

## SHORT NOTES

### THE CORRECT IDENTITY OF A *Pseudoboeckella* sp. (COPEPODA, CALANOIDA) FROM SIGNY ISLAND, SOUTH ORKNEY ISLANDS

By RONALD B. HEYWOOD

ABSTRACT. An Antarctic, fresh-water calanoid copepod, mistakenly referred to as *Pseudoboeckella silvestri* in earlier papers, has now been identified as *Pseudoboeckella poppei* Mrazek.

MORPHOLOGICAL variation has led to a fresh-water copepod from Signy Island being mistakenly identified as *Pseudoboeckella silvestri* Daday (Heywood, 1967, 1970a, b, 1972; Goodman, 1969).

Specimens of the copepod have been re-examined along with material collected at stations spread over 16° of latitude in the Antarctic Peninsula region of Antarctica:

South Georgia	lat. 54°20'S., long. 36°40'W.
Signy Island, South Orkney Islands	lat. 60°43'S., long. 45°38'W.
King George Island, South Shetland Islands	lat. 62°00'S., long. 58°15'W.
Horseshoe Island	lat. 67°51'S., long. 67°12'W.
Ablation Point, Alexander Island	lat. 70°48'S., long. 68°22'W.
Fossil Bluff, Alexander Island	lat. 71°20'S., long. 68°17'W.

The range of morphological variation, occurring at inter- and intra-population level, includes features used in keys to separate *Pseudoboeckella silvestri* Daday and *Pseudoboeckella poppei* Mrazek (Daday, 1902; Marsh, 1924). The copepod was finally identified as *P. poppei* after comparison with type material kindly loaned by the Zoologisches Institute und Zoologisches Museum, Hamburg. A paper on the morphological variation occurring within the species is in preparation.

*Pseudoboeckella poppei* has previously been recorded from South Georgia, Patagonia, Horseshoe Island and Hope Bay (Antarctic Peninsula).

MS. received 9 January 1976

## REFERENCES

- DADAY, E. 1902. Mikroskopische Süßwasserthiere aus Patagonien. *Természetr. Füzet.*, **25**, 201-310.
- GOODMAN, B. J. A. 1969. A physical, chemical and biological investigation of some fresh-water pools on Signy Island, South Orkney Islands. *British Antarctic Survey Bulletin*, No. 20, 1-31.
- HEYWOOD, R. B. 1967. The freshwater lakes of Signy Island and their fauna. (In SMITH, J. E., organizer. A discussion on the terrestrial Antarctic ecosystem. *Phil. Trans. R. Soc.*, Ser. B, **252**, No. 777, 347-62.)
- . 1970a. The mouthparts and feeding habits of *Parabroteas sarsi* (Daday) and *Pseudoboeckella silvestri*, Daday (Copepoda, Calanoida). (In HOLDGATE, M. W., ed. *Antarctic ecology*. London and New York, Academic Press, 639-50.)
- . 1970b. Ecology of the fresh-water lakes of Signy Island, South Orkney Islands: III. Biology of the copepod *Pseudoboeckella silvestri* Daday (Calanoida, Centropagidae). *British Antarctic Survey Bulletin*, No. 23, 1-17.
- . 1972. Antarctic limnology: a review. *British Antarctic Survey Bulletin*, No. 29, 35-65.
- MARSH, C. D. 1924. A synopsis of the species of *Boeckella* and *Pseudoboeckella* with a key to the genera of the fresh-water Centropagidae. *Proc. U.S. natn. Mus.*, **64**, Art. 8, 28 pp.

## A *Nothofagus* LOG STRANDED ON CANDLEMAS ISLAND, SOUTH SANDWICH ISLANDS

By R. E. LONGTON\*

ABSTRACT. A *Nothofagus* log is reported as stranded on Candlemas Island, South Sandwich Islands. The biogeographical significance of this observation is discussed.

THE South Sandwich Islands occupy an isolated position in the South Atlantic Ocean between lat.  $58^{\circ}18'$  and  $59^{\circ}28'S$ , and long.  $26^{\circ}14'$  and  $28^{\circ}11'W$ . On 12 March 1964, during a comprehensive survey of the island group (Baker and others, 1964), a log was noted by the author and Dr. P. J. Tilbrook near Carbon Point on the west coast of Candlemas Island (see Longton and Holdgate, 1976, fig. 2). The log was approximately 4 m. long, 35 cm. in diameter at the wider end, and branched near the narrower end with both branches being c. 15 cm. wide. It was twisted in appearance and was almost fully clothed in bark; it bore no saw marks or other evidence of having been worked. A sample of the log has been examined anatomically and identified as belonging to a species of *Nothofagus*, resembling most closely *N. menziesii* Oerst. from New Zealand. The log was lying approximately 40 m. inshore from, and at an altitude of 3-4 m. above, the normal high-water mark which was indicated by blocks of ice. It is considered probable that a severe storm combined with a high tide would be sufficient to carry it to this position, which it shared with a few small spars of drift-wood. Indeed, the arrival of the log on Candlemas Island as drift-wood appears to be the most reasonable explanation of its occurrence, due to the isolated position of the South Sandwich Islands and the infrequency with which they are visited (Holdgate, 1963).

If this interpretation is correct, the present observation provides further evidence for the long-range transport of floating objects in ocean currents associated with the West Wind Drift. Foreign drift-wood has been reported on South Georgia (Matthews, 1931), and on Tasmania and Macquarie Island. Samples from the latter stations included wood of South American species of *Nothofagus* which, like the Candlemas Island log, may have completed approximately half the circumnavigation of the Southern Hemisphere (Barber and others, 1959). Deacon (1960) indicated that objects more or less awash appear to have been carried eastward half-way round the Southern Ocean at approximately 8 miles/day, and he noted that they might thus take 3-4 years for the complete circumnavigation. Data for the drift of pumice, thought to have resulted from the 1962 South Sandwich Islands eruption and subsequently washed up on Australian and New Zealand shores, suggest that small particles may have been carried at comparable speeds, but that larger fragments had averaged up to 18 miles/day, possibly due to wind assistance (Sutherland, 1965; Coombs and Landis, 1966).

These observations are of biogeographical significance due to the possibility that long-range transport of propagules in ocean currents may have been partly instrumental in permitting plant and animal colonization of isolated oceanic islands, and in giving rise to the well-known disjunct distribution patterns which characterize Southern Hemisphere biota. It is likely that most plant and animal propagules would fail to survive prolonged immersion in sea-water but some exceptions are known. For example, seeds of *Cakile edulenta* and *Honkenya peploides* remain viable after immersion in salt water, and these strand plants are thought to have reached Surtsey Island, off Iceland, as seeds floating from neighbouring islands (Einarsson, 1967). Of greater significance in terms of long-range dispersal is the report by Costin (1965) of a viable seed of *Caesalpinia bonduc* found washed up on Macquarie Island. Barber and others (1959) have pointed out the possibility of seeds receiving protection from immersion after becoming overgrown in wood. It therefore seems desirable that a critical examination for viable propagules be carried out in the case of future discoveries of stranded objects believed to have undergone a substantial passage in the Southern Ocean. Some aspects of the bio-

\* Present address: Department of Botany, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada.

geography of the South Sandwich Islands have been discussed in greater detail by Holdgate and Baker (1977) and Longton and Holdgate (1977).

## ACKNOWLEDGEMENTS

I wish to thank Dr. C. R. Metcalfe for examining and identifying the log from Candlemas Island.

MS. received 10 May 1976

## REFERENCES

- BAKER, P. E., HOLDGATE, M. W., LONGTON, R. E., TILBROOK, P. J., TOMBLIN, J. F., VAUGHAN, R. W. and C. J. C. WYNNE-EDWARDS. 1964. A survey of the South Sandwich Islands. *Nature, Lond.*, **203**, No. 4946, 691-93.
- BARBER, H. N., DADSWELL, H. E. and H. D. INGLE. 1959. Transport of driftwood from South America to Tasmania and Macquarie Island. *Nature, Lond.*, **184**, No. 4681, 203-04.
- COOMBS, D. S. and C. A. LANDIS. 1966. Pumice from the South Sandwich eruption of March 1962 reaches New Zealand. *Nature, Lond.*, **209**, No. 5020, 289-90.
- COSTIN, A. B. 1965. Long-distance seed dispersal to Macquarie Island. *Nature, Lond.*, **206**, No. 4981, 317.
- LEACON, G. E. R. 1960. The southern cool temperate zone. (In PANTIN, C. F. A., leader. A discussion of the biology of the southern cool temperate zone. *Proc. R. Soc., Ser. B*, **152**, No. 949, 441-47.)
- EINARSSON, E. 1967. The colonization of Surtsey, the new volcanic island, by vascular plants. *Aquilo, Ser. botanica*, **6**, No. 2, 172-82.
- HOLDGATE, M. W. 1963. Observations in the South Sandwich Islands, 1962. *Polar Rec.*, **11**, No. 73, 394-405.
- . and P. E. BAKER. 1977. The South Sandwich Islands: I. General description. *British Antarctic Survey Scientific Reports*, No. 91.
- LONGTON, R. E. and M. W. HOLDGATE. 1977. The South Sandwich Islands: IV. Botany. *British Antarctic Survey Scientific Reports*, No. 94.
- MATTHEWS, L. H. 1931. *South Georgia: the British Empire's sub-Antarctic outpost*. Bristol, John Wright and Sons Ltd.; London, Simpkin Marshall Ltd.
- SUTHERLAND, F. L. 1965. Dispersal of pumice, supposedly from the 1962 South Sandwich Islands eruption, on southern Australian shores. *Nature, Lond.*, **207**, No. 5004, 1332-35.