recorded.

Iredale was employed as an accountant in Christchurch but in his spare time he became fast friends with W R B Oliver. Oliver had just graduated from Victoria University, Wellington with an MSc in systematic botany but was working at this time as a customs clerk in Christchurch. Oliver would later become a noted ornithologist, botanist and museum curator. It was Oliver who taught Iredale the basics of malacology and systematics and no doubt turned his amateur enthusiasm into a more honed scientific discipline.

Tom's married life

Tom Iredale's romantic life has recently been discussed in a book about Iredale's second wife (Mattingley 2003). He was married twice and Mattingley implies that his first marriage was unhappy. However, the source of his marital strife has never been discussed but seems to stem from his time in London.

On 16 April 1906, Tom married 26-year-old Alice Maud Atkinson (1885–1975) in Christchurch and just over a year later a daughter, Ida⁵ (Fig. 1), was born. Tom spent nine months on the Kermadec Island Group in 1908 with a scientific party that included Oliver and it would appear that after this formative experience, he decided that a return to England might enable him to become a professional scientist. The family arrived in London (via Sydney and Port Said, where his sister lived) on 17 April 1909 aboard the Orient Royal Mail Ship *Ortona* and Alice stayed in England until at least September.⁶

It would appear that Tom's decision to return to England was a sound one, for he was employed on several occasions by members of the famed Rothschild family on collecting trips. Whilst working at the British Museum (Natural History) he met the wealthy Australian expatriate Gregory Mathews who employed him for nearly 10 years writing ornithological monographs for which Mathews took the lion's share of the credit⁷ (Kloot 1983).

Bohemian London

Iredale's obituarist, Gilbert Whitley, who first met him in Sydney in the 1920s, seems to have an inkling of Iredale's past and intriguingly wrote in a paragraph discussing Iredale's time in London:

His upbringing had been strict, in a Christian family, and it was not until he was 30 that he began going to such worldly places as theatre and vaudeville. Later he was to find 'show business' and the persons associated with it a relaxation from the disciplines of science (Whitley 1972).

Indeed he did meet people in "show business"



Figure 1. Ida Iredale. Clifford Collection, Canterbury Museum 1980.175.39423



Figure 2. Ms Jeanne Davis, taken prior to the First World War dressed apparently as Madam Butterfly. From the collection of Mrs P Soane, used with permission.

whilst he was in London; by 1911, Alice was back in Christchurch⁸ and Tom was living with a 25-year-old “theatrical professional” (starlet in the title of this article) Jane (Jeanne) Davis (Fig. 2) from Torquay in a Fulham flat within walking distance of the British Museum (Natural History).⁹ Jeanne’s family recall that Tom met Jeanne at a bohemian party given by the wealthy banker, entomologist and Iredale’s benefactor, Nathaniel Charles Rothschild.¹⁰ Official birth records indicate that Tom and Jeanne had at least four, and probably five children; Tom Hedley in 1910 (died aged 9 months), Freda Marion Roche in 1912, Mollie Ena Mathieson in 1914, Constance Ruth Iredale on 1 January 1916 and Zona Madge Ward on 3 April 1917.¹¹

Lilian Medland

Whilst working at the British Museum, Tom

met a nurse turned artist Lilian Marguerite Medland (1880–1955) (Mattingley 2003). Medland was an accomplished artist and the illustrator for *Birds of the British Isles* (Stonham 1906–1911). On 18 May 1916, Lilian Medland gave birth to Beryl Rozelle Iredale in the district of Barnet, England where her mother was still living. Note the date with respect to the date of Constance Ruth’s birth above. On 26 September 1918, Lilian Medland gave birth to Rex Iredale in the district of Brentford, England.¹²

The pair were unable to marry until Tom’s first wife divorced him. Alice started divorce proceedings on 1 December 1922 but as the process took 6 months, the divorce was not granted until June 1923. The grounds given by Mrs Iredale were “desertion and misconduct”.¹³

At the St Giles registry office on 8 June 1923,¹⁴ only a few days after the divorce became final in New Zealand, Tom married Lilian Marguerite Medland. The family left England the same day for Sydney, Australia, with their two children aged 4 and 6. Tom and Lilian lived a charmed life in Sydney where Tom was employed at the Australian Museum from 1923 until his retirement in 1944 (Fig. 3). Lilian illustrated several of Tom’s books, many of his papers and painted birds for the Australian Museum and Gregory Matthews. They lived in the Northern Beaches area and raised their two English-born children. Lilian died in 1955.

Iredale’s honorifics

Iredale’s honorifics appear to tell a hidden story of his personal life; their concealed connotations were no doubt titillating to the author. For example, the genus *Jeannea* Iredale, 1912 (a buccinoid whelk) probably honours Jeanne Davis. The fact that Tom’s first born son’s second name was Hedley allowed him to name seven species and genus level taxa and two family level taxa both after his prominent malacological colleague, Charles Hedley (1862–1926) and after his lost son simultaneously. Not least of which was *Jeannea hedleyi* Iredale, 1912 (Fig. 4); after all, naming a taxon *tomi* or even *tomiredalei* would not have been acceptable,



Figure 3. Group portrait of Lilian Medland and her husband Tom Iredale with their two children, Rex and Beryl Iredale (c.1920). National Library of Australia PIC/9912/1/nla.obj-137120780

even in 1912.

The New Zealand Fairy Tern *Sternula nereis davisae* (Fig. 5) was formally described by Gregory Mathews and Tom Iredale in their 1913 publication *A Reference List of the Birds of New Zealand* (Mathews and Iredale 1913) with reference to an earlier incorrect attribution by Potts (1871). It is clear that Mathews and Iredale based their description on a single specimen (“Type in the British Museum” 1895.3.15.29) collected by Sir Samuel Scott (Warren 1966). It has been widely reported in recent years that Tom Iredale was the primary author of much of Mathews’ output (Beolens et al. 2014), thus it seems likely that the source of the name was Iredale and not Mathews. They chose the honorific name *davisae* for the new taxon. The suffix *-ae* indicates that it is honouring a female, Ms Davis, but there is no indication in the description who this Ms Davis is. One theory proposed recently without evidence was that the honouree was Mrs Lilian Davis (née Ball) mother of New Zealand businessman Sir George Davis (M Watkins in Gochfeld et

al. 2019). However, this supposition seems unfounded. Given that Tom Iredale was living with Jeanne Davis and had a son and a daughter with her during the period that the manuscript for Mathews and Iredale (1913) was being written, there is a very strong case to suggest that Tom named *Sternula nereis davisae* after Ms Jeanne Davis.

Iredale’s honorifics also reflect his wayward gaze, as by 1915 Iredale was naming a mollusc *Tellina liliana* Iredale, 1915 after his future wife, Lilian Medland. Iredale’s names also occasionally indicate a longing for the past and honouring memories, for long after his marriage to Lilian Medland, he named one of the most beautiful bird of paradise genera *Visendavis* Iredale, 1948. Some have interpreted this name as being a combination of the Latin words *visenda* (the plural noun form of *viso*) meaning things worth notice and *avis* for bird. I suggest that this name could have been a deliberate double entendre with possible explanations being both “a noticeable bird” and *viso* “to behold” and “*davis*” for Jeanne Davis,



Figure 4. *Jeaneia hedleyi* Iredale, 1912, holotype. Collection locality: waters off Raoul Island, Kermadec Island Group. Scale = 1mm. Canterbury Museum M3057

who had died in 1943.

What became of Tom Iredale's other families?

Following her divorce, Alice Maud Iredale never remarried. After living for many years in Christchurch, she moved to Timaru in the early 1960s, presumably to be near her daughter. She died in Timaru in 1975. Ida Iredale, Alice's daughter, married Ernest Owen Joseph, a draper, in 1930 and lived the rest of her life in

Timaru where she died in 1989.

Jeanne Davis (who used the name Jeanne Iredale on her marriage licence) married Albert A Robinson in 1919 at St Giles, London. She died in 1943. It appears that Tom and Jeanne maintained friendly relations even after her marriage. Albert was a wealthy businessman who is said by the family to have paid for Tom and Lilian's emigration to Australia. Freda Iredale remembered seeing off Tom, Lilian and the two children one June morning when she



Figure 5. The New Zealand Fairy Tern, *Sternula nereis davisae*. Copyright Brent Stephenson, used with permission.

was only 11-years-old. Freda, Constance, Mollie and Zona were all raised as Albert's children and remembered an enjoyable childhood.¹⁵

Conclusion

Tom Iredale was one of Australasia's greatest naturalists but he was clearly a complex and intriguing man. A modern observer might be astonished by the 'code of silence' amongst Iredale's peers who apparently knew of his philanders, but even after his death chose to only disclose this information cryptically (Whitley 1972). It is likely that the identities of the honourees for many of Iredale's taxa still contain hidden secrets that may never be revealed.

Acknowledgements

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Endnotes

- 1 Wayne Longmore, email to author, June 2019.
- 2 *Census Returns of England and Wales*, 1891. The National Archives of the UK, Public Record Office, Kew, UK; Class: RG12; Piece: 4304; Folio: 80; Page: 29.
- 3 *Census Returns of England and Wales*, 1901. The National Archives of the UK, Public Record Office, Kew, UK; Class: RG13; Piece: 4883; Folio: 102; Page: 27.
- 4 Letter to Will Lawrie dated 25 January 1902, held by the Iredale family.
- 5 Births, *Lyttelton Times*, 6 June 1907, p. 1.
- 6 About People. Notes From London, *Evening Post*, Volume LXXVIII, Issue 107, 2 November 1909.

- 7 John Disney often recounted the story that on Iredale's 'death bed' he said of the joint Mathews/Iredale publications that "He [Iredale] did it all" (Wayne Longmore, email to author, June 2019).
 - 8 *New Zealand Electoral Rolls, 1853–1981*. Auckland, New Zealand: BAB microfilming. Microfiche publication, fiche 4032.
 - 9 *Census Returns of England and Wales, 1911*. The National Archives of the UK, Public Record Office, Kew, UK; Class: RG14; Piece: 314.
 - 10 Mrs P Soane, email to author, March 2018.
 - 11 On Zona's birth certificate her mother's name is given as "Singer" rather than Jeanne Davis and by this time Tom was (presumably) living with Lilian Medland.
 - 12 Rex Iredale, *Second Australian Imperial Force Personnel Dossiers, 1939–1947*. National Archives of Australia.
 - 13 The Courts, *Press*, Volume LVIII, Issue 17633, 9 December 1922.
 - 14 *England & Wales, Civil Registration Marriage Index, 1916–2005*.
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The sea was going mountains high: Shipboard accounts at Canterbury Museum

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This paper presents the initial findings from a collaborative and cross-institutional history project between researchers at the University of Canterbury and Canterbury Museum. We aimed to establish the number and provenance of the extant shipboard narratives currently held by the Museum for the period 1842 to 1914. One of the major findings of our work has been the fact that the Museum holds more than 200 personal narratives, some of which have associated artefacts or images. This makes the collection one of the largest of its type in New Zealand and certainly very significant in the wider context of Australasian migration history.

Our discussion is in three main parts. In the first, we report on the provenance and broad parameters of the collection. We focus here on the types of shipboard accounts, explore the backgrounds of the writers and reveal and explain the patterns of acquisition. The second section links our narratives to the available historiography. Here we highlight some of the major themes that emerge in this literature and examine how historians have used this kind of primary source material in their work. In the final section, we give one example of an area of shipboard history that has been little studied by historians and which emerges from the collection. We offer a close reading of four accounts kept by married men to cast further light on the gendered dimensions of everyday life at sea with a particular focus on intimacy and the performance of masculinity.

Keywords: intimacy, masculinities, migration, nineteenth century, shipboard

Introduction

On 3 August 1858, James Goss, a London carpenter, wrote in his diary of the “intense confusion” that he observed aboard the *Indiana* over the previous 2 days at one of the city’s inner docks. “If one can picture to oneself about 150 children of all sorts and sizes, Squalling and crying”, he began, “and as many women scolding and grumbling, and the men below deck rattling and banging the luggage about ... then one may have a slight idea of the commencement of an emigrant’s life”. It was an experience that he

shared with his wife, Sarah, and their daughter, Emma, aged 18 months. The ship was towed to Gravesend for its final preparations the next day, including the Board of Trade inspections and issuing of “rules and regulations”. James thought this wise given the “unruly lot” on board and the prospect of hard living in such “close quarters” for several months. Their journey to Lyttelton began in earnest on 5 August as the *Indiana* weighed anchor and started down the Thames:

There is a beautiful breeze blowing

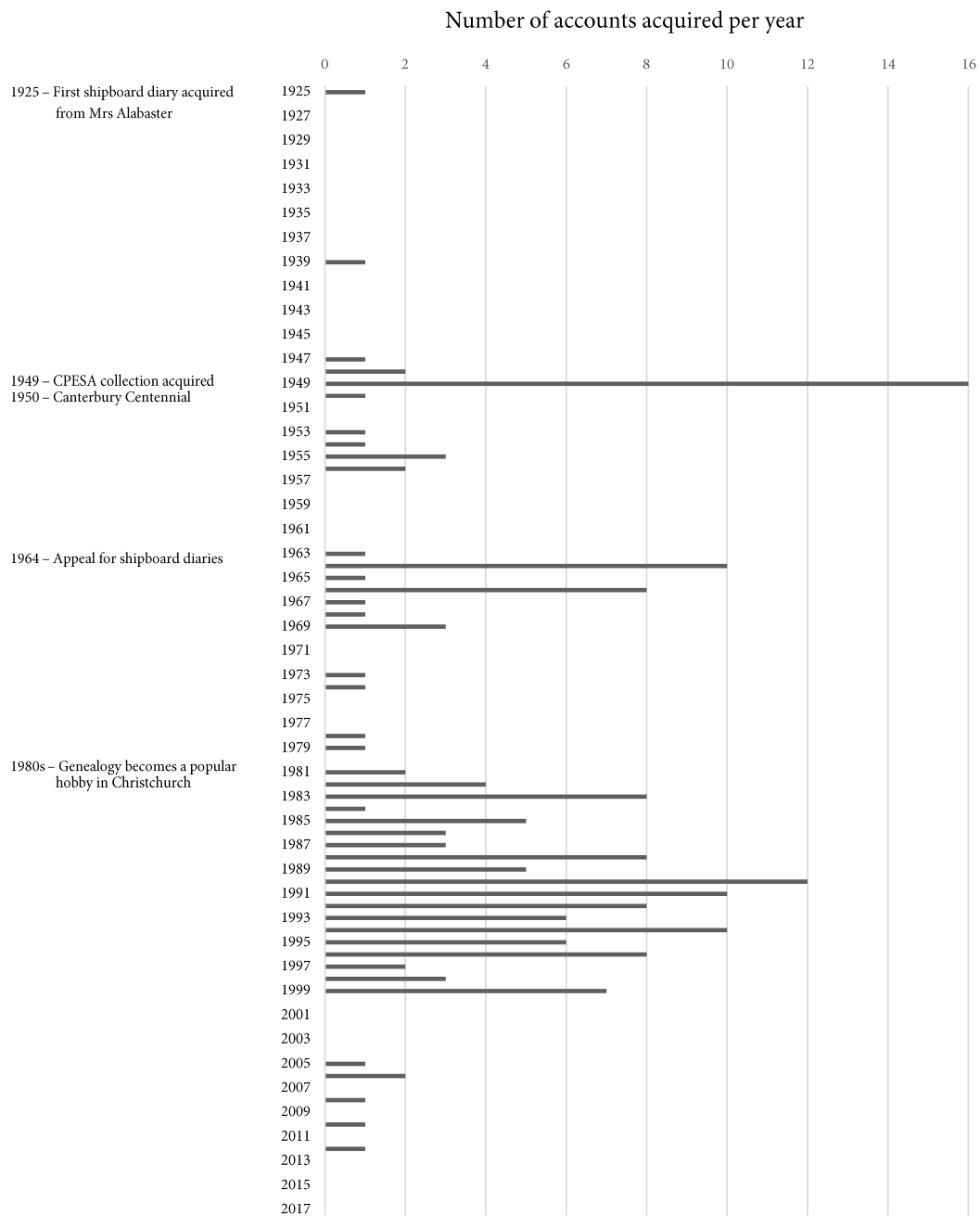


Figure 1. A chart showing the number of shipboard accounts held at Canterbury Museum with known acquisition dates. A full list of shipboard accounts is available in the appendix. CPESA = Canterbury Pilgrims Early Settlers Association.

tonight which is a fair wind ... and now the sailors are running up the rigging like so many cats, unfolding the sails and getting her in good trim. So off we go, sailors pulling and singing, but many an anxious eye and heart too looks back to those we are leaving, and leaving perhaps forever (Goss 1858: 1–2).

James, Sarah and Emma Goss were among the many thousands of migrants who left British ports to make new lives half the world from home in New Zealand. Like some of his fellow passengers in steerage, James kept a diary that recorded his experiences at sea and the departure scenes he so vividly described would have been common to most emigrants during the great age of sail. A transcript of his narrative is currently held by Canterbury Museum and forms part of a much wider collection of shipboard accounts from the nineteenth and early twentieth centuries. In this paper we aim to establish the number and provenance of these extant writings.¹

The first section reports our findings in this area, explores the backgrounds of the writers and reveals and explains patterns of acquisition. The second section links our narratives to the available historiography. Here we highlight some of the major themes that emerge in this literature and examine how historians have used this kind of primary source material in their work. In the final section, we give one example of an area of shipboard history that has been little studied by historians and which emerges from the collection. We offer a close reading of four accounts kept by married men like James Goss to cast further light on the gendered dimensions of everyday life at sea, with a particular focus on intimacy and the performance of masculinity within the confines of the emigrant ships.

Collecting Shipboard Accounts

Canterbury Museum began collecting shipboard accounts in 1925 when a Mrs Alabaster presented the diary of Charles Alabaster written on board the *Strathallen*, which had

arrived in Lyttelton 66 years earlier.² As Figure 1 illustrates, this remained the only shipboard account in the collection until the middle of the twentieth century when regional interest in great maritime migrations under sail in the mid to late nineteenth century expanded. In 1950, Canterbury was due to celebrate the centenary of the foundation of the Canterbury Association's settlement and the arrival in 1850 of the scheme's first four ships: the *Randolph* (Fig. 2), the *Cressy*, the *Sir George Seymour* and the *Charlotte Jane* (Fig. 3). Although people had been living in the area before 1850, Cookson (2000) explains that the Canterbury Association settlers brought with them a sense of Englishness, Anglicanism and elitism which came to define the provincial capital, Christchurch. He argues that the reality of the city's identity was much more complex but nevertheless the idealised version persisted, giving the arrival of the ships a near mythic status.

As the centenary approached, the province in general and Canterbury Museum in particular began to reflect on the last 100 years and look at ways of marking the milestone. In 1949, the Museum hired its first professional librarian, John C Wilson, and set about organising the library's two main areas of focus: science and Canterbury archives. The looming centenary accelerated efforts to collect items relating to the province's colonial history (Canterbury Museum Trust Board 1950). While Canterbury Museum's initial collecting efforts in the mid nineteenth century were rooted in the idea of establishing an encyclopaedic collection with items from around the world (Fyfe 2010), by 1949, the idea to collect local history was not a new one. A concerted effort to collect items from the region's colonial history began in 1909 when a department of colonial history was founded. There were already items relating to Canterbury's earliest British and Irish settlers in the collection before 1909, but the acquisitions became part of the Museum's collections during the lifetimes of these people and did not necessarily reflect the view that this kind of history needed to be preserved before it was lost to living memory.

The deposit of the Canterbury Pilgrims and Early Settlers Association's (CPESA) large collection of papers, photographs and books in 1949 accounts for the majority of the mid twentieth-century influx of shipboard accounts into the Museum. The CPESA formed in 1923 because the anniversary day that marked the arrival of the first four ships in that year had been neglected. Membership was initially restricted to those who had arrived before March 1851 and their direct descendants but this was later broadened out. By 1933, anyone who had lived in Canterbury for 50 years or had otherwise been approved by the executive could join. The CPESA aimed to spread knowledge of and encourage interest in Canterbury's history and this was partly accomplished by collecting items associated with the province's British settlers.³ Amongst their collection were 14 shipboard accounts.

Shipboard accounts continued to trickle in and by 1964, the Museum decided to make a more concerted effort to expand this portion of its archives. A public appeal to collect more shipboard diaries was made with an eye to include them in a planned publication, although it does not appear that it was ever produced. Eleven people answered the appeal and while they were happy to share the information, most were unwilling to part with the original diaries. As a result, most of the diaries were transcribed and then returned to their owners (Canterbury Museum Trust Board 1965). A few more accounts were added to the collection during the latter half of the 1960s, perhaps as a delayed response to the 1964 appeal. It was not until two decades later that collecting in this area mushroomed.

During the 1970s and 1980s, genealogy and



Figure 2. A watercolour of one of the Canterbury Association's first four ships, *The Randolph*. James Edward Fitzgerald (1818–1896). The Museum holds shipboard accounts from the *Randolph*; diaries by Charles Bridge, Cyrus Davie, Richard John Phillip Fleming and Joseph Parson Lee as well as letters by Joseph Parson Lee and John and Mary Stanley. Canterbury Museum 1938.238.6

family history gained increasing popularity as a hobby in Canterbury, just as it did in other parts of the world (Little 2011; Rodriguez 2014). Enquiries to the Museum's library rose exponentially and the Museum quickly set about photocopying resources and ordering microfilm copies to meet the increased public demand (Canterbury Museum Trust Board 1983, 1985, 1987). Strong public interest in family history resulted in a huge influx of shipboard accounts into the Museum's collection beginning at the end of the 1970s and continuing steadily until the end of the millennium (Fig. 1). Although genealogy remains incredibly popular as a pastime, acquisitions of shipboard diaries have slowed down in recent years. Perhaps most or all of the surviving accounts have now made their way into public collections.

The Museum's collection of shipboard

accounts includes 229 documents with varying formats, such as diaries, letters, shipboard newspapers and a few reminiscences written after the voyage. Most are photocopies or transcriptions but there are original documents, and some accounts have multiple copies. A strength of this collection is that several voyages have multiple accounts from different authors enabling a fuller picture of the voyage. Most of the accounts were written by men and steerage passengers are relatively well represented within the collection (Fig. 4). These patterns are plainly evident in the appendix but what is not clear from this information is the extent to which English and Scottish Protestant voices are dominant, while those of women, the Irish-born and Catholics are badly underrepresented relative to their share of Canterbury's nineteenth-century migration intake and population.



Figure 3. A watercolour of one of the Canterbury Association's first four ships, *The Charlotte Jane*. James Edward Fitzgerald (1818–1896). The artist was a passenger on this ship. The Museum holds diaries by Edward War, Alfred and Emma Barker, Mary Ann Bishop and Lucy Large Howard from this voyage, as well as a shipboard newspaper *The Cockroach* and reminiscences from Jane Whitmore. Canterbury Museum 1938.238.9

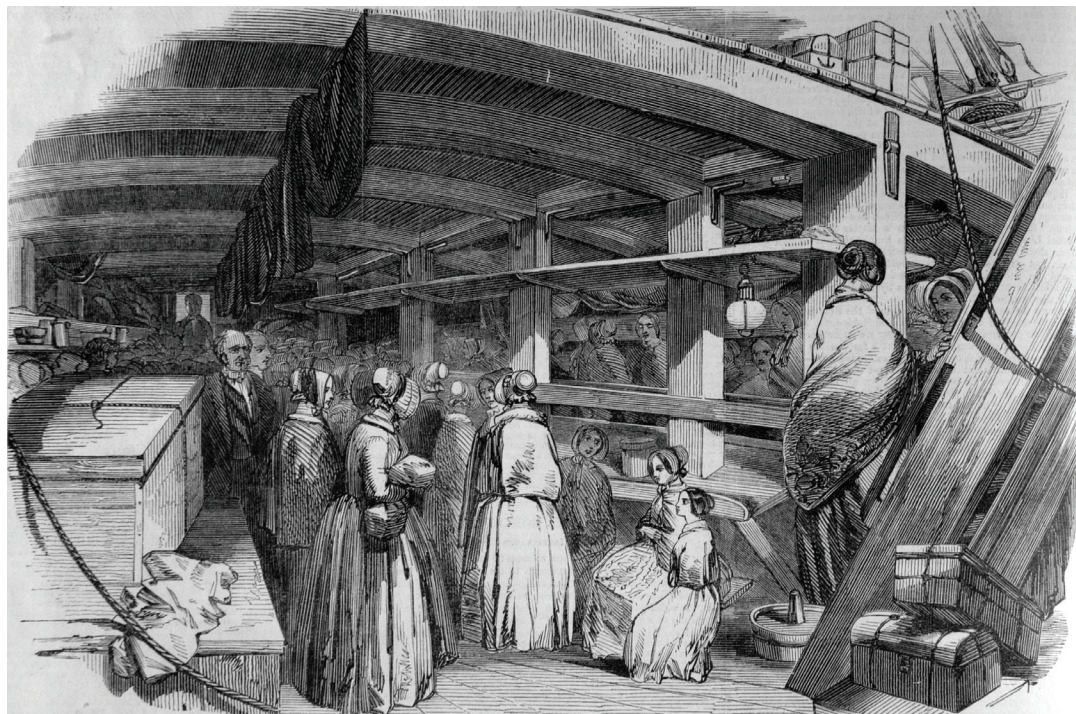


Figure 4. A lithograph of steerage passengers between decks on an immigrant ship. *The London Illustrated News*. 17 August 1850. Canterbury Museum 1949.136.2

Analysing Shipboard Accounts

What do shipboard accounts like those held by Canterbury Museum tell us about the past? Many historians have made use of these sources in their research, often to give a general sense of everyday life at sea. In an essay written in 1980, for example, Nigel Wace gave what is still one of the best short overviews of the voyage out to New Zealand and Australia (Wace 1980). He traced the routes that vessels followed regardless of the season and split the journey into two halves of roughly equal length, each with its own ‘character and duration’: the Atlantic leg and the run east through the southern latitudes. Wace pulled together material from a swathe of 230 diaries and letters, far more than most of the scholars who worked this ground in later years. His succinct description of the maritime sphere is colourful and touches on themes that historians would later explore including accommodation, food, leisure, conflict, human-animal relations,

first impressions, health and death. These topics were covered comprehensively in a well-known and much-cited book on the voyage to Australia. Don Charlwood’s *The Long Farewell*, published in 1981, was lavishly illustrated and provided considerable space for the testimony of ordinary migrants (Charlwood 1981). One is struck now by its unusual structure, the experiments with font sizes and the eclectic image research. Yet it succeeds quite brilliantly in capturing the textures of shipboard lives and the emotions that migrant writers felt and expressed at sea.

Don Charlwood and other scholars like Helen Woolcock and Andrew Hassam were an important influence on how New Zealand historians approached the voyage out (Woolcock 1986; Hassam 1994). Charlotte Macdonald’s classic study of single women migrants to nineteenth-century Canterbury is a case in point (Macdonald 1990). *A Woman of Good Character* features one of the most evocative chapters on Victorian maritime worlds in print. It combines

provincial government records, official papers, family memory and a relatively small number of shipboard diaries. We get a real sense of what life was like for young women “packed like so many cattle” into a physically segregated compartment of the ship, which they shared with a dark menagerie of rats, fleas, head lice and cockroaches. These single migrants were subjected to forms of shipboard discipline that featured “an element of repression as well as protection” (Macdonald 1990: 83). The title of Macdonald’s book neatly captures contemporary anxieties about the safety of women in transit and a perceived need to protect them from the unwanted sexual advances of captains, crew and male passengers. The movement of single women, their hours on deck and their communications with others were all sharply curtailed and enforced by shipboard matrons, few of whom seemed competent to take the formal authority granted to them.

Whereas Macdonald and other writers like Colin Amodeo (2000) focused on particular ships or types of migrant, New Zealand lacked a wide-ranging study to match the Australian research until 2006. David Hastings’ *Over the Mountains of the Sea* provided a much-needed general history of nineteenth-century maritime life that is highly readable, well-illustrated and incisive (Hastings 2006). He examined 250 voyages from the Vogel period of mass immigration from 1870–1885 for which there were 82 diaries. It is significant that these accounts, drawn mainly from the Alexander Turnbull Library, represented a good cross-section of the immigrant ships. About half were from steerage, nearly one-third were women and his ‘archive’ included ships’ officers, surgeons, matrons, married and single people, and first and second-class passengers. Hastings deployed the notion of a ‘social map’ to capture the way space was structured on board ship according to gender, class and marital status. The extensive evidentiary base he constructed enabled him to provide a corrective to Macdonald’s emphasis on “sexual predations” and, in fact, shows that single women were far from passive ciphers, reaching

out from “the virgins’ cage” as they did to sailors on the *Cardigan Castle* en route to Lyttelton in 1876 (Hastings 2006: 184). There is originality in his detailed treatments of shipboard time, of crime and punishment, of storms and weather and in tensions that could lead to individual or inter-group conflict. The latter formed the basis for a new strand of research by Angela McCarthy who extended the Hastings analysis in two excellent studies that cast new light on the experiences of Irish and Scottish migrants to New Zealand (McCarthy 2005, 2011). She made use of letter sequences and dozens of shipboard diaries to investigate familiar themes such as conflict, food and leisure, but also added some fresh ones: the treatment of language and accent, the representation of national characteristics and the significance of religious belief and practice. These insights have been brought together rather wonderfully in McCarthy’s chapter in an important publication *New Zealand and the Sea* (McCarthy 2018).

Diaries and other forms of writing at sea have offered significant insights into the social history of health and medicine in Australia and New Zealand as well as in Britain and Ireland. Helen Woolcock’s finely detailed *Rights of Passage*, based on her doctoral research at the University College, London, used a variety of sources to examine the transit of immigrants to nineteenth-century Queensland. She based her analysis mainly on official publications and correspondence, passenger lists and reports, to which she added a small number of migrant diaries, letters and ship surgeon’s accounts. The picture that emerges from her work is remarkable. Between the years 1860 and 1900, Queensland’s health-care policies and regulations were strictly enforced on most immigrant vessels, resulting in a 99% passenger survival rate and experiences at sea that were “safe, healthy and tolerable” (Woolcock 1986: xviii).

Woolcock’s pioneering study has been extended by Robin Haines in a series of articles and in a landmark book entitled *Life and Death in the Age of Sail: The Passage to Australia* (Haines 2003). Like her earlier work

on Britain and Ireland's labouring poor and Australian emigration, she focuses squarely on the maritime experiences of government-assisted working-class people. Haines uses similar source materials to Woolcock, as we might expect, but what sets her study apart and provides useful guidance for future historians is her willingness to place eyewitness records at the very centre of the book. The use of migrant letters, especially, reminds us that shipboard accounts extended beyond diaries, as we have observed for Canterbury Museum's collection. Here she follows the lead of the late David Fitzpatrick, whose work on nineteenth-century Irish Australian correspondence in *Oceans of Consolation* stands as an indispensable text (Fitzpatrick 1994). As Haines explains, migrant letters – like diaries and recollections – give us compelling “insights into the hearts and minds of people whose voices in history have tended to remain subdued” (Haines 2003: 37). Their testimony brings a much-needed personal dimension to an analysis of migrant health experiences at sea and the success of colonial authorities in lowering maritime death rates during the age of sail.⁴

What of mental illness on the voyage to New Zealand? This important topic had been ignored by scholars until relatively recently, despite the clear evidence of its significance in accounts like those held by Canterbury Museum. Angela McCarthy has now explored this aspect of everyday life at sea in several detailed studies. This exciting new work makes use of a number of different kinds of writing, including asylum casebooks, the reports of immigration officials, newspapers and medical journals (McCarthy 2015). But it also draws upon similar narratives to the ones we have documented for this paper. McCarthy's moving story of Cornish-born Jane T, for example, a passenger on the *Merope* to Lyttelton in 1875, is based on the exhaustive report of the ship's Surgeon Superintendent John Hassard. This case, she suggests, reveals much about madness in the maritime sphere; the ways in which doctors documented mental illness in both physical and behavioural terms, the

gendered lens through which Victorian medical professionals viewed women's symptoms with a central focus “on their bodies, moods and speech”, and the strong possibility that some migrants were shipped abroad by poor families and law authorities for the benefit of their health. It seems likely that Jane T was previously an inmate at Bodmin Asylum in Cornwall and she was admitted immediately after her arrival to Christchurch's Sunnyside Lunatic Asylum, where she died in 1888. McCarthy supplements these kinds of sources with shipboard diaries kept by migrants like Jane Findlayson on the *Oamaru* to Port Chalmers in 1876 and shows how this testimony provides further insights into the causes of insanity and the ways that it was portrayed and understood by contemporaries.

Shipboard accounts have been particularly useful for historians keen to explore the social and cultural history of death in the context of nineteenth-century migration. Patricia Jalland's Australian research, for example, speaks to the transnational dimensions of Victorian society, mobility and religion, and draws attention to the ways that migrants handled their relations with death and the dead (Jalland 2002). Recent work by Robin Haines, David Hastings, Angela McCarthy and Lyndon Fraser has provided a much deeper understanding of mortality rates and deathways on colonial-era voyages to Australasian ports (Haines 2003; Hastings 2006; McCarthy 2011; Fraser 2012). Collections such as those held by Canterbury Museum show that the long ocean voyage and prospect of a ‘watery grave’ did not undermine Christianity, nor did it represent an ‘abrupt termination’ of older death practices or attitudes. As Fraser shows, death at sea was greatly feared by Victorian migrants. It disrupted familiar relations between the living and the dead, created anxieties over the fate of corpses, and challenged models of “the good death” (Fraser 2017: 9). As we might expect, responses to death and loss varied according to denomination, gender, marital status, class, age and region. What is clear, however, is that migrant writers tended to construct the meaning of individual deaths in terms of their

own Christian beliefs (Fraser 2017: 9).

The subject of birth at sea is also an extremely important one given that large numbers of married women were pregnant at the time of their departure from Britain. Many of the studies mentioned above touch upon childbirth but the grittiest and most realistic narrative was penned by a male historian. David Hastings' brilliant description of Catherine Holmes' labour on the *Chile* in 1873 was based on the account of her diligent surgeon, Millen Coughtrey:

Holmes went into labour with short, grinding pains on 12 September and that night came the 'show', a bloody discharge indicating the serious work was about to begin. Coughtrey recorded in his medical journal that labour increased until six o'clock the next morning when he examined internally and found the cervix soft and pliable. Labour continued throughout the day and at five o'clock that afternoon Holmes allowed Coughtrey to draw off her waters. Two hours later he examined her again and made out the presentation; 24 hours after labour had started in earnest the baby's head had just reached the pelvic brim... (Hastings 2006: 197–198).

Hastings has readers in suspense and more drama is about to unfold. Coughtrey gives Holmes an infusion of ergot to increase her contractions, which had become feeble. It had the desired impact but, with the end in sight, the umbilical cord gets wrapped around the baby's head. The surgeon acts quickly, just before Holmes' final push and the baby girl is delivered, resuscitated and handed to its mother by the nurse, Bridget Hunter (Hastings 2006: 198). Births at sea, like the one depicted here, were much more common than we previously realised. Alison Clarke's research shows that birth rates on the New Zealand voyages "were among the highest in the oceanic world" (Clarke 2016). The experience of childbirth would no doubt have varied for migrant women, but one cannot help but be struck by the words of Emily Summerhays aboard the *Halcione* to New Plymouth in 1875, who had assisted another

passenger: "I pity anyone who has to be confined in a ship, it is terrible work, so much noise and rolling, nothing nice or tempting to be had, it does seem hard"⁵.

Married Men, Intimacy and Masculinity at Sea

Over the last four decades, then, historians have used shipboard accounts to explore various aspects of maritime worlds in the nineteenth century. More recently, as we have seen, scholars have posed new questions to these familiar sources and yielded fresh insights into topics as diverse as mental illness, birth and religion. They have also exploited personal testimony to provide clues about patterns or transformations at both ends of the voyage, as we see very clearly with research into the successful containment of disease at sea and how this connects with "the adult mortality revolution" in Britain (Haines 2003: 17). Our goal in this section is much more modest. In what follows, we want to bring attention to a topic that emerges from many of the accounts in the collection but has been neglected by historians. The public performance of masculinity and the nature of intimacy and emotions for married men at sea is worthy of greater attention. It seems clear from the available evidence that the traditional patterns of gendered caregiving and duties that we associate with Victorian-era domesticity were often reversed on the voyage (Hastings 2006: 84–86). Married men took responsibility for cooking in steerage, looked after children and nursed sick wives, a significant minority of whom were pregnant. For their part, women writers expressed great pain at their separation from families and friends and anxiety about their futures. Unlike their men, married women were often sick. They spent longer below decks and struggled with restrictive clothing and notions of respectability when ships were becalmed in the tropics. The best explanation for the blurring of gendered patterns of work at sea turns, perhaps, on sheer necessity rather than ideas about male observations of crew or

men's desires for productive labour. The tasks like food preparation that these men performed were essential ones for familial survival.

What do the surviving accounts reveal about intimacy and masculinities at sea? We offer a close reading of four accounts kept by married men to provide tentative answers to these questions. The first of these men, William Smith, was a cabin class passenger born in 1823 at Cheddleton, on the Staffordshire moors. He penned a retrospective account of his 1852 voyage to Canterbury on the barque *Minerva* that weaves together later reflections with personal testimony from his diary. Smith had married his beloved, Lizzie, that year and sweetened his plans for emigration by cannily offering to bring along her younger sister, 17-year-old Annie. After emotional farewells at Delton, the three travellers made their way to London and stayed at the Caledonian Hotel, near the Strand, to await the fitting out of their cabins. The task accomplished, they went by rail to Gravesend on "a wild and tempestuous day" and boarded their maritime 'home'. The newly wed William, whose nerve almost failed him before the ship left the dock, was equal to the "trying cares" required when a severe gale was encountered off the chalk headland of North Foreland on the Kent coast (Smith 1853: 6).

William had forewarning of the troubles ahead. On the first night, he recalled "leaving the girls to make their preparations for passing the night" by going on deck to smoke his pipe and ascertain what he could about the weather. It was there that he heard a "grave" conversation between the Captain and First Officer that signalled a "deadly struggle" beyond the river. His description of the cabin scene when he went below decks reveals much about the nature of his relationship, the strength of his Christian faith and his belief in the efficacy of prayer:

And so in the black darkness and tempest was our voyage commenced... I saw through the door which communicated between the two cabins that Annie was fast asleep in her berth. Lizzie was also in a deep but uneasy slumber; she started and

moaned but did not wake. As I gazed on her troubled countenance I felt overwhelmed with remorse for bringing her and her young sister into the perils that I felt intuitively surrounded us. I then fell on my knees in a long and earnest prayer, committed them and myself to the care of my Heavenly Father, and was soon also asleep (Smith 1853: 6–7).

The next morning, William committed himself to caring for Lizzie and Annie "in all the horrors and hopelessness of sea sickness. I could not leave the poor sufferers for a moment to go on deck even though I felt an almost irresistible desire to do so". He heard the crashing waves, the yells of the pilot and officers and the "heavy tramp" of desperate crew as the *Minerva* changed tack. "Wretched indeed!" he wrote in his journal on 5 October 1852:

Oh! That we had gone down to Plymouth to embark! Tremendous gale from the West. Driven back time after time to Dungeness. Oh! The horrors of last night! Lizzie delirious – raving of home! How the poor child did call on her Mother! Then she talked with child-like glee about going home, mentioning in a fond anticipation each cherished name. May He who alone can calm the winds and still the raging of the sea look in mercy on us and tenderly regard these dear lambs of mine (Smith 1853: 7).

William was not only "a good sailor" but also a resourceful one. He extended his care the next day to two young women in a cabin next to Annie's who were in "a state of exhaustion" from sea sickness. "Fortunately before leaving London", he recalled, "I had brought a small tin contrivance for boiling water even in the roughest weather, so I could make plenty of arrowroot, and having abundance of wine I managed to keep them and my helpless ones alive through those dreadful days and nights". The ship made it back to Plymouth for repairs and time ashore, the Captain warning him to watch "the girls" in case they fled at the prospect of further dangers on an angry sea (Smith 1853: 7).



Figure 5. The front cover of William Henry Jewell's shipboard diary. Canterbury Museum X4204

William's easy adjustment to the maritime world was not an experience shared by all male writers. Kerry-born Matthew Moriarty, the second son of a rector's household in Donegal, had nursed his elder brother, Robert, through tuberculosis during their time at Trinity College, Dublin. His physician considered him at threat from the disease and recommended a long sea voyage and an outdoor life as the best remedies. According to family memory, Matthew was offered a job on a sheep station in the Ashburton district. It was during the period before his departure for Canterbury that he met Julia Adams while staying with relatives at Coleraine. They fell in love and were married quickly – at Julia's insistence – so that they could travel together to the province. The couple embarked on the *Northern Monarch* in Plymouth at the end of October 1878 and arrived in Lyttelton 3 months later, only to be quarantined on Quail Island for 2 weeks due to a measles outbreak.

Matthew's account offers some of the best observations of everyday life at sea in the

Museum's collection and takes the form of a diary that was sent home to his mother, Sarah, at Killaghtee. His health was not great during the initial stages of the voyage but he seemed to gain strength over time. This transformation was neatly captured by his comments on Quail Island:

I am as fat as a fool and though the sailors thought I came on board to die of consumption we are all like a jolly lot at Portrush with the advantage of knowing each other and knowing who prefers different games and amusement (Moriarty 1878–1879: 60).

The gradual return to vigour was much needed for Julia spent most of the voyage ill, sometimes for days on end, and Matthew became her nurse:

11th [January 1879]

Julia is very ill to-day, her head and stomach are uncomfortable, Doctor gave her some medicine.

12th

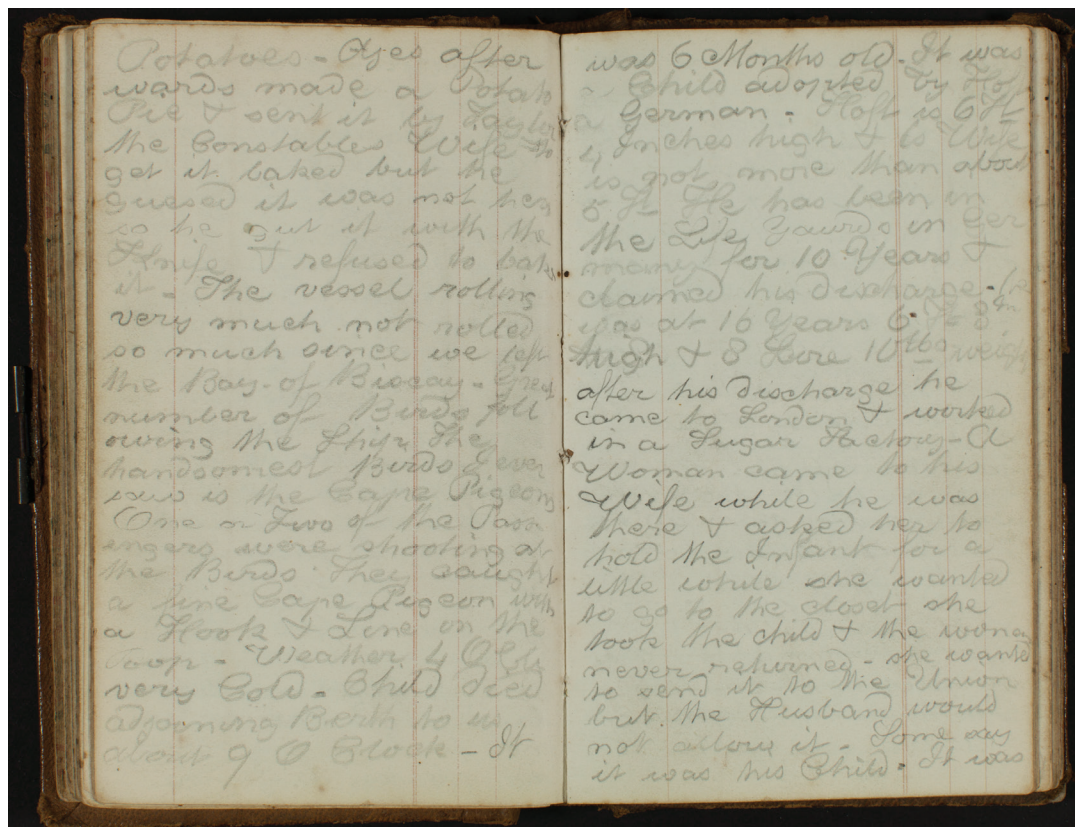


Figure 6. A page from William Henry Jewell's shipboard diary. Canterbury Museum X4204

Julia very ill to-day feverish, tooth aching, sore throat and headache, a great deal of sickness in the ship caused I suppose by the damp and cold (Moriarty 1878–1879: 47).

Julia rallied briefly, much to Matthew's relief, but he recorded on 18 January that she was "ill in bed suffering from violent pain in her side" (Moriarty 1878–1879: 52). By 22 January she was "still ill and sometimes better, in bed generally, but cannot stay sometimes so she gets up" (Moriarty 1878–1879: 54). Two days later he penned an entry that revealed his deeper feelings:

Julia is still very ill, but for my care for her just now these notes would be more interesting. But though I can do nothing for her all my thoughts are so much hers. I can think of nothing else just now (Moriarty 1878–1879: 54).

Her condition had not improved by 28

January. Matthew noted that "her worst time is at night, she cannot sleep and is so tired and sleepy in the day time and cannot eat anything, only drink, drink, drink" (Moriarty 1878–1879: 55). Land proves to be a saviour, just as he had hoped, "If this does not make her well, nothing will. It makes my heart so low I cannot write of anything now" (Moriarty 1878–1879: 56). Julia regained her appetite in the summer warmth on Quail Island and gradually recovered her strength. "This is one of the happiest times of my life", Matthew told his mother, "and I go up to the Church with a light heart as my darling is getting her old self again" (Moriarty 1878–1879: 60).

What of married men's experiences in steerage? The beautiful leather-bound diary of William Jewell, a carpenter from Cornwall, offers some clues (Figs 5 and 6). It is one of three items held by Canterbury Museum that relate to his voyage to Canterbury with his wife, Grace, on



Figure 7. William and Grace Jewell's embarkation order. Canterbury Museum ARC1900.281 item 1

the *Echunga* in 1862. In addition to the written account, which includes the evocative phrase “the Sea was going mountains high” (Jewell 1862: 9), there is a black-framed embarkation order and a passengers’ contract ticket (Figs 7 and 8). The Jewell diary is also notable for other reasons.

For example, it contains a catalogue of the books that he owned and gives us a sense of both his reading and the influences on his writing. We also find that William was a keen poet and several of his compositions are included in the extant volume. He was certainly a close observer

CANTERBURY, NEW ZEALAND.

LINE OF PACKETS.

No. 756

PASSENGERS' CONTRACT TICKET.

1.—A Contract Ticket in this form must be given to every Passenger engaging a passage from the United Kingdom to any place out of Europe, and not being within the Mediterranean Sea.
 2.—The Victualling Scale for the voyage must be printed in the body of the Ticket.
 3.—All the Blanks must be correctly filled in, and the Ticket must be legibly signed with the Christian Names and Surname and Address in full of the party issuing the same.
 4.—The day of the month on which the Ship is to sail must be inserted in words and not in figures.
 5.—When once issued, this Ticket must not be withdrawn from the Passenger, nor any alteration, addition, or erasure made in it.

Ship Reliance of 1007 Tons Register, to take in
 Passengers at half Royal Dock London for NEW ZEALAND, on the 1st
 day of September 1862

I engage that the person named in the margin hereof shall be provided with a Steerage Passage to, and shall be Landed at, the Port of Lyttelton, in the Province of Canterbury, New Zealand, in the Ship Reliance with not less than Twenty* Cubic Feet for Luggage for each Statute Adult, and shall be victualled during the voyage and the time of detention at any place before its termination, according to the subjoined Scale, for the sum of £ 34 — including Government dues before embarkation, and head money, if any, at the place of landing, and every other charge except Freight for excess of Luggage beyond the quantity above specified; and I hereby acknowledge to have received the sum of £ 34 — in {part} payment.

NAMES.	AGES.	Equal to Statute Adults.
<u>William Jewell</u>	<u>27</u>	<u>one</u>
<u>Grace</u>	<u>27</u>	<u>one</u>

The following quantities, at least, of Water and Provisions (to be issued daily), will be supplied by the Master of the Ship, as required by Law, viz., to each Statute Adult Three Quarts of Water daily, exclusive of what is necessary for cooking the articles required by the Passenger Act, to be issued in a cooked state, and a Weekly Allowance of Provisions according to the following Scale:—

ARTICLES.		ARTICLES.	
Preserved Meats	1 lb	Tea	1 oz.
Soups and Bouilli	—	Coffee	2 oz.
York Hams	—	Butter	4 oz.
Fish	—	Cheese	—
Salt Beef	1 1/2 lb	Currants, or	—
Pork	1 lb	Raisins, Valentin	1/2 lb
Biscuit	3 1/2 lb	Suet	6 oz.
Flour	3 lb	Pickles	1/2 pt.
Rice	1/2 lb	Mustard	1/2 oz.
Barley	—	Pepper	1/2 oz.
Peas	1 pt.	Salt	2 oz.
Oatmeal	1 pt.	Potatoes, Fresh, or	2 lb
Sugar, Raw	1 lb	Preserved ditto	1/2 lb
Lime Juice	6 oz.		

Substitutions at the following rates, may at the option of the Master, be made in the above Dietary Scale:—

1 lb. of Preserved Meat	for	1 lb. of Salt Pork or Beef
1 lb. of Bread, or Flour, or Biscuit or	"	1 lb. of Oatmeal, or
1 lb. of Beef or Pork	"	1 lb. of Rice or Peas.
1 lb. of Rice	"	1 lb. of Oatmeal, or rice <i>tertia</i> .
1 lb. of Preserved Potatoes	"	1 lb. of Potatoes.
10 1/2 oz. of Currants	"	8 oz. of Raisins.
3 1/2 oz. of Cocoa or Coffee, Roasted and Ground	"	2 oz. of Tea.
1 lb. of Tapioca	"	1 lb. of Sugar.
1 gill of Mixed Pickles	"	1 gill of Vinegar.

Signature in full Wm Jewell
23 August 1862
 LONDON, to be paid at Charing Cross, London, on or before the 23 August, when an Embarcation Order will be given.

Deposit..... £ 5
 Balance..... £ 12
 Advance in Aid by the 17
 Total... £ 34

NOTICES TO PASSENGERS.

1.—If Passengers through no default of their own, are not received on board on the day named in their Contract Tickets, or fail to obtain a passage in the Ship, they should apply to the Government Emigration Officer at the Port, who will assist them in obtaining redress under the Passenger Act.
 2.—Passengers should carefully keep this part of their Contract Ticket till after the end of the voyage. If lost, no second Ticket will be issued.
 N.B.—If Passengers are not maintained on Board after the above-named Date, they will be paid Subsistence Money, after the rate of 1s. 6d. per day for each Statute Adult.
 N.B.—This Contract Ticket is exempt from Stamp Duty.
 will not undertake to hand more than the above quantity of Luggage.
 † All charges on board the vessel between embarkation and disembarkation.
 It is understood that this deposit will be absolutely forfeited in case the parties named herein fail to embark in a fit state of health for the voyage at the above-mentioned place and date.

Figure 8. William and Grace Jewell's passenger contract ticket. Canterbury Museum ARC1900.281 item 2

of shipboard life, with a sharp eye for action and his racy style is laced with good humour. He writes toward the end of his first entry:

Well you are the Jewell. Yes, but sometimes the diamond. Where is your righte [sic] Jewell. Here she is. Well I hope

youll [sic] prove Jewells. I hope I shall gather some before I come back. Came on the upper Deck had Pint of Porter the last for a long time in Merry England (Jewell 1862: 3).

William's affection for Grace is clearly evident in the entries and we are given fleeting glimpses of their moments together. Like many other husbands, he made tea for his wife during the days of sickness after leaving port. Later, on the Atlantic, they enjoyed some leisure time:

Friday. Wind favourable Saw a great quantity of Mothers Careys Chickens. Swallow was sucked up by Napier from the side of the Ship. Sleeping. Stokes went & got some water but by the time he got the water he awoke and flew away. I suppose it was weak through want of food. It has been about the Ship 2 or 3 days. Splendid Moonlight. Grace & me went of the forecastle & staid 2 or 3 Hours. Grace enjoyed herself very much. Never had such a comfortable lie down since she left home. That is Grace? (Jewell 1862: 5).

The work required within steerage is certainly far greater for married men than in cabin class. But there was still space for tenderness. "Made a foot Stool for Grace", William reports proudly on 27 October, "& put my name on the Top in German Text" (Jewell 1862: 8). When sharing part of a morning on deck, they gazed in awe at the mountainous seas of the southern ocean:

Our bulwarks are high more than 7 Feet. I & Grace were looking over her side about 8 O Clock when a large wave struck and went right over us. We have been throwing over broken biscuit & vituals [sic] to the Birds. They are flying around in swarms (Jewell 1862: 10).

The couple were less enamoured of the rats that plagued the *Echunga* throughout its voyage. William's descriptions of their antics are often darkly comical, as we read in a passage written on 3 November:

We were disturbed for some time after we were in bed by a rat behind us in the inside of the Ship screaming dreadful. I got my Screw Driver & knocked several times

and it went off but shortly returned again not long after. I heard it again & got up in the bed to get a light when it made a spring & almost knocked me down by striking me in the head. Grace awoke once that rat was in again. I had my Screw driver by my side but owing to the darkness I had no chance to kill it. I struck out right & left with the Screw Driver as it was jumping from side to side but it made its way off (Jewell 1862: 14).

The drama seemed over until a large rat casually walked across their pillow into the next berth as they were sitting up. He noted:

[W]e had no sleep for that night the rats were running over our faces & on the child. Grace got up about 4 O Clock next morning afraid to stay in bed. They are an enormous size. We intend to sleep another way next night (Jewell 1862: 14).

William Jewell's chivalrous battles with rats and Grace's occasional illnesses seem tame affairs when compared to the experiences of some other migrants. Such was the case for Yorkshireman Thomas Dacre (Fig. 9) who came to Canterbury with his wife, Emma, and two infant children,



Figure 9. Thomas Dacre later in life. Canterbury Museum 2012.38.2



Figure 10. Thomas Dacre's shipboard diary. Canterbury Museum 2012.38.1

Lucy and Annie, in 1873. Thomas recorded the dramas of their journey aboard the *Adamant* with a pencil in a pocket-sized and leather-bound diary (Figs 10 and 11). Despite these limitations of scale, he manages to convey the rich textures of shipboard life in lucid and often colourful prose. Like Grace Moriarty, Lincolnshire-born Emma Dacre was sick for long periods on the voyage. There were also worrying signs for infants. On 28 July, 2 weeks out, Thomas revealed that “[t]wo or three young children [were] very poorly” (Dacre 1873: 2). The first funeral took place one day later and by the 6 August he was “thankful to note that my children are still well” (Dacre 1873: 4). As readers, we sense trouble ahead.

The first indications of looming tragedy are given on 11 August, Annie's first birthday; “Very wet rough weather. Emma poorly and sick. Annie very poorly with her teeth” (Dacre 1873: 4). Lucy, on the other hand, remained in good health as the rest of her family suffered through the tropics. By 22 August, Annie was “very thin and don't eat scarcely anything” (Dacre 1873: 5). On 25 August,

the ship's surgeon-superintendent prescribed the standard and nutritious combination of arrowroot and beef tea. The end was swift and heart-breaking:

28 [August]

At 2 o'clock this morning our Dear Annie died after suffering very much ... the last three days with Diarrhoea which I believe was brought on with the water being so salt[y]- the condensed water. She was very much purged and very sick. She put everything we gave her up and gradually wore away to almost a shadow. She died very quiet without any struggle at all. They interred her at 10am. We feel it is very hard to lose the little lamb and much more so at sea, but we know she has departed to be with Jesus, which is far better. Emma is very weak and poorly (Dacre 1873: 6).

For bereaved parents like Thomas and Emma Dacre, there was enormous consolation and comfort in the knowledge that their young

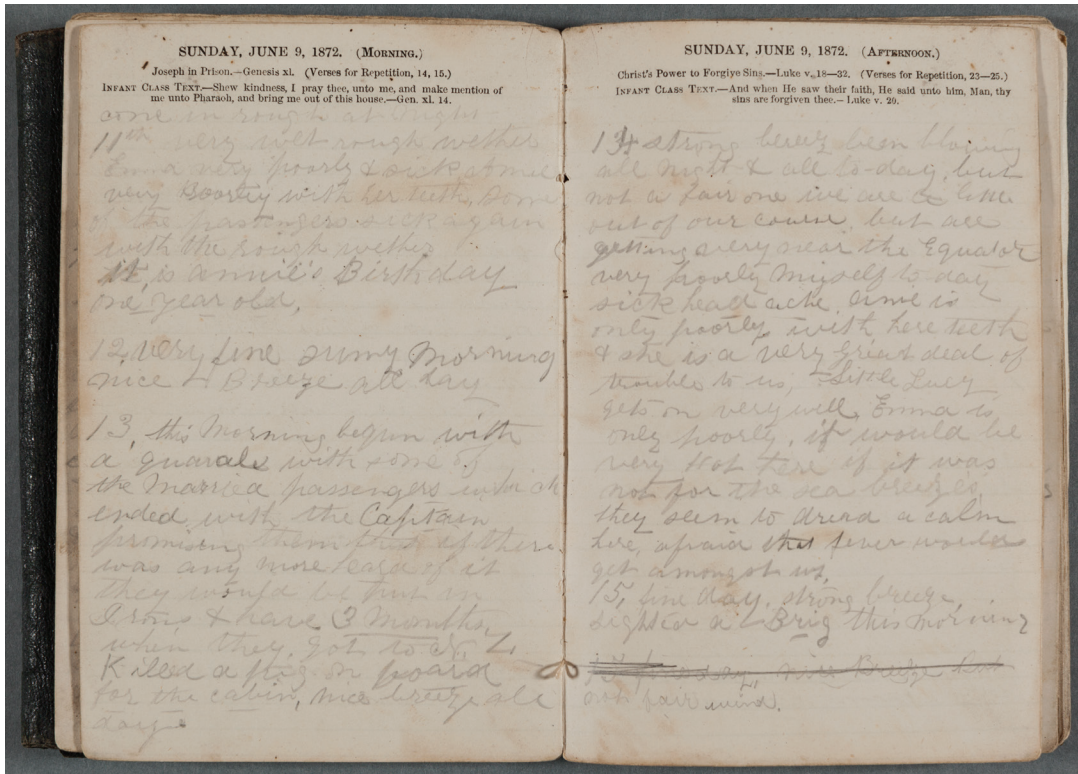


Figure 11. Pages from Thomas Dacre's shipboard diary. Note that Dacre used an 1872 diary to record his 1873 voyage. Canterbury Museum 2012.38.1

daughter was now safe with Jesus. Her death was an act of God's mercy and there appears to have been no confusion in Thomas's mind about the conceptual geography of salvation and its implicit promise of reunion with Annie in the world beyond (Dacre 1873: 6).

Conclusion

The long sea voyages from Europe to New Zealand in the nineteenth century remain a subject of great fascination for scholars and the general public. Since 1925, the descendants of nineteenth-century British and Irish immigrants have been sharing their family's accounts with the Museum. Their generosity has made the shipboard diaries collection a reflection of the community's values and interests: a public celebration and a popular hobby have shaped the collection to a greater degree than conscious

collecting efforts made by Museum staff. It is perhaps not a coincidence that the first scholarly studies using shipboard accounts appeared in the 1980s and 1990s, the same time that an interest in family history exploded. As more shipboard accounts were donated to various repositories, scholars had more raw material available to study. To date, scholars have examined multiple facets of shipboard life, from the day to day realities of living on a cramped ship with strangers, domestic animals, rodents and birds, to detailed investigations of topics such as the experiences of single women, class, healthcare, and birth and death at sea. The extant shipboard accounts continue to yield fruitful results, as demonstrated by our exploration of intimacy and the performance of masculinity in the diaries of four married men who sailed to Canterbury. We often think of nineteenth-century men and women existing in separate spheres of public

and domestic life, respectively. However, a closer reading of shipboard accounts kept by married men reveals that, at least in some cases, the marriages were very much a partnership, with men stepping into the domestic sphere when needed.

Endnotes

- 1 Lyndon Fraser began examining these documents in 2016 but more intensive work began in 2018 when Emily Rosevear provided a close and systematic analysis of the entire collection. One of the first outcomes of this research was Emily's BA (Honours) dissertation in History (Rosevear 2018). Joanna Szczepanski took a museological approach to investigate why and how the documents came to Canterbury Museum. Her work revealed why the documents came to be seen as significant so long after they were written.
- 2 The donor's exact relationship to Charles Alabaster is unclear.
- 3 See related documents for Canterbury Pilgrims and Early Settlers Association papers 148/49. The organisation is still active today.
- 4 Two other important Australian studies of voyages, health and the sea are Haines (2005) and Foxhall (2012).
- 5 Emily Summerhays' diary, 8 June and 16–18 June 1875, quoted in Clarke (2016: 18).

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Appendix

Shipboard accounts are organised in alphabetical order by author's surname. A few of the authors remain unidentified. Most of the ships travelled from Great Britain to Lyttelton. If the ship took a different course, this is indicated after the year(s) of the ship's travel. A handful of accounts have been published while others have multiple copies stored at different repositories around New Zealand. Where other copies are known to exist, this is noted in the provenance column. Unfortunately, several accounts have become disassociated from their provenance and consequently their acquisition dates and provenance are marked as unknown.

The terms 'presented' and 'gifted' means that Canterbury Museum has legal title to these items. The terms 'deposited' and 'loaned' means that Canterbury Museum does not hold legal title and the item is on a long-term loan. For a list of shipboard accounts held by other repositories in New Zealand see "A Guide to firsthand shipboard accounts for voyage to New Zealand, 1840–1900" compiled by Marsha Donaldson in 1998. The microfiche is available at the National Library in Wellington. Please note that the microfiche does not include reference numbers (in most cases) or provenance information and some of the repositories have changed their names since 1998.

Author	Type of Document	Ship & Year(s) of Travel	Dates of Document	Format	Reference Number	Year of Acquisition	Provenance Notes
Alabaster, Charles	Diary	<i>Strathallen</i> (1858–1859)	12 Oct 1858– 21 Jan 1859	Original and Transcription	ARC1900.10	1925	Presented by Mrs Alabaster.
Alington, William	Diary	<i>Matoaka</i> (1860)	4 Sep 1860– Dec 1860	Original	ARC1991.10 item 1	1991	Presented by W H Alington.
Andrews, Joseph	Letters	<i>Accrington</i> (1863)	18 Jun 1863– 5 Sep 1863	Photocopy	ARC1990.3	1990	Presented by Mr A R Claridge. Location of original unknown.
Andrews, William	Diary	<i>Somersetshire</i> (1874–1875) to Melbourne	21 Nov 1874– 5 Feb 1875	Transcription	X3521	1978	Presented by Charles Edward True-man Roberts. Location of original unknown.
Angus, Mr	Diary	<i>Canterbury</i> (1874)	6 Jun 1874– 3 Sep 1874	Photocopy	ARC1994.36	1994	Presented by Mrs Kaye Catron. Location of original unknown.
Barker, Alfred	Diary	<i>Charlotte Jane</i> (1850)	12 Sep 1850– 16 Dec 1850	Original and Transcription	X3551	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association. A copy is available at the University of Waikato. Extracts published in: Burdon CC. 1972. <i>Dr A C Barker 1819–1873, photographer, farmer, physician</i> . Dunedin: John McIndie.

Barker, Emma	Diary	<i>Charlotte Jane</i> (1850)	12 Sep 1850–16 Dec 1850	Original and Transcription	X3551	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association.
Baxter, James	Diary	<i>Roman Emperor</i> (1859)	1 Oct 1859–26 Jan 1860	Transcription	ARC1990.96	1990	Presented by Mrs A B Taylor.
Bedwell, Edward	Diary	<i>Sobroan</i> (1875) to Melbourne	28 Sep 1875–28 Nov 1875	Original	X3580	1983	Presented by Mrs D L Rigby.
Bennetts, Mary Ann	Diary	<i>Adamant</i> (1873)	16 Jul 1873–16 Oct 1873	Transcription	ARC1900.18	pre 1965	Location of original unknown.
Bishop, Mary Ann	Diary	<i>Charlotte Jane</i> (1850)	6 Sep 1850–2 Jan 1851	Transcription	ARC1900.38	Unknown	Unknown
Bold, Edwin	Letter and Reminiscences	<i>Pleiades</i> (1885)	26 Jun 1885–21 Sep 1885	Photocopy and Transcriptions	ARC1998.13	1993	Presented by Mrs Joyce Ennor. Location of original unknown.
Bottle, Henry	Diary	<i>Himalaya</i> (1879)	11 Jan 1879–15 Apr 1879	Photocopy and Transcription	ARC1900.43	1990	Presented by Mrs J K Bottle. Original held at Christchurch City Libraries.
Bridge, Charles	Diary	<i>Randolph</i> (1850)	7 Sep 1850–16 Dec 1850	Transcribed Letters and Journal	X3635	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association. A copy is available at the University of Waikato. Location of originals unknown. Extracts published in: Brett H. 1976. <i>White Wing Volume 2: Founding of the Provinces and Old Time Shipping</i> . Christchurch: Capper Press.
Brittenden, Fredrick	Letter	<i>Olive</i> (1878)	10 Sep 1878	Transcript	ARC1992.26	1992	Presented by Mrs J K Dalton. A copy is available at the Alexander Turnbull Library in Wellington.
Brittenden, Fredrick	Letter	<i>Olive</i> (1878)	10 Sep 1878	Transcript	ARC1994.43	1994	Transcribed from the original. A copy is available at the Alexander Turnbull Library in Wellington.

Author	Type of Document	Ship & Year(s) of Travel	Dates of Document	Format	Reference Number	Year of Acquisition	Provenance Notes
Brittenden, Fredrick	Letter	<i>Olive</i> (1878)	10 Sep 1878	Original	X3642	1982	Presented by Mrs John Waugh. A copy is available at the Alexander Turnbull Library in Wellington.
Brook, Alonzo	Diary	<i>Surat</i> (1873) to Port Chalmers	26 Sep 1873–2 Mar 1874	Photocopy	ARC1900.11	Unknown	Unknown
Brown, Christopher	Diary	<i>City of Dumedin</i> (1876)	13 Mar 1876–28 Jun 1876	Photocopy	ARC1992.38	1992	Presented by Mr Rex Brown. Location of original unknown.
Brown, John	Diary	<i>Alma</i> (1855) from Melbourne to Lyttelton	25 Oct 1855–22 Nov 1855	Original Logbook	X3656	Unknown	Unknown
Burnell, Edwin	Diary	<i>Clontarf</i> (1859)	15 Sep 1858–5 Jan 1859	Photocopy	ARC1900.110	Unknown	Unknown
Butler, John	Diary	<i>Waimate</i> (1874–1875)	12 Oct 1874–10 Oct 1887	Original and Transcription	X3691	1984	Gifted by Jim H Weir.
Button, Benjamin	Diary	<i>Egmont</i> (1856–1857)	11 Sep 1856–23 Dec 1856	Photocopies	ARC1990.32 item 1	1990	Presented by Mrs Gilda Lulham. Location of original unknown.
Button, Benjamin	Diary	<i>Airdale, Albion and Wellesley</i> (1865)	16 Mar 1865–24 Jul 1865	Photocopies	ARC1990.32 item 2	1990	Presented by Mrs Gilda Lulham. Location of original unknown.
Button, Edward	Letter	<i>Merope</i> (1872)	4 Sep 1872	Transcribed Letter	ARC1900.24	Unknown	Unknown
Campbell, Andrew	Diary	<i>Trevelyan</i> (1883) to Port Chalmers	24 Sep 1883–2 Jan 1884	Photocopy	X3695	1985	Gifted by Mrs Beth A Saunders. Location of original unknown.

Candy, Emily	Diary	<i>John Lawson</i> (1859)	20 Oct 1859– 20 Feb 1860	Original and Photocopy	ARC1900.1	Unknown	Unknown. A copy is available at the New Zealand Society of Genealogists Library.
Cardwell, John	Diary	<i>City of Transjore</i> (1881)	26 Jun 1881– Oct 1881	Photocopy	ARC1995.18	1995	Presented by Jeanette Denny. A copy is also available at the Alexander Turnbull in Wellington. Location of original unknown.
Carey, Andrew Fuller	Diary	<i>Benan</i> (1882) to Port Chalmers	25 Nov 1882–22 Feb 1883	Transcription	ARC1900.41	1964	Original held by Mrs S P Carey.
Carr, David	Diary	<i>Lancashire Witch</i> (1863)	27 Jun 1863– 14 Oct 1863, farm account for 1871	Photocopy	ARC1993.67	1993	Presented by Mr Frank Carr. Location of original unknown.
Caygill, James	Diary	<i>Amoor</i> (1864)	4 Apr 1864–8 Jul 1864	Transcription	ARC1900.21	1964	Original held by Mrs F E Empson. A copy is also available at the Alexander Turnbull Library.
Caygill, James	Diary	<i>Queen Bee</i> (1872) Wellington to England	7 Mar 1872–21 Jun 1872	Photocopy	ARC1996.8	1996	Presented by Margaret Buckley and Alan Chapman. Location of original unknown.
Chapman, Edward Palmer	Diary	<i>Hampshire</i> (1852–1853)	9 Dec 1852–6 May 1853	Transcription	X3747	1987	Loaned by E Mary Chapman. A copy is also available at Museums Wellington.
Chapman, Edward Palmer	Diary	<i>Hampshire</i> (1852–1853)	9 Dec 1852–6 May 1853	Original	X446	1987	Loaned by E Mary Chapman. A copy is also available at Museums Wellington.
Chudleigh, Edward	Diary	<i>Matoaka</i> (1862)	27 Nov 1861– 11 Jan 1863	Original and Photocopy	A336 item 1	1949	Presented by Maj Chudleigh.
Clifford, Charles	Diary	<i>Mary's of Dundee</i> (1842)	5 Jul 1842	Original	338/50 Folder 1 Item 32	1950	Deposited by Mrs MacDonald. Location of original unknown.

Author	Type of Document	Ship & Year(s) of Travel	Dates of Document	Format	Reference Number	Year of Acquisition	Provenance Notes
Clifford, Mary	Letter	<i>Phoebe Dunbar</i> (1850) to Port Chalmers	28 Jul 1850	Original and Type-script	ARC1989.63	1989	Loaned By Mrs J MacDonald.
Clifford, Mary	Letter	<i>Phoebe Dunbar</i> (1850) to Port Chalmers	25 Aug 1850	Original and Type-script	ARC1989.63	1989	Loaned By Mrs J MacDonald.
Clifford, Mary	Letter	<i>Phoebe Dunbar</i> (1850) to Port Chalmers	Oct– Nov 1850	Original and Type-script	ARC1989.63	1989	Loaned By Mrs J MacDonald.
Clifford, Mary and Charles	Letter	<i>Phoebe Dunbar</i> (1850) to Port Chalmers	11 Jul 1850	Original and Type-script	ARC1989.63	1989	Loaned By Mrs J MacDonald.
Clutterbuck, J.B.	Diary	<i>Captain Cook</i> (1863)	9 May 1863–1 Sep 1863	Photocopy and Transcription	ARC1900.3	Unknown	Unknown. Original is at National Archives in Wellington.
Coates, Isaac	Extract from Memoirs	<i>Lancashire Witch</i> (1867)	2 Apr 1867–29 Jul 1867	Transcription	ARC1900.6	Unknown	Unknown
Cook, Sarah Ann	Diary	<i>Rachel</i> (1864)	1 Dec 1864–27 Mar 1865	Transcription	ARC1993.64	1993	Presented by Adrienne Adair. Location of original unknown.
Copley, Alfred	Diary	<i>Tintern Abbey</i> (1874)	21 Dec 1874–2 May 1875	Original and Transcription	ARC1900.30	1964	Original held by Mr A E Copley.
Cordery, Edith Alice and John Ellis Shipley	Diary	<i>Waimate</i> (1881)	14 Sep 1881–23 Dec 1881	Transcription	ARC1990.93	1990	Presented by Mr E L Cordery. Location of original unknown.

Cowie, James	Diary	<i>William Miles</i> (1860)	3 May 1860–22 Aug 1860	Original and Photocopy	X3818	1987	Gifted by Mrs E Cowie. A copy is also available at the Auckland War Memorial Museum.
Cowley, James Thomas	Diary	<i>Cathcart</i> (1874)	1 Sep 1873–15 Nov 1875	Original	ARC1997.3	1997	Presented by Mr Trevor Phillips.
Cumworth, John	Diary	<i>Zealandia</i> (1859)	29 Jul 1859–28 Sep 1860	Transcription	X3833	1981	Presented by Mr Brian Lovell-Smith. Original in private collection.
Cunningham, Andrew	Diary	<i>Minerva</i> (1859)	18 Mar 1859–2 Sep 1859	Photocopy	ARC1988.22 item 1	1988	Gifted by Brian Walker.
Cunningham, Andrew	Diary	<i>Minerva</i> (1859)	18 Mar 1859–2 Sep 1859	Original	ARC1995.12 item 1	1995	Presented by Brian Walker.
Dacre, Thomas	Diary	<i>Adamant</i> (1873)	15 Jul 1873–17 Oct 1873	Original	2012.38.1	2012	Gifted by Clifford R Harris.
Dacre, Thomas	Diary	<i>Adamant</i> (1873)	15 Jul 1873–17 Oct 1873	Transcription	ARC1994.19	1994	Presented by Mrs Audrey Harris.
Davie, Cryrus	Diary	<i>Sir George Seymour and Randolph</i> (1850)	7 Sep 1850–15 Dec 1850	Photocopy	ARC1996.4	1996	Original held at Alexander Turnbull Library in Wellington. Copies are also available at the Alexander Turnbull Library in Wellington and the Hocken Collection University of Otago in Dunedin.
Davie, Cryrus	Diary	<i>Sir George Seymour and Randolph</i> (1850)	7 Sep 1850–15 Dec 1850	Typescript	X3849	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association. Copies are also available at the Alexander Turnbull Library in Wellington and the Hocken Collection University of Otago in Dunedin.

Author	Type of Document	Ship & Year(s) of Travel	Dates of Document	Format	Reference Number	Year of Acquisition	Provenance Notes
Davie, Cryrus	Diary	<i>Sir George Seymour and Randolph (1850)</i>	7 Sep 1850–15 Dec 1850	Original and Photocopy	X3850	1983	Presented by Mr F L Davie. Copies are also available at the Alexander Turnbull Library in Wellington and the Hocken Collection University of Otago in Dunedin.
Davie, William Petersen	Diary	Aberdeen (c1863–1864) Boston to Melbourne and Gothenburg (c1863–1864) Melbourne to Lyttelton	16 Sep 1863–28 Jan 1864	Photocopy	ARC1996.5	1996	Original held at Alexander Turnbull Library in Wellington.
Dawber, Robert and Rebecca	Diary	Ceres (1870)	22 Dec 1870–19 Jun 1871	Transcription	X3853	1974	Presented by R R Dawber. Original held at Alexander Turnbull Library in Wellington. Copies are also available at the Akaroa Museum and Christchurch City Libraries. Published as: Dawber AR. 1968. Robert and Rebecca Dawber. Akaroa: Dawber family.
Dawson, John	Diary	Nelson (1879) to Port Chalmers	5 Jun 1879–28 Aug 1879	Transcription	ARC1900.37	Unknown	Unknown. Copies are also available at the Alexander Turnbull Library in Wellington and Toitu Otago Settlers Museum in Dunedin.

Dewe, George	Poem	Scimitar (1873–1874) to Port Chalmers	24 Dec 1873–4 Mar 1874	Original	X3862	Unknown	Unknown
Draper, William	Register	Duke of Bronte (1851)	8 Jan 1851–6 Jun 1851	Photocopy and Transcription	X3706 Box 2 Folder 9 Item 198	Unknown	Originals held at Archives New Zealand.
Eaglesome, Matthew	Diary	Rose of Sharon (1856)	10 Oct 1856–19 Jan 1857	Original and Photocopy	ARC1900.32	Unknown	Unknown. Published in <i>The Star</i> June–July 1931.
Emery, Edith Jane	Diary	Zealandia (1879)	14 Jul 1879–20 Oct 1879	Original & Photocopy	ARX1988.50	1988	Gifted by Mrs J A Weise.
Enys, John	Diary	Chrysolite (1861)	15 Apr 1861–31 Jul 1861	Original	A343 Item 1	1955	Deposited by Kenneth A Webster.
Enys, John	Diary	Chrysolite (1861)	1837–1882	Original	A343 item 4	1955	Deposited by Kenneth A Webster.
Ferguson, Robert	Diary	<i>Timaru</i> (1874–1875) to Port Chalmers	30 Dec 1874–29 Apr 1875	Original and Transcription	ARC1900.12	Unknown	Unknown
Field, Strickland	Diary	<i>Canterbury</i> (1851)	15 Jun 1851–18 Oct 1851	Transcription	ARC1989.31	1989	Copied from the transcription.
Field, Strickland	Diary	<i>Canterbury</i> (1851)	15 Jun 1851–18 Oct 1851	Transcription	X3936	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association. Location of original unknown.
Fleming, John Smyth	Diary	<i>Zealandia</i> (1862)	3 Feb 1862–11 Jun 1862	Photocopy (Newspaper)	ARC1991.28	1991	Presented by Ron Chapman. Original at Toitu Otago Settlers Museum in Dunedin. Published in <i>The Star</i> June–July 1924.

Author	Type of Document	Ship & Year(s) of Travel	Dates of Document	Format	Reference Number	Year of Acquisition	Provenance Notes
Fleming, Richard John Philip	Diary	<i>Randolph</i> (1850)	7 Sep 1850–14 Dec 1850	Original and Pho- tcopy	X3949	1995	Gifted by the estate of Mr Bertram Fleming.
Florence, Augustus	Diary	<i>Mersey</i> (1862)	29 May 1862–30 Sep 1862	Original and Pho- tcopy	ARC1992.27	1992	Presented by Mr David Retter.
Gerard, Louisa	Reminis- cences, Diary	<i>Punjab</i> (1873)	2 Jun 1873–20 Sep 1873	Photocopy of News- paper	ARC1991.66	1991	Presented by J Smith. Location of original unknown. Published in <i>The Star</i> 16 September 1933.
Gill, Robert Askew	Diary	<i>Tongariro</i> (1887) to Wellington	10 Feb 1887– 27 Mar 1887	Photocopy	ARC1900.13	Unknown	Unknown
Godley, John Robert	Original	<i>Lady Nugent</i> (1850)	28 May 1851–18 Sep 1851	Original	A346	1939	Presented by Miss F E Godley. Copies also available at the Hocken Collection University of Otago in Dunedin.
Goldsmith, Horace Henry	Diary	<i>Tongariro</i> (1883) to Port Chalmers	22 Oct 1883–25 May 1884	Original, Photocopy and Tran- scription	ARC1992.18	1992	Presented by Mr V B Insley.
Goss, James	Diary	<i>Indiana</i> (1858)	3 Aug 1858–5 Dec 1858	Transcrip- tion	ARC1900.29	1964	Original held in private collection.
Gough, Charles	Letter	<i>Captain Cook</i> (1863)	17 May 1863–12 Sep 1863	Original	ARC1995.21	1995	Presented by Mrs B Harper-Nelson.
Gough, Charles	Letter	<i>Captain Cook</i> (1863)	17 May 1863–12 Sep 1863	Transcrip- tion	ARC1996.19	1996	Transcribed from the original.

Griffiths, Austin Secundus	Diary	<i>Merope</i> (1874)	27 Jun 1874-7 Aug 1874	Photocopy	ARC1900.23	Unknown	Unknown. A copy is also available at Christchurch City Libraries.
Gundry, John Seagar	Diary	<i>Steadfast</i> (1851)	25 Feb 1851-9 Jun 1851	Original	A347	1963	Presented by Miss D May. Published as: Gundry JS. 1982. <i>Dr Gundry's Diary</i> . Christchurch: Nag's Head Press.
Gundry, John Seagar	Diary	<i>Steadfast</i> (1851)	25 Feb 1851-9 Jun 1851	Transcription	ARC1900.233	Unknown	Transcribed from the original. Published as: Gundry JS. 1982. <i>Dr Gundry's Diary</i> . Christchurch: Nag's Head Press.
Handisides, David	Diary	<i>Northern Monarch</i> (1878)	18 Oct 1878-13 Feb 1879	Photocopy and Transcription	ARC1900.17	1990	Presented by Miss E J Pilgrim. Location of original unknown.
Harmer, Jason	Diary	<i>Waimate</i> (1874)	5 Oct 1874-22 Jan 1875	Original and Transcription	ARC1900.26	1973	Unknown
Harrow, Charles Adolphus	Diary	<i>Otaki</i> (1880)	22 Sep 1880-18 Nov 1880	Newspaper transcription	ARC1900.36	Unknown	Original at Alexander Turnbull Library in Wellington. Published as: "England to NZ - 1880s style" in the <i>West Christchurch Advertiser</i> 27 May 1969.
Hawke, David	Diary	<i>Waitangi</i> (1878)	10 Jul 1878-13 Oct 1878	Original	ARC1998.21	1998	Gifted by Mr Wilson Hawke.
Hayter, Richard	Diary	<i>Isabella Hercules</i> (1850)	24 Oct 1850-13 Jan 1851	Original	X4097	1983	Presented by Mrs Bastion.
Hempton, James Stephenson	Diary	<i>Piako</i> (1878-1879)	23 Mar 1878-5 Mar 1879	Photocopy	ARC1990.57	1990	Presented by Mr W J Armstrong. Location of original unknown.

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Henwood, Horatio	Diary	<i>Joseph Fletcher</i> (1856)	2 Jul 1856–23 Oct 1856	Photocopy and Transcription	ARC1992.20	1992	Presented by Smiths Bookshop. Location of original unknown.
Hitchens, George	Diary	<i>Waitangi</i> (1876)	20 Jun 1876–17 Sep 1876	Photocopy	X4129	1986	Gifted by Mrs Shirley Williams. Location of original unknown.
Holmes, John Sayers Frederick	Diary	<i>Halcione</i> (1877)	18 Aug 1877–28 Nov 1877	Transcription	ARC1999.4	1999	Gifted by John C Holmes. Location of original unknown.
Horrell, Frances	Diary	<i>Piako</i> (1878–1879)	5 Oct 1878–5 Mar 1879	Transcription	ARC1992.44	1992	Mrs Noreen Pearson. Location of original unknown.
Horrell, Frances	Diary	<i>Piako</i> (1878–1879)	5 Oct 1878–5 Mar 1879	Transcription	X4147	1964	Presented by Miss Noreen Mulholland. Location of original unknown.
Howard, James	Diary	<i>Simlah</i> (1854) to Wellington	25 Oct 1854–12 Mar 1855	Original	X4156	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association.
Howard, Lucy Large	Diary	<i>Charlotte Jane</i> (1850)	7 Sep 1850–16 Dec 1850	Original and Transcription	1993.286.1	1993	Presented by John H Webb.
Howard, Lucy Large	Diary	<i>Charlotte Jane</i> (1850)	7 Sep 1850–16 Dec 1850	Transcription	1993.286.2	1993	Presented by John H Webb.
Howell, Albert James	Diary	<i>Harvest Home</i> (1871)	9 Oct 1871–30 Dec 1871	Photocopy and Transcription	ARC1995.27	1995	Presented by Barbara Young. A copy is available at Christchurch City Libraries. Location of original unknown.
Hurst, Christopher John	Diary	<i>Waitangi</i> (1880)	11 Jul 1880–10 Oct 1880	Transcription	ARC1992.24	1992	Presented by Mrs Win Hamilton. Location of original unknown.

Jackson, Thomas	Report	<i>Castle Eden</i> (1850–1851)	03 Oct 1850–7 Feb 1851	Newspaper	X4190	1956	Purchased from A H Johnstone. Published in <i>The Star</i> , date unknown.
Jennings, William George	Diary	<i>Ballychmyle</i> (1874)	30 Mar 1874–6 May 1874	Photocopy and Transcription	ARC1996.18	1996	Presented by John Ward. Location of original unknown.
Jewell, William	Diary	<i>Echunga</i> (1862)	20 Aug 1862–12 Dec 1862	Original and Transcription	X4204	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association.
Johnston, William	Diary	<i>Mystery</i> (1858)	1 Dec 1858–8 Jan 1859	Original	X4217	1969	Presented by Mrs E Cave.
Keir, Thomas	Diary	<i>Mermaid</i> (1863–1864)	15 Nov 1863–16 Feb 1864	Photocopy	ARC1900.22	Unknown	Unknown. A copy is also available at the Alexander Turnbull Library in Wellington.
Kendall, Thomas	Diary	<i>Active</i> (1814–1815)	7 Mar 1814–10 Jan 1815	Transcription	ARC1900.17	Unknown	Unknown
Kimber, George J.	Letter	<i>White Rose</i> (1875)	Aug 1875	Transcription	ARC1900.27	Unknown	Unknown
Laing, William	Diary	<i>Bosworth</i> (1859) to Port Chalmers	26 Nov 1859–25 Jan 1860	Original	EC149.89	1949	Presented by Mrs U M Schaere.
Langford, Harriett	Reminiscences	<i>Aurora</i> (1839–1840)	10 Sep 1839–22 Jan 1840	Transcription	X4269	1986	Gifted by Mrs Hazel Warren-Jones. Copies are also available at the Alexander Turnbull Library in Wellington, Auckland War Memorial Museum and Auckland City Library.
Lawrence, Basil	Diary	<i>Charlotte Gladstone</i> (1870)	23 Oct 1870–28 Jan 1871	Transcription	X4275	1969	Presented by Mrs M Glasgow. Location of original unknown.

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Lee, Joseph Parsons	Letter	<i>Randolph</i> (1850)	25 Sep 1850	Original	ARC1900.303	Unknown	Unknown
Lee, Joseph Parsons	Diary	<i>Randolph</i> (1850)	7 Sep 1850–16 Dec 1850	Photocopy and Transcription	ARC1990.44	1990	Presented by Jean Garner. A copy is also available at Christchurch City Libraries. Published in <i>The Star</i> December 1923–January 1924.
Leech, George John	Diary	<i>Tasmania</i> (1852–1853)	3 Nov 1852–15 Mar 1853	Original	2009.26.4	2008	Gifted by Mr John Leech.
Lindsay, Ivy	Diary	<i>Ionic</i> (1907) to Wellington	18 Sep 1907–8 Dec 1907	Original and Transcription	A352	1968	Presented by Mrs Kelsey Lindsay.
Little, James	Diary	<i>Zambesi</i> (1863)	11 Jun 1863–20 Sep 1863	Transcription	ARC1900.285	1964	Original held by Mr G R Saunders.
Livesey, Hubert	Diary	<i>Athenic</i> (1908) to Wellington	20 Aug 1908–7 Oct 1908	Photocopy	ARC1997.19	1997	Presented by Mrs Margaret Stott. Location of original unknown.
Longden, Joseph	Diary	<i>Barbara Gordon</i> (1850) to Auckland	16 May 1850–8 Dec 1850	Original and Photocopy	ARC1900.14	1964	Presented by Mrs Dorothy Keele. A copy is also available at the Auckland War Memorial Museum.
Lough, Lucy	Diary	<i>Egmont</i> (1856)	11 Sep 1856–15 Dec 1856	Photocopy	2010.I.135	2010	Gifted by Elizabeth Gordon-Smith. Location of original unknown.
Lough, Lucy	Diary	<i>Egmont</i> (1856)	11 Sep 1856–15 Dec 1856	Transcription	X4307	1983	Presented by Mrs G Gibson. Location of original unknown.
Lush, Vicesimus	Diary	<i>Barbara Gordon</i> (1850) to Auckland	1 Jan 1850–20 Oct 1850	Photocopy	ARC1900.15	1964	Original in private collection. A copy is also available at Auckland War Memorial Museum.

Lyes, George	Diary	<i>Agamemnon</i> (c1872) to Cape Town and <i>Lyttelton</i> (c1872) to Canterbury	7 Mar 1872–22 May 1881	Photocopy	ARC1900.19	1982	Presented by Mr J E Carter. Location of original unknown.
Manning, Theophilus Samuel	Diary and Reminiscences	<i>Sydney</i> (1852)	31 Jul 1852–16 Nov 1852	Photocopy and Transcription of Reminiscences	ARC1900.5	Unknown	Unknown
Martin, Albin	Diary	<i>Cashmere</i> (1851)	16 Jun 1851–Jan 1852	Transcription	ARC1900.39	1953	Original at the Alexander Turnbull Library in Wellington. Published as: Martin A. 1852. <i>Journal of an Emigrant from Dorsetshire to New Zealand</i> . London: W.S. Johnson.
Martin, Henry	Diary	<i>Clontarf</i> (1858)	15 Sep 1858–7 Jan 1859	Photocopy	X4375	1983	Gifted by Mrs E A Edgerton. Original held by Elizabeth Edgerton.
Martin, J.	Report	<i>Stag</i> (1852)	18 May 1852	Photocopy	X3706 Box 5 Folder 22 Item 546	Unknown	Originals held at Archives New Zealand.
Martin, Sarah	Diary	<i>Clontarf</i> (1858)	3 Oct 1858–30 Oct 1858	Photocopy (Newspaper)	ARC1991.67	1991	Presented by Ron Chapman. Location of original unknown. A copy is also available at the New Zealand Society of Genealogists Library. Published as Originals held at Archives New Zealand. Published as: “A Clontarf Pioneer” in <i>The Star</i> 16 August 1919.

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McCheane, Thomas	Diary	<i>Bangalore</i> (1851)	9 May 1851–24 Aug 1851	Photocopy and Transcription	X3706 Box 3 Folder 12 Item 288	Unknown	Originals held at Archives New Zealand.
McLachlan, John	Diary	<i>Sebastopol</i> (1861)	4 Sep 1861–9 Dec 1861	Photocopy	ARC1900.4	1964	Original held by Miss E Bell.
Mee, John	Diary	<i>Alpaca</i> (1863)	2 Sep 1863–14 Apr 1864	Photocopy and Transcription	ARC1900.20	Unknown	Unknown. Copies are also available at the Alexander Turnbull Library in Wellington and Wellington Museum.
Menzies, John Forsythe	Diary	<i>Boyne</i> (1878)	11 Nov 1878–27 Feb 1879	Transcription	X4416	1985	Gifted by Mr F J Brooker. A copy is also available at the Alexander Turnbull Library in Wellington. Location of original unknown.
Mills, Elizabeth	Diary	<i>Crusader</i> (1882–1883)	16 Dec 1882–22 Mar 1883	Transcription	2006.86.1	2006	Gifted by Colleen Mears. Location of original unknown.
Milne, Francis	Diary	<i>Dunedin</i> (1874)	25 Mar 1874–13 Apr 1874	Transcription	ARC1990.40	1990	Presented by Mrs June Gibb. Published in <i>New Zealand Society of Genealogists magazine</i> . November–December 1995. Volume 26 Number 236.
Montgomery, Jane	Letter	<i>Glenmark</i> (1865)	23 Nov 1865	Transcription	ARC1999.8	1999	Original in private collection.
Moody, H.R.	Diary	<i>Carnatic</i> (1873) to Port Chalmers	24 Nov 1873–2 Mar 1874	Photocopy	X4434	1981	Presented by Mrs B Tyndall. Location of original unknown.

Moore, John Duncan	Diary	<i>Dunedin</i> (1873) to Port Chalmers	30 Jul 1877 – 1 Nov 1877	Photocopy	ARC1988.93	1988	Presented by Brian Lovell-Smith. Original in private collection. A copy is also available at the Hocken Collection University of Otago in Dunedin.
Moriarty, Matthew Francis	Diary	<i>Northern Monarch</i> (1878)	31 Oct 1878 – 1 Feb 1879	Transcrip- tion	X4438	1967	Presented by Mrs R H Henderson. Location of original unknown.
Morris, Matthew	Diary	<i>Rose of Sha- ron</i> (1857) to Wellington	2 Oct 1856 – 19 Jan 1857	Photocopy and Tran- scription	ARC1988.90	1988	Presented by Miss R M C Morris. Original in private collection.
Morris, Rosetta	Diary	<i>Canterbury</i> (1882) to Port Chalmers	19 Sep 1882 – 11 Dec 1882	Transcrip- tion	ARC1988.23	1988	Gifted by Misses M M and R A Hay. Location of original unknown.
Munnings, Joseph	Diary	<i>Zealandia</i> (1859)	30 Jul 1859 – 14 Nov 1859	Transcrip- tion	ARC1990.50	1990	Presented by Miss Pat Allen. Orig- inal at Alexander Turnbull Library.
Munnings, Joseph	Diary	<i>Zealandia</i> (1859)	30 Jul 1859 – 14 Nov 1859	Transcrip- tion and Photocopy	X4457	1985	Gifted by Mrs Edwards. Original at Alexander Turnbull Library in Wellington.
Neave, Francis Digby	Letter	<i>Devonshire</i> (1864)	22 Jul 1864 – 28 Aug 1869	Transcrip- tion	X4469 item 1	1969	Transcribed from the original.
Neave, Francis Digby	Diary	<i>Devonshire</i> (1864)	18 Jun 1864 – 16 Aug 1864	Original	X4470 item 1	c 1966/1967	Presented by Mrs Ian Menzies.
Neave, Francis Digby	Diary	<i>Glenmark</i> (1871)	29 Jul 1871 – 1 Nov 1871	Original	X4470 item 2	c 1966/1967	Presented by Mrs Ian Menzies.

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Neave, Francis Digby	Letter	<i>Devonshire</i> (1864)	22 Jul 1864	Transcription	X4470 item 6	c 1966/1967	Presented by Mrs Ian Menzies.
Neave, Francis Digby	Letter	<i>Devonshire</i> (1864)	23 Jul 1864	Transcription	X4470 item 7	c 1966/1967	Presented by Mrs Ian Menzies.
Nicholls, Charles H	Diary	<i>Stag</i> (1852)	4 Jan 1851–17 May 1852	Photocopy	X3706 Box 5 Item 574e	Unknown	Original at Archives New Zealand.
Norriss, William Edward	Diary	<i>Canterbury</i> (1863)	14 Sep 1863–10 Jan 1864	Photocopy	ARC1989.48	1989	Presented by Ron Chapman. A copy is also available at the New Zealand Genealogical Society Library. Published in <i>The Plainsman: Canterbury's Magazine</i> May–October 1950.
Norriss, William Edward	Diary	<i>Canterbury</i> (1863)	14 Sep 1863–10 Jan 1864	Original and Photocopy	X4504	1964	Presented by Mr A E Norriss. A copy is also available at the New Zealand Genealogical Society Library. Published in <i>The Plainsman: Canterbury's Magazine</i> May–October 1950.
Nuttall, William	Diary	<i>Boyne</i> (1878)	18 Nov 1878–26 Feb 1879	Photocopy and Transcription	ARC1900.16	Unknown	Unknown. Original at Alexander Turnbull Library in Wellington. A copy is also available at the New Zealand Society of Genealogist's Library. Published as: Nuttall W. 198?. <i>The Little Black Book: Diary of William Nuttall</i> . Hamilton: R Nuttall.

Oliver, Mary Jane	Diary	<i>Wiltshire</i> (1876)	12 Nov 1876–17 Feb 1877	Photocopy	ARC1993.31	1993	Presented by Mrs Emida A Greig. Location of original unknown.
Olliver, John	Diary	<i>John Taylor</i> (1853)	8 Jul 1853–Oct 1853	Original and Transcription	A365	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association.
Parkerson, Emma Mary	Diary	<i>John Taylor</i> (1853)	24 Aug 1853–18 Sep 1853	Original	X4533	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association.
Parr, James	Diary	<i>Gloucester</i> (1857–1858) to Port Chalmers	29 Aug 1857–23 Dec 1858	Photocopy and Transcription	ARC1992.5 item 1	1992	Presented by Mr Ted Parr. Originals held at South Canterbury Museum. Copies are also available at Alexander Turnbull Library in Wellington and Auckland War Memorial Museum.
Perkins, William	Diary	<i>Clontarf</i> (1859)	30 Nov 1859–21 Mar 1860	Photocopy and Transcription	ARC1990.23	1990	Presented by Helen Chapman. Original held at Toitu Otago Settlers Museum in Dunedin. A copy is also available at Wellington Museum.
Pinel, Oswald Henry	Diary	<i>Maravel</i> (1879) to Wellington	29 Oct 1879–22 Jan 1880	Photocopy	ARC1900.8	Unknown	Unknown
Preston, James	Diary	<i>Gratitude and Harwood</i> (1860) from Sydney	31 Aug 1860–6 Dec 1860	Original	A996	1947	Presented by Miss Margaret F Preston.
Price, Arthur Hubert	Diary	<i>Lancashire Witch</i> (1863)	4 Jul 1863–13 Oct 1863	Transcription	B235	1983	Presented by Mrs Bastion. Original in private collection.
Pringle, John	Diary	<i>Eastern Empire</i> (1864)	25 Aug 1864–4 Jan 1865	Photocopy and Transcription	ARC1998.12	1998	Gifted by Mrs H M Dunkley. Location of original unknown.

Author	Type of Document	Ship & Year(s) of Travel	Dates of Document	Format	Reference Number	Year of Acquisition	Provenance Notes
Renant, J.H.	Diary	<i>Punjab</i> (1873)	30 May 1873–19 Sep 1873	Photocopy and Transcription	ARC1991.70	1991	Presented by Mr A Hemmingsen. Location of original unknown.
Richardson, Frederick Hall	Register	<i>Dominion</i> (1851)	8 May 1851–28 Aug 1851	Photocopy	X3706 Box 3 Folder 13 Item 309	Unknown	Original at Archives New Zealand.
Richmond, James Crowe	Diary	<i>Victory</i> (1850) to Auckland	17 Oct 1850–1 Feb 1851	Transcription	A533	1948	Presented by CUC. Original at the Alexander Turnbull Library in Wellington. Published as: Scholefield, GH. 1960. <i>The Richmond-Atkinson Papers</i> . Wellington: Government Printer.
Richmond, Maria Jane	Diary and Letters	<i>Sir Edward Paget</i> (1852)	9 Dec 1852–25 May 1853	Transcription	A533	1948	Presented by CUC. Original at the Alexander Turnbull Library in Wellington. Published as: Scholefield, GH. 1960. <i>The Richmond-Atkinson Papers</i> . Wellington: Government Printer.
Rickards, Frederick William	Diary	<i>Waitara</i> (1879)	6 Sep 1879–24 Dec 1879	Photocopy and Transcription	ARC1988.19	1988	Gifted by Mrs Diane Wilson. Location of original unknown.
Roy, Jemima	Diary	<i>Cardigan Castle</i> (1876)	26 Sep 1876–22 Dec 1876	Transcription	A373	1966	Presented by Mr K Cheals. Location of original unknown.
Samuel, James	Diary	<i>Pladda</i> (1860) to Port Chalmers	24 Apr 1860–16 Aug 1860	Photocopy and Transcription	ARC1900.35	Unknown	Presented by Mr C Stubbs. A copy is also available at Toitu Otago Settlers Museum.

Sandison, Alexander	Diary	<i>Rhea Sylvia</i> (1861)	5 Jan 1861–6 May 1861	Photocopy and Transcription	X4682	1983	Presented by Dr and Mrs C D Moore. Original held by donors.
Schofield, Henry	Diary	<i>Cardigan Castle</i> (1873)	23 Aug 1873–15 Nov 1873	Original	ARC1900.40	Unknown	Unknown. A copy is also available at Christchurch City Libraries.
Selwyn, George Augustus	Diary	<i>Tomatin</i> (1842) to Sydney	11 Jan 1842–12 Apr 1842	Transcription	A376	Unknown	Unknown. A copy is also available at the Alexander Turnbull Library in Wellington and the Auckland War Memorial Museum.
Shrimpton, Samuel	Diary	<i>Royal Stuart</i> (1854–1855)	9 Oct 1854–4 Jan 1855	Transcription	X4728	1982	Presented by Mrs R L Wilson. Location of original unknown. Published in <i>Journals of Bucks Family History Society UK</i> 1991.
Silcock, Frank	Diary	<i>Nebudda</i> (1882–1883) to Sydney	8 Dec 1882–19 Mar 1883	Transcription with original notebook	ARC1995.24	1995	Presented by Mrs Marlene L Borgfeldt.
Smith, William	Reminiscences	<i>Minerva</i> (1852)	12 Oct 1852–2 Feb 1853	Transcription	ARC1900.25	Unknown	Unknown. A copy is also available at the Alexander Turnbull Library in Wellington.
Southesk Weekly News	Newspaper (printed)	<i>Southesk</i> (1879)	26 Sep 1879–28 Dec 1879	Original	LIB17836	Unknown	Unknown
Sowry, Joseph	Diary	<i>Zealandia</i> (1862)	1 Feb 1862–8 Jun 1862	Photocopy and Transcription	ARC1998.12	1998	Gifted by Mrs H M Dunkley. Location of original unknown.
Stanley, John and Mary	Letters	<i>Randolph</i> (1850)	7 Sep 1850–16 Dec 1850	Originals and Transcription	X4769	1966	Presented by Mr C C Stanley. A copy is also available at the Alexander Turnbull Library in Wellington.

Author	Type of Document	Ship & Year(s) of Travel	Dates of Document	Format	Reference Number	Year of Acquisition	Provenance Notes
Stephens, Sarah	Diary	<i>Cardigan Castle</i> (1876)	26 Sep 1876– 23 Jan 1877	Transcription	ARC1989.81	1989	Presented by J G Read. A copy is also available at the Alexander Turnbull Library. Location of original unknown.
Stoddart, Mark Pringle	Reminiscences	<i>Australasia</i> (1851) Sydney to Lyttelton	c1850–1851	Transcription with original letter	X4787	1950	Presented by H Burson. Original in private collection.
Supplement to the Chronicle	Newspaper	<i>Travencore</i> (1851)	15 Feb 1851 and 15 Mar 1851	Original and Photocopy	X4872	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association.
Sutherland, Ann	Diary	<i>Crusader</i> (1882–1883)	8 Dec 1882–7 Jan 1883	Photocopy	ARC1991.12	1991	Presented by Dawn Foster. Location of original unknown.
Tanner, William	Diary	<i>Waitara</i> (1879)	5 Sep 1879–24 Dec 1879	Photocopy and Transcription	X4718	1986	Gifted by Mr D V Clifford. Location of original unknown.
Taylor, James and Margaret Thompson	Diary	<i>Derwentwater</i> (1859–1860) James Taylor travelled to Wellington and Margaret Thompson travelled to Lyttelton	7 Dec 1859–30 Mar 1860	Original	ARC1999.6 item 43	1999	Gifted by Ms Judith Streeter.
Taylor, Robert	Diary	<i>Hydaspes</i> (1869)	5 Jul 1869–24 Oct 1869	Original	2005.118.1	2005	Purchased from Dunbar Sloane Auctions. Previously on loan to Canterbury Museum in 1980s.

Taylor, Robert	Diary	<i>Hydaspes</i> (1869)	5 Jul 1869–24 Oct 1869	Transcription	ARC1991.91	1991	Transcribed from original.
Taylor, Thomas Edward	Diary	<i>Loch Awe</i> (1880)	4 May 1880–4 Aug 1880	Photocopy and Transcription	X3568	1996	Presented by Dr Arthur Batt. Location of original unknown.
Teschemak-er, Frederick W	Diary	<i>Stately</i> (1852), Unidentified to Britain (1866)	1852–1853, 1866	Typescript	89/59 Box 16 Folder 88 Item 817	1959	Presented by Mrs C R Straubel.
The Cockroach	Newspaper	<i>Charlotte Jane</i> (1850)	28 Sep 1850, 3 Oct 1850, and 2 Nov 1850	Typescript	92/64 Folder 19 Item 202	1964	Presented by Trevor Barker.
Thompson, Robert	Diary	<i>Sir Edward Paget</i> (1856)	20 Feb 1856–15 Sep 1856	Original and Transcription	ARC1988.21	1988	Gifted by Mrs S Cosham.
Timpson, Ann	Diary	<i>Largstone</i> (1886) to Port Chalmers	29 Apr 1886–21 Jul 1886	Photocopy and Transcription	ARC1900.7	Unknown	Unknown. Copies also available at Alexander Turnbull Library in Wellington and Wellington Museum.
Todhunter, Ann	Letter	<i>Golconda</i> (1861) to Wellington	2 Mar 1861	Transcription	ARC1999.8 item 66	1999	Original in private collection.
Todhunter, Ann	Letter	<i>Golconda</i> (1861) to Wellington	31 Jan 1861	Transcription	ARC1999.8 item 67	1999	Original in private collection.
Todhunter, Joseph	Diary	<i>Atrato</i> (1866)	c. October 1866	Photocopy and Transcription	ARC1900.469	Unknown	Unknown. Location of original unknown.
Todhunter, Joseph	Letter	<i>Golconda</i> (1861) to Wellington	25 Jan 1861	Transcription	ARC1999.8 item 68	1999	Copied from original held in private collection.

Author	Type of Document	Ship & Year(s) of Travel	Dates of Document	Format	Reference Number	Year of Acquisition	Provenance Notes
Torlesse, Charles Obins	Diary	<i>Bernica</i> (1848–1851) to Wellington and Nelson	6 Jul 1848–13 Mar 1851	Original	X4866 item 1	1955	Deposited by A D Torlesse.
Torlesse, Elizabeth Henrietta	Reminiscences	<i>Minerva</i> (1853)	12 Oct 1852–2 Feb 1853	Transcription	ARC1900.472	Unknown	Unknown
Torlesse, Priscilla	Diary	<i>Egmont</i> (1856–1857)	11 Sep 1856–18 Apr 1857	Original	X4868	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association.
Tucker, Thomas	Diary	<i>Rimutaka</i> (1894–1895)	15 Nov 1894–6 Jan 1895	Photocopy	ARC1900.33	Unknown	Unknown
Tylee, Charles Alexander	Diary	<i>Cornwall</i> (1851)	13 Aug 1851–20 Aug 1862	Photocopy	X4892	1985	Gifted by Mr M J Millidge. Location of original unknown.
Tylee, John Thomas	Diary	<i>Mariner</i> (1849) to Wellington	7 Feb 1849–15 Jun 1849	Photocopy and Transcription	ARC1900.9	Unknown	Unknown. Copies are also available at the Alexander Turnbull Library in Wellington, Hocken Collection University of Otago in Dunedin, Puke Ariki in New Plymouth and Whanganui Museum.
Unidentified	Diary	<i>Merope</i> (1874)	29 Jun 1874–27 Sep 1874	Original	2006.59.1	2006	Purchased from Mr Steve Hyman.
Unidentified	Diary	<i>Glenora</i> (1879)	4 Jun 1879–30 Aug 1879	Original and Transcription	ARC1900.43	Unknown	Unknown
Unidentified	Notes	Glenmark (1865)	Unknown	Copy	ARC1999.8 item 82	1999	Unknown

Unidentified	Diary	William Hyde (1851)	24 Oct 1851–5 Feb 1852	Photocopy	X3706 Box 5 Folder 21 Item 508	Unknown	Original at Archives New Zealand.
Unidentified	Diary	Travancore (1850–1851)	24 Dec 1850–31 Mar 1851	Photocopy and Transcription	X3706 Box 2 Folder 8 Item 156	Unknown	Originals at Archives New Zealand.
Unidentified	Diary	Caroline (1875–1876) to Nelson	12 Oct 1875–18 Jan 1876	Original and Transcription	X4930	1966	Presented by Mr K Cheals. Location of original unknown.
Unidentified	Reminiscences	Swan (1851) to Launceston	c. early 1851	Original	ARC 1900.367	Unknown	Unknown
Upton, Thomas Everard	Diary	Mermaid (1865)	30 Sep 1865–1 Jan 1866	Original	ARC1996.31 item 1	1996	Presented by Mrs Hazel Upton. A copy is also available at the Alexander Turnbull Library in Wellington.
Upton, Thomas Everard	Letter	Mermaid (1865)	29 Sep 1865–1 Jan 1866	Original	ARC1996.31 item 2	1996	Presented by Mrs Hazel Upton. A copy is also available at the Alexander Turnbull Library in Wellington.
Vale, Frank	Diary	Punjab (1873)	31 May 1873–10 Oct 1873	Original	ARC1991.11 item 1	1991	Presented by Mrs N M McIroy.
Voice, Charles	Diary	St Lawrence (1874)	28 Apr 1874–16 Aug 1874	Photocopy and Transcription	X4978	1983	Presented by Miss E Voice. Location of original unknown.
Waitangi Tribune	Newspaper	Waitangi (1876)	18 Mar 1876	Original	X4983	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association.
Walton, Ellen	Diary	Lutterworth (1879) to Wellington	15 Sep 1879–24 Dec 1879	Original, Photocopy and Transcription	ARC1994.11	1994	Presented by Mr Laurence W Ford. A copy is also available at the Alexander Turnbull Library in Wellington.

Author	Type of Document	Ship & Year(s) of Travel	Dates of Document	Format	Reference Number	Year of Acquisition	Provenance Notes
Ward, Edward Robert	Diary	<i>Charlotte Jane</i> (1850)	7 Sep 1850–16 Dec 1850	Original	A387	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association. Published as: Ward ER. 1956. <i>The Journal of Edward Ward, 1850–51: Being His Account of the Voyage to New Zealand in the Charlotte Jane and the First Six Months of the Canterbury Settlement</i> . Christchurch: Pegasus Press
Ward, Edward Robert	Diary and Letters	<i>Charlotte Jane</i> (1850)	25 Apr 1850–28 Oct 1851	Transcription	X5002 item 6	1956	Presented by Miss Margaret F Ward.
Ward, Edward Robert	Diary	<i>Charlotte Jane</i> (1850)	7 Sep 1850–16 Dec 1850	Transcription	X5005	1979	Deposited by Norman L Macbeth. Published as: Ward ER. 1956. <i>The Journal of Edward Ward, 1850–51: Being His Account of the Voyage to New Zealand in the Charlotte Jane and the First Six Months of the Canterbury Settlement</i> . Christchurch: Pegasus Press.
Ward, Joseph	Diary	<i>George Fyfe</i> (1842) to Wellington	18 Jun 1842–25 Sep 1842	Transcription	X4930	1954	Original at the Alexander Turnbull Library in Wellington. Copies are also available at the Auckland War Memorial Museum and the Nelson Provincial Museum.
Watson-Watson, Eckford	Diary	<i>Carnatic</i> (1876)	20 Dec 1876–14 Apr 1877	Original and Photocopy	B240	1982	Presented by Mr E J Worthington.

Westland, Agnes Mildred	Reminiscences	<i>Lusitania</i> (1891) to Melbourne; Tekapo to Wellington; Penguin to Lyttelton	c. 1891	Transcription of Reminiscences and Letter 29 Apr 1934; Photocopy of Diary Fragment, c. 1935.	X5025	1985	Gifted by Mrs J R Parker. Location of original unknown.
Wheeler, Joseph Mort	Diary	<i>British Empire</i> (1864)	26 May 1864–9 Sep 1864	Photocopy	ARC1900.42	Unknown	Unknown. Original at Christchurch City Libraries. A copy is also available at Waikato University.
White, Arthur David	Register	<i>Canterbury</i> (1851)	24 Oct 1851	Photocopy and Transcription	X3706 Box 4 Folder 17 Item 400	Unknown	Originals at Archives New Zealand.
Whitmore, Jane (nee Grubb)	Reminiscences	<i>Charlotte Jane</i> (1850)	25 Apr 1850–28 Oct 1850	Transcription	X5008	1949	Deposited by the Canterbury Pilgrims and Early Settlers Association. Original in private collection.
Williams, Matilda Susan	Diary	<i>Royal Stuart</i> (1861)	1 Jul 1861–9 Oct 1861	Photocopy and Transcription	ARC1991.69	1991	Presented by Mrs D L Street.
Wilson, John Cracroft	Diary	<i>Waterwatch</i> (1854–1855) to Calcutta	1854–1855	Photocopy	X5065	Unknown	Unknown
Wilson, Sarah Jane	Diary	<i>Unknown</i> (1898) to England	2 Feb 1898–11 May 1898	Original	ARC1994.30 item 1	1994	Presented by Mrs Amy L Wilson.
Wilson, Sarah Jane	Diary	<i>Unknown</i> (1898) to England	12 May 1898–21 Jun 1898	Original	ARC1994.30 item 2	1994	Presented by Mrs Amy L Wilson.

Author	Type of Document	Ship & Year(s) of Travel	Dates of Document	Format	Reference Number	Year of Acquisition	Provenance Notes
Wilson, Sarah Jane	Diary	<i>Unknown</i> (1898) to England	22 Jun 1898– 26 Sep 1898	Original	ARC1994.30 item 3	1994	Presented by Mrs Amy L Wilson.
Wilson, Sarah Jane	Diary	<i>Unknown</i> (1900–1901)	2 Feb 1900–21 May 1900	Original	ARC1994.30 item 4	1994	Presented by Mrs Amy L Wilson.
Wilson, Sarah Jane	Diary	<i>Unknown</i> (1900–1901)	22 May 1900–28 Mar 1901	Original	ARC1994.30 item 5	1994	Presented by Mrs Amy L Wilson.
Wilson, Sarah Jane	Diary	<i>Unknown</i> (1900–1901)	5 Apr 1901–8 Oct 1901	Original	ARC1994.30 item 6	1994	Presented by Mrs Amy L Wilson.
Wilson, William	Diary	<i>Wairoa</i> (1876)	4 Mar 1876–1 Jul 1876	Photocopy and Transcription	ARC1999.11	1999	Presented by Mr Thomas Bowie. Location of original unknown.
Woods, William	Diary	<i>Northampton</i> (1874)	24 Mar 1874–5 Jun 1874	Newspaper Transcription	ARC1990.34	Unknown	Unknown. Copies are also available at Christchurch City Libraries and Hocken Collection University of Otago in Dunedin. Published in <i>The Star</i> 2 May–8 August 1925 and as: "A Pioneer's Diary – The Northampton's Voyage" in <i>The Bulletin</i> 1935.
Wright, George	Diary	<i>Castle Eden</i> (1850–1851)	25 Sep 1850–1 Mar 1851	Transcription	ARC1989.15	1989	Presented by Ms Jessie R Radford.
Wright, George	Diary	<i>Castle Eden</i> (1850–1851)	25 Sep 1850–1 Mar 1851	Transcription	ARC1989.16	1989	Presented by John Wright. A copy is also available at the Alexander Turnbull Library in Wellington.

Wright, Thomas	Diary	<i>Lady Egida</i> (1860–1861) to Port Chal- mers	10 Oct 1860– 28 Jan 1861	Transcrip- tion	ARC1991.71	1991	Presented by Ivy Campbell. A copy is also available at the Hocken Collection University of Otago in Dunedin.
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Records of the Canterbury Museum publishes original papers and review articles on the Museum's collections or on topics related to the collections. Original papers must present results that are essentially new and that have not been published or are not being considered for publication elsewhere. Reviews should cover a topic of current interest and present new insights or conclusions. All manuscripts are subject to peer review.

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Manuscripts should be in MS Word 2000 or later and have 1.5 line spacing, in Arial 11 point font. These should be emailed to records@canterburymuseum.com The first page should show the author name(s) and address(es) plus email address(es), paper title and category. An abstract and keywords should also be on this page. The body of the text, references, tables and figure captions are to be on separate pages. High resolution electronic files (minimum of 600 dpi, preferably TIF files) will be required upon final submission of a revised manuscript.

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Dates Are written in numerals, e.g. 1800s, 8 May 1923. Spell out nineteenth century, sequential dates in full 1956–1986.

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References (including bibliography)

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The convention of citation in text in the format author surname (year) and (author surname and year) is used. Two authors are cited as Fraser and McCarthy (2012) or (Fraser and McCarthy 2012) and three or more authors as Winterbourn et al. (2008) or (Winterbourn et al. 2008). Newspaper articles by unknown authors should be cited in the text in the following format: (*Press*, 19 December 1938: 11)

For references:**Journal**

Ward JB. 1995. Nine new species of New Zealand caddis (Trichoptera). *New Zealand Journal of Zoology* 22: 91–103.

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Fraser L. 2012. Memory, mourning and melancholy: English ways of death on the margins of empire. In: Fraser L, McCarthy A, editors. *Far From 'Home': The English in New Zealand*. Dunedin: Otago University Press; p. 99–122.

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Malumbres-Olarte J. 2010. Spider Diversity and Ecology in Native Tussock Grasslands of the South Island, New Zealand. PhD thesis. Lincoln: Lincoln University.

Website

Food Standards Australia New Zealand. 2008. Canned foods: purchasing and storing. Wellington: Food Standards Australia New Zealand. Available from: <http://www.foodstandards.govt.nz/consumer/safety/cannedfoods> [cited 15 February 2015].

Use an unspaced en-dash not a hyphen for page ranges.

