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Antarctican Society centennial medallion

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The Antarctic Society, based in the United States, has produced a medallion (Fig. 1) in recognition of the centennial of the discovery of the South Pole by Roald Amundsen and Captain Robert Falcon Scott, in 1911 and 1912, respectively. This item is representative of both expeditions.

The Antarctic Society was formed in 1960 as a not-for-profit educational society by those with interests and experience in Antarctica. A newsletter resulted, published at irregular intervals, and continues to this day.

The centerpiece of the medallion is a replica of a snowflake, and the core is an historic scene from the South Pole itself, the Norwegian tent with four of Amundsen's party standing nearby. The hexagonal rim around the scene includes the names Amundsen and Scott and their arrival dates at the South Pole. The medallion was created by sculptor Jack Chase of Jericho, Vermont, and glaciologist Tony Gow, recipient of the Seligman Crystal, selected one of Wilson A. Bentley's (1931) photomicrographs of snowflakes for this model. Chase used laser cutting techniques to produce the stainless steel medallion.

The centennial medallion was produced in two forms, one with a pin on the back for fastening onto a coat, and the other with an 18-inch necklace for wearing around the neck. The medallion pictured has an actual width of 1.75 inches (4.5 cm). Further information about the medallion is available from the Antarctic Society, Box 325, Port Clyde, Maine 04855 U.S.A. (www.antarctican.org).

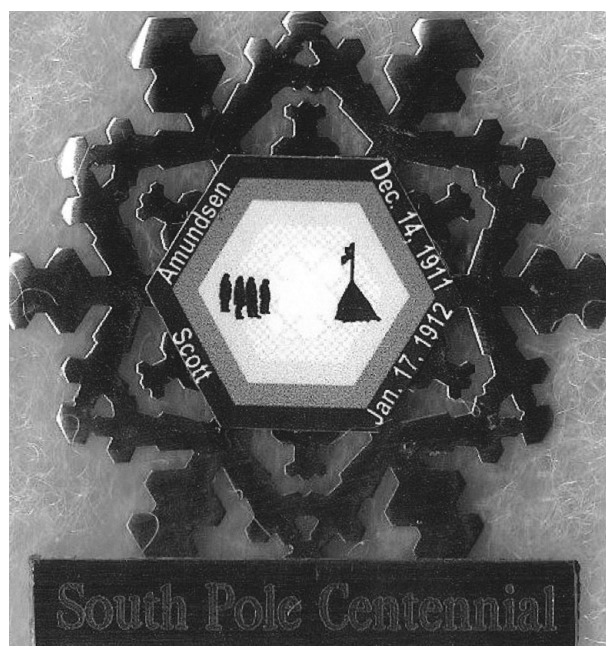


Fig. 1. South Pole centennial medallion.

Nothofagus trees stranded on the Antarctic Peninsula

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ABSTRACT. The occurrence of two basal sections of southern beech trees (*Nothofagus* sp.) embedded in raised cobble beaches and exposed by receding icefields at widely separated locations on islands off the

western coast of the Antarctic Peninsula is reported. These are the most southerly records of naturally occurring driftwood. Both are of Fuegian or southern Patagonian origin but whether they arrived at their destinations directly from the north or by circumnavigating the Southern Ocean eastwards is uncertain. While their stranding probably occurred several centuries ago this can only be speculated.

The occurrence of driftwood trees or parts of trees, without any signs of anthropogenic association, that is cutting and/or dressing, in southern polar regions has been documented by Lewis Smith (1985 and references therein). That account related particularly to stranded tree trunks or branches on sub-Antarctic South Georgia (53°58'–54°53'S, 38°01'–35°47'W), and maritime Antarctic islands in the South Sandwich Islands

(Candlemas Island 57°04'S, 26°41'W) and South Shetland Islands (61°00'–63°20'S, 54°00'–62°45'W). All identified timbers were of southern South American provenance and predominantly of species of southern beech (*Nothofagus betuloides*, *N. pumilio* and possibly *N. obliqua*). Subsequently several other *Nothofagus* trunks have been found embedded in raised beaches in the maritime Antarctic, three of which are reported here.

In January 1987 a branched irregular trunk of a species of *Nothofagus*, 5.6 m long and ranging from 34 cm to 25 cm diameter, was found emerging from a late snow bank on a raised cobble beach *circa* 2.5 m above high tide mark in a cove at Williams Point, Livingston Island, South Shetland Islands (62°27'S, 60°09'W). The trunk was worn smooth by the action of water and white in colour. It was abundantly pitted by toredo 'worm' holes indicating that it had been in the sea for some considerable time before being washed ashore.

The basal part of two trunks identified as *Nothofagus* spp. of Fuegian origin were found on the western coast of the Antarctic Peninsula. In 1993 a large piece of the base of a tree trunk emerged from a receding ice cap on Black Island, the southernmost of the Argentine Islands archipelago (65°16'S, 64°17'W), 1200 km south of Tierra del Fuego. Two years later a similar piece of basal tree trunk emerged from a receding icefield at Rothera Point, Adelaide Island (67°34'S, 68°08'W), 1600 km south of Tierra del Fuego. Both were on raised cobble beaches about 2.5 m above sea level. The Black I. specimen was about 15 m from the high water shoreline and the Rothera Point specimen about 50–70 m from the shore.

Of particular interest is determining the provenance of these logs. All previous records of *Nothofagus* logs found on raised beaches on sub-Antarctic islands and the South Shetland Islands originated from southern South America. Transport by the prevailing ocean currents can easily explain their eastward drift, hence their occurrence on the south-western side of the Falkland Islands, South Georgia, Marion Island, Tasmania and Macquarie Island (Barber and others 1959; van Zinderen Bakker 1971; Lewis Smith 1985). Aided by north-south gales flotsam can cross Drake Passage to reach the shores of the South Shetland Islands. Surprisingly, no logs have been reported from the South Orkney Islands. However, the occurrence of logs far to the south of the South Shetland Islands raises the question of whether their provenance could have been from New Zealand, where *Nothofagus* is also a widespread genus. Trans-Pacific crossing on the west wind drift seems a logical explanation to transport the logs to the Antarctic Peninsula.

Although identification to species has not been possible their anatomical features are as follows:

Black Island log. Cells diffuse porous; rays mainly uniseriate with a few biseriata; vessels with spiral thickening, mainly in radial multiples of 1–5 (up to 8), tylosed; fibres thin-walled; axial parenchyma apparently absent.

Rothera Point log. Cells semi ring porous; rays 1–2 seriate but sometimes 2–4 seriate; vessels in multiples of 1–8, with spiral thickening, tylosed; fibres occasionally septate; axial parenchyma diffuse.

These details are consistent with both taxa being *Nothofagus* but they do not fit any of the New Zealand species. A key diagnostic feature is that no New Zealand species has spiral thickening in the vessels (Patel 1986), although species from New Caledonia do but the vessels are much wider than in the South American species (J.M. Harris, personal communication,

15 August 1996). The conclusion is that the two Antarctic Peninsula logs are of South American origin, probably from Tierra del Fuego. Here, *N. antarctica*, *N. betuloides* and *N. pumilio* occur to sea level throughout much of the archipelago, but forests dominated by each exhibit an altitudinal succession with *N. betuloides* at the lower altitudes and *N. antarctica* at the highest where it also develops a stunted krummholz form at the treeline. The former two extend to the most southerly islands (McQueen 1976; Moore 1983). However, the separation of *N. betuloides* and *N. pumilio* on the basis of wood anatomy is unreliable. The anatomical characters were inconsistent with *N. antarctica*, while a fourth species, *N. obliqua*, occurs predominantly in northern Patagonia.

To date, these specimens represent the most southerly records of naturally transported driftwood that show no sign of human intervention. What remains unknown is whether the Antarctic Peninsula logs moved directly southwards to their present locations possibly during prolonged storms, or whether they could have circumnavigated the Southern Ocean on a slightly southerly trajectory to come ashore on the west side of the Antarctic Peninsula. Even more curious is the circuitous route that the more southerly log would have taken. It must first have reached the waters off the western side of Adelaide Island, drifted around the island's southern tip and then northwards across Marguerite Bay to the east side of Rothera Point on the eastern side of Adelaide Island. It may have been deposited at its present site some distance beyond the shoreline by a storm or glacier-calving surge at a time before the raised beach became buried by an ice field that may have persisted for centuries or even millennia. Unfortunately, radiocarbon dates were not obtained for either log.

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