

The Medical History of South Georgia

A dissertation for the degree of MSc

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Abstract

Context South Georgia is one of the most remote inhabited islands in the world. An antarctic island, it was discovered in 1755. Sealing expeditions arrived soon afterwards, and during the late 18th, 19th and 20th centuries men plundered the beaches and seas surrounding the island for seals and whales. Sealing and whaling ceased in the 1960s, when declining whale numbers and the increasing use of other forms of oil made the industry uneconomical.

Aims Although an isolated island with a small population and a severe climate, South Georgia has a rich history. Its medical history has not been previously studied. This dissertation aims to look at all aspects of the medical history of the island, from early expeditions of discovery, through to the 20th century whaling industry.

Design Surviving whalers and whaling doctors were interviewed. Published material with any relevance to South Georgia, including academic texts and personal memoirs, have been searched for details of hospitals, doctors and medical events on the island. Documents archived in South Georgia, the Falkland Islands and the United Kingdom revealed much useful information, and occasional unpublished and unarchived documents have come to light from other sources.

Results The provision of medical services over two centuries from 1755 to the beginning of the 1960s is described. Morbidity and mortality are summarised and discussed. Factors which contributed towards some of the illnesses and causes of death are analysed.

Conclusion Antarctic medical history is not well described. This document looks at a small part of it, and will no doubt be added to in future years.

Chapter 1. Introduction

In 2005 I spent a year as the medical officer on the Island of South Georgia. It is one of the most remote inhabited places on earth, situated at 54 degrees South and 1450km from the Falkland Islands, which are the nearest landmass. Even in the 21st century South Georgia has no air access, and takes a minimum of three days to reach by ship. Captain James Cook is credited with discovering the island in 1775, describing it as “Land doomed by Nature to perpetual frigidness: never to feel the warmth of the sun’s rays; whose horrible and savage aspects I have not words to describe.’ (Beaglehole, 1961) Cook also described large numbers of whales and seals around the island, and this led to increasing numbers of visitors to the island over the following two hundred years, mostly intent on making their fortunes from selling fur seal skins and the oil of whales and seals.

Whilst on the island, I became increasingly interested in its history, particularly in its medical history. Large numbers of books have been written about South Georgia, particularly about its whaling era. From a medical history point of view, the island is interesting for a number of reasons. It is small and geographically well defined, which makes it manageable to study. Development over time can be documented, and patterns studied. Its remoteness is of obvious interest, as provision of medical care to remote areas remains a source of some difficulty, even today. Also, the nature of the industry which took place on the island, and the severe climate of the region, ensure that it is a particularly challenging place in which to live, work, and provide health care. As a doctor working on the island, and studying its history, I clearly felt that I was a continuing part of the medical history of the island. This is not something I have felt in previous jobs, and I presume is related to the small numbers of doctors recorded, and the very remote situation of South Georgia.

No previous attempts have been made to document the medical history of South Georgia, although summaries of Antarctic medical history have been published (Lugg, 1975) and a Norwegian author has presented a paper which describes patterns of illness and injury which occurred on Norwegian factory ships during the 1940s and 50s. (Wexelsen, 2006) Other more comprehensive

South Georgia texts, particularly those by Hart (2001) and Headland (1986), have made reference to some of the medical issues which were of note during the whaling times. A few contemporary authors have looked at topics which are relevant, but not strictly related, to the island, such as Guly (2002), who published a paper which looks at the medical supplies of a polar expedition in the earlier part of the twentieth century and Carpenter, (1986) who wrote about scurvy, which remained an issue in South Georgia up until the second half of the twentieth century. Druett (2000) published an account of the medical history of 'the age of sail' which, although it does not mention the Antarctic, describes conditions which were found on ships which worked in the Arctic and the South Sea and is of relevance to early South Georgia history. Many doctors who accompanied early Antarctic expeditions wrote about their experiences, which clearly have some relevance in terms of climate and remoteness, but also major differences in terms of the large number of men involved and the nature of the industry which took place on South Georgia. There are very few comparable places in terms of remoteness, climate and industry, and I have not been able to locate any detailed accounts of the medical history of any part of the world which has all of these things in common with South Georgia.

Background

As mentioned, South Georgia was discovered by Captain James Cook in 1775. Sealing for fur seals (mostly for skin) and elephant seals (for oil), started as early as 1778 (Jones, 1973) and continued throughout the nineteenth century, with peaks of activity in the 1820s and from 1840-1860. By the 1870s fur seals were nearly extinct and mostly elephant seals were being taken. Well-regulated sealing for elephant seals continued until the end of the modern whaling era. Voyages of exploration have continued since the discovery of the island, starting with Bellingshausen in 1819 and ongoing, with mountaineering expeditions happening almost annually.

Whaling did not start in the South Atlantic until the twentieth century, as most whales found in the region were too fast to be caught using traditional whaling methods. In 1906 Captain Larsen, a Norwegian with support from an Argentinian company, Compañía Argentina de Pesca (CAP), established a

land-based whaling station at Grytviken, and many others followed over the next few years. The main product was whale oil, which was used extensively prior to the development of the petrochemical industry. Peak production on South Georgia was in 1925, with 7825 whales taken. Production remained high until the mid 1950s, when whale catches began to fall and by 1960 all but Salvesen had pulled out of South Georgia. They stopped whaling two years later and leased Grytviken to a Japanese company who whaled for a further two seasons.

South Georgia was a British Colony. The whaling stations were operated by whaling companies under licence and governed by the Governor of the Falkland Islands, who was based in Stanley. The government's representative on the island, who was responsible for legal and administrative issues, was based at King Edward Point.

South Georgia remains a rugged and essentially uninhabited island. It is 160km in length, with only one short road, built in the late 20th century between Grytviken and King Edward Point, and no paths. All local transport is either by foot or skis across difficult terrain, or by boat. In the whaling days most overland travel was done for recreational purposes, although occasionally mail was transported to boat pick-up points on the other side of a peninsula. The island is subject to a regular series of low pressure weather systems, resulting in sea conditions which often make boating (particularly in small boats) difficult or dangerous. There was telegraphic communication between whaling stations, whose location is shown in Fig 1.1.

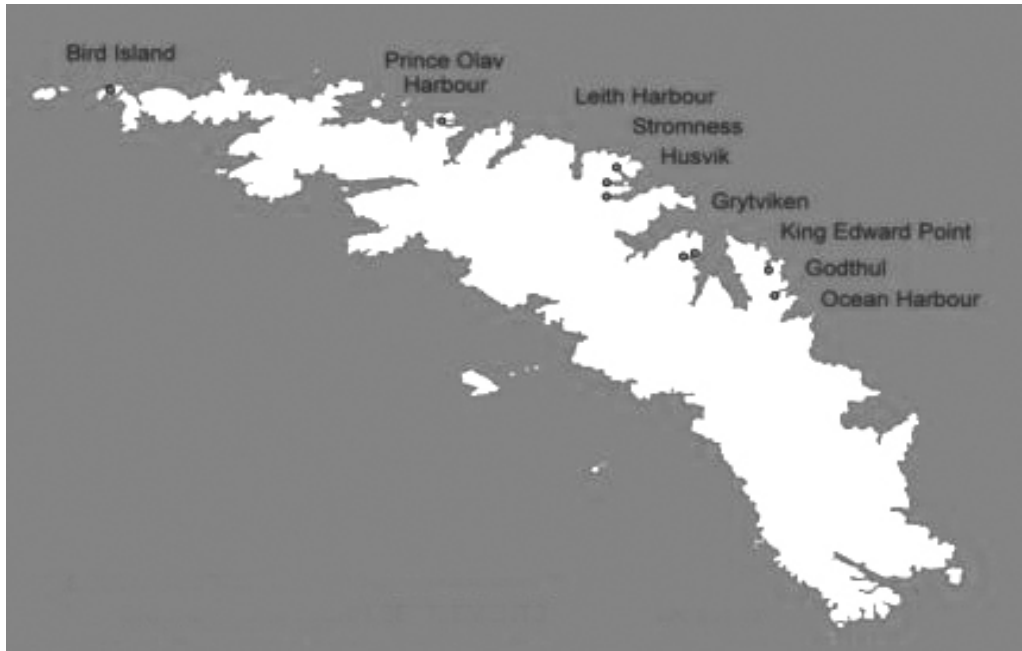


Fig 1.1 Map of South Georgia

Methods

My initial enquiries into investigating the topic were made with experts in the general history of South Georgia, including Professor David Walton, who was head of information at British Antarctic Survey (BAS), Dr Robert Headland, ex-archivist and curator at Scott Polar Research Institute (SPRI), and Robert Burton, who has a very long term interest in the island, and is secretary of the South Georgia Association. After talking to them, I have obtained information from four main sources:

1. official documentation of the era (mostly archived)
2. contemporary reports, diaries and published accounts
3. published historical accounts
4. interviews of those who were present on the island from the 1940s onwards.

This information has been supplemented by details from some other sources, including websites and occasional documents which individuals have given me.

I have also read more widely, particularly with regard to early Arctic and South Seas whaling history (prior to the era of modern whaling), as there is not much written information about medical practice on the early sealing expeditions.

I located these documents, books, diaries and reports in many different places. I read all relevant books in the comprehensive collections of South Georgia Museum and Pat and Sarah Lurcock, the current government employees at King Edward Point. I searched UK archives using Archives Hub, (www.archiveshub.ac.uk) the website which catalogues all archived material held by universities in the United Kingdom, using keywords South Georgia, whaling and sealing. I used the same keywords to search Medline and the Wellcome Library medical history database. I requested relevant information on the official South Georgia website newsletter, and also searched the internet using Google. Gordon Liddle, at the Government of South Georgia and the South Sandwich Islands (GSGSSI), gave me the names of living ex-South Georgians. Gibbie Fraser (who edited Shetland's Whalers Remember) very kindly took me to see many surviving whalers in Shetland, in addition to giving me contact details of those in other parts of Scotland. Sir Gerald Elliot made me aware of family members of an ex-South Georgia doctor, who gave me copies of his memoirs.

I have chosen not to include a separate literature review in this document, as much of that which is to be found in relevant texts is discussed in the main body of the dissertation.

Contemporary official sources

I regard the official documentation of the times as my best source of information. In this section I include artefacts such as graves which are (or which were) on the island, the South Georgia register of births, marriages and deaths and the South Georgia medical register. Details which were officially recorded at the time are generally thought to have the highest likelihood of being a true account of actual occurrences, although this may not always be the case (for example, in at least one case the officially recorded death differs from that which is recorded in the diary of a doctor who was on the island). I have

also found death certificates which have been archived but are not in the register of deaths.

Many documents removed from Leith Harbour are in a collection at SPRI Archive, which also holds a collection belonging to CAP. CAP archives are in a range of languages, but mostly Spanish, which I translated myself. The SPRI archive also holds a collection of South Georgia Coroner's Inquests, which has revealed many details, particularly with regard to industrial accidents and suicides. SPRI also holds a very large number of documents pertaining to whaling and sealing; some of these have relevance to South Georgia, and others have provided useful information about provision of healthcare in comparable circumstances in other parts of the world. Material from Salvesen (the most successful and long-lived South Georgia whaling company) is held in a special collection at the University of Edinburgh. My access to this archive has been limited to a small number of specially requested 'medical cards', (SA, Shelf B3,1) which were sent to me as anonymised photocopies because of concerns about data protection by Christian Salvesen, who control access to the archive. (Anita Prinjha, personal communication.) These are the only medical records that I have been able to locate. There are also smaller collections of relevant documents at the Falkland Islands Government (FIG) Archive and the South Georgia Museum Archive. I have also occasionally been given copies of relevant contemporary documents from small personal collections.

Contemporary reports, books and diaries

Many books were written by those who lived on or visited the island, to explore or participate in the whaling or sealing industries. These accounts became much more common during the second half of the twentieth century. Several doctors, such as Lillie (1955) and Kohl-Larsen (2003) published personal accounts of their visit to the island. Some of the content of these accounts are not consistent with more official material, and some has been strongly objected to, most notably 'Of Whales and Men.' (Robertson, 1954 and 1956) It was originally published in the US, but changes were made for the UK edition, after threats of litigation from Salvesen over the content, which they felt to be potentially very harmful to their reputation in Britain. Elliot (1998) says of Robertson: 'much of what he wrote was fiction', and many ex-whalers agree. I

have found no other public objections made to the content of any other publications, and much of the information from these literary sources can be corroborated by that from official documents, or gives more colour or detail to that provided in official documents.

The earliest writing by a doctor visiting South Georgia is a collection of letters written by Gilbert Smith in 1801. Unfortunately they contain no details of his medical work. Hillenbrand published a report of his work over a year in South Georgia in the *Lancet* (1953) and his son has given copies of his personal memoirs. A copy (which was made by a visitor to Leith Harbour in the 1990s) of an unpublished report by Andersen (1953) also exists. The diaries of Dr MacIntosh (1956/7, 1957/8 and 1960/1), who spent 10 years whaling, including three winters on South Georgia, have been archived in South Georgia Museum. In addition to containing many useful medical details these diaries give some insight into prevailing attitudes of the time. They are the only contemporary source in which a doctor has clearly felt able to speak his mind about how he felt about his work, presumably because they were not intended for publication.

Academic historical texts

Several comprehensive texts have described the history of South Georgia, in particular Robert Headland's 'The Island of South Georgia' (1984) and Ian Hart's 'Pesca.' (2001) Headland's text remains the most complete description of the science and history of the island, whilst Hart specifically looked at the development of whaling by Compañía Argentina de Pesca at Grytviken. Both books contain references to deaths, illnesses and injuries. I have not always been able to trace their information back to its original source and, unless I have found any references which contradict these sources and which appears to be unequivocal, I have treated them as fact.

Interviews and personal communications

I have now interviewed several ex-South Georgia doctors and dentists, as well as many other men who worked on the island. In October 2006 I spent time in Shetland with Gibbie Fraser and visited many ex-whalers, chosen by him for their memories and ongoing ability to give a good account of their whaling days. These men worked on the island between 1947 and 1963, when the modern whaling era finished. Their anecdotes are often very informative and

entertaining, and many give a lot of colour and background to other sources of information. However, many of these stories came from times when these men were in their teens or twenties, now up to 60 years ago. Some of these memories are fading, or may have changed over the years. Some anecdotes can be corroborated by contemporary documents. I initially began interviewing using a template of relevant questions but, after several interviews, found that it was much more rewarding to let the interviewee talk, and steer the conversation in the direction of medical topics. I asked each whaler about what he remembered of illness and injury, the doctors present on the island, deaths, alcohol, mental illness and suicide. I used the medical register and the register of deaths as *aide memoires* and, in a few cases, this produced additional recollections. I also talked to Sir Gerald Elliot, who was working for Salvesen in a managerial capacity in the 1950s, and visited the island. In each case, I made hand-written notes at the time of the interview.

I have only been able to identify a few living doctors who worked on the island prior to the 1960s. The earliest of these is Dr Michael Gilkes, who worked at Leith Harbour during 1947-8, and has been a great source of information, anecdote and detail. I have also met Dr Ian Brooker, who was expedition leader of the British South Georgia Expedition in 1957/8. I visited Mr Ian Cummings who spent two years in South Georgia at the beginning of the 1960 in his role as a government employed dentist. Both Dr Gilkes and Mr Cummings have retained a lifelong interest in the island, and have revisited it many times.

Other potential sources of information

There are many obvious gaps in my information. Prior to the whaling era (in the late 18th and 19th centuries) it is likely that not much information was written down and, of that which was written, not much was kept. My sources are limited to a few written accounts, and suppositions made from similar expeditions of that time. Even archived documentation from the 20th century is not complete. Despite extensive investigation, the whereabouts of much information that was undoubtedly recorded at the time is not obvious. I have only been able to locate a very small number of medical records, although I believe that records would have been kept on a daily basis. A few accident reports from Grytviken are

archived at SPRI (kept in accordance with Argentinian law), but annual accident reports from the doctor are also referred to in documents from the Leith Harbour manager. (Leith Harbour Manager, 1953) I have not located any such reports.

A large proportion of the men on the island during the twentieth century came from Norway, and I am told that there may be some relevant documents stored in the archive at the Whaling Museum in Sandefjord in Norway, particularly regarding the earlier part of the twentieth century at Grytviken. (Personal Communication, Dag Borresen) However, without any knowledge of Norwegian, searching this archive would prove to be prohibitively time consuming and expensive, and I have had to rely on material which is in English, or which has been used as a reference to other works. There have also been studies of injuries and medical work in the whaling industry in Norwegian, (Albretsen, 1955) and also Russian. (Khodov, 1969) I have located no information relevant to the short period in the 1960s when whaling at Grytviken was run by a Japanese company.

I have chosen to end my study in the early 1960s. This is for several reasons. I believe that the most interesting and historically relevant periods of the island's history are the periods of exploration, sealing and whaling. After this time no further whaling took place on South Georgia. King Edward Point was occupied for a period during the late sixties, seventies and early eighties by a group of scientists and support staff from the British Antarctic Survey. Following the Argentinian invasion in 1982, a military garrison was stationed at King Edward Point and in 2000 it was once again taken over by British Antarctic Survey. Tourism is currently becoming increasingly important in South Georgia. Whilst there is a large amount of information to be found with regard to these more recent times, it is historically interesting, and its inclusion would have led to the omission of much detail regarding earlier times.

Ethical issues

As my work looks at the time up to the early 1960s, there are many men involved in the whaling industry in South Georgia who are still alive. Even those who are no longer alive may still have living first and second-generation

relatives. I have tried to preserve the confidentiality of those who worked on the island by rarely mentioning the names of workers. I have made an exception for information which is already in the public domain, names of doctors who worked on the island, and men who I met and interviewed. I have also been told many anecdotes which I have not used, even when I heard them from several independent sources. In some cases I felt that they may tarnish the reputation of either a whaler or doctor, and I felt that it would be unwise to commit them to paper.

Aims

The aim of this paper is to describe the medical history of South Georgia from its discovery in 1775 until the end of the whaling era in 1964, using the written and verbal information which has been accessible to me. The main activities during this time can most easily be separated into exploration, sealing and whaling, although at times these happened contemporaneously. As information with regard to exploration and sealing is limited I have not attempted to categorise it, but have drawn attention to relevant events and issues. More extensive information is available from the 20th century, and I have devoted most of this paper to analysing the most important issues of that time. I have included two lists as appendices. One is the register of South Georgia Doctors (appendix 1). The other is a list of those who died on, or near South Georgia, and is an amalgamation of information from all available sources (appendix 2).

Chapter 2. Early medical history

Information regarding the early medical history of South Georgia is sparse, although a few details exist within texts published by expedition members. Details of conditions on similar whaling and sealing voyages to other parts of the world during the 18th and 19th century have occasionally been described and give a reasonable picture of likely conditions on early South Georgia sealing voyages.

Captain James Cook discovered South Georgia in January 1775, towards the end of his second voyage. The first doctor to visit the island was John Patten, the ship's senior surgeon, who has been described as 'a perceptive clinician.' The main medical problem to afflict expeditions at that time was undoubtedly scurvy, but Cook largely avoided this condition by encouraging the consumption of fresh plants and meat at every opportunity, and regular provision of sauerkraut. There were only five recorded episodes of scurvy during the three-year voyage, and no deaths. Sexually transmitted infections were rife amongst the crew of the Resolution. Only four deaths occurred on this trip, one from tuberculosis, and three as a result of accidents. (Watt, 1979)

Sealing in South Georgia started as early as 1778 and peaked around 1820, when around 40 vessels per year were visiting the island. (Palmer, 2003) Very few of these vessels carried surgeons. (Headland, 1984) However, Edmund Fanning (1833) wrote about a sealing expedition which took place in 1800 on board *Aspasia*. He describes the ship's surgeon, Gilbert Smith, who 'remained on the ship to help keep it', or went hunting and fowling, picking up fur seal skins and walking in the hills. No records of any of his medical work exist, but Smith (1801) wrote home that

...our officers and men live in the greatest harmony and good order and seem to study to make each other as happy as possible a thing not common among such a large crew.

Dr Smith may well have contributed towards good feeling on the ship. Fanning wrote:

His kind disposition and attention to the sick and wounded, together with a regard for their welfare, endeared him to all on board, and the many happy and

agreeable hours spent in his company during the voyage makes it a pleasure for the author to bear this feeble testimony to his worth. (Roberts, undated)

It would be reasonable to assume that medical facilities on board sealing ships were primitive at best. British whaling ships working in the Arctic and the South Seas at around the same time did carry a surgeon as this was a legal requirement, but many of these men may have been only partly trained. In the 1800s it was reckoned that 30-40 medical students were absent each summer from the medical school in Edinburgh, all working on whaling and sealing expeditions. (Struthers, 1856) David Forbes, a medical student working on a sealing vessel out of New England, recorded his experiences. As well as ship's surgeon he was leader of a shore gang which was put ashore to hunt seals, often running short of food before being picked up. (Stackpole, 1953) On a comparable Arctic whaling expedition in the mid 1800s a medical student dealt with cases of:

phlegmonous erysipelas, 1; punctured wounds, several; lacerated wounds, several; case of two broken ribs; case of reducible hernia; case of bilious fever; a good many cases of each of the following – whitlows, boils, ulcers, dyspepsia, diarrhoea, constipation, catarrh (Struthers, 1856)

In the late 1800s the surgeon on board an Arctic whaling ship saw cases of tuberculous peritonitis and typhus, which he noted was 'a very disagreeable discovery under the circumstances.' (Allan, 1893) It is likely that South Georgia sealing ships of the era had similar patterns of illness and injury, but no qualified person to care for those sealers who became unwell. United States whaling vessels of the time carried no surgeon, but did have a medical chest. It was the responsibility of the captain to treat sick and injured men. Records exist of whaling captains conferring regarding the best treatment for their men. A record was made of three additional captains being called on board a New London whaler to discuss the best treatment for a man who had most of his foot torn off. (Druett, 2000)

Thomas Smith (1844), a sealer, published an account of several voyages, which included a sealing expedition to South Georgia in 1816. His descriptions of prevailing conditions are harsh.

I suffered much with the severity of the cold, which affected my feet to a great degree. I had neither shoes nor stockings, having previously worn them out, and it was impossible to obtain from the slop chest, as it was empty, or from the crew.

On Smith's voyages men died as a result of freezing, drowning and falling down crevasses. (Headland, 1984)

Other well-known expeditions visited the island. James Weddel (1827) anchored his ships Jane and Beafoy in Undine Harbour for a month in 1823 after a visit to the Weddel Sea. They had been five months at sea, and ate South Georgia plants to ward off scurvy.

Our crews here fed plentifully on greens which, although bitter, are very salutary, being an excellent antiscorbutic.'

The earliest grave on the island is dated October 14th 1820 and belongs to Frank Gabriel, who was a steward on the US ship Frances Allen. Another early grave found in Prince Olav Harbour has the name of three men on it (two ship's captains and a mate), although it is not clear whether they all died. A memorial for ship's surgeon WH Dyre (of the Esther), dated 1846, was found at Grytviken. He is the only doctor recorded as having died on the island. (South Georgia Museum, 2005) Four of the nine unmarked graves at the cemetery are said to be from the crew of the same vessel, all reportedly having died of typhus. Presumably at that time men of lesser status were either buried in unmarked graves, or at sea.



Fig 2.1 Grave marker of surgeon WH Dyre (South Georgia Museum)

Chapter 3. Exploration

Many expeditions to the island have taken place and have been challenged by severe, unpredictable weather conditions and the remote environment. Only a few mention medical issues within their reports – this account is not a comprehensive list of all South Georgia expeditions. Some expeditions are listed in Table 3.1. Many expeditions took a medical person with them, but the doctor often had a dual role. For example, Dr Karl von den Steinen was the doctor and zoologist on the German South Georgia Expedition of 1882/3. He reported on the avifauna of the island. (Headland, 1982)

An early expedition (1906) on the ship Fridtjof Nansen came to grief on rocks, and quickly went down, drowning nine of her crew of 58 men. Survivors were repatriated, but her physician, August Szielasko, stayed and investigated the geology and wildlife of the island. (Headland, 1984) The Szielasko icecap, on the Barff Peninsula, is named after him. (Hattersley-Smith, 1980)

Ludwig Kohl was an expedition doctor on the 1911 Second German Antarctic Expedition led Wilhelm Filchner, which called in to South Georgia. Whilst *en route* for South Georgia, Kohl suffered an attack of appendicitis and was operated on the next day by the other doctor on the ship, arriving in Grytviken several days later in a very weak condition. He lived in Grytviken with CAP's station manager, Carl Larsen, until he recovered. He went on to marry Larsen's daughter, Margit. He says:

On that occasion I had left home with great, proud plans, but I had to abandon them all in that quiet bay. An appendix operation at sea under the most primitive conditions had sapped my strength, my resolution and my taste for the loneliness of South Polar voyages.

In 1927 Kohl and his wife returned on an expedition to South Georgia. He has a glacier named after him. (Kohl-Larsen, 2003)

A memorial exists on the hill overlooking Grytviken to Walter Slossarczyk (23-years-old) who was the third officer on Filchner's expedition. In November 1911

he left King Edward Cove in a small boat, saying that he was going fishing, but was never seen again. After several days fruitless search his small boat Captain Olsen of Fortuna discovered his boat in the open sea near Sappho Point 'quite dry' with the oars inside. (Coroner's report, 1911) A few days prior Slossarczyk had described a seaman's death as the most beautiful way to die and Filchner states quite clearly that Slossarczyk took his own life. (Filchner, 1994)

On many expeditions the doctor appears to have been somewhat underemployed. Lieutenant Colonel Hillis Marshall was surgeon on board the Discovery during her expeditions of 1925-7. He appeared to be very good at using his time, taking charge of the insect collections and being 'very fully occupied after our dredge or trawl hauls.' (Hardy, 1967) He also made himself very popular by constructing a toaster out of medical equipment. (Savours, 1992) No significant medical events are recorded in either account of the expedition.

The South Georgia Surveys took place in the 1950s under the leadership of Duncan Carse. On the first survey no doctor was taken. Trendall, the geologist, sustained a severe knee injury and, after spending a day camped up in a blizzard, they took four days to pulk (or sledge) the patient back to Sorling, where they made contact with King Edward Point by lighting a fire. (Carse, 1959) On the second survey they took Keith Warburton as a doctor, but he soon succumbed to a self-diagnosed duodenal ulcer. He stayed on base, but did not get better with diet and rest and was invalided home. He recovered to provide medical support to the third survey. Warburton Peak, near Wilson Harbour, is named after him. (Hattersley-Smith, 1980)

Dr Ian Brooker was a Squadron Leader when he was seconded to lead the British South Georgia Expedition in 1954. He worked his passage (and that of his team) by providing medical cover on whaling ships on the journey to South Georgia and back home. (Brooker, 2006) During their time on South Georgia the team were based in the jail at King Edward Point. It was from here that he treated fellow expedition member Harry Pretty for injuries to his hands and back after he fell down a crevasse on their first trip away from base. He also assisted

with medical supplies for Dr Sarmiento at Grytviken, when the latter was unable to send to Leith Harbour because of a storm. (Sutton, 1957) Mount Brooker is named after him.

Sir Ernest Shackleton made several visits to the island, of which two are very well recorded. When the Trans-Antarctic Expedition failed, a small party sailed in very difficult circumstances from Elephant Island to South Georgia to King Haakon bay, eventually crossing the island for the first time. No account exists of the state of the men who had spent so long in very difficult conditions before a major mountaineering expedition, although Macklin (1921) does suggest that one of the men incurred frostbite of the penis.

Shackleton returned to South Georgia several years later, on the way south again, but died on the island on January 5th 1922, aged 47 years. He had been working hard in the United Kingdom prior to sailing, and was unusually quiet on the way South. Alexander Macklin, one of the three doctors on board Quest, thought that Shackleton was looking tired and ill, and urged him to rest, but he would not. Quest arrived in South Georgia on January 4th and Shackleton went ashore for the evening. Macklin's own account of events that night records that Shackleton asked for something for pain that might help him sleep, and Macklin suggested once again that he might like to start taking things a little more easily. Shackleton replied 'You are always wanting me to give up something. What do you want me to give up now?' before dying (Wild, 1923) At post mortem, which was performed by Macklin, he was found to have extensive coronary atheroma. (Levack, 1993) A mountain at the southern end of the Salvesen range, and the current King Edward Point medical centre, are named after Alexander Macklin. (Hattersley-Smith, 1980)

YEAR	EXPEDITION
1775	Captain James Cook
1823	James Weddel
1882	1 st German Expedition
1902	Swedish South Polar Expedition
1911-12	2 nd German Expedition
1912	David Ferguson's Geology Survey
1912-13	Daisy
1913-14	Major Barrett Hamilton
1922	Shackleton
1923/5/7	Alberto Carcelles
1925-51	Discovery Expeditions
1928-9	Kohl Larsen
1931	Eric Dutert
1946	Niall Rankin
1953-5	Bernard Stonehouse and Nigel Bonner

Table 3.1 Selected South Georgia Expeditions

Chapter 4. Provision of medical services on South Georgia

Eight whaling stations operated on South Georgia at various times during the twentieth century.

SITE	COMPANY	YEARS
Grytviken	Compañía Argentina de Pesca (Argentina) Albion Star (Falkland Islands)	1904-60 1960-79
Jason Harbour	Compañía Argentina de Pesca (Argentina)	1909-26
Stromness	Sandefjord Hvalfangerselskab (Norway) Vestfold Hvalfangers (Norway)	1907-20 1920-45
Husvik	Tønsberg Hvalfangeri (Norway) Albion Star (Falkland Islands)	1907-60 1960-79
Godthul	Bryde & Dahls Hvalfangerselskab (Norway)	1908-29
Leith Harbour	Christian Salvesen (UK)	1909-
Ocean Harbour	Hvalfangerselskab 'Ocean' (Norway)	1909-20
Prince Olav Harbour	Irving and Johnson (South Africa) Lever Brothers (UK)	1911-19 1919-34

Table 4.1. Sites leased to whaling companies on South Georgia (adapted from Hart, 2001)

The numbers of men employed on South Georgia varied over the years. In April 1914 seven companies employed 1700 men in the summer and 500 in the winter. Men were of all ages (those dying on the island were aged 18-69) and some may have been younger. One man who died at age 18 was said to have been whaling for 4 years. (see below) Numbers dropped markedly during a slump in demand for whale oil in the 1930s and then again during the Second World War. At the peak of its life as a whaling station Leith Harbour alone employed 500 men in the winter, but by 1958 it was operating with little over 300 men during the summer whaling season. (Vam Plew, 1975) There were very few women or children on the island, although in 1906 Larsen brought his family of five daughters and two sons (Hart, 2001), and in the early 1960s the Biggs family had four children staying at King Edward Point. (Biggs, 2004)

From the earliest days of whaling, doctors were employed by the whaling companies. CAP's first physician was Stal Olaf Eggen, a 28-year-old Norwegian, who began in 1907. In the tradition of remote medical staff, often employed in dual roles, he was also contracted to help with office work in the station. Eggen remained in Grytviken for a year. (Hart, 2001)

Dr Michelet came to Grytviken a few years later. He had already been on the island for two and a half years when he left at the request of Larsen. The manager felt that he was responsible for the outbreak of typhus amongst the community, as he had mis-diagnosed the first case. (Falkland Islands Government, South Georgia register of deaths) In August 1912 Larsen wrote to Pesca asking for them to send an 'able doctor without delay.' He also suggested that 'we should get a first class man for 8000 kroner per annum (£440).' Five years earlier, Eggen had been hired on a salary of only 2500 kroner. (Hart, 2001)

In the following years whaling started elsewhere on the island, and many of these expeditions brought medical men with them. There is no single source which lists all the doctors who have worked on the island. The South Georgia medical register, a list collated by FIG in Stanley, started in 1926, but is incomplete even after that date. Prior to its commencement many doctors' names can be found on other documents. The first death was officially registered in 1910, and many deaths were notified by doctors (although sometimes with an illegible signature.) The date on which a doctor's name was added to the medical register is known, but no record was made of when a doctor left the island, or if he returned. Signatures on death certificates are often the only evidence which suggests how long doctors stayed. Other doctors are mentioned in accounts of the time. For example Dr Leach, the station physician at Prince Olav in 1912, who was met by Robert Cushman Murphy (1948), and described as 'a very lordly looking Irishman....who wanted to keep us interminably for drinks, a game of chess, and many other things.' Most doctors on the register were either from Norway or the United Kingdom, the majority of whom were Scots. More than half had been qualified less than five years at the time of their entry onto the medical register, and one in five had been qualified one year or less. (FIG, South Georgia register of doctors)

Most doctors stayed only a season, or two seasons with a winter, usually working on whaling ships before getting to the island and on their way back home. Some notable long-stayers were Dr Aarburg, who was there for six years in the 1920s, Dr MacIntosh who worked three winters on the island over 10 years employed as a whaling doctor and Dr Loveid, who was in Grytviken and Husvik between 1912 and 1918. His daughter was born on the island in 1916. Welshman Dr Richards spent 3 seasons and two winters during the 1950s, apparently to pay for a university education for his sister. (Gordon, 2006)

The doctors were initially contracted to provide services to the whaling company and, theoretically at least, not to the government. In December 1913 the SS Ramleh arrived at Leith Harbour, with a man on board thought to be suffering from measles. Dr Titterton, the Leith medical officer, placed the ship in quarantine and boarded, examining every man on board. He later billed the government £39 for his work. Many angry letters were exchanged, with FIG finally stating 'you have no claim whatsoever on the Government.'

(SP,MS1228/30/12) Others were happier to work without remuneration. In 1928 a government telegram states 'On the subject of obtaining the services of a medical practitioner to act as a port medical officer Dr Sverdrup of Pesca has said that he will act gratis' (SP,MS1228/30/18). By 1930 FIG started to contribute towards the cost of the doctor at Grytviken. (Falkland Islands Government, 1930) In 1927 the doctor was paid £950, in addition to board and lodging. (SP,MS1228/30/18) In the summer the Grytviken doctor was responsible for looking after those at KEP, Grytviken and Godthul. During the winter only one doctor remained on the island.

In the 1940s two or three doctors were employed on the island, with a doctor (or sometimes two) being shared by Salvesen and Tonsberg, and Pesca employing their own doctor. By that time Salvesen was servicing any governmental needs. Although there was no formal agreement with the government (SP,MS1228/30/18) Salvesen's medical officers were contracted to provide care to 'all British personnel resident in South Georgia.' (Gilkes, 1947)

Finding doctors who were willing to be employed in such a remote location was not always easy. In 1926 Pesca wrote to the government saying that when Dr

Aarburg left at the end of the summer there would be no doctor on the island for the winter. (SP,MS1228/30/18) It is doubtful whether many of the early whaling medics were fully qualified. At a meeting regarding this topic in 1926 the Colonial Surgeon said that ‘the Medical Officers attached to the whalers are not always qualified, several of them being only junior students.’

(SP,MS1228/30/18)

Doctors remained difficult to recruit immediately after the Second World War. Elliot (1998) describes those who were willing to come south as ‘either newly qualified men, or persons with a history.’ Cumming (2005) tells that ‘most of the doctors who went to the whaling were there for a reason, sometimes adventure, sometimes to get away from their past, and often because of alcohol.’ In the post-war era Salvesen employed Dr Hillenbrand, who was the only doctor to respond to an advertisement which stated that ‘only British –qualified doctors need apply.’ (Hillenbrand, undated) He is the doctor met by Robertson (1956) who pointed out that he had no license to practice from the ‘British Medical Council’, but felt that he ‘knew his job.’ After a year in South Georgia Dr Hillenbrand worked on the Falkland Islands for several years. Recruitment remained an issue in the late 1950s, when the post of Medical Officer was advertised by the Falkland Islands Government with no response, and also in the early 1960s, when some consideration was given to appointing a woman as a doctor. (FIG, South Georgia Staff Files) This idea was not approved as the accommodation was thought to be unsuitable by the FIG.

Apart from the accommodation, I do not like the idea of a woman (an unattached woman, I mean) in that environment and I could not advise such an appointment’ (FI, D/18/51/S)

Ian Cummings’ (dentist in the early 1960s), wife Yvonne, is the only female doctor on the South Georgia medical register, but was four months pregnant when she went to the island and never officially worked there.

Doctors were contracted to ‘assist in such suitable employment as may be mutually agreed upon between him and the Master of the transport vessel or Manager of the Principals’ South Georgia Station. (Gilkes,1947). This presumably includes non-medical work that the station manager might have thought appropriate. Managers were also able to impose limitations on doctors’ freedom; after a trip up Coronda Peak behind Leith Harbour Station, Dr Gilkes

was asked not to go out with the sound of the station whistle. (Gilkes, 2006)

Hillenbrand also found that he provided care for animals, including a cat, a dog, and a pig, during his stay. (Hillenbrand, undated)

Some doctors proved popular amongst the whalers. MacIntosh's name is mentioned frequently by many men – he was 'a Lewisman' and mixed regularly with the whalers. He was said to be very pro-whaling. (Arthur, 2006) Most doctors travelled alone. Williamson (2006) described most Norwegian whalers being very much against the presence of women on the whaling stations. When Dr Sustring was accompanied by his wife in the late 1950s (she signed on as a messboy) she was ignored by most men.

Provision of dental services was also a problem. Dental health was poor amongst the whalers, who often had extensive caries, and extractions were common. (Hillenbrand, undated) In the 1950s FIG agreed to provide a dentist as part of the service it gave to those companies who were paying license fees to use the island. (Cumming, 2006) Prior to that, dental work had been performed by the station doctors. Jack Smellie was dentist for a year in 1956, but proved difficult to replace. Enquiries were made by the government to the doctors on the island about the necessity of a dentist. Dr Nilssen in Husvik replied that in the last 6 weeks he had done 3 difficult extractions, rebuilt one tooth and dealt with two abscesses, in addition to 21 other routine dental cases. He thought that dental care took up as much time as medical. Dr Richards at Leith estimated that he dealt with 5 dental cases every day. FIG initially offered the doctors £15 per month for dental work, and the doctors asked for £60. (FI, Box People 1917 to 1953) Presumably some compromise was eventually reached.

The doctors were assisted by Norwegian trained nurses, diakons, who were responsible for care of minor accidents. They also did some dental work, with Dr Andersen (1953) reporting that over the winter of 1953 the diakon did over 300 fillings and 150 extractions (much of it in his spare time). There were also untrained mess boys who worked in the hospitals, keeping them clean, and assisting the doctors when that was required. On occasion, whalers may have been called to help, such as with the appendicectomy of whaler John Smith,

when the doctor was assisted by Bill Lynch, who had been in the Royal Army Medical Corps in the war. (Smith, 2006)

Hospital Buildings

In total there were hospitals built at six whaling stations, only two of which survived past the 1930s. The hospital at Stromness was converted into a foreman's house, and patients were transferred to Leith Harbour for in-patient care. (Basberg, 2004) Husvik had a 10 bedded, two storey hospital. A hospital was planned at Ocean Harbour, but never built. Prince Olav Harbour also had a hospital. I have not found details of when these hospitals were built. Basberg (1996) describes the buildings as having the 'aesthetic qualities of a classical Vestfold County (Norway) style.'

In Grytviken a small hospital was built next to the cemetery as part of the original station. After the typhus epidemic in 1912 it was demolished and a new hospital was built behind the factory. The new building had an office, x-ray room, operating theatre and two wards, each big enough for not more than three beds. This was maintained until the early 1960s and in 1962/3 New Discovery House (Shackleton House) was built, and part of it was set aside for use as a hospital. The total cost of the hospital part of the building, funded by the FIG, was £36,000. (FI,D/9/50/III)

Towards the end of its life, the hospital at Grytviken was clearly felt to be sub-optimal by some of the medical staff. Whilst filling-in for an absent doctor at Grytviken, MacIntosh persuaded the Government Officer that the whaling station needed a new hospital, and soon after said that 'the hospital plans are now in the hands of the station draughtsman and by this time next year the building should be well underway.' These plans clearly never came to fruition - in March 1962, after ten years of Antarctic whaling, MacIntosh wrote:

A wire came today offering me Grytviken for the winter, but I gracefully declined.....the hospital is just a patched up dump.

The hospital at Grytviken is described by Ian Cumming (2006), who was a dentist based at King Edward Point in the early 1960s, as being well kitted out, with a separate dental surgery. It was eventually demolished with the rest of the disused whaling station buildings in 2004.

Salvesen built a new hospital in Leith Harbour in 1918 (Tonneson, 1982). I have found no record of what medical facility existed prior to that. Gilkes (2006) describes two wards, a surgery, a theatre, and x-ray and dark rooms in 1947. Hillenbrand (undated) describes the 'hospital hut' in 1950 as 'almost beyond belief.' The theatre's ceiling

...had been made of canvas, and the space between the ceiling and the corrugated iron roof was nothing but a thick layer of fine gravel. The canvas ceiling had largely perished, covering the whole room, including the operating table, with a thick layer of dust.

Vam Plew (1975) says that a further new hospital was built in 1950, 'based on the conflicting recommendations of successive whaling doctors'. It had four wards (with 20-25 beds), two operating/examination rooms and a dentist's room. (Basberg, 2004) There was a fire in Leith Hospital in July 1952 requiring patients, and Dr Mossige and Dr Hope (who were sleeping in a ward on the ground floor), to rescue an unconscious patient (who was probably the diakon (nurse) from Grytviken, in hospital for treatment of a non-healing wound (CAP, MS1213/27/2)) from the corridor. (SP,MS1228/21/2) The damage done was clearly not substantial, as this building remained the hospital for the remainder of the working years of the station and is still standing, although in poor repair, with the floor showing signs of collapse. (Poles Apart, 1999) Nan Brown (1971), a housewife who spent time on the island in the 1950s, described the Leith Hospital in less than glowing terms:

a somewhat oppressive place with a few hard beds and uncomfortable chairs, almost as if designed specifically to discourage men from reporting sick. If this was the objective it certainly succeeded, as the whalers considered the hospital to be a last resort,

but in December 1956 Macintosh commented that a VIP visitor was 'very impressed by the modern equipment.'

At times capacity within the hospitals was not sufficient for the number of sick men. According to Karl Brown, a Shetlander who wintered in Leith Harbour in the early 1950s, he was planning on learning to ski when he saw a notice in the office window saying that no more skiing would be allowed until beds became available in the hospital (Fraser, 2001)



Fig 4.1 Leith Harbour Hospital 1929-30. (Wisnes, 2006)

Provision of drugs and medical supplies

I have located very little information with regard to exactly what surgical and medical supplies were available on the island, apart from a 1964 indent of medical equipment for Grytviken Hospital. This is likely to be a reasonable reflection of the supplies which had been there for some time preceding this date, as by 1964 the whaling station was about to close. The indent of diagnostic and surgical equipment seems to be very complete, and would allow most forms of surgery to take place. It includes, for example, 143 artery forceps, 12 needles (aneurysm and hernia), 8 needles (suture), 6 amputation saws and 2 'things' (metal, cannula like, 5cm.)

In 1947 (Gilkes, 2006) there was an x-ray room and dark room in Leith Hospital. He recalls that the x-ray machine was a Siemens glass tube, thought to be of mid-30s vintage, apparently with no manual. Recollections differ; Hillenbrand (undated) describes the same machine as dating from pre-First World War. There were complete sealed boxes of surgical instruments and, by the standards of the day drugs were in good supply. In 1962 Dr Nurse was

obviously concerned that stocks would deteriorate after the service was taken over by the government from the whaling companies. He refused any further salary until he as assured that the supply of the quantity and variety of drugs that he was used to would continue to be supplied. (F1,D/8/62)

On occasion medical equipment was built on the whaling stations, such as in 1950, when the carpenter and plumber in Leith Harbour built a Balkan frame and pulley for a patient who had a complicated fracture of the femur and tibia. (Hillenbrand, undated)



Fig 4.2 Unnamed doctor and diakon

Chapter 5. Illness

Descriptions of medical care can be found from many different sources, although few of these provide much technical detail. Patterns of severe illness and injury can be observed by looking at certified deaths, and further details have been preserved in coroner's reports. Apart from a few records which have been preserved in the Salvesen Archive, I have not been able to find any medical records, although I am told that consultation records were generally made (Gilkes, 2006). Much information was recorded by Dr MacIntosh in his diaries of 1956/7, 1957/8 and 1961/2, often giving the doctor's very frank opinions of the cases he saw. Dr Andersen's annual report of 1953 was copied from an isolated file which remained in Leith Harbour in 2000, but which was otherwise filled with documents which were not thought to be interesting (Ann Prior, personal communication). Hillenbrand (1953) who was doctor at Leith Harbour for a year in the 1950s published an account of a South Georgia winter in the *Lancet* and his personal memoirs have been kept by his son. (Hillenbrand, undated) Most surviving whalers had very little contact with the doctors on South Georgia, and unless they were unwell had little knowledge of any work that the doctor did.

In his detailed report for 1953 Dr Andersen, based at Leith Harbour, describes an average of 15 consultations daily, mostly for minor illness. There were 40 hospitalisations over the winter, including five from Husvik, and at the end of the winter six men were sent home without working the summer season, including one with cancer and one with probable tuberculosis. Dr Hillenbrand describes two daily surgeries. Dr MacIntosh makes occasional reference to patterns of work in his diaries, commenting on surgeries which were 'again busy but nothing of great importance' where patients had 'really nothing wrong' and also mentioning nights when he waited up for the last whale catcher to come in at three am. Hillenbrand describes patterns of minor illness, commenting that chilblains are 'almost unknown' and respiratory diseases are rare. He believed that the whalers were a hardy breed, and would rarely seek medical advice unless they really needed it. Dr Gilkes (2006) recalls that the main problems were colds (after ships had arrived), skin diseases including psoriasis, and infestations such as scabies or crabs (pediculosis).

Some obvious themes emerge from many of these sources. Infection, which occasionally occurred in outbreaks, was a particular problem, especially in the days prior to antibiotics. Injury was common, although many sources suggest less so than might have been expected given the hazardous working environment. Mental illness and suicides were also common, and alcohol played a part in many accidents (some fatal) and suicides. A few conditions were characteristic of the whaling and sealing industries. There are a few examples of nutritional deficiency, and also iatrogenic illness. Wexelsen (2006) reported that a combination of infection (most commonly affecting the hands) and injury accounted for 85% of days lost on board floating factories in the 1930s.

Infection

Outbreaks of infectious disease occurred from the earliest times on South Georgia. Headland (1984) reports that four of the nine unmarked graves at Grytviken belong to crew of the Esther of London. These men and their surgeon, whose grave was marked with a wooden marker were said to have died of typhus in 1846.

Better known was the outbreak of typhus that happened in Grytviken in 1912. Hart describes the outbreak, which killed at least nine men between June and August 1912 (out of 50 remaining on the island over winter). The index case was thought to have arrived on a ship from Buenos Aires. Hart (2001) describes a letter that Larsen wrote to his wife on 23rd June, saying that many men were sick. On 28th June there were six cases and by 30th June another 12 men were sick. On 24th July CAP in Buenos Aires wrote that they had sent a large number of artificial flowers on the next ship 'in case there are more deaths on the island' and say that they 'hope sincerely that you will have succeeded in overcoming the illness, and that the next news will be better.' (CAP,MS/1213/27)

The numbers of deaths described by Hart does not correlate with the death register. Men who died over the winter of 1912 were certified of dying from a variety of illnesses. The earliest case of a death from infectious disease in 1912 was a man who died of tuberculosis, but he was certified, and buried, in Prince

Olav Harbour. The first death from an infectious disease in Grytviken was diagnosed as pneumonia. Seven subsequent deaths, potentially caused by typhus, (although certified as pneumonia, *myelitis dorsalis* and *vitium cordis*) happened over the following four months. (FIG, South Georgia Register of Deaths) *Vitium cordis* is a diagnosis often used by German speaking doctors to signify structural heart disease; I have not been able to find a translation of *myelitis dorsalis*, but it seems likely to mean a neurological disease affecting the spinal cord. Many workers asked to be sent away from Grytviken but Larsen refused, on the grounds that he was not able to leave. Wilson, the registrar, stated in his annual report that Grytviken was practically in quarantine during the outbreak and that no other station on the island had been affected. (SP,MS1228/17/145)

After the first typhus epidemic it became routine for vessels to be boarded by a medical officer prior to disembarkation in South Georgia, to rule out infectious cases on board. (SP,MS1228/30/12) The SS Orwell arrived at Husvik in February 1923, from Cardiff via St Vincent. The doctor examined a man and found him to be suffering from typhoid fever. He was isolated, the entire crew was examined, the ship fumigated and water tanks emptied. Within a few days there were seven men in the hospital, two of whom died. Husvik was placed in quarantine and, once again, there was no spread to the rest of the island. (SP,MS1228/30/15) There was at least one outbreak of measles on a factory ship, with 13 cases and one death on the Southern Opal in 1950, but there is no record of this affecting the stations on South Georgia (Fraser, 2001)

Deaths from infectious disease as a proportion of total deaths

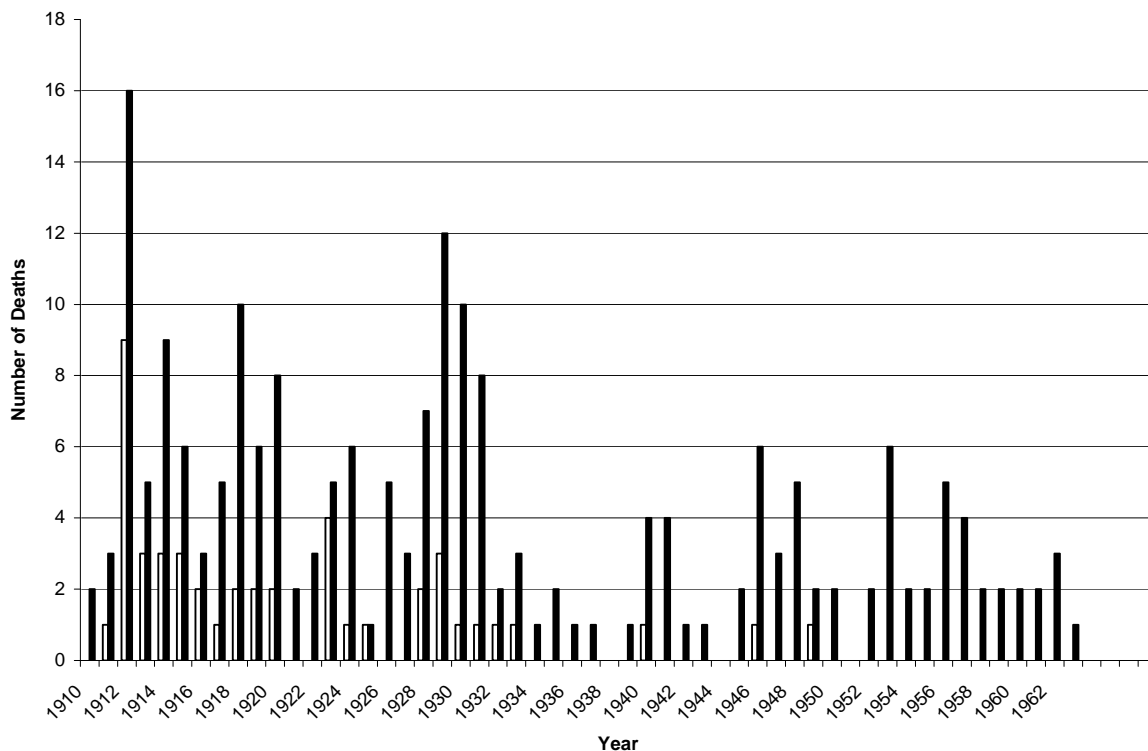


Table 5.1 Deaths from infectious disease as a proportion of total deaths 1910-62

(Dark bars represent total deaths, pale bars death from infectious diseases)

Andersen describes two outbreaks during 1953, the first of which was an infectious pneumonia which happened at the beginning of the winter. ‘Nearly every man was infected’, and although most of them continued to be able to work, a few were in bed for a week or more. Over one month treatment for the outbreak used the majority of the available penicillin. Several months later there was an outbreak of ‘*trichophytia*,’ a fungal skin infection, which affected 45 people. Two required hospital treatment for over two months and one, who had a penile infection, was sent home after Dr Andersen had tried treatment with gentiana, yellow blue, auromycin cream and ACTH hormone. In his communication asking for the boy to be sent home he says ‘I have not dared try x-ray. This must be done by a skin specialist at home and this young man must be repatriated at the first available opportunity.’ (Andersen, 1953,2)

Tuberculosis was an ongoing problem, particularly in the earlier part of the 20th century, with four deaths from the disease in the 1910s, two in the 20s, two in the 30s and one in 1949. In 1947 Dr Gilkes diagnosed the pigs as having tuberculosis, and all the pigs on the island were put down. (Gilkes, 2006) In 1957 the government tried to recruit a 'TB sister' for the island with no success, suggesting that it remained an issue.

Death from other infectious diseases was not uncommon, including those from appendicitis, otitis media and probable meningococcal sepsis (purpura fulminatis (acutissima)). As can be seen from table 5.1, deaths from infection fell markedly over the first part of the century, and had ceased by 1950.

Injury

Whaling was heavy industry, and injuries were caused by many different mechanisms. The best surviving sources of information about injury are undoubtedly coroner's inquests, and a small number of injury reports from CAP, both held at the SPRI Archive. Deaths from injury are a reasonably steady proportion of total deaths up until 1962 (see table 5.2). In the early 1950s, rates of injuries in Grytviken recorded in the accident log varied from 1-16 per month. (CAP,MS1213/27/2) Injuries recorded included slips, falls, foreign bodies in eyes, minor skin wounds, fractures, major lacerations, heatstroke from working in the furnace, infected wounds, dislocations and back sprains. (CAP,MS1213/27/1)

Head injuries were particularly common, and sometimes caused horrific damage. In 1912 Pesca lost a whaler, 28-year-old Ludvig Bechman, who had the reputation of being the best gunner in the world. (Hart, 2001) The harpoon gun recoiled, throwing him 15 feet back onto the deck. Doctors Lampert and Loveid recorded that his skull was 'frightfully crushed.' (SP,MS1228/17/6) In 1926 a whaler was injured by an explosion of gunpowder (possibly when he was playing with it). The doctor found a fist-sized hole about the left ear, with most of the left half of the brain substance gone. (SP,MS1228/17/45) Other men were lucky enough to survive head injuries. In the early 1950s a man sustained a head injury after being hit by a bar which sprang loose whilst he was

loosening brakes on a dumping barge. He had a scalp laceration with underlying skull fracture and was cared for in Grytviken for 28 days before transfer to Buenos Aires. The doctor saw him 55 times over that period.

(CAP,MS1213/27/1)

Non-head injuries could be just as severe, for example those of a man who died in 1919 after being caught in a steam winch which pulled him into the turns of chain and took him three times around the barrel. (SP,MS1228/17/32) Fatal injuries were sustained by a 57-year-old fitter who was struck by a wire traveller when turning a whale on the flensing platform. He was killed by rupture of his transverse colon and bladder but also had injuries to his clavicle and head.

(SP,MS1228/17/35) Incidents also occurred with firearms. In 1916 the Grytviken doctor amputated the arm of a man who had shot off his hand. (Berntsen,1916)

Often the mishap which caused the death of one man would also injure others. In 1929 a mast broke on a ship whilst it was in port in Leith Harbour, killing one man (with head injuries.) In the same incident 18 men fell 14 feet into a tank, with two of them breaking legs. (SP,MS1228/17/56) Many injuries were severe enough that they would have been unlikely to survive even if they had happened in proximity to a major hospital, but at times a doctor may not have been easily to hand. In 1912 a man was working on the plan when he was hit by a heavy metal block. He was taken to the surgery alive at 6.30am, but had been dead for several hours by the time the doctor arrived at 6pm. (SP,MS 1228/17/13) First aid was often different from that recommended now, as described by Smith (2006) who saw an injured man's severely bleeding leg put into a bag of flour to try to stop the loss of blood prior to the doctor's arrival.

Edward Binnie, one of the earliest magistrates on the island had his own opinions regarding the attitudes of the whaling industry to the safety of its workers, and commented in 1913:

...although the whaling industry is fraught with many dangers and risks a good deal unnecessary carelessness is often shown and only in cases such as the present accident are the people thus employed suddenly pulled up, and for a time every care is exercised until sooner or later the past is forgotten, and the same careless attitude is adopted as before, the season only lasts 5-6 months and it is the apparent ambition of all to get as many barrels of oil as possible

heedless of all possible risks and dangers attendant hereon. (SP, MS1228/17/12)

Managerial errors which contributed to injury and death were made. Buildings built on a site at Leith Harbour known as Jericho were damaged by avalanche in 1920 and rebuilt on the same site. After a heavy fall of snow in August 1929, several buildings, including the carpenters shop, meat cookery, smithy and engineers workshop were almost buried by another avalanche. All hands were put to work immediately, and two men were found alive more than one-and-a-half hours later. Three men died, and after this the buildings were re-situated in a safer area. (SP,MS1228/17/55)

Recreation was also a cause of injury, often in the mountains around the stations. A Scottish whaler recalled an inter-station winter sports competition at Leith, when a Norwegian made a bad landing whilst ski-jumping and broke an arm, leg and clavicle. (Gordon, undated) Deaths also occurred as a result of recreational pursuits. In 1950 a British radio officer walking from Stromness to Leith did not return when expected, and was found dead. It was thought that he had probably fallen and hit his head, then died from exposure. (MS1228/17/118) A few years later when a Norwegian labourer did not return from a climbing trip, a search party was organised, and he was found dead at the bottom of a cliff with a fractured skull (SP,MS1228/17/126)

Many people died in the water, which is around minus two degrees Celsius in the winter. It is often not possible to differentiate drowning and death in the water from hypothermia as causes of death from the descriptions given of events. Death in the water was not uncommon, and numbers are probably an underestimate as many of those who disappeared presumably drowned. Scientific studies disagree regarding the length of time of survival in cold water, but those whalers who ended up in the water in South Georgia did not survive long. Crossing between whaling boats appears to have been particularly hazardous. In 1929 an Irishman who was crossing between two ships was seen to fall into the water. A rope was thrown immediately but it was only a few minutes before the rescuers felt the weight go off the rope, and they had a body to collect from the water. (SP,MS1228/17/54) Sverre Akseth, respected manager of Leith Harbour, died in the same way in 1960. He was conscious in

the water and for a very short time after he was pulled out of the water, but died soon after. It is thought that a blow to the head as he fell may have hastened his death. (SP,MS1228/17/142) In 1931 it was described as 'no more than 5 minutes' before the body of a Norwegian who had fallen between two ships was removed from the water. (SP,MS1228/17/71) Prior ingestion of alcohol may reduce survival time in the water, and several drownings were reported late at night as men tried to cross between whale boats, which would have been very icy in the winter. In 1917 an engineer had been drinking heavily on Lille Carl when he tried to row ashore. He was heard shouting for help, but found unconscious with frozen clothes. (SP,MS1228/17/26)

Dr MacIntosh recorded many other injuries, very few of which were of a serious nature. In December 1956 'again a long string of minor casualties to be attended to,' and the following day

casualties #1 fractured two ribs after falling heavily on his ribs on a hatch coming. #2 jammed foot between two motor boats. Nasty and painful longitudinal crack on one bone, hospitalised. #3 tore thigh muscle playing football, hospitalised.

He also describes the treatment of an injury to a young Scotsman

One of crew of service boat unshackling a rope – middle finger L hand got stuck between shackle and heavy metal ring...chewed end of finger off...horribly gory stump. ..disarticulated joint. Covered stump with muscle flap and skin...local anaesthetic. Patient... departed smiling broadly.... he is a hard man.

He also records the frustration of treating men in less than optimal conditions.

We spent the morning manipulating a very stubborn Potts fracture back to position and after all our labours and plastering the confounded thing has slipped again.

Elsewhere at the same time, such a fracture may have been treated by open reduction and internal fixation.

Deaths from injury as proportion of total deaths

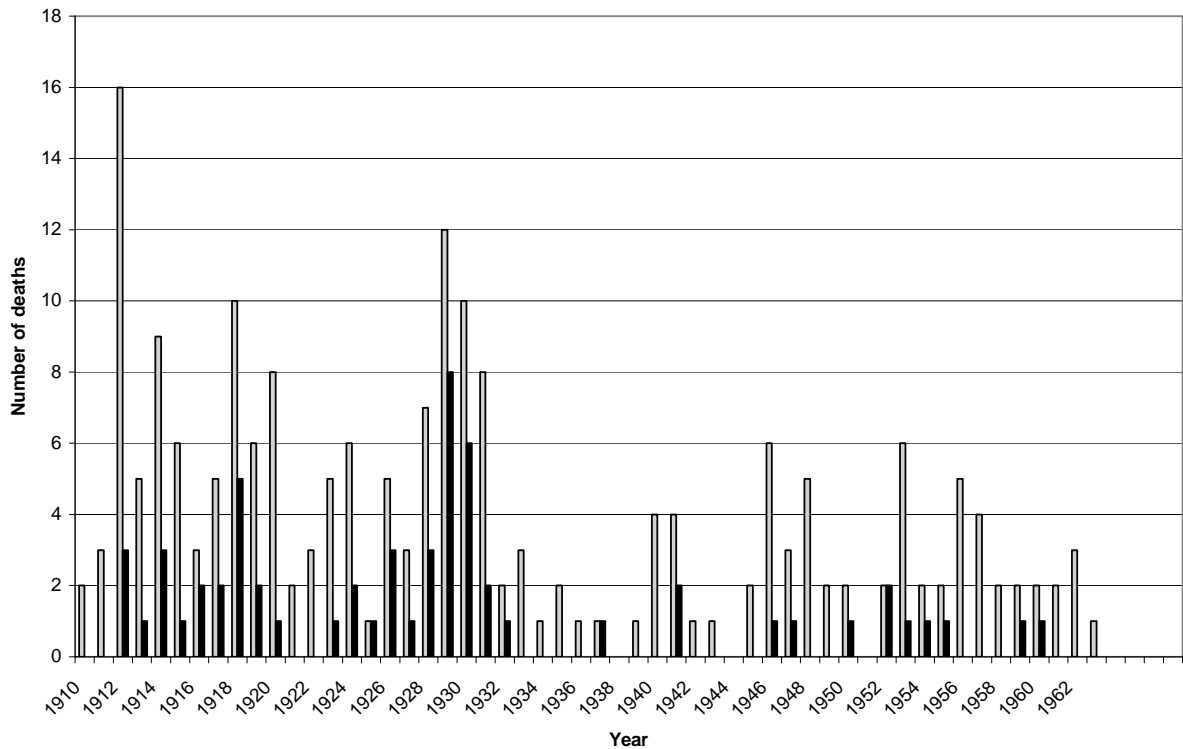


Table 5.2 Death as a result of injury as a proportion of total deaths 1910-1962
(Dark bars represent total deaths, pale bars death from injury)

Psychiatric Illness and Alcohol

Psychiatric illness

References to mental upset occur in almost every South Georgia text, memoir, and official document. During the whaling years seven men were officially recorded as having committed suicide. This is undoubtedly an underestimate. Hanging was the most common method of documented suicide, but suspicion undoubtedly exists over many cases of men who either disappeared (CP,MS1228/17/136) but who were never recorded as having died, or were found dead in the water.

In the early days of whaling, a depressive illness affected whalers in large numbers. Despite the lack of recorded suicides in those times, there is

anecdotal evidence that they may have occurred. A pastor by the name of Kristen Loeken, who arrived at Grytviken in 1912 is recorded as saying:

It was not surprising that the whalers became melancholic... many suffered from the despair and loneliness of working in an isolated, sometimes soulless, community devoid of female company which frequently resulted in men being sent home as mentally deranged or worse committing suicide. (Hart, 2001)

Harry Lillie, a ships doctor on a whaling ship in the 1950s, described a similar phenomenon:

The occasional lack of whales at times had a strange, depressing effect on some of the Norwegian whalers. They couldn't even explain themselves why it was that they would sit around with this 'whale sickness' as they called it, apparently thoroughly miserable...

Nan Brown describes whale sickness, which she says 'manifested itself in various ways', including 'truculent behaviour, moping and imaginary complaints.' The only cure was 'a good catch of whales.' Hillenbrand (1953) felt that it was the 'frequent atmospheric changes, blizzards, absence of any sunshine....., isolation that may predispose to melancholy in predisposed persons.' In 1956 an overwintering whaler wrote the ten commandments (South Georgia version) which suggest that some of the whalers found rules very restrictive.

- 1/ Thou shalt not steal (chops).*
- 2/ Thou shalt not harbour any heaters in they Cabin nor in thy Mates cabin.*
- 3/Thou shalt not complain about Mail.*
- 4/Thou shalt not turn up thy nose at meat balls.*
- 5/Thou shalt not curse the cook not his staff nor anyone in the galley.*
- 6/Thou shalt not use eng W.C.*
- 7/Thou shalt not throw residue of meals from out thy Cabin window.*
- 8/Thou shalt not feed seagulls.*
- 9/Thou shalt not make nor consume "Home Brew" in thy Cabin, nor in thy mates cabin.*
- 10/ Thou shalt not enjoy thyself at all.*

The list of Commandments finishes 'and on the seventh day they all died a horrible death.'

A song which was probably written at about the same time, (Robertson, undated) says:

We live it seven days a week

*Cold hands and frozen feet
Bitter days and lonely nights
Making grog and having fights*

and refers to South Georgia as an 'icy hole.'

Dr MacIntosh's diaries frequently describe cases of psychiatric illness, often in a very colourful manner. They give some insight into his perceptions of mental illness in the 1950s and 60s. At the end of the season in 1957 he 'had a very queer Argentine in the surgery' who was having delusions of persecution, imagining that he was having caustic soda added to his food and thinking that other whalers were ready to murder him. MacIntosh states:

In the UK he would be a fit and proper person for an institution, in Argentina they are just allowed to run around loose.

At the end of 1956 he sent a young Norwegian man home, describing him as 'the only serious case in the hospital.' He described his mental condition as 'recurrent' and that he 'should not be here under the circumstances,' and also said he was very rude to the Tonsberg office about him. Screening for mental illness prior to departure may have been less than optimal. Dr MacIntosh shared his feelings with his diary on another occasion, when he had been asked to take a patient suffering from acute mania off a ship. He also gives some insight into the limited range of therapeutic options for psychiatric disease.

He is in a bad state, acute mania, and required more than the full dose of morphine to put him out.

The man died the day he arrived on shore and the comment is made:

Perhaps it is for the best, as it transpires that he has already been in a mental institution in a similar condition. This has solved all our problems about getting him home, and in a way is a relief.

Morphine (usually with hyoscine) was still used in the United Kingdom as occasional treatment in the 1950s to sedate violent patients. Chlorpromazine was introduced in the late 1950s. (Alexander Cooper, personal communication.)

Suicides

In the 1920s a whaler had consulted Dr Will, who thought him 'somewhat neurasthenic, weak and nervous'. He also suggested that he might be 'somewhat self-concentrated, with a loss of self-confidence and energy.' He had no hallucinations or suicidal ideas, and was diagnosed with melancholy, which was not thought to be serious. He visited the doctor one evening, but could not be found when the diakon went to give him a sleeping draught. He was next seen about seven weeks later, washed up on the shore. His death was recorded as a drowning. (SP,MS1228/17/43). A similar case happened in the 1940s. A man was found face down in the water after fellow workers thought that his behaviour was strange. His death was also recorded as a drowning (SP,MS1228/17/102) Dr MacIntosh, in his diary of 1956, comments on a Norwegian, who had been 'quiet and moody for some time' and was known to have had domestic worries. He disappeared in November, at the beginning of the season. Two days were spent searching ashore, and divers were sent down in Leith Harbour, but his body was never found. He was 'posted as missing' but there is no record of an inquest being held, and he was never certified dead. MacIntosh thought that 'nothing could have been done about it.' In 1961 he notes the death of a young Shetlander, who disappeared over the side of a catcher, where his boots and pullover were found. He is described as 'a bit of a hard case' who was known to be drunk. Once again the divers were sent down, and no record was made of the boys disappearance.

Many whalers recall an unfortunate 18 year old who, in April 1952, had been saying goodbye to friends, when he heard that the ship had left, leaving him in Leith Harbour for the winter. (Williamson, 2006) He was later found hanging from a rope in a room in an accommodation block. It was noted that he had always been very quiet, but 'after the new year he turned even quieter.....he did not seem to have any wish to go home.' Another man described offering him a drink a few days before he committed suicide and the boy crying and saying that he was no good and that nobody liked him. He had already been whaling for four years. (SP,MS1228/17/126)

In the early 1920s a violent death was recorded as suicide at the coroner's inquest, although it would appear that the doctor might have had some

reservations. The Norwegian whaler was working on the flensing platform when the whistle blew. He was said to have been seen to go back to his knife and then fall to the platform. Dr Aardberg described three deep lacerations which severed the skin, the windpipe and the oesophagus and the large blood vessels on both sides. At the inquest the doctor said that the whaler 'was said to have inflicted certain wounds on himself.' (SP,MS1228/17/37)

Medical Officers

South Georgia doctors were not immune from whalers' sickness. In his last diary, after ten years of whaling, MacIntosh appears to be fed up with the whole thing. After arriving in Leith Harbour in November, he comments

Well, here we are in desolation once more. There seems to be a very depressed atmosphere all around.....the continued long hours is(sic) getting everybody down. I'm beginning to feel myself going that way too. The end of the season can't come too soon.

Things had not picked up for him by February, when he says:

I won't be sorry to see Venturer come creeping around the corner and take a tearless farewell from South Georgia.

Alcohol

Alcohol was undoubtedly implicated in many injuries, disappearances and cases of mental illness in South Georgia, even from the earliest days. In 1907 Larsen himself stopped drinking and banned alcohol for everyone, except the manager, gunners and officers. However it continued to be manufactured from boot polish and industrial alcohol, and smuggling and stills were common. Larsen offered financial inducements to ships masters to encourage them not to bring alcohol to Grytviken. (Hart, 2001) Alcohol remained a problem 50 years later and ships continued to smuggle alcohol to the whalers. Ex-whalers from Shetland clearly remember stills hidden in various lofts and other corners at Grytviken, and also seeing large amounts of alcohol hidden on the ships. The authorities continued to clamp down hard on those trying to manufacture alcohol. A whaler remembers a man being found guilty for having an illegal still

in the 1950s, and being charge £80, which would have been nearly half his wage for the season. (Fraser, 2001) However, none of the surviving whalers that I talked to remember drinking more than a glass a night, or alcohol being a problem on the stations.

In 1956 MacIntosh describes a Norwegian man as dying of 'cardiac failure, accelerated, almost certainly, by a gross overdose of bad booze.' This man was certified by a different doctor as dying of a pulmonary embolus. (FIG, South Georgia Register of Deaths.) He also talks about a Husvik manager who

...thinks he is celebrating Christmas or his birthday and has reached the stage of extreme alcoholism, when he is seeing all sorts of queer unheard of beasties diving off the top of his locker and scaring the living daylights out of him.

This case caused significant difficulties, as the man required ongoing sedation, and had Leith's only hospital orderly with him all the time.

There were undoubtedly many doctors who went south who had a significant problem with alcohol (and, according to Elliot, possibly drugs); this also starts in the earliest days. In 1926 Pesca asked the Colonial Surgeon in the Falkland Islands for help in appointing a doctor. In the surgeon's opinion:

The sore point regarding British Medical men in South Georgia, in the past, and one which is to be deeply regretted, is that they have all more or less been sent home before the end of their agreement owing to the abuse of intoxicating liquors. (SP,MS1228/30/18)

In 1957 the manager at Grytviken dismissed the stations doctor, an Argentinian, on a charge of alcoholism. On January 1st Dr MacIntosh was asked by the Magistrate if he would go to Grytviken until a replacement for the doctor could be found. He had:

...been on the most monumental 'bender' for the past 3 weeks and was not attending to his work, so when Ken [the government officer] went along to his room to remonstrate, he was met by a volley of abuse. (MacIntosh. 1957)

This led to his dismissal. Dr MacIntosh was very happy to be paid an additional £50 a month for filling in in Grytviken for him. Six weeks earlier the dismissed doctor had performed an anaesthetic which resulted in the death of a young man (see below).

Dr Michael Gilkes (2006) was initially employed as an assistant medical officer in 1947, but by the time he got to Leith Harbour the previous doctor had been sent to Montevideo for 'drinking and drugging,' and Dr Gilkes was immediately promoted, despite having only recently qualified. When he arrived in Leith, the hospital attic had 'no less than eight pounds of solid cocaine' in it, which his predecessor was thought to have been abusing. Cocaine may have had a minor role to fulfil as a local anaesthetic in the 1940s, but didn't have enough therapeutic uses to justify that quantity of the drug for clinical use. Dr MacIntosh was himself said to be 'fond of whisky but a true healer' (Elliot, 1998), and many have said that a Scottish doctor who was in South Georgia for many years in the late 50 and early 60s, was a heavy drinker. He was otherwise noted for wearing a kilt all year round, 'no matter how severe the weather.' (Cummings, personal communication) Doctors may have also been moved on from postings on South Georgia to cover for ship's medical officers who 'couldn't be kept away from alcohol. (Barclay, personal communication) It seems to have been anticipated that doctors would consume a large amount of alcohol. In 1947 Dr Gilkes asked for one gin, one brandy, one whisky and one sherry and was given a bottle of each. (Gilkes, 2006)

In 1950, just before midnight, a fire began in the bed of a medical officer on the Southern Venturer, thought to have been caused by a lit cigarette. He was taken to Leith Harbour, where Dr Hillenbrand found that he was suffering from extensive and severe burns to the abdominal wall. When he was found he was said to be in a very bad state and could not reply when spoken to. Alcohol may also have had a part to play in this injury. Dr Kelly was treated and sent back to the Southern Venturer to complete the season. (SP,MS1228/21/2)

Some of the doctors were obviously affected by hundreds of dead whales, including Dr Harry Lillie, who campaigned for the more humane killing of whales. (Elliot, 1998)

Living conditions

Many people have commented on the working environment in South Georgia, especially as it may have contributed to the high incidence of mental health problems. Morley (1927) was one of the earlier independent commentators. He was a filmmaker who visited the island in 1923, and said:

The first impression of a whaling station is received violently though the nose, and I may admit that I have never experienced anything so overpowering. It took me several days to get at all used to it, and during that time I could not eat and felt downright miserable. The doctor, also, who had never been on a whaling station before, was a suffering companion.

McLaughlin (1962), a ship's captain working for Salvesen, has similar memories from the late 1950s.

A shore based whaling station is a sordid habitation. Scores of squalid and dilapidated wooden huts and buildings clustered as near as possible to the foreshore....Each barracks housed about fifty men in four-berth cabins. The smells in them were unbelievably foul – smells accumulated from successive generations of whale men. The system of sanitation was prehistoric.

The best-known doctor-author is Robertson, who wrote about a season on board a whaling ship which stopped at South Georgia in 1951. Elliot, a Salvesen manager, (1998) has said that 'much of what he wrote was fiction,' and a number of surviving whalers agree with this opinion. Robertson published his account first in the United States. (Robertson, 1954) He describes South Georgia in 1951 as 'the most sordid, unsanitary habitation of white men to be found the whole world over,' and goes on to say that 'the denizens of the terrifying slums' of Glasgow, Cairo, Calcutta and Shanghai 'are cared for better than the whalemens living in Leith Harbour.' After threatened litigation from Salvesen his British edition showed substantial changes (Robertson, 1956) He prefaced this edition:

If you're writing a book about whaling, I was advised by an experienced Whaling Inspector, 'don't tell the exact truth. If you do, nobody ashore will believe you.

His revised descriptions of South Georgia are less colourful and more formal, perhaps with a hint of sarcasm:

I see nothing else which..... would pass as a fit permanent residence for human beings....However, I think my standards are probably too high.

Sir Gerald Elliot (1998, recalls it in slightly different terms:

My impressions of Leith Harbour in 1948 were of a somewhat shabby, but reasonably clean and cheerful place. Food was about as varied as it could be. There was little fresh fruit or vegetables. There was an excellent bakery.

Basberg (1996) estimated the personal space which was available to the whaling station workers. He calculated that up to 8 men who shared a room had an average of 2.5 square metres each, whilst a man who lived in a room on his own, including the doctors, had 7.5 square metres of personal space. In Husvik the mess boys' room was even more overcrowded, earning the title 'the penguin rookery.' This may have also increased the risk of infectious disease.

Whaling and sealing specific illnesses

As described, whalers were at risk of injury and mental illness, particularly depression. A few authors also describe a condition which is sometimes known as whale finger. Hillenbrand (1953,2) described these infections in depth. Whalers were subject to a range of skin infections, which mostly occurred on the index and middle fingers, and varied from subcutaneous abscesses to cellulitis and erysipeloid. These were not usually related to puncture wounds, but 'wire stings' from gripping wire ropes which were used to move the whales on the flensing platforms. In a four month season on a floating factory Hillenbrand dealt with 34 such injuries and in a winter season he treated 16 infections in men who were preparing gear for the next season. He took swabs and attempted to culture micro-organisms but never succeeded in isolating any bacteria. He discusses the possibility of *Erysipelothrix rhusiopathia* being responsible, as it causes similar infections in those who handle fish ('fish handlers' disease') and pigs ('pork finger'). His chosen treatment for superficial digital infections was local application of 30% mercury ointment. The average duration of treatment was five days; non-responders were treated with parenteral penicillin. He also saw one case of erysipeloid complicated by a septic arthritis.

Puncture wounds which occurred during flensing also had a very high incidence of infection, although it was Hillenbrand's observations that superficial lesions were more likely to become infected. Dr Lillie (1955) described the most effective treatment for these cuts as bismuth iodoform paraffin paste, 'the BIPP which my old hospital in Dundee had used so much.' He also says that large amounts of 'anti-gas gangrene serum' were taken, but rarely used, presumably because of the risk of serum sickness. (Lillie, 1949) Sonny Williamson, a Shetland whaler

...started the whaling in 1939 and I spent half a season in the tank gang and then there were so many blood poisoned hands on deck that I had to go there for the rest of the season. (Fraser, 2001)

Whale finger may have been different to a condition known as seal finger, which was common amongst sealers in the northern and southern hemispheres. It has been described as being similar to a tuberculous finger, often occurring without any skin injury, and causing a local destructive lesion. (Lillie, 1949) Dr Frank Ryding, who worked for British Antarctic Survey on South Georgia during the 1970s did some unpublished work on the topic and also tried unsuccessfully to culture swabs taken from elephant seals. (Ryding, personal communication, 2005)

Hillenbrand (1953) comments on the interesting 'stenocardiac attacks' (angina) which are found in some sensitive people when the barometric pressure drops suddenly. He also mentions 'a characteristic conjunctivitis which is seen in men working with separators which emit whale-oil fumes.' Whale oil was used to make soap, which the men used to wash clothes, and this sometimes resulted in dermatitis.

Nutritional deficiencies

I have already discussed the prevention of scurvy on some very early expeditions to the island but there are a few references to ongoing problems with the condition. Elliot (1998) records that Toralf Fritzvold (a baker at Leith Harbour for many years in the earlier days of the station) told that after a few cases of scurvy one of the early doctors encouraged the whalers to eat the roots and young leaves of the tussock grass. Hillenbrand (1953) also alludes to

the 'old South Georgia habit (almost forgotten by the 1950s) of eating the anti-scorbutic tussock grass'. He also describes a case of severe scurvy in a young man who, by his own choice, had lived on tinned food, salt meat and salt fish during his stay on the island. This is presumably the 23-year-old who he certified as having died from heart failure and scurvy in 1950. (FIG, South Georgia register of deaths) A note kept in the SPRI archive written by Dr Hillenbrand says that this man was cared for in Leith Hospital from June 13th to July 10th 1950. (SP,MS1228/17/117). Scurvy usually responds very quickly to treatment with vitamin C, with symptoms improving within days. (Pimentel, 2003) Hillenbrand says that ascorbic acid tablets and orange juice were available on the island at this time. It is not clear why this young man died after a month in hospital, unless other pathology (perhaps beri-beri, also caused by his limited diet) was also present.

Beri-beri, also caused by dietary deficiency, was also a problem in South Georgia, although it is not clear to what degree. Beri-beri was seen in Grytviken in 1910 and there was an outbreak on Ems, one of Pesca's ships, in 1912. (Hart, 2001) Filchner visited South Georgia in 1911, and noted that, six months before the arrival of the Deutschland, 'beri-beri had been raging at Husvik'. No deaths were attributed to beri-beri at that time. It was felt by the workers to be an infectious illness and at the time of Filchner's visit there was considerable unrest amongst those who felt that the disease was recurring, and who wanted to go home. These feelings were consistent with the general knowledge of the time. A 1911 encyclopaedia suggested that 'the cause is believed by many authorities to be an infective agent of a parasitic nature'. (Encyclopaedia Britannica, 1911) However, a Norwegian scientist had already noted that ship's beri-beri gets better when fresh food was introduced into the diet. He described a rapid improvement with recovery within a fortnight. (Holst, 1907) Beri-beri was known to be a problem in other contemporary whaling expeditions, with an outbreak also occurring in the South Shetlands in 1927/8. (Lancet editorial, 1930)

By the end of the 1920s the cause of beri-beri was well known, and thiamine was marketed commercially in the 1930s. (Porter, 1999) The 1930 Colonial Report states that there was, in general, very little sickness but occasional outbreaks of beri-beri with some deaths: a 25-year-old labourer dying in 1931

and in a 26-year-old man in 1933. (FIG, South Georgia Register of Deaths) Beri-beri is still occasionally seen in heavy drinkers with poor diets, and this may have also contributed to these cases. In 1930 Dr Rolt from Edinburgh wrote to the Lancet, saying that he had successfully treated beri-beri in the Antarctic with marmite.

Pernicious anaemia killed a 28-year-old labourer in 1927. Treatment for the condition was not widely known at that time, although in 1925 Minot had shown that it was possible to rapidly cure pernicious anaemia by feeding patients with a pound of raw liver every day. (Porter, 1999)

Iatrogenic illnesses

Three deaths were recorded on South Georgia as the result of medical intervention. Dr Gilkes (2006) describes the case of a diakon at Grytviken who had poor dental health and had been self-medicating with sulphonamides. He developed aplastic anaemia, presumably as a result of the drugs, and then developed Vincent's stomatitis and died. Consideration was given to shipping him home, but this was felt unlikely to have improved his prognosis.

Two men also died under anaesthetic. In one case, in winter 1956, a detailed report was made to Dr Slessor, who was the senior medical officer in the Falkland Islands. Dr Burian and Dr Smilley operated on a young whaler with appendicitis. Attempted spinal anaesthesia was unsuccessful and a general anaesthetic, with thiopentone, was given. The appendix was removed but during closure the patient stopped breathing. Attempted resuscitation, initially with methidrine, lobeline (a respiratory stimulant) and artificial respiration, and then with direct cardiac massage, was unsuccessful after 30 minutes. (SP,MS1228/17/135)

No official description exists of the next death under anaesthetic, which happened only two months later. Nan Brown (1971) refers to it in her account 'Antarctic Housewife.' She describes a 'strapping healthy fellow' who consulted the doctor about a lump on his neck, during a period of slack time. The doctor

was apparently at a loss for the diagnosis and decided to operate. Death was certified as a result of ventricular fibrillation whilst under anaesthesia.

Chapter 6. Deaths

A number of deaths have been discussed in chapter 5 above.

Records

Much of the official documentation of the whaling era relates to the deaths which occurred on the island. This exists in many different places. The official South Georgia Register of Deaths is kept by the Falkland Islands Registrar in Stanley. The Falkland Islands coroner has some inquest reports, but many more were destroyed by a fire which occurred in the 1950s. A much larger collection of inquests exists at the archive of SPRI. Occasional references to deaths have been found at other sites and in other references, although the source of this information is not always clear.

The official death register is not comprehensive; death certificates exist for, and inquests took place into, deaths which have not been included in the register. (SP, MS1228/17/21). Some deaths that occurred on whaling vessels whilst at sea were included but deaths which occurred on ships in South Georgia ports were not always registered. Many disappearances happened over the years and inquests took place, but these men were often not recorded as having died even when their bodies turned up at a later date. Many men were buried on the island but information in the church burial registers is also not complete. It is often not obvious where these men came from, and an assumption is made that they died on ships working in the area.

I have amalgamated as much of this information as possible into one table (Appendix 2), and this gives the clearest picture possible of rates and patterns of death over the years in South Georgia. I have included information from the official death register and the Church Book of deaths. I have also taken information from graves on the island from the website of South Georgia graves (Lurcock, 2006) and also Headland's 1986 record of graves (even when there is no information about the man buried). I have added records of deaths which happened prior to the start of official registration of deaths, and also inquests into the disappearance of men, whether there is evidence that the body was found, or not. In the total number of deaths I have also included 11 men who were buried in unmarked graves at Leith Harbour between 1912 and 1916,

although I have no further details regarding their names or why they died. I have not added deaths which occurred at sea later in the whaling era, where ships were often far from the island, but whose inquests occasionally occurred in South Georgia.

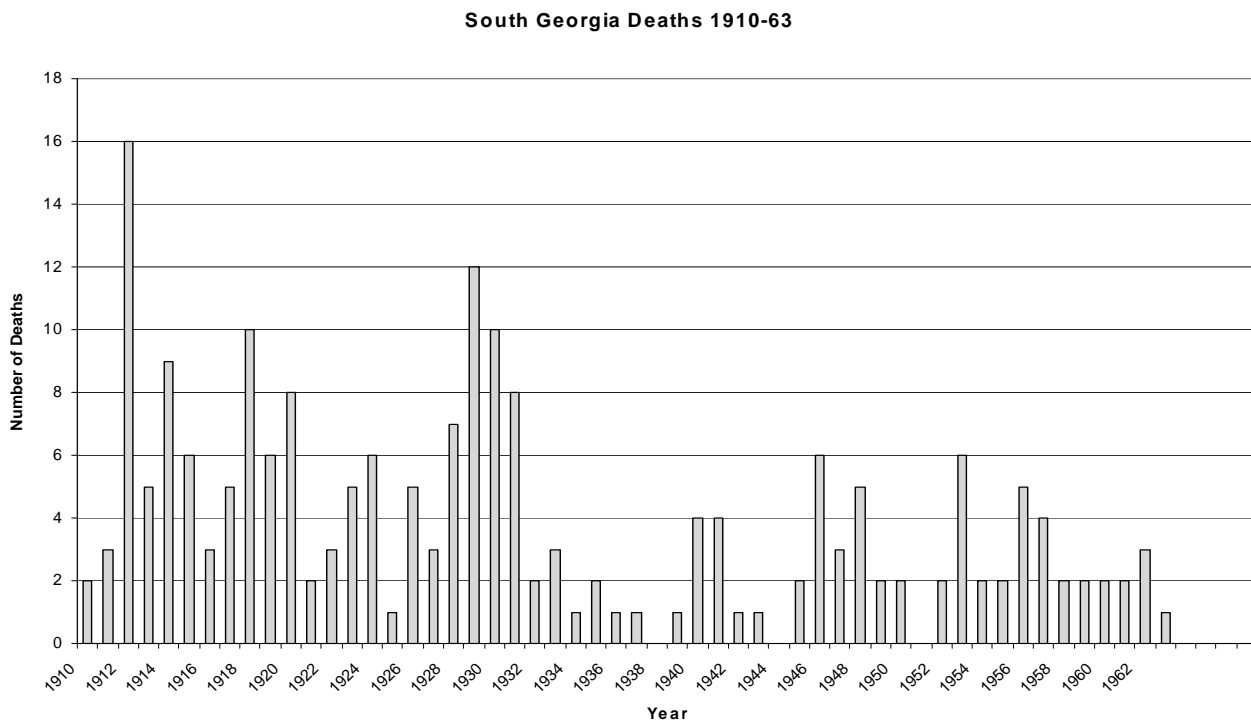


Table 6.1 South Georgia Deaths 1910-1962

Statistics

I have records of a total of 231 deaths which happened on, or very close to, the island between 1820 and 1982. These were mostly between 1910 and 1962, undoubtedly because there was no formal recording of deaths prior to the early 20th century. All were male. At least 132 were Norwegian, and 23 British, but many countries are represented, including Russia, China and Cape Verde.

Age (years)	Number of deaths
<20	15
20-29	53
30-39	49
40-49	35
50-59	33
>60	16
unknown	30

Table 6.2 Age at death

The cause of death is available either from the death register, coroner's inquest report, or other description, in 163 cases. 23% of cases where the cause of death is known are recorded as dying as a result of injury, but injury also undoubtedly contributed towards other deaths, including those who died in avalanches and some of those who died in the water.

Recorded cause of death	Number of deaths
Head injury	27
Other injury	10
Avalanches	6
Death in water	13
Exposure to cold	3
Cardiac disease	35
Infections	35
Nutritional deficiency	5
Suicide	7
Other	90

Table 6.3 Cause of death

Post Mortem examinations

The officially recorded cause of death may not have been as accurate in some cases. Recorded cause of death is not always the same as that which is described in other sources, such as a doctor's diary, where a man was described as dying of 'cardiac failure, accelerated, almost certainly, but a gross overdose of bad booze' but recorded as having died of a pulmonary embolus. (MacIntosh 1956/7) Post-mortem examinations were a rarity (I have only found five recorded autopsies), and it appears that they were often done to satisfy the curiosity of the doctor after an illness which had been unresponsive to treatment or an unexpected death. For example, in 1917 a man sustained a very tiny injury to his eyelid with a hook. The doctor saw and cleaned the wound, but the next day the man became unwell and died. A post-mortem showed that the wound went through the roof of the orbit and caused frontal haemorrhage. (SP,MS1228/17/25) On another occasion a man was treated for a manic depressive psychosis with a combination of drugs which included sodium amytal and insulin, but later died. The treating physician obviously felt that he had been dealing with something more than a straightforward psychiatric case, and a post-mortem showed that he had tuberculosis of the frontal lobes. (SP,MS1228/17/114) A 21 year old was certified in the 1910s as dying from heart failure, although a letter to the coroner from one of the doctor's on the island states that he would be unable to certify death without a post-mortem examination. (SP,MS1228/17/9) No post-mortem took place.

Even when a post-mortem examination took place, the cause of death was not always clear. In the 1960s a man in his 20s was out walking when he said he felt cold, ran to warm himself, collapsed and died. At post-mortem the only abnormality which was found was an enlarged thymus gland, said to be about the size of three fingers. This was reported as being the cause of his death. (SP,MS1228/17/144) This may have been a reference to a condition known as Status Lymphaticus which was first described in 1889, and continued to be treated seriously by medical schools and in textbooks at least up until the 1950s. It was described as a disease which resulted in sudden death of children and young people with apparently no specific cause (apart from an

enlarged thymus on post mortem examination.) It remained a reasonable post mortem diagnosis (for a generalist, rather than a specialist pathologist) in the 1960s. (Dally, 1997)

Coroner's reports

The South Georgia magistrate investigated all deaths and disappearances on the island and made a report as to the cause of all unexpected or traumatic deaths. He was occasionally moved to make recommendations, particularly when the cause of death appeared to be particularly avoidable, or had caused death before. When a man was killed by a head injury caused by the lid blowing off a pressure cooker in 1916 it was the opinion of the court that

Some responsible person should examine the boilers before the steam is put on to see that the lids are screwed on rightly. (SP,MS1228/17/20)

His conclusions were consistent with the thinking of the times, and definitely not reports which would be made now, for example regarding a St Vincent worker who died of a medical illness in 1920 (likely to have been a stowaway who was then put to work on the island):

It is quite a known fact that this class of Portuguese labourer in South Georgia is practically with no constitution to stand the rigorous climatic conditions they are nearly all stowaway (sic) and without employment at home hence their being admitted to the stations on arrival, some of them are good strong men who in the course of the season make good but the majority of them are weaklings.' (SP,MS1228/17/34)

Reports by the island magistrate were forwarded to Stanley, where they occasionally elicited a response from the governor. In 1918 a 17-year-old boy was killed whilst collecting coal from a stack. The pile, which was mixed with snow, slipped and smothered him. In 1920 a labourer from St Vincent was killed in the same way. A subsequent letter sent from the Governor's office in Stanley to the magistrate on South Georgia enquires:

I am directed by the Governor to ask you what steps you propose to take in order to avoid recurrence of such accidents. (SP,MS1228/17/32)

The coroner also had to investigate two serious attacks, one of which had major consequences for the workload of the doctor. In 1928 a Lithuanian man attacked a fellow Russian worker with a hatchet. The Russian was examined by

Dr Longva, who described a 10cm wound behind the right ear, with the cranium penetrated along its length and brain hanging out. He also mentions a hand wound, with 'almost all the sinews of the extensors and bones cut off.'

Interestingly, no mention is made of medical care given to the assaulted man, and his name is not included on the death register. When the doctor arrived he found that the Lithuanian had self-inflicted abdominal wounds (he had injured himself with a table knife). The wounds had lengths of bowel hanging out, about a metre of which had been cut off and was lying on the floor. He was taken to the hospital, where an end-to-end anastomosis was performed, but is recorded as having died 14 days later. (SP,MS1228/17/49)

Two years later a fight between two Chinese workers led to one of them receiving fatal stab wounds. One was struck with a knife several times. The fatal wound was an injury to the left femoral area which led to abundant haemorrhage into his trouser leg. He made his way onto the deck and said that he wished to speak to the captain, but died before anything was done for him. His injuries were described to the coroner by Dr Will. (SP,MS1228/17/61)



Fig 6.1 Funeral at Grytviken between 1923 and 32. (Stig-Tore, 2004)

Chapter 7. Differences in remote medical care

In many ways, the care provided in remote regions during the early part of the twentieth century would not have been too different to that received by the majority of the population living in a densely populated country. The difference may have increased over the years, with increased specialisation and rapidly advancing technology but, particularly in the earlier whaling days, both drug and surgical therapy were relatively limited, and the training of doctors was more general than it is now. Dr Brooker (2005), who was in South Georgia in the 1950s, feels that there was no major difference in the work he did aboard the whaling ships, and the work he had been doing previously, as a Royal Air Force medical officer based in Germany. Harry Little (1955), also whaling in the 50s, made the following observation:

Surgery and medicine on Arctic or Antarctic expeditions are very different from the routine of practices and hospitals in cities. There the surgeon is his own radiologist, pathologist and theatre sister, and for a second opinion on any problem you have the nearest penguin or polar bear. When an operation has to be done, the ship's fifth engineer may be first assistant and one of the radio operators anaesthetist.

He also suggested that recovery times were faster amongst whalers, as he knew that his mates were waiting for him to restart work. Pay was lost when a man was off sick for 'a long period of time' and bonuses were lost. (Borresen, 2006) I have found no references to pay being stopped for short absences from work.

Screened population

All whalers were screened prior to going South, though not to the same degree as they would be now. Elliot (1998) describes whalers coming in, 60 or 70 a day, to have a medical examination. Surviving whalers say that the initial examination was comprehensive, but in subsequent years the doctor said hello to them and signed them off as fit. (Williamson, 2006) The examining doctor was usually one who would be sailing south on one of the factory ships with them. Some medicals were done late, after the ship had set sail. (MacIntosh, 1956/7) Winterers were subject to further medicals, which took place on South Georgia towards the end of the summer season.

I have found no evidence to indicate which conditions would exempt a man from service, but MacIntosh suggests that a British Antarctic Survey employee with a history of peptic ulceration would not have been allowed to work on a whaling expedition. Macklin, one of Shackleton's medical officers, described conditions which would exclude a man from inclusion in a polar expedition. These included bad teeth, septic tonsils, haemorrhoids, bunions, a history of dislocations and flat feet. (Macklin, 1923) It is not clear whether such conditions would also exclude a man from service on a whaling expedition. In 1958 the South Georgia administrative officer wrote to Salvesen after the death of a man with a psychiatric condition. The patient was reported to have said 'in a more lucid moment' that he had received 'Shock Treatment in a mental home'. Questions were asked about why this information would have been missed during a screening medical examination, (SP,MS1228/17/140) suggesting that previous psychiatric episodes would also have excluded men from employment.

During the first part of the twentieth century the whaling companies used a blacklist to exclude some men from employment. Men may have been blacklisted for drunkenness, laziness and nervousness, but also illnesses such as asthma or bronchitis. (Borresen, 2006)

Help from others

Doctors undoubtedly helped each other out, although at times difficulties with the weather would make communication or transport difficult. Hillenbrand (1953) said that the 'lack of any sort of a road and the gales at sea usually prevent medical consultation.' However, circumstances did occur when doctors worked together, particularly when they had a confusing or difficult case. Dr Andersen (from Husvik) anaesthetised scientist Nigel Bonner for an appendectomy performed by Dr Richards in Leith Harbour in 1953. (Richards, 1953) In the early 1960s King Edward Point telegraphed the Manager at Leith Harbour to ask if Dr Burian could come round to Grytviken, as the CAP doctor had requested a second opinion on a patient in the hospital (Telegram, 21st November)

Nan Brown (1971) described a case when a patient was helped by a third opinion. A wintering whaler at Leith Harbour had an operation done by the

Argentinean and Norwegian doctors who had overwintered. Despite this treatment he was deteriorating, but improved after treatment from the senior medical officer who had just arrived to work in Leith over the summer. MacIntosh also mentions asking Dr Turner in from a ship to give a second opinion for a death certificate for a man who died suddenly in 1957.

Evacuation

If a doctor was unable to provide the necessary treatment for a patient, or if the patient sustained injuries or had an illness which rendered him unfit for whaling, arrangements were made to send the man home on medical grounds. Several men left Grytviken in the early 1950s two to four weeks after a significant injury. (CAP,MS1213/27/2) However, at times, particularly during the winter, there was no transport to the island and sick men would have to stay until the beginning of the next season before evacuation. Sometimes during the whaling season whalers would be brought to South Georgia by ship, where they stayed until the end of the season to be taken home. Johnnie Johnson, a Shetland whaler, describes a man on a factory ship whose hand was nearly taken off by his flensing knife when he was knocked over by a whale.

The doctors managed to botch him up and he was put on a catcher which took him to South Georgia. He was sent home on the first available transport ship. (Fraser, 2001)

In later days urgent cases were occasionally flown back to the UK from Buenos Aires. (Leith Harbour Manager, 1953)

There were often delays in sending men home, and this was not considered adequate by many. It has been suggested that in some cases it was 'not economically viable' to send men home, even when they would have undoubtedly benefited from repatriation. Elliot (1998) confirms this, saying that often, when the doctor felt that it would be in the patient's best interest to be evacuated, the whaling manager would resist, as this would use valuable resources. Robertson (1956) suggests that a businessman in a hurry could perhaps reach South Georgia from the UK in about four days, and follows:

...so there seems little justification for taking four months and often longer to evacuate a gravely injured whaleman to a civilised hospital.

He made a written proposal for changes in evacuation to 'an important whaling company' and received a reply which he quotes verbatim:

With regard to your proposal in attached appendix, we must inform you that we consider this both impracticable and unsuitable for the conditions. Evacuation to the civilised world at any time is economically impossible, and this is accepted by whalers throughout the industry.

Captain Swanson, a 56-year-old Salvesen captain died just off South Georgia and was to be buried in Stromness the following day. MacIntosh felt that the ship's refusal to wait for the funeral was 'a definite insult' and that economic interests had once again taken precedence.

Doctor's illnesses

Doctors undoubtedly had their own illnesses to treat, but few of these are recorded. As previously mentioned, the diakon who self-treated dental sepsis with sulphonamides succumbed after several months to aplastic anaemia (Gilkes, 2006). MacIntosh (1960/1) mentions 'Doc has cough and aching carcass', and had a day in bed, whilst treating another man for a significant pneumonia. A few days after Christmas 1961 he 'had a rather bad time last night with an acute diffuse pain in the pelvis (R side).' He took a few butobarbitone with no effect, but went to sleep after an alternative analgesic, and woke with only a mild dull ache. Dr Michael Gilkes (2006) got his right foot caught in a fishing boat starter handle, breaking a bone, and spent several weeks in plaster at the beginning of winter.

In general, the health of the doctors appears to have been good, drugs and alcohol causing the only significant problems.

Chapter 8. Conclusion

This study describes the medical history of South Georgia from its discovery until the end of the whaling years, in the 1960s. The information I have located has many limitations. These became more obvious as my research progressed. I have identified three main limitations. The most obvious is that written information, such as medical records and lists of medication, has often not been kept (or if it has been kept, its location is not known.) In the earlier part of my study period it is likely that not much information was written down, but in later years it is very likely that a substantial number of records would have been made. I presume that most of these records have either been lost or destroyed.

My second limitation is related to language, and the international nature of the industry which took place on South Georgia. I am aware that a large number of documents have been archived in Norway, and it is likely that this study could be added to substantially by an author with the ability to read Norwegian. It is also possible that other documents exist in Argentina, related to the business of CAP. Limits on time and money meant that I did not make any attempt to search for these. Nor did I search archives in the United States for documents related to early South Georgia sealing trips although it is possible that some might exist. I have no record of the short Japanese stay at Grytviken.

My third limitation is related to the timing of this study. Most surviving whalers and whaling doctors are advanced in years. Many have died in the last 10-20 years. I am sure that much more verbal history could have been obtained from survivors, had this study been done earlier.

Given these limitations, this document has achieved in outlining the main issues affecting the provision of medical services on South Georgia over two centuries. I started with the intent of continuing the study up to present day times but, as more information came to light, it became obvious that this would have lead to a much larger study. Over the years, the volume of information recorded and stored has become much greater, and very large amounts of data exist for recent years. It would be possible to make a statistical analysis of data from the

mid 1960s onwards – something which I have only been able to do in the most limited way for some basic data for the whaling years, and not at all prior to that.

As a general practitioner with no prior interest in medical history, and no previous knowledge of anything but the most basic Antarctic history, I have gained hugely from researching this dissertation. Without a doubt the most interesting part has been the opportunity to talk with many ex-South Georgia men (and one lady), particularly those for whom the most interesting and exciting part of their lives was the time they spent on South Georgia. It has also encouraged me to read more widely about South Georgia, and also other topics of note, such as scurvy and seal finger. It has been a privilege to be able to read original documents, such as letters and diaries written in the 19th century, and also to be enthusiastically given documents and other information from many interested parties. I hope to maintain an interest in the field, and perhaps extend it at another time.

This research adds to our knowledge of medical history, and in particular, remote medical history. It makes a first attempt to describe a limited part of Antarctic medical history. No doubt others will add to this interesting field in future years.

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Appendix 1. South Georgia Doctors

Part A. South Georgia Medical Register

Name	Place of Work	Degree	Nationality	Qualified	Registered
S Bill	SG	Uni Christiana	Norway		1926
BSB Longva	SG	Uni Christiana	Norway		1926
KK Sverdrup	SG	Uni Christiana	Norway		1926
Erling Refsum	Grytviken	Oslo	Norway	1927	1929
Kase Augensen	Grytviken	Oslo	Norway	1920	1930
Peter Kenneth Shand	Leith Harbour	Edinburgh MBChB	Scotland	1928	1932
Falk Horne	Grytviken	Oslo	Norway	1931	1932
Rolf Baltzeren	SG	Oslo	Norway	1933	1933
Haakon Ingjier Vold	Grytviken	Oslo	Norway	1932	1934
Kaare Liavaug	Grytviken	U. Regia Frederiana	Norway	1934	1938
Helmuth Krauss	Grytviken	Freiburg University	Germany	1923	1940
Luigi Togneri	SG	MBChB	? Italy	1938	1938
Wilfredo Alberto Caix	SG	Buenos Aires University	Argentina		1942
Ernesto Gorge Zalazar	SG	Argentina	Argentina	1944	1945
Ronald William Irving	Leith and Husvik	MD Edin and FCP New Brunswick	Scotland	1936	1945
Romulo Alberto Peyrallo	Husvik	MRCS Eng LRCP Lond	England	1938	1946
John Michael Gilkes	Husvik	MRCS Eng LRCP Lond	England	1946	1946
Kenneth Greig	Leith Harbour	MBChB Glasgow	Scotland	1946	1947
Hugh MacDonald Clark	Leith Harbour	MBChB Edinburgh	Scotland	1933	1947
John Clark Phemister	Stromness Harbour	MBChB Edinburgh	Scotland	1931	1947
John Fentonfyffe	Husvik	LRCS(Ed)LRCP(Ed)	Scotland	1931	1947
John Wilson Kendall	Leith Harbour	LRCP MRCS Eng	England	1926	1948

Kenneth Saltman	Leith Harbour	MBChB Edinburgh	Scotland	1947	1948
Erling Brande	Grytviken	MD Oslo	Norway	1933	1948
Paul Ingaed Johansen	Husvik	MD Oslo	Norway	1940	1948
Roy Walter Wallis	Leith	MRCS Eng LRCP Lond	Scotland	1948	1948
Peter Hugh Eccles Smith	Leith Harbour	MBChB Birmingham FRCS Edin	England	1944	1949
Ivar Erling Skuseth	Grytviken	MD Oslo	Norway	1938	1950
Fritz Karl Michael Hillenbrand	Leith Harbour	MD Berlin MD Rostock	Germany	1934	1950
Kjell Mosgiel	Husvik	MD Oslo	Norway	1925	1950
Alastair MacKintosh MacLachlainn	SG	MBChB Edinburgh	Scotland	1943	1950
George Peter Thompson Barclay	Leith Harbour	MBChB Edinburgh	Scotland	1951	1951
Henry Boyd Martin	Leith Harbour	LRCS(Ed)LRCP(Ed)	Scotland	1926	1951
Keith Warborton	Leith Harbour	MBChB Liverpool	England	1951	1951
Ludvig Johannes Hope	Grytviken	MB Bergen	Norway	1951	1952
Ian Warren MacIntosh	Leith Harbour	MBChB St Andrews	Scotland	1935	1952
Ola Hans Andersen	Husvik	MD Oslo	Norway	1950	1952
John Twomey	Leith Harbour	LAM Dublin	Ireland	1951	1953
Jon Oystein Ihler	Leith Harbour	CM Oslo	Norway	1951	1953
David Felix Richards	Leith Harbour	MB BChir	Wales	1948	1953
Stanisalus Burian	Leith Harbour	MD DPH	Czech	1935	1954
Raul Maria Sarmiento Pesca	Grytviken	MD Buenos Aires	Argentina	1937	1954
Birger Magnus Pallensen-Mustikay	Husvik	MD Oslo	Norway	1920	1954
Adolfo Guillermo Angli	Grytviken	MD Buenos Aires	Argentina	1948	1956
Anders Vinten Johansen	Husvik	MD Copenhagen	Denmark	1940	1956
Arthur Brymer	Grytviken	MBChB Witwatersrand	South Africa	1950	1958
Roar Nilssen	Husvik	MBChB Capetown	South Africa	1956	1958
James John Barton	Grytviken	MBChB Glasgow	Scotland	1932	1959
Johannes Sustring	Leith Harbour	MRCS LRCP Edinburgh	Scotland	1957	1959
George Trevor Nurse	Leith Harbour	MBChB Capetown	South Africa	1951	1960
Toru Hayashi	Leith Harbour	Kobe	Japan		1960

Fumio Kurogo	Leith Harbour	Kobe	Japan		1960
William Parker	Leith Harbour	MBChB Edinburgh	Scotland	1924	1961
David Orr	South Georgia	MBChB Edinburgh	Scotland	1930	1962
Yvonne Cumming	KEP	MBBS	Scotland		
Kunio Hika	Grytviken	MB Japan	Japan	1961	1963
Norio Kobayashi	Leith Harbour	Japan	Japan	1963	1963
Shigo Fugita	Leith Harbour	Japan	Japan	1963	1963
Norio Hashiba	Grytviken	Tokyo	Japan	1960	1964
Yutake Uchihashi	Leith Harbour	Kobe	Japan		1964
Yukio Tagashira	Leith Harbour	Japan	Japan		1964

Part B. Other whaling doctors who worked on South Georgia (from all other sources)

Staf Olaf Eggen	from 1907
H Mathiesen	until 1910
Dr Leach	around 1912
Dr Michelet	until 1912
Dr Loveid	from 1912
Dr Lampert	from 1912
Dr H Titterton	from 1913
Dr Kullman	from 1914
Dr Arne Bang	from 1916
Dr A Aguado	from 1918
Dr RC Aarburg or Aardberg	around 1920-24
Dr Will	around 1927-31

Appendix 2. List of Deaths which happened on or near South Georgia

When Name or Age have been recorded differently in two sources, both have been recorded, e.g. Johannssen/ Svensson or 18/20

Date	Sex	Name	Age	Profession	Nationality	Place of Death	Cause of Death	Informed/certified by	Grave
14.10.1820	m	Cabriel	?	steward	US	?	not in death register		Ocean Harbour
23.11.1838	m	Anderson	36			?	not in death register		Prince Olav
Jul 1846	m	Dyre	27	surgeon	Britain	?	possible typhus, see text		Grytviken
10.1.1871	m	Brockloe	35		US	?	not in death register		Grytviken
11.7.10	m	Lampert	?	2nd engineer		?	disappeared in small boat		
28.2.1871	m	Montaro	19		Cape Verde		not in death register		Grytviken
1906	m	Isaksen	?	?	?	?	drowned whilst whaling on Rosita	Pesca	
29.10.10	m	Andersen	?	?	?	?	not in death register		
11.11.10	m	Eriksen	41	engineer	Norway	Husvik	Lues Tertiaria	manager	Husvik
7.1.11	m	Johannesen	32	labourer	Norway	New Fortuna	Consumption	Leonard Norgen	Ocean Harbour
9.3.11	m	Knudsen Osulden/	26	labourer	Norway	Godthul	appendicitis and diffuse peritonitis	certified Micheles	
8.10.11	m	Osvaldsen	21	labourer	Norway	Husvik	Misadventure caused by exposure	certified Cruickshank	Husvik
1.1.12	m	Bechmann	28	gunner	Norway	at sea	Head injury	coroners inquest	
25.2.12	m	Dunn	38	fireman	Ireland	Leith	Comotio Medullae Spinalis by misadventure	coroners inquest	Leith
1.4.12	m	Solberg	33	labourer	Norway	Prince Olaf	Rupture of the heart occasioned by arteriosclerosis	certified Naysmith	Prince Olav
18.4.12	m	Johnsen	22	seaman	Sweden	Prince Olaf	Consumption, pneumonia	certified Micheles	Prince Olav
30.4.12	m	Nilsson	26	fireman	Sweden	Grytviken	pneumonia	certified illegible	Grytviken
20.5.12	m	Olsson	32	labourer	Sweden	Grytviken	myelitis dorsalis	certified Mathieson	Grytviken
7.6.12	m	Andreassen	22	labourer	Norway	Grytviken	vitium cordis	certified Mathieson	
23.6.12	m	Amundsen	58	labourer	Norway	Grytviken	pneumonia	certified Mathieson	
30.6.12	m	Aanerud	61	labourer	Norway	Husvik	vitium organ cordis	certified Loveid	Husvik
29.7.12	m	Rodsten	27	baker	Norway	Grytviken	typhus (pneumotyphus)	certified Loveid	Grytviken

6.8.12	m	Adriansen	36 seaman	Norway	Grytviken	typhus abdominalis	certified Loveid	Grytviken
9.8.12	m	Henriksen	20 fireman	Norway	Grytviken	typhus abdominalis	certified Loveid	Grytviken
18.8.12	m	Olenius Bjornstad/	31 carpenter	Finland	Grytviken	Appendicitis. C.peritonitis acute purulent	certified Loveid	Grytviken
19.9.12	m	Bjornstad	32 sea captain	Norway	Grytviken	heart disease	certified Lampert	Grytviken
30.11.12	m	Bechmann	28 Captain	Norway	Grytviken	Complicated fracture of skull	coroner	Norway
23.12.12	m	Amundsen	58 ?	Norway	?	not in death register	?	Grytviken
17.3.13	m	Gulliksen	20 seaman	Norway	Godthul	Fracture of the skull	certified Rampert	Godthul
7.5.13	m	Sorensen	17 seaman	Norway	Husvik	Meningitis tuberculosis, paralysis cordis	certified Loveid	Husvik
28.9.13	m	Martinsen	24 labourer	Norway	Leith	Syncope, mucous colitis	certified Titterton	Leith
23.9.13	m	Jacobs	59 labourer	Norway	Stromness	Bright's disease, Chronic interstitial nephritis	certified Lampert	Stromness
15.12.13	m	Simensen Barrett- Hamilton	21 labourer marine	nNorway	Leith	Acute Oedema of lungs, Phthisis,Heart failure	certified Titterton	Leith
17.1.14	m	Lutshazi	42 biologist	ireland British	?ship	Syncope, Mitral insufficiency	certified Titterton	Canada
10.3.14	m	Lutshazi	56 labourer marine	Kaffir, Natal	Prince Olaf	pneumonia	certified Kullman	Prince Olav
18.5.14	m	Sorensen	24 fireman	Norway	at sea	body crushed	coroner	Ocean Harbour
28.7.14	m	Rasmussen	22 labourer	Norway	Husvik	Tuberculous meningitis	certified Janke	Husvik
8.9.14	m	Gunnalfsen	27 blacksmith	Norway	Leith	Beri-beri,heart debility	certified Janke	Leith
9.11.14	m	Kristofferssen	4 labourer	Norway	?	purpura fulminatis (acutissima)	certifiedJanke	Husvik
30.11.14	m	Olsen	50 seaman	Norway	?	accidental, coroners inquest	coroner	Grytviken
8.12.14	m	Wiik	6 labourer	Norway	?	fatty degeneration heart, syncope	certified Titterton	Leith
11.12.14	m	Rasmussen	31 labourer	Norway	Grytviken	accidental, coroners inquest	certified Titterton	Grytviken
23.1.15	m	Eknes	29 labourer	Norway	?	strangulated hernia, diffuse septic peritonitis	Certified Drs Brinte and Janke	Ocean Harbour
1.3.15	m	Johannssen	42 seaman	Norway	Leith	acute infection cystitis and toxemia	certified Brinte	Leith
28.8.15	m	Christensen	52 cooper	Norway	?	heart failure accelerated by congestion of lungs	coroner	Husvik
29.10.15	m	Sandall	26 fireman	Sweden	?	amoebic dysentery	certified Brinte	Stromness
29.10.15	m	Hamalane	28 mariner	Estonia	Stromness	accidental, coroners inquest	certified Brinte	Stromness
8.11.15	m	Andressen	7 labourer	Norway	?	amoebic dysentery	ship's captain	Stromness
9.5.16	m	Lauritsen	31 labourer	Norway	Leith	accidental, coroners inquest	coroner	Leith
13.5.16	m	Fagerstrom/ Fagerstrom	37 cook	Finland	?	erysipelas	certified Brinte	Leith

19.5.16	m	Rolighed	19 labourer	Norway	?	meningitis cerebrospinalis epidural		Husvik
10.12.16		?	? ?	?	Prince Olaf	exposure (body found, inquest)		Prince Olav
19.1.17	m	Jaatum Johannssen/	36 carpenter 30/3	Norway	Husvik	abscessus cerebri	certified Loveid	unknown(SG)
12.7.17	m	Svensson	8 fireman	Sweden	Stromness	suicide	coroners inquisition	Stromness
8.3.17	m	Eliassen	17 sailor	Norway	Stromness	pneumonia crouposa	certified Loveid	
19.11.17	m	Hogburg	33 labourer 37/3	Sweden	Leith	apopleptic seizure	certified Coughtry	Stromness
9.12.17	m	Holm	3 labourer	Sweden	Leith	accidental (hook through eye)	certified Coughtry	Leith
1.2.18	m	Robertson	24 fireman	?	Stromness	typhus abdominalis	certified Loveid	Stromness
5.3.18	m	Olsen	45 engineer	Norway	Grytviken	drowned 27.2.17, body found 5.3.18	coroners inquisition	Grytviken
9.3.18	m	Looney	57 fitter	Ireland	Stromness	accidental rupture	certified Bany	Stromness
30.6.18	m	Tegner	27 seaman	Sweden	Leith	suffocation by snow slide	certified Bany	Stromness
1.7.18	m	Bergersen	37 engineer	Norway	Husvik	paralysis cordis	certified Loveid	
1.8.18	m	Thorsen	56 steward	Norway	Leith	paralysis cordis	certified Bany	Leith
3.8.18	m	Tomasen	37 seaman	Norway	Leith	death not in register (disappeared, body later found)		Leith
12.9.18	m	Hansen	17 labourer	?	Leith	suffocation by snow slide	certified Bany	Husvik
4.11.18	m	Johnsen	20 labourer	Norway	Leith	paralysis cordis due to exposure	certified Bany	Husvik
28.11.18	m	Wilbraham	54 ship's steward	Britain	Leith	paralysis cordis, fracture cranium cum haemorrhagia	certified Bany	Leith
26.7.19	m	Thomassen	37 sailor	Norway	?	accidental drowning 3.8.18	coroners inquest	
22.7.19(or 22.2.19)	m	Rasmussen	18 labourer	Denmark	?	encephalitis (accidental)	coroners inquest	Grytviken
16.4.19	m	Jakobsen	21 seaman	Norway	?	peritonitis diffuse	certified Aguardo	unknown(SG)
9.3.19	m	Olsen	19 seaman 20/1	Denmark	Wilson Harb.	accidental drowning	ship's master	unknown(SG)
15.5.19	m	Andressen	8 labourer	Norway	?	appendicitis		Leith
22.11.19	m	Sundbakken	25 labourer	Norway	?	enteritis	certified Aguardo	unknown(SG)
30.3.20	m	Neves	23 labourer	Portugal	?	nephritis interstitial	certified Aguardo	Ocean Harbour
16.4.20	m	Kristiansen	71 cooper	Norway	?	pneumonia	medical certificate	unknown(SG)
10.5.20	m	Oliveira	23 labourer	St Vincent CV	New Fortuna	asystole	certified Aguardo	Ocean Harbour
2.7.20	m	Edvardsen	46 foreman	Norway	New Fortuna	angina pectoris	certified Aguardo	Ocean Harbour
27.8.20	m	Talantino	19 labourer	Cape Verde	Stromness	suffocation	certified Aarburg	unknown(SG)
14.10.20	m	Stukin/Stulein	31 labourer	Russia	?	cerebral apoplexy	certified Aguardo	unknown(SG)

22.10.20	m	Favaluy	38 ?	Russia	?	not in death register		unknown(SG)
28.10.20	m	Zavalny	39 labourer	Russia	Grytviken	haemorrhage cerebral	certified Aguardo	
17.3.21	m	Tollefsen	32 labourer	Norway	Husvik	accidental	Coroner	Husvik
15.7.21	m	Larsen	34 engineer	Norway	Grytviken	acute rheumatism		
5.1.22	m	Sir Ernest Shackleton Goncalves/ Gonsales	47 explorer	Irish	Grytviken	angina pectoris, heart failure	certified Macklin	Grytviken
10.3.22	m	Gonsales	38 labourer	CV	?	disease of liver	certified Aarburg	Leith
3.11.22	m	Eriksen	37 labourer	Norway	?	suicide while of unsound mind	certified Aarburg	Stromness
2.1.23	m	Andersen	47 seaman	Norway	?	typhoid fever	certified Aarburg	Husvik
8.1.23	m	Olafsen	22 seaman	Norway	Husvik	typhoid fever (intestinal bleeding.)	certified Aarburg	Husvik
19.3.23	m	Andersen	24 seaman	Norway	Stromness	accidental	coroner	Stromness
3.4.23	m	Silva Nansen/ Hansen	27 labourer	CV	Husvik	nephritis and cystitis	certified Aarburg	Husvik
12.11.23	m	Hansen	21 labourer	Norway	?	tuberculosis		Prince Olav
6.3.24	m	Olsen	28 ?	?	?	death not in register		Leith
12.3.24	m	Paulsen	59 storekeeper	Norway	Grytviken	haemoptysis	certified Aarburg	Grytviken
30.10.24	m	Hansen	21 labourer	Norway	Leith	accidental (scald)	coroners inquest	Leith
26.11.24	m	Kristiansen Amundsen/ Abrahamsen	18 labourer	Norway	Stromness	phthisis florida	certified Aarburg	
27.11.24	m	Abrahamsen	39 labourer	Norway	Leith	ulcus ventriculi and pulmonary gangrene	certified Aarburg	Leith
23.12.24	m	Hansen	27 flenser	Norway	Godthul	accidental (fractured skull)	coroners inquest	Godthul
21.10.25	m	Johanssen	37 sailor	Norway	Husvik	bronchial pneumonia	certified Will	Husvik
27.1.26or		master						
6.11.25	m	Larsen	47 mariner	Norway	Husvik	drowning	certified Will	Husvik
2.2.26	m	Johnsen	65 mariner	Scotland	?	paralysis heart	customs officer by telegram from south orkneys	Signy
7.8.26	m	Hansen	31 engineer	Norway	?	Misadventure	coroner	Grytviken
23.12.26	m	Alekandersen	43 ?	?	?	death not in register		Stromness
24.12.26	m	Hauge	28 sailor	Norway	Leith	misadventure	coroner	Leith
6.3.27	m	Olsen	28 labourer	Norway	Leith	pernicious anaemia	certified Will	
		master						
8.11.27	m	Bartho	48 mariner	Norway	Leith	vitium organicum cordis	certified Will	Leith
18.12.27	m	Minev	33 labourer	Bulgaria	Prince Olaf	depressive fracture of the skull	coroners inquest	Prince Olav
14.1.28	m	Been	20 sailor	Norway	South Orkneys	acute colic in gall bladder	whaling officer by telegram from south orkneys	Signy

26.1.28	m	Hornvedt	26 drierman	Norway	Prince Olaf	fracture cranii complicated	coroner	Prince Olav
21.3.28	m	Ellefsen	53 secretary	Norway	Husvik	chronic nephritis	certified Will	Husvik
15.4.28	m	Bengtsson	48 whaler	Sweden	Grytviken	myocarditis and pneumonia	certified Will	Grytviken
28.5.28	m	Gobis	40 labourer	Lithuania	Grytviken	self inflicted abdominal wounds	certified Longvis	Grytviken
21.10.28	m	Hillestad	20 labourer	Norway	Leith	contusion of chest and septicaemia	certified Will	
30.10.28	m	Torgersen	32 chief officer	Norway	Husvik	combustion and fracture of skull	coroners inquest	Husvik
3.1.29	m	Ellifsen	37 blacksmith	?	Leith	fracture of skull and spine	coroners inquest	Leith
8.1.29	m	Marilainen	34 sailor	?	?	embolia pulmonius	certified Will	
25.1.29	m	Larsen	25 boiler	Norway	?	otitis media (cerebral complications)	certified Will	
15.2.29	m	Nilsen	19 messboy	Norway	Prince Olaf	appendicitis (died on 5th day after operation)	certified Will	
26.2.29	m	Harkins	32 L/T Operator	Ireland	Leith	drowning	coroners inquest	Leith
27.3.29	m	Martinsen	26 labourer	Norway	Prince Olaf	fracture of skull	certified Longvis	Prince Olav
16.4.29	m	Andersen	63 labourer	Norway	Leith	fracture of skull	coroners inquest	Husvik
15.8.29	m	Johansen	34 labourer	Norway	?	fractura cranii (secondary suffocation)	coroners inquest	Leith
15.8.29	m	Jorgensen	61 blacksmith	Norway	?	compressio thoracis, fractura costarum		Leith
15.8.29	m	Gotz	41 moulder	Norway	?	suffocation	coroners inquest	Leith
10.10.29	m	Andersen	26 whaler	Norway	Husvik	tuberculosis Pulmon	certified Will	Leith
7.11.29	m	Androchuk	42 whaler	?	?	fractura cranii contusio cerebral	certified Refsum	Grytviken
9.1.30	m	Ah Seng	45 storekeeper	China	Leith	haemorrhage due to cut wound of femoral artery	certified Will	Stromness
3.2.30	m	Melgaard	37 mariner	Norway	Leith	comminuted fracture of femur, gas gangrene	certified Will	Leith
11.3.30	m	Hansen	23 whaler	Norway	Grytviken	tuberculous pneumonia	certified Refsum	Grytviken
5.4.30	m	Smith	46 mariner	Ireland	Leith	fracture of skull	certified Will	Leith
14.4.30	m	Larsen	28 labourer	Norway	?	injury to brain	coroners inquest	Leith
19.2.30	m	Simonsen	30 fireman	Norway	Prince Olaf	heart failure (sudden unexpected death)	certified Oystise	Prince Olav
16.4.30	m	Bodher	? ?	?	?	death not in register		Stromness
21.4.30	m	MacDougall	41 ?	?	Prince Olaf	disappeared on pram on his own in the bay		
2.6.30	m	Olsen	24 carpenter	Norway	Grytviken	exposure	certified Oystise	Grytviken
24.6.30	m	Johansen Wennberg/	53 mason	Norway/ Norway/	?	ileus	certified Oystise	Husvik
24.11.30	m	Wanesberg	51 ?	Sweden	Leith	haemopericardium, aneurysm aortae	certified Will	Stromness
15.2.31	m	Arnesen	35 ?	Norway	Leith	drowning	coroners inquest	Leith
29.3.31	m	Bakke	51 labourer	Norway	?	Aneurysine (sic) of aorta. Degeneration of heart	certified Will	Husvik
29.3.31	m	Jensen	70 labourer	Norway	?	cancer ventriculi cancer hepabis etc	certified Will	Husvik

2.4.31	m	Falkegjerde	23 labourer	Norway	?	tubercular meningitis(about three weeks)	certified Will	Leith
2.4.31	m	Berg	25 labourer	Norway	?	beri-beri myocarditis (3 weeks)	certified Shand	Leith
6.4.31	m	Aker	26 labourer	Norway	?	paralysis of heart	certified Augensen	Husvik
7.4.31	m	Granholt	17 labourer	Norway	?	strangulation	certified Augensen	Grytviken
12.10.31	m	Eliassen	45 mechanic	Norway	Leith	paralysis of heart (sudden unexpected death)	certified Will	Leith
14.1.32	m	Stangeby	56 foreman	Norway	Leith	compression of chest, fractured ribs and shock	coroners inquest	Leith
18.11.32	m	Sveinungsen	37 rivetter	Norway	Grytviken	pneumonia crouposa	certified Horne	Grytviken
1.1.33.	m	Ganter	44 cook	Germany	Grytviken	hypertropia et dilatatio cordis cum thrombosis	coroners inquest	Grytviken
3.3.33.	m	Clifton	26 labourer	FI	at sea	acute beri-beri (whaling, well away from SG)	certified Fannin	Leith
18.3.33	m	Torgersen	46 seaman	Norway	at sea	pneumonia and duodenal ulcer	certified Williams	
15.12.34	m	Karlsen	50 engineer	Norway	?	heart failure,paralysis cordis, sudden death.	certified Vold	Grytviken
14.2.35	m	Palmer	35 seaman	Finland	Grytviken	vitium organicum cordis, insufficiencia aortae	certified Vold	Grytviken
18.2.35	m	Haakonson	70 mariner	Sweden	Grytviken	haemorrhagia cerebri	certified Vold	Grytviken
19.10.36	m	Buer	60 koker'	Norway	Leith	arteriosclerosis acute catarrhal infection	certified Will	Leith
8.3.37	m	Larsen	21 whaler	?	at sea	death not in register		Leith
20.5.39	m	Onda	34 labourer	Norway	Stromness	angina phlegmonsa	certified Jacobsen	
8.3.40	m	Olsen	17 messboy	Norway	Grytviken	otitis media meningitis purulent	certified Krass	Grytviken
2.6.40	m	Torgersen	47 ?	?	?	death not in register		Leith
2.6.40	m	Andersen	46 labourer	Norway	Leith	angina pectoris	manager	
18.12.40	m	Klaveness	44 labourer	Norway	Grytviken	encephalitis heart infirmity	certified Krauss	Grytviken
2.4.41	m	Andersen	47 labourer	Norway	Grytviken	carcinoma ventriculi marasmus	certified Krauss	Grytviken
8.4.41	m	Halvorsen	68 plater	Norway	Grytviken	tumor abdomini marasmus	certified Krauss	Leith
11.4.41	m	Roli	44 painter	Norway	?	bleeding into the internal organs and brain	coroners inquest	Grytviken
2.9.41	m	Barlas	53 magistrate	Britain	Grytviken	shock and drowning (avalanche)	certified Krauss	Grytviken
18.5.42	m	Renberg	61 steward	Norway	Grytviken	insufficiencia cordis, apoplexia cordis	certified Krauss	Leith
24.10.43	m	Hansen	63 blacksmith meteriological	Norway	Grytviken	aortitis, angina pectoris (sudden death)	coroners inquest	Grytviken
20.3.45	m	Gustavsen	42 observer	Norway	Grytviken	infarct of mesentery	certified Caix	Grytviken
11.11.45	m	Karlsen	42 ?	?	?	death not in register		Grytviken
21.1.46	m	Svendsen	47 boilerman	Norway	leith	primary myocarditis, secondary myocardial failure	certified Irving	Leith
31.3.46	m	Perak	22 messboy winter	Argentina	Grytviken	dementia, cardiac syncope	certified Zalazar	Grytviken
21.7.46	m	Gudjouson	61 manager	Iceland	Grytviken	drowning	certified Zalazar	Grytviken

9.10.46	m	Salvini	32 mariner	Argentina	Grytviken	gangrenous toxæmia, postoperative shock	certified Peyrado	Grytviken
11.10.46	m	Johansen	58 labourer	Norway	Leith	cerebral hæmorrhage, arteriosclerosis	certified Gilkes	Leith
4.12.46	m	Hutchison	59 donkeyman	British	Leith	Heart failure, coronary arterial disease	certified Gilkes	Leith
7.1.47	m	Roberg	54 foreman	Swedish	Husvik	dislocation of spinal column in cervical region	coroners inquest	Husvik
14.2.47	m	Olsen	51 turner	Norway	Grytviken	cardiac arrhythmia, cardiac syncope	certified Peyrallo	Grytviken
10.8.47	m	Lundgren	30 diacom	Sweden	Leith	aplastic anaemia (two months), toxic septicaemia	certified Gilkes	Grytviken
16.3.48	m	Onsum	69 storekeeper	Norway	Husvik	chronic venous congestion, acute pulmonary oedema	certified Phemister	Husvik
4.4.48	m	Anthonsen	33 chief mate	Norway	at sea	death not in register (dead in his bunk)		Leith
7.8.48	m	Jeremiassen	41 blacksmith	Norway	Leith	heart failure, myocardial degeneration	certified Kendall	Husvik
20.11.48	m	Svantemann	63 coppersmith	Norway	Grytviken	myocarditis, chronic nephritis	certified Brande	Grytviken
25.12.48	m	Thorsen	61 oilcooker	Norway	Leith	cardiac failure	certified Kendall	Leith
16.3.49	m	Engebretsen	49 foreman	Norway	Grytviken	hypertension, myocarditis	certified Brande	Grytviken
26.3.49	m	Williamson	35 A.B.	Britain	Leith	Tuberculous meningitis	certified Kendall	Leith
22.3.50	m	Sprott	51 radio officer	Britain	Stromness	Fracture skull, exposure	coroners inquest	Leith
10.7.50	m	Lisleboe	23 handyman	Norway	Leith	scurvy, heart failure	certified Hillenbrand	Husvik
20.4.52	m	Ford	18 messboy	Britain	Leith	strangulation (suicide)	certified Mossige	Leith
9.11.52	m	Kristiansen	42 labourer station	Norway	Stromness	fractured skull, laceration of brain tissue	coroners inquest	Leith
17.1.53	m	Hansen	45 engineer	Norway	?	cerebral tumour, arteriosclerosis	certified Mossige	Leith
21.2.53	m	Nikkari	49 whaler	Finland	Grytviken	vit. Cordis hypertensivum	certified Twomey	Grytviken
1.3.53	m	Belin	56 toolmaker	Norway	Leith	cardiac failure, myocardial degeneration	certified Twomey	Leith
9.10.53	m	Kristensen	51 repairer	Norway	Grytviken	asphyxia, drowning	certified Ihler	Grytviken
11.10.53	m	Reitan	43 plumber	Norway	Husvik	fractured base of skull, hyperpressure cerebrum	certified Andersen	Husvik
17.10.53	m	Hottvedt	60 carpenter	Norway	Husvik	cerebral hæmorrhage	certified Andersen	Husvik
18.2.54	m	Andersen	65 fireman	Norway	Husvik	coronary thrombosis, rupture of heart	certified Andersen	Husvik
20.9.54	m	Haug	25 labourer	Norway	Grytviken	fracture of base of skull	certified Sarmiento	Grytviken
26.2.55	m	Baardsen	35 seaman	Norway	Grytviken	depression of base of skull with bleeding meninges	certified Sarmiento	Grytviken
1.3.55	m	Liveroed	53 chief engineer	Norway	Leith	intracranial arterial aneurysm of circle of Willis	certified Burian	Leith
6.6.56	m	Halvorsen	60 master	Norway	Leith	coronary thrombosis, atherosclerosis	certified Burian	Leith
14.8.56	m	Westwood	29 whaler	Scotland	Leith	primary cardiac arrest under GA, appendicitis	certified Burian	Leith
5.9.56	m	Andersen	51 repairer	Norway	Leith	hypertension, coronary thrombosis	certified Burian	Leith
27.9.56	m	Bjorndahl	58 1st cooker	Norway	Husvik	death not in register	certified Johannsen	Husvik
13.10.56	m	Halvorsen	57 1st extract	Norway	Grytviken	ventricular fibrillation, primary anaesthetic syncope	certified Angli	Grytviken

			man						
23.9.57	m	Holthe	45 cooker worksmaster	Norway	at sea	natural causes being the result of heart failure	certified de Vries		Grytviken
5.10.57	m	Weckhorst	59 assistant	Norway	Leith	myocardial infarction and thrombosis	certified Richards		Leith
25.11.57	m	Swanson	54 master asdic	Britain	at sea	Pulmonary embolus, cancer hepatis.	certified MacKintosh		Leith
6.12.57	m	Davidson	33 technician	Norway	at sea	overdose of all barbitone causing asphyxia	certified Brymer		Grytviken
2.3.58	m	Jensen	52 manager	Norway	Leith	Coronary thrombosis	certified Turner		Leith
13.3.58	m	Vallestad	35 repairer	Norway	Leith	acute left sided cardiac failure due to acute mania	certified Turner		Leith
14.3.59	m	Klevjer	19 AB Seaman	Norway	Husvik	Asphyxia due to drowning	certified Nilssen		Husvik
19.12.59	m	langaas	51 1st mate	Norway	at sea	laceration frontal lobes of brain	certified Barton		Grytviken
15.2.60	m	McNair	28 whaler	Britain	Leith	head injury	certified Turner		Leith
24.12.60	m	Akseth	50 manager	Norway	Leith	head injury	certified Nurse		Leith
25.6.61	m	Johnansen	45 repairer	Norway	Leith	Coronary thrombosis	certified Parker		Leith
27.11.61	m	Tulloch	20 ?	Scotland	Leith	certified drowned, but disappeared at Leith harbour.			
28.11.61	m	Lien	24 whaler building	Norway	Leith	Enlarged thymus gland (sudden death)	certified Parker		Leith
3.11.62	m	Watt	39 supervisor	Britain	Grytviken	myocardial infarction	certified Nurse		Grytviken