

Notes

The 50th anniversary of the Gough Island scientific survey, 1955–1956

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ABSTRACT. The Gough Island scientific survey (GISS) of 1955–1956 contributed greatly to knowledge of the natural history of that remote island in the south Atlantic. This note commemorates the expedition and provides information concerning it and its achievements. An outline is also given concerning the research that has since been undertaken on the island.

The 50th anniversary of the Gough Island scientific survey (GISS) (Holdgate 1957a) coincided with the 500th anniversary of the discovery of Tristan da Cunha (Wace 1999), and, for that reason, six members of the expedition (J.B. Heaney, R.J.H. Chambers, M.W. Holdgate, R.W. Le Maitre, P.J. Mullock and M.K. Swales) participated in the Quincentennial Anniversary Voyage to Tristan in RMS *St Helena* between 30 January and 17 February 2006. Arrangements had been made for the vessel to continue to Gough and it had been hoped to mark the anniversary with a landing. However, this proved not to be possible: instead the vessel circumnavigated the island close inshore and paused for a while off the mouth of the Glen where a portion of the ashes of the late N.M. Wace, a participant in the expedition and who died in 2005, (Holdgate 2005) were scattered in the sea.

Gough Island (40°18'S, 9°56'W) lies in the central south Atlantic Ocean 350 km south-southeast of Tristan da Cunha, some 2800 km from South Africa and 3200 km from South America. It is a volcanic mass, somewhat to the east of the mid-Atlantic Ridge and probably over a distinct mantle plume or 'hot spot'. It was discovered in July 1505 by a Portuguese fleet under Pero de Anhaia, and initially bore the name Gonçalo Alvarez after the chief pilot in the flagship *Santo Espirito*. The substitution of the name Gough Island followed the re-discovery by Captain Charles Gough in the East Indiaman *Richmond* in 1732.

A recent general description of the history and wild life of Gough Island has been provided by Hänel and others (2005). The island was occupied intermittently by sealers in the 19th century, and was visited by several expedition ships returning from the Antarctic. The Scottish National Antarctic Expedition in *Scotia* called in 1904 and *Quest*, captained by Frank Wild, after Ernest Shackleton's death, did the same in 1922. Both sent parties ashore, collected specimens and did some charting. The RRS *Discovery* and *William Scoresby* called and sampled the marine fauna in

the 1920s and 1930s and a Norwegian party under Lars Christensen in *Thorshavn* visited in 1934. The GISS was, however, the first scientific party to live on the island.

A general account of the GISS is given in Holdgate (1957a). The expedition was organised in Cambridge by J.B. Heaney, who had been a surveyor on the South Georgia Survey, led by V.D. Carse, in 1951–52. Gough Island was suggested as a destination by B.B. Roberts of the Scott Polar Research Institute, through whom contact was established with A.B. Crawford, then Port Meteorological Officer in Cape Town, who had unrivalled personal knowledge of the Tristan islands and who had landed on Gough Island in 1937 when it was formally claimed for the United Kingdom. Heaney intended to make the first shore-based survey of the island, assisted by R.J.H. Chambers. The other UK members of the team were J.P. Hall (cine-photographer), M.W. Holdgate (invertebrate zoologist), R.W. Le Maitre (geologist), P.J. Mullock (radio operator and assistant meteorologist), M.K. Swales (vertebrate zoologist) and N.M. Wace (botanist). The South African Weather Bureau, which was keenly interested in evaluating the island as the potential site for a manned weather station, seconded J.J. van der Merwe as principal meteorologist. Hall took film of the expedition, the island and its wild life but this has never been shown commercially.

The GISS was one of the last privately organised scientific expeditions to the subantarctic and southern cold temperate region. It was supported by a generous personal donation from HRH the Duke of Edinburgh, grants from the Scott Polar Research Institute, the Royal Geographical Society, the Royal Meteorological Society, the Mount Everest Foundation and the Zoological Society of London and contributions in kind, including free transport, from the Royal Navy, the South African Navy, the Tristan da Cunha Development Company and the Union Castle Shipping Company and many gifts of food and equipment. Unusually for expeditions at that (or any other) time, thanks to the sale of its hut, equipment and surplus stores to the South African Weather Bureau and royalty payments for film and book, it ended with a credit balance which allowed the creation of the Gough Island Fund at the Royal Geographical Society.

The UK expedition members left England in two separate groups in September 1955 and after a week in Cape Town (where they were joined by van der Merwe), sailed from Simonstown in the frigate HMS *Magpie*, reaching Tristan da Cunha on 1 October. Here they were delayed for six weeks, spent undertaking useful scientific work including a vegetation survey (Wace and Holdgate 1958). On 13 November 1955 the party, including two Tristan Islanders, A. Rogers and J.B. Lavarello, were landed from the fishing vessel MV *Tristania* at The Glen



Fig. 1. Members of the Gough Island scientific survey at their hut on Gough Island in 1956. Left to right: Harold Green; Ernest Repetto (behind); John Heaney; Roger Le Maitre; James Hall; Nigel Wace; Johannes van der Merwe (in doorway); Philip Mullock; Michael Swales; Martin Holdgate.

on the eastern coast of Gough Island where they erected a wooden hut as base camp. Unfortunately, the leader, Chambers, was injured during the landing and had to be evacuated by fishing vessel three days later, leaving Holdgate in command, but Heaney, the original leader and organiser of the venture, was able to join the party in February 1956. Two further Tristan Islanders, H. Green and E. Repetto, accompanied him, the first pair having returned home. Fig. 1 illustrates the party at that time. The GISS spent six months on Gough Island and was relieved by the South African frigate SAS *Transvaal* on 13 May 1956. Van der Merwe remained behind as officer in charge of a South African Weather Station that has continued in operation since then (albeit transferred to a new site in 1963) (Hänel and others 2005).

The GISS made the first comprehensive study of the island and showed it to be one of the least-damaged southern temperate oceanic islands and one of the most important seabird islands in the world (Holdgate 1957a). Heaney, with Holdgate's assistance, made the first accurate map of the island, which measures some 13 km north-south and 5 km west-east, rises to 910 m, and has extremely rugged and complex terrain (Heaney and Holdgate 1957). The rocks of the island were sampled thoroughly, and a first account given of its 2.6 million years of volcanic history, which was shown to extend into comparatively recent times as the highest peak, Edinburgh Peak, is a cinder cone from which lava flows have issued at a very recent

date (Le Maitre 1960). The vegetation was described in detail (Wace 1961), and 35 species of flowering plant (11 endemic to the Tristan group) and 27 ferns were recorded, almost doubling the existing plant list from the island. Not all the material collected was examined by specialists, but 81 species of terrestrial invertebrate, eight endemic to Gough and a further 14 endemic to the Tristan group, were identified (Holdgate 1960, 1965). Accounts of the freshwater fauna (Holdgate 1961) and the ecology of the inter-tidal zones (Chamberlain and others 1985) were also published. A census of seals was undertaken, revealing that the fur seal population had recovered from near-extinction in the 19th century to some 13,000 animals in 1956 and that (contrary to expectations) the species was the Kerguelen (or Subantarctic) fur seal *Arctocephalus tropicalis* (Heaney and Holdgate 1957). The two endemic land birds, a flightless moorhen, *Gallinula nesiotis comeri* and a bunting, *Rowettia goughensis*, were studied for the first time in their natural habitats, and measurements, biological notes and census information were obtained for most of the 22 species of breeding seabird (Swales 1965, 1970). Sound recordings were made of a number of birds, and many of these were the first for the species: they are preserved in the British Library sound archives.

The GISS marked the commencement of a period of near-continuous scientific research on Gough Island and in the Tristan da Cunha group. Several GISS members contributed to this work. Van der Merwe remained in

the South African Weather Bureau after his return from Gough Island in 1957, until his retirement. Le Maitre returned to Tristan da Cunha as a member of the Royal Society Expedition that investigated the 1961–62 volcanic eruption, and both Holdgate and Wace contributed to the scientific reports from that expedition (Wace and Dickson 1965; Holdgate 1965). Wace and Holdgate returned to the islands in 1968 and co-authored a monograph on man and nature in the Tristan da Cunha Islands (Wace and Holdgate 1976). Wace made the plant life of the islands a central focus of his scientific career, returning on three other occasions. Swales returned to the Tristan group in 1982 as leader of a Denstone College expedition that undertook the first detailed survey of Inaccessible Island, and, in 1993, he led another party that studied the spread of a population of Gough Island flightless moorhens, believed to descend from birds he had liberated in 1956 (Swales 1983, 1993; Swales and others 1985).

GISS members have also had a wide influence on the affairs of the Tristan da Cunha islands. With A.B. Crawford, Swales was instrumental in founding the Tristan da Cunha Association, and is now a Vice President and Chairman; Holdgate is also a Vice President. All the surviving GISS members belong to the association. The GISS gave a major stimulus to the conservation of the island flora and fauna. The potential of Gough Island as a nature reserve was discussed in 1957 (Holdgate 1957b), and it was declared to be a wildlife reserve in a new conservation ordinance prepared by Wace and Holdgate and enacted by the government of St Helena in 1976. A conservation management plan was prepared by J. Cooper and P.G. Ryan of the University of Cape Town and adopted in 1994. This established a Gough Island Wildlife Refuge Advisory Committee. In 1995, the island was added to the World Heritage list. In 2006 a new conservation ordinance was presented as part of the 500th anniversary celebrations on Tristan. While all depends on the effectiveness with which such measures are observed, Gough Island has a world status and recognition today that was not dreamed of 50 years ago.

In recent decades, the number of publications on Gough Island, and especially its seabirds and seals, has mushroomed. Much of this research has been completed by South African scientists based at the new weather station that was built in 1963. Long term studies on seals have been undertaken by M. Bester of the University of Pretoria; research on seabirds is especially associated with J. Cooper and P.G. Ryan of the Percy Fitzpatrick Institute, University of Cape Town, and a major three-year Gough Island terrestrial invertebrate survey (GITIS) was a collaborative venture of the University of Sheffield and the Universities of Pretoria and Stellenbosch and was funded by the UK Darwin initiative (Jones and others 2002; Hänel and others 2005). One of the most-publicised discoveries since 1956 has been of the predation by introduced house mice, *Mus musculus*, on juvenile albatross (especially Tristan wandering albatross, *Diomedea dabbenena*) (Cuthbert and Hilton 2004). Mice are abundant on Gough, from the coasts to the highest summits, and collections

made in 1955–56 showed that they were unusually large (Hill 1959), but no signs of attack on seabirds were noted (possibly because the GISS was not there in the winter when food scarcity may elicit this behaviour). Now it is appreciated that this predation, in conjunction with mortality at sea from long-line fishing vessels, may pose a serious threat to the Tristan wandering albatross, most of whose world population breeds on Gough, while populations of the two breeding species of smaller albatrosses are also declining (Hänel and others 2005).

The 1955–56 Gough Island scientific survey was, therefore, far more than just a one off expedition to a remote island, going, doing its field work, returning, writing up the results and moving on to other things. It can be said to have put the island on the world's scientific and conservation map. The continuing involvement of the expedition members with the Tristan Islands has also been a significant factor in island policy. It is not unusual for members of a group who share such experiences to remain in touch and hold occasional reunions or for some, at least, to retain a scientific interest in the place where they undertook their first field work. But it is most unusual for a group like this to continue for fifty years to exert a personal and professional influence on national and international policy towards a place in which they worked so long ago.

References

- Chamberlain, Y. M., M.W. Holdgate, and N.M. Wace. 1985. The littoral ecology of Gough Island, South Atlantic Ocean. *Tethys* 11: 302–319.
- Cuthbert, R. J., and G.M. Hilton. 2004. Introduced house mice *Mus musculus*: a significant predator of endangered and endemic birds on Gough Island, South Atlantic Ocean? *Biological Conservation* 117: 483–489.
- Hänel, C., S.L. Chown, and K.J. Gaston. 2005. *Gough Island: a natural history*. Stellenbosch: Sun Press.
- Heaney, J.B., and M.W. Holdgate. 1957. The Gough Island scientific survey. *Geographical Journal* 123: 20–30.
- Hill, J.E. 1959. Rats and mice from the islands of Tristan da Cunha and Gough, South Atlantic Ocean. In: Christopherson, E. (editor). *Results of the Norwegian scientific expedition to Tristan da Cunha, 1937–38*. Oslo: Norske Videnskaps-Akademi: 5(46): 1–5.
- Holdgate, M.W. 1957a. *Mountains in the sea: the story of the Gough Island expedition*. London: Macmillan.
- Holdgate, M.W. 1957b. Gough Island: a possible sanctuary. *Oryx* 4: 168–176.
- Holdgate, M.W. 1960. The fauna of the mid-Atlantic islands. *Proceedings of the Royal Society London. Series B* 152: 550–567.
- Holdgate, M.W. 1961. The fresh water fauna of Gough Island (South Atlantic). *Proceedings of the Linnean Society* 172: 8–24.
- Holdgate, M.W. 1965. The fauna of the Tristan da Cunha islands. *Philosophical Transactions of the Royal Society B* 249: 361–402.
- Holdgate, M.W. 2005. Dr Nigel Wace. *Polar Record* 41(218): 265–266.
- Jones, A.G., S.L. Chown, and K.J. Gaston. 2002. Terrestrial invertebrates of Gough Island: an assemblage under threat? *African Entomology* 10(1): 1–9.

- Le Maitre, R.W. 1960. The geology of Gough island, S Atlantic. *Overseas Geological and Mineral Resources* 7: 371–380.
- Swales, M.K. 1965. The sea-birds of Gough Island. *Ibis* 107: 17–42, 215–229.
- Swales, M.K. 1970. A preliminary study on the application of the internal structure of feather barbs to avian taxonomy. *Ostrich Supplement* 8: 55–66.
- Swales, M.K. 1983. Denstone expedition to Inaccessible Island. *Denstonian Autumn* 1983(Supplement): 1–60.
- Swales, M.K. 1993. Denstone expedition to Tristan da Cunha. *Denstonian Autumn* 1993(Supplement): 1–32.
- Swales, M.K., C.P. Siddall, N.J. Mateer, N.H. Hall, R.C. Preece, and M.W. Fraser. 1985. The Denstone expedition to Inaccessible Island. *Geographical Journal* 151: 347–350.
- Wace, N.M. 1961. The vegetation of Gough Island. *Ecological Monographs* 31: 337–367.
- Wace, N.M. 1999. The discovery of oceanic islands in the South Atlantic by Portuguese during the sixteenth century. *Portuguese Studies Review* VIII(1): 126–156.
- Wace, N.M., and J.H. Dickson. 1965. The terrestrial botany of the Tristan da Cunha Islands. *Philosophical Transactions of the Royal Society* B249: 273–360.
- Wace, N.M., and M.W. Holdgate. 1958. The vegetation of Tristan da Cunha. *Journal of Ecology* 46: 595–620.
- Wace, N.M., and M.W. Holdgate. 1976. Man and nature in the Tristan da Cunha Islands. Gland, Switzerland: International Union for Conservation of Nature and Natural Resources (IUCN Monographs 6): 1–114.

The *Belgica* project

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ABSTRACT. This note reports on a project concerning the wreck of *Belgica*, in 22 m of water at Bruvik, Norway. A society has been founded with the aims of protecting the wreck, conducting a feasibility study on the possible raising and preservation of it, and for promoting education concerning the polar regions.

In 2005, Kjell-G. Kjaer published an interesting article in this journal entitled ‘*Belgica* in the Arctic’. This for example provided much information concerning the career of that famous vessel subsequent to the Adrien Victor de Gerlache de Gomery Antarctic expedition for which she is best known. He pointed out that, during the Norwegian campaign of 1940, *Belgica* had been employed by the British forces. She had been laden with ammunition at Harstadt near Narvik and had been sunk, as a result of enemy action, in Bruvik on 19 May of that year. Kjaer also noted that, in 1990, the wreck of *Belgica* had been found, at a depth of 22 m, by a local diving club and he printed in his paper a remarkable photograph of it (Kjaer 2005: 212).

This article came to the attention of A. van Autenboer who, in collaboration with Kjaer, determined, to explore the possibilities for preserving the ship. To work towards this goal a society has been established. This is named the *Belgica* Society and it has the structure of a non-profit organisation. It has the following objectives:

- to protect the wreck from pilfering,
- to conduct a feasibility study concerning the recovery and restoration of the wreck,
- to develop educational projects in relation to the history, geography, climate and human aspects of the polar regions.

The *Belgica* Society is chaired by W. Versluys, a well-known shipowner at Ostend. The executive committee comprises ten members, including Jean-Louis de Gerlache, grandson of Adrien de Gerlache, and Kjaer himself. At present, the *Belgica* Society is awaiting the results obtained by a team of divers, which will report on the state and condition of the wreck of *Belgica*.

Further reports will be made in due course. Correspondence from readers of *Polar Record* will be welcome and should be addressed to the author at walter.loy@skynet.be

Reference

- Kjær, K. 2005. *Belgica* in the Arctic. *Polar Record* 41(218): 205–214.