

## **The Scottish Polar explorer William Speirs Bruce (1867–1921) and his thwarted ambitions in the Falkland Islands Dependencies**

*By Phil Stone*

On 2 April 1923, Easter Monday, the ashes of the Scottish Polar explorer William Speirs Bruce were scattered in the South Atlantic Ocean off South Georgia, at latitude 54° South, longitude 36° West. Bruce is best known for his leadership of the 1902–1904 Scottish National Antarctic Expedition (Fig. 1). He had died in Edinburgh on 28 October 1921, and in his will, he had requested that his ashes be scattered at sea in a high southern latitude between 10° and 15° East. His first biographer, Robert Rudmose Brown, a member of the Scottish expedition (Fig. 1), wrote that in stipulating the eastern longitude Bruce hoped to draw attention to a little-known section of the Antarctic coastline (Brown 1923); in the event, the spirit of his wishes was satisfied even if the geography could not be realised. Nevertheless, given Bruce’s involvement in exploration of the Scotia and Weddell seas and the South Orkney Islands, the location was highly appropriate. His ashes were conveyed to South Georgia on the Salvesen Company’s supply ship *Coronda* and scattered from the whale-catcher *Symra* by Edward Binnie, the resident South Georgia magistrate, in company with the managers of some of the islands’ whaling stations.<sup>1</sup> According to Brown (1923, p. 294), “[t]hey had no sooner got clear of the land than a strong wind set in from the north bringing with it a heavy sea; the deck of the whaler was more often under water than above it.” It was a poignant coincidence that a year previously, on 5 March 1922, Binnie had officiated at the funeral of Bruce’s Antarctic peer Sir Ernest Shackleton, buried in the Grytviken cemetery (Fig. 2).

The Scottish National Antarctic Expedition, covered in general terms in Bruce’s entry in *The Dictionary of Falklands Biography* (Wordie 2008), was his second visit to the Falkland Islands and foray into the Antarctic. The first expedition was a speculative whaling venture from Dundee. In 1892 Bruce had abandoned his final year medical studies at Edinburgh University to sign-on as surgeon on the *Balaena*, one of the four Dundee ships involved – and persuaded his good friend William Burn-Murdoch to accompany him as assistant surgeon, despite the latter’s complete lack of any medical training whatsoever. Burn-Murdoch (also written-up for *The Dictionary of Falklands Biography* by Wordie) was a talented writer and artist and his account of the *Balaena* voyage, published in 1894, is an entertaining classic of Antarctic literature.

### **The Dundee Whaling Expedition, 1892-1893.**

*Balaena* reached the Falkland Islands on 8 December 1892. We have no first-hand description from Bruce of his first impressions but Burn-Murdoch clearly felt at home (1894, p. 165): “[t]he appearance of the coast was, to us, very homely, and reminded

us of the Shetlands, or the shores of Mull or Jura.” They enjoyed the hospitality of Stanley – Burn-Murdoch’s bagpipes were much in demand – and were entertained by Governor Goldsworthy; the view westward from Government House (op. cit. p. 185) “recalled Kilchoan in Ardnamurchan and the view looking up the road to Benhiant and Loch Meudal” (Fig. 3). Bruce’s principal reason for joining the Dundee whaling expedition had been a desire to investigate Antarctic natural history, and both he and Burn-Murdoch took delight in their first encounters with the southern fauna and flora; many birds were shot. They disputed (op. cit. p. 177) Charles Darwin’s rather dismal view that the Falklands, “were a howling wilderness, waste, wet, cold, inhospitable, and unfit for man or beast. We would have given a great deal just to pitch a tent where we were [in the SW corner of Port William, to the west of the Narrows] and stop for months.”

But the Dundee expedition’s focus was farther south than the Falklands and the *Balaena* sailed from Stanley on 11 December 1892. The James Clark Ross *Erebus & Terror* Antarctic expedition of 1839-1843 had reported abundant Right Whales in the vicinity of the South Shetland Islands, and these were the target. The four Dundee ships had agreed a Christmas rendezvous in Erebus and Terror Gulf, at the northern end of the Antarctic Peninsula, and three of the four met there on 23 December. They were joined on 26 December by a Norwegian whaling ship, *Jason*, captained by Carl Larsen (see Basberg (2008) for his entry in *The Dictionary of Falklands Biography*). Both Bruce and Burn-Murdoch were greatly impressed by Larsen, and very envious of his enlightened approach to scientific investigations as an extension of his commercial activities. Bruce wrote the final chapter of Burn-Murdoch’s book in which he summarised the scientific work he had been able to complete during the *Balaena* voyage. The results were relatively meagre and it is clear that the ship’s master, Alexander Fairweather, had little sympathy or tolerance for Bruce’s ambitions. In their accounts, both Bruce and Burn-Murdoch decry lost opportunities, and both note Larsen’s discovery of fossils on Seymour Island, the first animal fossils recovered from the Antarctic: “Some of the fossil shells he showed us resembled very large cockles” (Burn-Murdoch 1894, p. 251).<sup>2</sup>

Neither the Scottish nor the Norwegian ships saw any Right Whales. Fin Whales were abundant, but their speed and behaviour made their capture beyond the whalers’ capabilities at that time; so, the *Balaena* turned to sealing. Leopard seals (Fig. 4) and Weddell, Crabeater and Ross seals were taken indiscriminately but no Elephant or Fur seals were seen – they had already been hunted to the brink of extinction – and penguins frequently featured on the menu (Fig. 5). Neither Bruce nor Burn-Murdoch much enjoyed the slaughter. Despite his hunting-shooting-fishing background, Burn-Murdoch wrote (1894, p. 236):

“It is a hideous thing this sealing, and most awfully bloody and cruel. Some of the seals were killed with the ice-picks ... others were shot. Sport there was none.”

Bruce accepted the commercial reality of their circumstances, “[b]ut I would protest against the *indiscriminate* [italics as in original] massacre which takes place ... Old

and young, females with young, are slaughtered alike, and should this continue, these seals, like the Antarctic Fur Seals at the beginning of the century, will undoubtedly be quickly exterminated.” (Bruce in Burn-Murdoch 1894, p. 360-361).

In the event, the seals were saved by advances in whaling technology, and it was the whales that came close to extermination.

### **Polar ambitions, 1893-1899**

Despite the frustrations and disappointments of the *Balaena* expedition, Bruce was determined to revisit the Antarctic and pursue the opportunities there for geographical and scientific discovery. Immediately after *Balaena* returned to Scotland in 1893, he began to seek support for an expedition to South Georgia. Detailed proposals were prepared for Bruce, with one or two assistants, to spend a year on the island and investigate all aspects of its physical characteristics, natural history and commercial possibilities. A summary memorandum of the plans was included by Bruce’s second biographer, Peter Speak (2003, p. 36-38), who also described Bruce’s promotion of South Georgia as the ideal onshore base for the development of whaling and sealing, and the identification of Larsen as the ideal manager for the enterprise. But Larsen had his own ideas. He had returned to the South Atlantic for the 1893-94 austral summer and spent time in April 1894 investigating potential harbours at South Georgia. Ten years later it was Larsen who established the first whaling station there, at Grytviken in Cumberland Bay.

Meanwhile, Bruce’s ambitions for South Georgia had come to nothing, foundering principally on the difficulties of securing a reliable shipping link with the Falkland Islands. But Bruce had other irons in the fire. Speak (2003, p. 36) reproduces part of a letter written by Bruce to a supporter in June 1893:

“This [South Georgia] scheme I may tell you is far from being the only one I have on hand nor is it the chief. I have fairly definite ideas of a true Antarctic research expedition and look upon South Georgia as a stepping-stone.”

What Bruce had in mind was most probably an involvement with the 1894-95 exploratory whaling and sealing expedition to the Ross Sea, sent out from Norway by the whaling pioneer Svend Foyn, and led by Henrik Bull. Bruce had been invited to join the expedition as naturalist, but before final arrangements could be made the expedition’s ship, *Antarctic*, sailed for Australia, leaving Bruce with the impossible task of reaching Melbourne at short notice in order to embark. Bruce had apparently lobbied for an ambitious extension to this expedition, but it was never a realistic prospect. In 1898 he wrote to a friend in Edinburgh: “I had been trying to get the ‘Antarctic’s’ people to land me in Victoria Land [on the western side of the Ross Sea] in order that I might winter there and make an attempt at reaching the magnetic pole” (Speak 2003, p. 39).

In place of Bruce, Carsten Borchgrevink, an itinerant Norwegian, joined *Antarctic* in Melbourne; he was to become a controversial figure in Antarctic exploration (Evans & Jones 1975). The expedition claimed the first landing on the Antarctic mainland, in Victoria Land at Cape Adare, and this inspired Borchgrevink to subsequently organise his own expedition (financed by the British publisher Sir George Newnes) which wintered at Cape Adare in 1899. This was the first time an expedition had overwintered in the Antarctic, although Bruce subsequently complained that Borchgrevink had simply followed, without acknowledgement, the detailed plans that he, Bruce, had laid out in 1893 ahead of the *Antarctic* voyage (Speak 2003, p. 39). This would not be the last time that Bruce's prescient proposals would be taken forward by others.

With his Antarctic ambitions thwarted, Bruce turned north, to the Arctic, and between 1896 and 1899 he joined several private expeditions to Spitzbergen (the western island of the Svalbard archipelago) and Novaya Zemlya. But he didn't give-up his Antarctic aspirations and would have followed with enthusiasm the revival of interest in the region that had been initiated at the 1895 International Geographical Congress, held in London, which passed a resolution declaring that "the exploration of the Antarctic Regions is the greatest piece of geographical exploration still to be undertaken" (Howarth 1896, p. 292). By the end of the 19<sup>th</sup> century several national Antarctic expeditions were commencing or planned, among them the British National Antarctic Expedition to be led by Robert Falcon Scott. Bruce wasted no time and on 15 March 1899 he wrote offering his services.

### **The Scottish National Antarctic Expedition, 1902-1904**

In 1899, Bruce was arguably Britain's most experienced Polar scientist, so his claims for a role in Scott's expedition were strong, but there was delay and prevarication in selecting the scientific personnel. In the meantime, left waiting for a decision, Bruce contemplated raising an independent, Scottish expedition to complement the 'British National' effort. When this proved possible through the largesse of the Coats family, wealthy from their Scottish textile business, Bruce rapidly carried his plans forward. His intentions were good. He sincerely, if naively, believed that his expedition would be welcomed as additional cooperative support for Scott's team. But Bruce was no diplomat, and his casual announcement of the Scottish expedition came as a complete bombshell to Scott's London-based backers; it sparked controversy and recrimination that lasted for years. The sad saga has been analysed in detail by Speak (2003) and by Isobel Williams and John Dudeney (2018), Bruce's third biographers, who note that the opposition and criticism from London only served to enhance Bruce's already strong sense of Scottish nationalism which, in turn, further alienated the London establishment. In the event, Scott departed for the Ross Sea aboard *Discovery* on 6 August 1901 and Bruce departed for the Weddell Sea aboard *Scotia* on 2 November 1902.

The scientific activities of Bruce and his team (Fig. 1) during the Scottish National Antarctic Expedition were remarkably wide-ranging and successful given the limited resources available to them. Much of the focus was on Laurie Island, one of the South Orkneys (e.g. Stone 2017a) but three visits to the Falkland Islands enabled a good deal of scientific study there (Stone 2017b). *Scotia* attained a ‘furthest south’ of 74° 01′ on 7 March 1904 (Fig. 6) and named the adjacent Antarctic coast of the Weddell Sea ‘Coats Land’ after the expedition’s principal sponsors. But sadly, it was not to be the expedition’s scientific achievements that became Bruce’s legacy. Instead, it was his arrangement with the government of Argentina for that country to take over and maintain the meteorological observatory that had been established on Laurie Island. Early in 1904 *Scotia* transported a three-man team from Buenos Aires to Laurie Island and to ensure scientific continuity the Scottish expedition’s meteorologist, Robert Mossman (Fig. 1), remained with the Argentinian party for the 1904 austral winter, as did Bill Smith, the Scottish cook. Bruce’s observatory became the Argentine base *Orcadas* and has operated as such ever since.

The transfer was another example of Bruce’s well-intentioned initiatives proving less than universally popular. It is clear that at the time the British authorities had absolutely no interest in the South Orkney Islands, with relevant correspondence reproduced by Speak (1992, 2003), but that didn’t prevent subsequent controversy; Williams & Dudeney (2018) are rather more critical of all concerned. The arrangement was only made possible by Bruce’s need to take *Scotia* to Buenos Aires, during the expedition’s second austral summer, for repairs necessitating a dry dock and for a telegraph connection to his financial backers in Scotland – he needed more money. Neither facility was available in Stanley. The circumstances of Bruce’s shuttle between Stanley and Buenos Aires have been detailed by Stone (2017b) but more recently some fascinating insights into the episode have been brought to light by Carrasquero (2021). In particular, she emphasised the pivotal role of Francisco Moreno, director of the Museo de La Plata, in securing Argentine government support for Bruce’s proposals.

Bruce had no personal contacts with anyone in Buenos Aires but was probably familiar with Moreno’s reputation and so appealed to him for assistance.<sup>3</sup> Moreno was a key figure in the expansion of Argentina southwards through Patagonia and the negotiation of border disputes with Chile and was well-established as what we would now call a ‘public intellectual’; he was commonly graced with the honorary title *Perito* for which the closest English translation is ‘expert’. Moreno undoubtedly grasped the wider significance of Bruce’s proposal and had all the right connections to carry it forward; another crucial ally was Gualterio [Walter] Davis, head of the Argentine Meteorological Office. Bruce was entertained by Moreno at his home and gave a series of lectures on the *Scotia* expedition to packed audiences. A selection of rock specimens from Laurie Island were presented by Bruce to Moreno’s Museo de La Plata and these became the founding items in that museum’s now extensive Antarctic collection (Carrasquero 2021). For the hospitality and generous assistance

that Moreno arranged for the expedition a few rock specimens might seem scant reward, but as an additional mark of respect Bruce named Point Moreno [60° 44' S, 44° 41' W] on the expedition's published map of Laurie Island (Brown *et al.* 1906, p. 145). This was one of the few names assigned that did not celebrate the expedition members, their families, or their Scottish supporters and associations.

The two first-hand accounts of the expedition's interlude in Buenos Aires (Brown *et al.* 1906; Bruce in Speak 1992) mention neither Bruce's lecture programme nor the presentation of specimens, so the details and archive documentation provided by Carrasquero (2021) are a welcome addition to the *Scotia* archive. But those contemporary accounts do undermine the subsequent, perhaps defensive claims by an increasingly embittered Bruce that he had been 'driven out of a British Colony' by the high price of coal (Stone 2017b). During the expedition's first visit to Stanley in January 1903 "[t]he ship's officers and crew were fully occupied in stowing provisions and coal, of which necessary commodity we had nearly 200 tons on board" (Brown *et al.* 1906, p. 47-48). Perhaps it's not absolutely clear that the coal was acquired in the Falklands, but there is no doubt about the entries in Bruce's log during the two subsequent visits (Speak 1992). On 5 December 1903 Bruce recorded, "Coaling from 6 am till 3 pm. We took thirty tons of Admiralty coal." On 1 February 1904 he wrote "A very warm day and the ship is being coaled."

Nevertheless, it must be acknowledged that 300 tons of coal had been provided to the *Scotia*, *gratis*, by the Argentine government. And that was in addition to no payments having been required for the use of the naval dockyard, the repairs carried out therein, and the donation of a range of additional supplies. Whilst in Buenos Aires the expedition also benefitted from individual acts of generosity. Moreno is recorded as having donated "lemons and cheese, cases for packing, zoological specimens, flowers"; probably even more welcome were the two cases of champagne received from Walter Davis (Speak 1992, p. 291).

Moreno's assistance and the actions of the Argentine government enabled Bruce to complete his expedition and secure its Laurie Island meteorological observatory, and *Scotia* returned to a triumphal welcome in Scotland on 21 July 1904. Bruce immediately began to process his specimens and prepare the expedition results for publication, setting up the Scottish Oceanographical Laboratory in Edinburgh as a base. He was perennially short of money, and by 1908 was contemplating commercial ventures in the Polar regions. Initially he looked north, and set up the Scottish Spitsbergen Syndicate, raising money to allow prospecting for commercially exploitable mineral resources in the Arctic Svalbard archipelago. He also noted the success of Larsen's Antarctic whaling operations at South Georgia, as had the British government which, in 1908, moved to establish the Falkland Islands Dependencies, formally claiming a swathe of territory that stretched from the Antarctic Peninsula to South Georgia and the South Sandwich Islands. The South Orkney Islands were also

included but the established presence of the Argentine *Orcadas* base on Laurie Island was conveniently ignored.

### **The South Sandwich Islands**

With the belated British interest in the region and hoping to emulate Larsen's success, in May 1909 Bruce applied to the Colonial Office in London for a lease on the South Sandwich Islands with a view to setting up a whaling and sealing operation and prospecting for exploitable mineral resources. He can have had little knowledge of the hostile conditions prevailing there, perhaps not even realising the wholly active volcanic nature of the archipelago (Fig. 7). Larsen had made a quasi-official assessment of the islands between 10<sup>th</sup> and 18<sup>th</sup> November 1908 and prepared a report for the British Colonial Office, which was received in London not long before the arrival of Bruce's application. It is unclear whether Bruce saw the full report, but he was certainly provided with an 'executive summary', which is preserved in the Bruce archive held by Edinburgh University Library's Centre for Research Collections (Reference: Gen. 1652, 103/11). The summary is undated but refers to "Captain C.A. Larsen's report in Gov/16650/09 Falklands." The following two paragraphs, transcribed from the original, set the tone.

"Landing at Lieskov and Visokoi was found impossible owing to the nature of the shore, and at the Southern Thule group owing to pack-ice. Landings were effected with difficulty on Zavodovskii [*sic*] and Montague, but with greater ease on Saunders, Bristol and the largest of the Candlemas group, The last-mentioned possess an excellent harbour for boats.

At Zavodovskii (Lat. 56° 18' S. Long. 27° 30' W.) two landings were made, the boat capsizing on each occasion. At the second landing place there were hot poisonous fumes of garlic and sulphur, which caused Captain Larsen to become seriously ill. Pure sulphur was seen flowing out of cracks, and stones were thrown up from holes in the ground. Bellingshausen landed on this island without difficulty."

The summary concludes that "Capt. Larsen found no harbour suitable for ships [contrasting with the harbour for boats at Candlemas] and concluded that whaling in the group was not possible." Naturally, there was some hesitancy in giving approval for Bruce's scheme and unsurprisingly he did not take the proposal any further. The episode has been described in a detailed appendix by Williams & Dudeney (2018).

One other interesting comment in the summary is that "Capt. Larsen collected specimens at all the landings, but there is no record to show how the specimens were disposed of." Then, in a footnote: "Enquiry is being made as to the disposal of the specimens." The outcome of that enquiry is unknown. It is possible that Larsen retained the specimens and took them back to Norway in 1914 when he retired from

South Georgia whaling. This would explain how, in 1915, a description of rocks collected by Larsen from the South Sandwich Islands came to be published in a Norwegian scientific journal, with particular emphasis on specimens from Saunders Island (Bäckström 1915; Tyrrell 1930).

Whatever the fate of the rock specimens from the South Sandwich Islands, other collections made by him continued to arouse interest, and a series of letters from early 1918, held in the British Geological Survey archive, discuss the provenance of another of Larsen's collections. Bruce was asked by a Colonial Office representative for an opinion on a Geological Survey report describing rocks that might have come from the South Orkney Islands. The report has not been traced but from the correspondence the collection seems to have included at least some metamorphosed sedimentary rocks, most probably from South Georgia. Although Bruce was non-committal in his reply (from the Scottish Oceanographical Laboratory, 6<sup>th</sup> February 1918), he still seemed unwilling to accept that the South Sandwich Islands were wholly volcanic. His comments confirm how little was known of South Atlantic regional geology at the time, even with regard to the Falkland Islands.

“I cannot agree that the specimens named definitely came from the South Orkneys ... but it does appear to me that it is more likely they may have come from the South Orkneys, from South Georgia, or the Falkland Islands, rather than the Sandwich Group. So little, however, is known regarding the Sandwich Group ... that it would be dangerous to absolutely refute that they came from that almost unknown group of islands.”

### **Proposals for a second Antarctic Expedition**

His commercial interest in the South Sandwich Islands and Svalbard notwithstanding, Bruce also nurtured ambitions to mount a second Scottish expedition to the Antarctic. This was to be an ambitious affair seeking to cross the continent from the Weddell Sea to the Ross Sea via the Pole, a crossing from coast to coast being deemed by Bruce of far greater scientific value than a dash to the Pole and back. He first floated the idea in 1908 and developed the theme enthusiastically but was unable to generate any financial support. He discussed his proposals with Scott and Shackleton, and it was the latter who eventually took the plan forward with his ill-fated, 1914-1917 *Endurance* expedition; Shackleton's networking and money-raising abilities far exceeded those of Bruce. Although undoubtedly disappointed, Bruce lent his support to Shackleton's expedition and there was certainly no personal animosity between the two men. Indeed, when it became clear that a rescue mission was needed for the missing *Endurance*, Bruce was mightily aggrieved not to be asked to take charge of the enterprise. However, in a now-famously heroic feat, Shackleton was able to extricate himself and his crew despite the loss of their ship, crushed by ice in the Weddell Sea.



## **Final endeavours**

In 1909 Bruce had been one of the founder members of the Zoological Society of Scotland and became closely associated with the planning and establishment of Edinburgh Zoo. The Zoo opened to the public in 1913 and amongst the first attractions were three King Penguins brought from South Georgia by the Salvesen Whaling Company. It is claimed that these were the first live penguins exhibited in Europe and Bruce was almost certainly instrumental in their acquisition. More penguins followed and the Zoo saw the first successful hatching of a King Penguin chick in 1919.<sup>4</sup>

Meanwhile, seeking to ease his ever-parlous financial situation, in 1915 Bruce was briefly involved in a whaling enterprise based in the Seychelles. It failed, and back in Scotland he grew frustrated that his expertise was not utilised for the War effort, until in 1916 he was offered a minor post in the Admiralty preparing navigational notes for parts of the South Atlantic. This role expanded as Southern Ocean whaling was recognised as a priority of post-war reconstruction, and Bruce was invited to advise on the detailed planning. From this initiative arose the *Discovery* investigations, which sought to provide a scientific basis for the burgeoning, South Georgia whaling industry.

After the war, and still attempting to improve his finances, Bruce turned back to the economic mineral possibilities of Svalbard with more prospecting expeditions on behalf of the Scottish Spitsbergen Syndicate. He used his Antarctic network to recruit geological expertise. The 1919 expedition was particularly notable in that two of Bruce's geologists were veterans of Shackleton's ill-fated 1914–16 Antarctic expedition: James Wordie from the Weddell Sea (*Endurance*) party and Alexander Stevens from the Ross Sea (*Aurora*) party. Wordie (later Sir James) went on to become Chairman of the Scott Polar Research Institute and Master of St John's College, Cambridge; Stevens became the first professor of geography at Glasgow University. Another participant was George Tyrrell, also of Glasgow University, who had contributed petrographic descriptions for many Antarctic rock collections: between 1914 and 1918 he had published four papers on South Georgia rock specimens, and a fifth followed in 1930.<sup>5</sup>

Despite the geological prowess brought to bear, the claims of the Scottish Spitsbergen Syndicate did not yield any economically exploitable mineral resources, and by 1919 Bruce's health was failing. He died in relative poverty on 28<sup>th</sup> October 1921 in the Liberton Hospital, Edinburgh.

## **Epitaphs**

Although he had worked extensively in both the Arctic and the Antarctic, Bruce was never awarded a Polar Medal. This omission remains controversial (Williams & Dudeney 2018, appendix 4). However, his memory is preserved by several Antarctic placenames (Hattersley-Smith 1991):

Bruce Islands, NW of Laurie Island, South Orkney Islands: 60° 41' S, 44° 54' W.

Bruce Island, Danco Coast, Graham Land: 64° 54' S, 63° 08' W.

Bruce Nunatak, one of the Seal Nunataks, Graham Land: 65° 05' S, 60° 14' W.

Bruce Plateau, central Graham Land, 65° 50' S, 63° 30' W.

In addition, Bruce came close to being celebrated in a South Georgia placename. The British South Georgia Expedition of 1954-1955, primarily a mountaineering adventure, used a number of informal names on the maps published in the account of the expedition; one of these was 'Bruce Glacier' shown flowing north to merge with the Ross Glacier in Royal Bay (Sutton 1957, p. 122) (Fig. 8). However, during Duncan Carse's South Georgia Survey expeditions between 1951 and 1956, the same glacier had been named after Edward Hindle who, as Honorary Secretary of the Royal Geographical Society, had supported the South Georgia Survey. Carse's map was published in 1958 and Hindle Glacier prevailed (Hattersley-Smith 1980).

## Notes

### Note 1.

In his book describing the 1954-1955 British South Georgia Expedition, George Sutton (1957, p. 200) noted that "the empty urn stood for many years at King Edward Point." The implication is that it was no longer there in 1954.

### Note 2.

The shallow-water marine fauna collected by Larsen from fossiliferous strata on Seymour Island ranges in age from Late Cretaceous to Palaeocene (about 80 to 60 million years old). Larsen also found fossil wood, a piece of which had been previously recovered from the South Shetland Islands in 1830 by James Eights, but his report was overlooked until Larsen's discoveries 62 years later.

### Note 3.

It is just possible that Bruce and Moreno had met previously, as both may have been present in 1899 at the 69<sup>th</sup> meeting of the British Association for the Advancement of Science held in Dover, England. Bruce contributed a paper on Arctic oceanography in the Barents Sea, Moreno presented on Patagonian palaeontology in collaboration with Arthur Smith Woodward of the British Museum. However, Bruce makes no mention of a previous meeting in his appeal for assistance.

### Note 4.

For further information see <https://www.edinburghzoo.org.uk/our-history/>, accessed 24 May 2022.

Note 5.

For full details see the bibliography of South Georgia geological publications at <http://nora.nerc.ac.uk/id/eprint/512249>

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## Figures



Fig. 1.

The scientific and administrative team of the Scottish National Antarctic Expedition. From left to right: standing – Ferrier (secretary), Rudmose Brown (botanist), Pirie (doctor and geologist), Ross (scientific assistant), Cuthbertson (artist), Whitson (treasurer); seated – Mossman (meteorologist), Bruce, Robertson (captain of *Scotia*), Wilton (zoologist) with his dog, Russ. Ferrier and Whitson did not travel south. Image from an original held by the Centre for Research Collections, University of Edinburgh (Papers of William Speirs Bruce, Coll-72-36).



Fig 2.  
The cemetery at the Grytviken whaling station, Cumberland East Bay, South Georgia. Shackleton's grave is marked by the tallest headstone on the near side of the cemetery. Since this photograph was taken many of the whaling station buildings have been demolished. Image by Phil Stone.

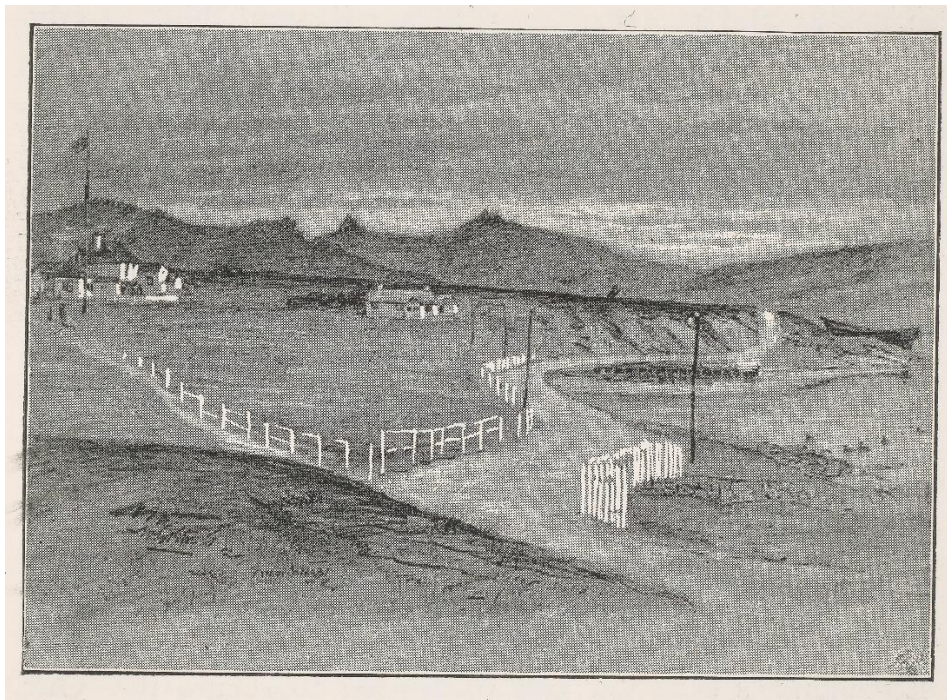


Fig 3. Burn-Murdoch's drawing of the view west from Government House, Stanley. From Burn Murdoch (1894, p. 185), image provided by National Library of Scotland.

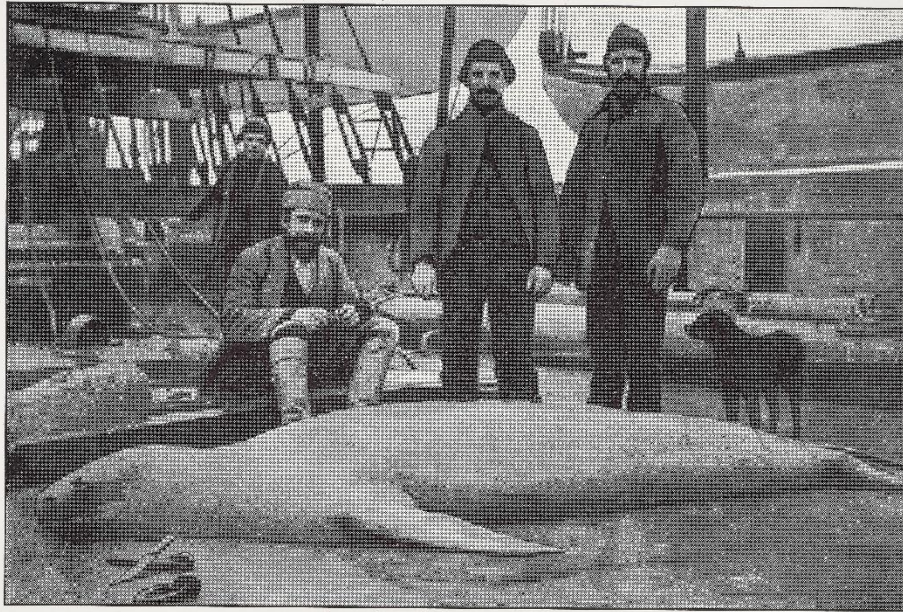


Fig. 4.  
Burn-Murdoch sitting on the deck of the *Balaena* beside a dead leopard seal.  
Photograph by William Speirs Bruce, probably the first ever taken of a leopard seal  
(on 17 December 1892). This image provided by National Library of Scotland from  
Brown (1915, Plate 1i).



Fig. 5. Burn-Murdoch's drawing of a penguin hunt. From Burn-Murdoch (1894, p.  
334), image provided by National Library of Scotland. The original caption is plain  
and straightforward: "Our food supply".



Fig. 6. The *Scotia* expedition team at the most southerly point reached in the Weddell Sea,  $74^{\circ} 01' S$ ,  $22^{\circ} 00' W$ , on 7 March 1904. Image provided by Glasgow Digital Library at the University of Strathclyde.

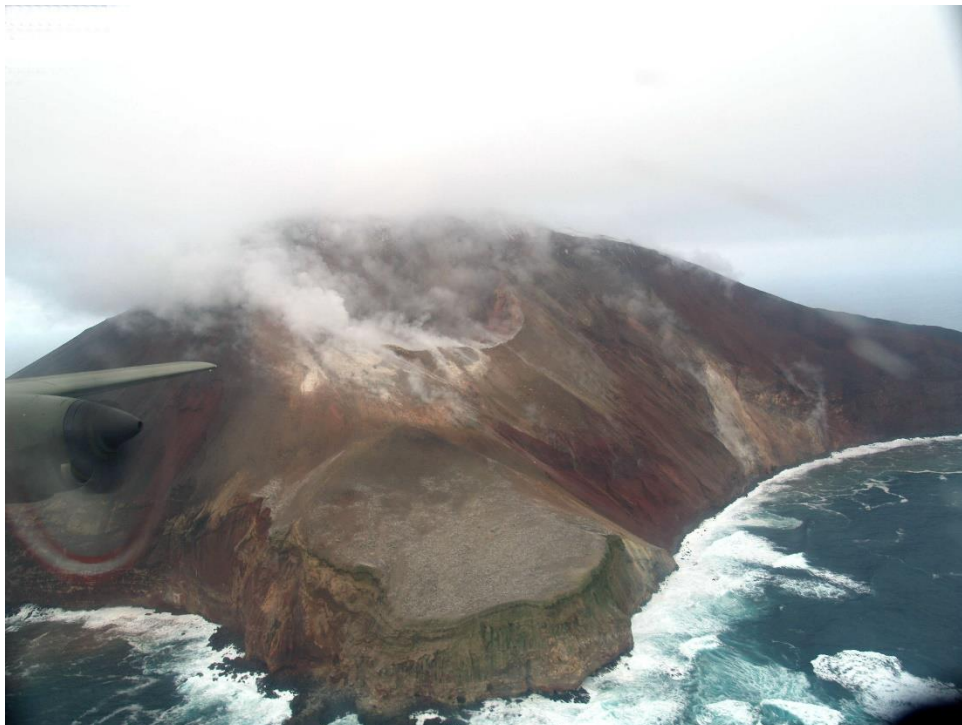


Fig. 7. The inhospitable coastline of Zavodovski Island, one of the South Sandwich Islands and an active volcano. Image by John Smellie.



Fig. 8. A view looking SW across Royal Bay, South Georgia. The Hindle (or it could have been Bruce) Glacier sweeps in from the left to merge with the Ross Glacier arriving from the right. This photograph was taken in 1971 and since then there has been rapid retreat of the glaciers to such an extent that neither are now visible from this vantage point. Image by Phil Stone.