

= Scottish National Antarctic Expedition =

The Scottish National Antarctic Expedition ( SNAE ) , 1902 ? 04 , was organised and led by William Speirs Bruce , a natural scientist and former medical student from the University of Edinburgh . Although overshadowed in prestige terms by Robert Falcon Scott 's concurrent Discovery Expedition , the SNAE completed a full programme of exploration and scientific work . Its achievements included the establishment of a manned meteorological station , the first in Antarctic territory , and the discovery of new land to the east of the Weddell Sea . Its large collection of biological and geological specimens , together with those from Bruce 's earlier travels , led to the establishment of the Scottish Oceanographical Laboratory in 1906 .

Bruce had spent most of the 1890s engaged on expeditions to the Antarctic and Arctic regions , and by 1899 was Britain 's most experienced polar scientist . In March of that year , he applied to join the Discovery Expedition ; however , his proposal to extend that expedition 's field of work into the Weddell Sea quadrant , using a second ship , was dismissed as " mischievous rivalry " by Royal Geographical Society ( RGS ) president Sir Clements Markham . Bruce reacted by obtaining independent finance ; his venture was supported and promoted by the Royal Scottish Geographical Society .

The expedition has been described as " by far the most cost @-@ effective and carefully planned scientific expedition of the Heroic Age . " Despite this , Bruce received no formal honour or recognition from the British Government , and the expedition 's members were denied the prestigious Polar Medal despite vigorous lobbying . After SNAE , Bruce led no more Antarctic expeditions , although he made regular Arctic trips . His focus on serious scientific exploration was out of fashion with his times , and his achievements , unlike those of the polar adventurers Scott , Shackleton and Amundsen , soon faded from public awareness . SNAE 's permanent memorial is the Orcadas weather station , which was set up in 1903 as " Omond House " on Laurie Island , South Orkneys , and has been in continuous operation ever since .

= = Background to the expedition = =

During his student years Bruce built up his knowledge of the natural sciences and oceanography , by studying at summer courses under distinguished tutors such as Patrick Geddes and John Arthur Thomson . He also spent time working voluntarily under the oceanographer Dr John Murray , helping to classify specimens collected during the Challenger expedition . In 1892 Bruce gave up his medical studies altogether , and embarked on a voyage to the Antarctic in the whaler Balaena , as part of the 1892 ? 93 Dundee Whaling Expedition . On his return , he began organising an expedition of his own to South Georgia , claiming that " the taste I have had has made me ravenous " , but he could not obtain funding . He then worked at a meteorological station on the summit of Ben Nevis , before joining the Jackson ? Harmsworth Arctic Expedition to Franz Josef Land as a scientific assistant . Between 1897 and 1899 he made further Arctic trips , to Spitsbergen and to Novaya Zemlya , first on a private trip organised by Major Andrew Coats , later as a scientist on the Arctic survey vessel Princess Alice . This vessel was owned by Prince Albert of Monaco , a renowned oceanographer who became a friend and supporter of Bruce .

After returning from the Arctic in 1899 , Bruce sent a lengthy letter to the Royal Geographical Society in London , applying for a scientific post on the major Antarctic expedition ( later to be known as the Discovery Expedition ) , which the RGS was then organising . His recent experiences made it " unlikely that there was any other person in the British Isles at that time better qualified " . Bruce 's letter , which detailed all his relevant qualifications , was acknowledged but not properly answered until more than a year had passed . By then , Bruce 's ideas had progressed away from his original expectation of a junior post on the scientific staff . He now proposed a second ship for the expedition , separately financed from Scottish sources , which would work in the Weddell Sea quadrant while the main ship was based in the Ross Sea . This proposal was denounced by RGS president Sir Clements Markham as " mischievous " and , after some heated correspondence , Bruce resolved to proceed independently . In this way the idea of a distinctive Scottish National

Antarctic expedition was born . Bruce was supported by the wealthy Coats family , who were prepared to give whole hearted financial backing to a Scottish expedition under his leadership . However , as a result he had acquired the lasting enmity of Markham .

#### = = Preparations = =

#### = = Scotia = =

In the autumn of 1901 , Bruce purchased a Norwegian whaler , Hekla , at a cost of £ 2 620 ( approximately £ 250 000 as of 2016 ) . During the following months , the ship was completely rebuilt as an Antarctic research vessel , with two laboratories , a darkroom , and extensive specialist equipment . Two huge revolving cylinders , each carrying 6 000 fathoms ( 36 000 ft ; 11 000 m ) of cable , were fitted to the deck to enable deep sea trawling for marine specimens . Other equipment was installed for making depth soundings , for the collection of sea water and sea bottom samples , and for meteorological and magnetic observations . The hull was massively reinforced to withstand the pressures of Antarctic ice , and the ship was rigged as a barque with auxiliary engines . This work increased the cost of the ship to £ 16 700 ( approximately £ 1 640 000 as of 2016 ) , which was met by the Coats family who altogether donated £ 30 000 towards the total expedition costs of £ 36 000 . Renamed Scotia , the ship was ready for her sea trials in August 1902 .

#### = = Personnel = =

The expedition 's scientific staff consisted of six persons , including Bruce . The zoologist was David Wilton who , like Bruce , had been a member of the Jackson Harmsworth Expedition . He had acquired skiing and sledging skills during several years living in northern Russia . Robert Rudmose Brown , of University College , Dundee , and formerly an assistant in the Botany Department at the British Museum , was the party 's botanist . Dr James Harvie Pirie , who had worked in the Challenger office under John Murray , was geologist , bacteriologist , and the expedition 's medical officer . Robert Mossman directed meteorological and magnetic work , and Alastair Ross , a medical student , was taxidermist .

Bruce appointed Thomas Robertson as Scotia 's captain . Robertson was an experienced Antarctic and Arctic sailor who had commanded the whaling ship Active on the Dundee Whaling Expedition . The rest of the 25 officers and men , who signed for three year engagements , were all Scotsmen , many used to sailing in icy waters on whaling voyages .

#### = = Objectives = =

The objectives of the expedition were published in the Scottish Geographical Magazine and in the RGS Geographical Journal , in October 1902 . They included the establishment of a winter station " as near to the South Pole as is practicable " , deep sea and other research of the Antarctic Ocean , and systematic observations and research of meteorology , geology , biology , topography and terrestrial physics . The essentially Scottish character of the expedition was expressed in The Scotsman shortly before departure : " The leader and all the scientific and nautical members of the expedition are Scots ; the funds have been collected for the most part on this side of the Border ; it is a product of voluntary effort , and unlike the expedition which will be simultaneously employed in the exploration of the Antarctic , it owes nothing to Government help " .

As the work of the expedition would be mainly at sea , or within the confines of the winter station , only a few dogs were taken , to facilitate the occasional sledge journey . Rudmose Brown records that of the original eight dogs , four survived the expedition ; they " pulled well in harness , their only weak point being their paws which ... were apt to be cut when on rough ice " .

= = Expedition = =

= = = First voyage 1902 ? 03 = = =

Scotia left Troon , Scotland , on 2 November 1902 . On her way southward she called at the Irish port of Kingstown ( now Dún Laoghaire ) , at Funchal in Madeira , and then the Cape Verde Isles before an unsuccessful attempt was made to land at the tiny , isolated equatorial archipelago known as St Paul 's Rocks . This attempt almost cost the life of the expedition 's geologist and medical officer , James Harvie Pirie , who was fortunate to escape from the shark @-@ infested seas after misjudging his leap ashore . Scotia reached Port Stanley in the Falkland Islands on 6 January 1903 , where she re @-@ provisioned for the Antarctic journey ahead .

On 26 January , Scotia set sail for Antarctic waters . She encountered heavy pack ice on 3 February , 25 miles ( 40 km ) north of the South Orkney Islands , which forced her to manoeuvre . Next day , Scotia was able to move southward again and land a small party on Saddle Island , South Orkney Islands , where a large number of botanical and geological specimens were gathered . Ice conditions prevented any further progress until 10 February , after which Scotia continued southward , " scudding along at seven knots under sail " . On 17 February the position was  $64^{\circ} 18' S$  , and five days later they passed  $70^{\circ} S$  , deep within the Weddell Sea . Shortly after this , with new ice forming and threatening the ship , Robertson turned northward , having reached  $70^{\circ} 25' S$  .

Having failed to find land , the expedition had to decide where to winter . The matter was of some urgency , since the sea would soon be freezing over , with the risk of the ship becoming trapped . Bruce decided to head back to the South Orkneys and find an anchorage there . In contrast to his stated object , to winter as far south as possible , the South Orkneys were more than 2 @, @ 000 miles ( 3 @, @ 200 km ) from the South Pole , but the northerly location had advantages . The relatively brief period during which the ship would be frozen in would allow more time for trawling and dredging operations in the early spring . Also , the islands were well @-@ situated as a site for a meteorological station ? their relative proximity to the South American mainland opened the prospect of establishing a permanent station .

It took a month of hard sailing before Scotia reached the islands . After several foiled attempts to locate a suitable anchorage , and with its rudder seriously damaged by ice , the ship finally found a sheltered bay on the southern shore of Laurie Island , the most easterly of the South Orkneys chain . On 25 March the ship safely anchored , settling into the ice a quarter of a mile ( 400m ) from shore . She was then rapidly converted to winter quarters , with engines dismantled , boilers emptied , and a canvas canopy enclosing the deck . Bruce instituted a comprehensive programme of work , involving meteorological readings , trawling for marine samples , botanical excursions , and the collection of biological and geological specimens . The major task completed during this time was the construction of a stone building , christened " Omond House " , after Robert Omond , director of the Edinburgh Observatory who was a supporter of the expedition . This building provided living accommodation for the parties that would remain on Laurie Island to operate the proposed meteorological laboratory . The building was constructed from local materials using the dry stone method , with a roof improvised from wood and canvas sheeting . The completed house had a footprint of 20 by 20 feet ( 6 by 6 m ) , with two windows , fitted as quarters for six people . Rudmose Brown wrote : " Considering that we had no mortar and no masons ' tools it is a wonderfully fine house and very lasting . I should think it will be standing a century hence ... "

In general , the party maintained excellent health . The exception was the ship 's engineer , Allan Ramsay , who had been taken ill with a heart condition in the Falklands during the outward voyage . He chose to remain with the expedition , but he grew steadily weaker as winter progressed . He died on 6 August , and was buried on the island .

As winter turned to spring the level of activity increased , and there were numerous sledge journeys , including some to neighbouring islands . Near Omond House , a wooden hut was constructed for magnetic observations and a cairn was built , nine feet high , on top of which the Union Flag and the

Saltire were displayed . Scotia was made seaworthy again , but remained icebound throughout September and October ; it was not until 23 November that strong winds broke up the bay ice , allowing her to float free . Four days later she departed for Port Stanley , leaving a party of six under Robert Mossman at Omond House .

= = = Buenos Aires , 1903 ? 04 = = =

On 2 December 1903 , the expedition reached Port Stanley , where they received their first news from the outside world since leaving the Cape Verde Islands . After a week 's rest , Scotia departed for Buenos Aires , where she was to be repaired and provisioned for another season 's work . Bruce had further business in the city ; he intended to persuade the Argentine government to assume responsibility for the Laurie Island meteorological station after the expedition 's departure . During the voyage to Buenos Aires , Scotia ran aground in the Río de la Plata estuary , and was stranded for several days before floating free and being assisted into port by a tug , on 24 December .

During the following four weeks , while the ship was dry @-@ docked , Bruce negotiated with the Argentine government over the future of the weather station . He was assisted by the British resident minister , the British Consul , and Dr W. G. Davis who was director of the Argentine Meteorological Office . When contacted by cable , the British Foreign Office registered no objection to this scheme . On 20 January 1904 , Bruce confirmed an agreement whereby three scientific assistants of the Argentine government would travel back to Laurie Island to work for a year , under Robert Mossman , as the first stage of an annual arrangement . He then formally handed over the Omond House building , its furnishings and provisions , and all magnetic and meteorological instruments , to the Argentine government . The station , renamed Orcadas Base , has remained operational ever since , having been rebuilt and extended several times .

Several of the original crew left during the Buenos Aires interlude , some through illness and one discharged for misconduct , and replacements were recruited locally . Scotia left for Laurie Island on 21 January , arriving on 14 February . A week later , having settled the meteorological party , who were to be relieved a year later by the Argentine gunboat Uruguay , Scotia set sail for her second voyage to the Weddell Sea .

= = = Second voyage , 1904 = = =

Scotia headed south @-@ east , towards the eastern waters of the Weddell Sea , in calm weather . No pack ice was encountered before they were south of the Antarctic Circle , and they were able to proceed smoothly until , on 3 March , heavy pack ice stopped the ship at 72 ° 18'S , 17 ° 59'W . A sounding was taken , revealing a sea @-@ depth of 1 @, @ 131 fathoms ( 6 @, @ 786 ft ; 2 @, @ 068 m ) , compared to the 2 @, @ 500 fathoms ( 15 @, @ 000 ft ; 4 @, @ 600 m ) which had been the general measurement up to that date . This suggested that they were approaching land . A few hours later , they reached an ice barrier , which blocked progress towards the south @-@ east . Over the following days , they tracked the edge of this barrier southwards for some 150 miles ( 240 km ) . A sounding 2 1 ? 2 miles ( 4 @. @ 0 km ) from the barrier edge gave a depth of only 159 fathoms ( 954 ft ; 291 m ) , which strongly indicated the presence of land behind the barrier . The outlines of this land soon became faintly visible , and Bruce named it Coats Land after his chief sponsors . This was the first positive indicator of the eastern limits of the Weddell Sea at high latitude , and suggested that the sea might be considerably smaller than had been previously supposed . A projected visit to Coats Land by a sledging party was abandoned by Bruce because of the state of the sea ice .

On 9 March 1904 Scotia reached its most southerly latitude of 74 ° 01'S . At this point , the ship was held fast in the pack ice , and the prospect loomed of becoming trapped for the winter . It was during this period of inactivity that bagpiper Gilbert Kerr was photographed serenading a penguin . On 13 March the ship broke free and began to move slowly north @-@ eastward under steam . Throughout this part of the voyage a regular programme of depth soundings , trawls , and sea @-@ bottom samples provided a comprehensive record of the oceanography and marine life of the

Weddell Sea .

Scotia headed for Cape Town by a route that took it to Gough Island , an isolated mid @-@ Atlantic volcanic projection that had never been visited by a scientific party . On 21 April , Bruce and five others spent a day ashore , collecting specimens . The ship then proceeded to Cape Town , arriving on 6 May . After carrying out further research work in the Saldanha Bay area , Scotia sailed for home on 21 May .

On the voyage home the party called at Saint Helena and visited Napoleon 's exile home which they found neglected and in disrepair . On 7 June the ship reached Ascension Island where they were impressed by the sight of giant turtles , some of them four feet across . The final port of call was at Horta in the Azores , where they stopped briefly on 5 July before heading for home .

= = Homecoming and after = =

The expedition was warmly received on its return to the Clyde on 21 July 1904 . A formal reception for 400 people was held at the Marine Biological Station , Millport , at which John Murray read a telegram of congratulation from King Edward VII . Bruce was presented with the Royal Scottish Geographical Society 's Gold Medal , and Captain Robertson with the silver medal .

Following the expedition , more than 1 @, @ 100 species of animal life , 212 of them previously unknown to science , were catalogued . However , there was no official acknowledgement from London , where under the influence of Markham the work of the SNAE tended to be ignored or denigrated . Its members were not awarded the prestigious RGS Polar Medals , which were bestowed on members of the Discovery Expedition when it returned home two months after Scotia . Polar Medals would also be awarded after each of Sir Ernest Shackleton 's later expeditions , and after Douglas Mawson 's Australasian expedition . Bruce fought unavailingly for years to right what he considered a grave injustice , a slight on his country and on his expedition . Some of the aversion of the London geographical establishment may have arisen from Bruce 's overt Scottish nationalism , reflected in his own prefatory note to Rudmose Brown 's expedition history , in which he said : " While Science was the talisman of the Expedition , Scotland was emblazoned on its flag ; and it may be that , in endeavouring to serve humanity by adding another link to the golden chain of science , we have also shown that the nationality of Scotland is a power that must be reckoned with " .

A significant consequence of the expedition was the establishment by Bruce , in Edinburgh , of the Scottish Oceanographical Laboratory , which was formally opened by Prince Albert of Monaco in 1906 . The Laboratory served as a repository for the large collection of biological , zoological and geological specimens amassed during the Scotia voyages , and also during Bruce 's earlier Arctic and Antarctic travels . It was also a base from which the scientific reports of the SNAE could be prepared , and it served as general headquarters where polar explorers could meet ? Nansen , Amundsen and Shackleton all visited ? and where other Scottish polar ventures could be planned and organised . Although Bruce continued to visit the Arctic for scientific and commercial purposes , he never led another Antarctic expedition , his plans for a transcontinental crossing being stifled through lack of funding . The SNAE scientific reports took many years to complete ; most were published between 1907 and 1920 , but one volume was delayed until 1992 . A proposal to convert the Laboratory into a permanent Scottish National Oceanographic Institute failed to come to fruition and , because of difficulties with funding , Bruce was forced to close it down in 1919 . He died two years later , aged 54 .

By this time , the Scotia expedition was barely remembered , even in Scotland , and it has remained overshadowed in polar histories by the more glamorous adventures of Scott and Shackleton . In these histories it is usually confined to a brief mention or footnote , with little attention given to its achievements . Bruce lacked charisma , had no public relations skills ( " ... as prickly as the Scottish thistle itself " , according to a lifelong friend ) , and tended to make powerful enemies . However , in the words of oceanographer Professor Tony Rice , his expedition fulfilled " a more comprehensive programme than that of any previous or contemporary Antarctic expedition " .

The expedition ship Scotia was requisitioned during the Great War , and saw service as a freighter . On 18 January 1916 she caught fire , and was burned out on a sandbank in the Bristol Channel .

One hundred years after Bruce , a 2003 expedition , in a modern version of Scotia , used information collected by the SNAE as a basis for examining climate change in South Georgia during the past century . This expedition asserted that its contribution to the international debate on global warming would be a fitting testament to SNAE 's pioneering research .

= = = Books = = =

Fiennes , Ranulph ( 2003 ) . Captain Scott . London : Hodder & Stoughton . ISBN 0 @-@ 340 @-@ 82697 @-@ 5 .

Huxley , Elspeth ( 1977 ) . Scott of the Antarctic . London : Weidenfeld & Nicolson . ISBN 0 @-@ 297 @-@ 77433 @-@ 6 .

Rudmose Brown , R. N. ; Pirie , J. H. ; Mossman , R. C. ( 2002 ) . The Voyage of the Scotia . Edinburgh : Mercat Press . ISBN 1 @-@ 84183 @-@ 044 @-@ 5 .

Speak , Peter ( 2003 ) . William Speirs Bruce : Polar Explorer and Scottish Nationalist . Edinburgh : NMS Publishing . ISBN 1 @-@ 901663 @-@ 71 @-@ X.

= = = Online = = =

Collingridge , Vanessa ( 9 May 2003 ) . " Diary of Climate Change " . [www.bbc.co.uk](http://www.bbc.co.uk). Retrieved 3 June 2008 .

Erskin , Angus B. ; Kjær , Kjell @-@ G. ( 2005 ) . " The Polar Ship Scotia " . Polar Record ( Cambridge University Press ) 41 ( 2 ) : 131 ? 140 @.@ doi : 10 @.@ 1017 / S0032247405004237 . Retrieved 10 October 2011 .

Goodlad , James A. ( 2003 ) . " Scotland and the Antarctic , Section 5 : Voyage of the ' Scotia ' ? Planning and financing the expedition " . Glasgow Digital Library . Royal Scottish Geographical Society . ISBN 0 @-@ 904049 @-@ 04 @-@ 3 . Retrieved 10 October 2011 .

Goodlad , James A. ( 2003 ) . " Scotland and the Antarctic , Section 5 : Voyage of the ' Scotia ' ? The voyage south " . Glasgow Digital Library . Royal Scottish Geographical Society . ISBN 0 @-@ 904049 @-@ 04 @-@ 3 . Retrieved 10 October 2011 .

" Measuring Worth " . Institute for the Measurement of Worth . Retrieved 12 July 2008 .

" Voyage of the Scotia 1902 ? 04 : The Antarctic . The hut known as Omond House on Laurie Island in the South Orkney Islands , 1902 ? 04 " . Glasgow Digital Library . Retrieved 10 October 2011 .

" William Speirs Bruce , 1867 ? 1921 . Polar explorer and oceanographer : Biographical Information " . Navigational Aids for the History of Science , Technology & the Environment ( University of Edinburgh ) . Retrieved 10 October 2011 .