

BOOK REVIEW

Ryszard OCHYRA. 1998. *The moss flora of King George Island, Antarctica*. xxiv + 279 pp. Paperback, size: 16.8 × 24.0 cm. Polish Academy of Sciences, W. Szafer Institute of Botany, Cracow. Price: US\$ 30. [ISBN 83-85444-60-2].

King George Island is situated in the central part of the South Shetland Islands and is the largest island of this archipelago. The area is characterized by its cold humid climate with a strong oceanic tendency. Biogeographically, it belongs to the maritime Antarctic province. Most of the island's surface is covered with ice and snow, ice- and snow-free areas occurring mainly on the coast. These places are covered, as in other parts of Antarctica, by rather poorly developed vegetation. Here cryptogamic tundra occurs, in which mosses and lichens are the prevailing components, with the vascular flora being represented by only two native species. It is generally accepted that the moss flora of the island is relatively rich and probably represents one of the bryologically most diverse areas in the Antarctic.

King George Island was one of the first lands to be discovered in Antarctica and it was here that the first observations on the flora of this biome were made. The first two species of moss, *Polytrichastrum alpinum* and *Sanionia uncinata*, were gathered in this area by James Eight's in 1829–1831. Mosses were not gathered here again for almost 80 years when, during the second French Antarctic Expedition in 1908–1910 under the command of Jean Charcot, M. Gain, naturalist of the expedition, collected three moss species in 1909. The first professional botanist to carry out investigations in this region was D.C. Lindsay, who, during the 1965–1966 austral summer, visited 17 localities on King George Island. The first professional bryologists to gather bryophytes there were R.M. Schuster (in 1969) and H. Kanda (1979).

In the 1979–1980 austral summer, Ryszard Ochyra, a member of the IVth Polish Antarctic Expedition to *Arctowski* Station, carried out detailed bryological investigations on King George Island, especially in the region of Admiralty Bay. In the course of a relatively short time he collected over 3000 specimens of moss, liverwort, lichen and vascular plant at 106 localities (in total, 151 localities were studied there). Among these very rich gatherings were 3 species new to science, 12 more new to Antarctica and 35 new to King George Island. 200 specimens of mosses (44 species) were distributed in "Bryophyta Antarctica Exsiccata" in 1984. The results of Ochyra's investigations have appeared as a long series in various publications.

"The Moss Flora of King George Island" is a first attempt at summarizing almost twenty years of R. Ochyra's investigations on austral mosses, with detailed consideration of Antarctic species.

The reviewed book contains the results of taxonomic, distributional and ecological studies on the mosses of King George Island. It provides descriptions of 61 species from 33 genera and 15 families of moss, which had been previously collected in this area. It is based mostly on materials and observations gathered during the author's stay at the *Arctowski* Station (in total 1300 specimens). Additionally he examined all type specimens and trawled through thousands of other specimens in herbaria worldwide. The book is dedicated to well-known explorers of Antarctica – S.W. Greene (prematurely deceased) and R.I. Lewis-Smith who have many times

supported the author of the Flora in his analyses. The work opens with a foreword by the ecologist D.W.H. Walton who for over thirty years has been working scientifically in Antarctica.

In the first parts of the book the author discusses the physiographical problems of King George Island against the background of all Antarctica, and presents the history of bryological exploration, vegetation types and bryogeographical problems. Additionally twenty coloured photographs show the scenery and vegetation of the island and the geographical problems discussed are illustrated by numerous maps. Chapter 6, the longest, contains among other things, perspicuously constructed keys and synthetic, precise descriptions of all taxa. The sequence of families largely follows Brotherus (1924, 1925). Within families the genera are arranged in alphabetical order and the species also alphabetically within the genera. The nomenclature used completely reflects the present state of knowledge. For each species synthetic descriptions are given which stress features important for identification, followed by ecological preferences, phytogeographical data, distribution on King George Island (on the basis of the specimens investigated), a list of the specimens examined and records from the literature. Species distribution is precisely shown on dot maps. In many cases taxonomic and nomenclatural remarks are included. Heterotypic and homotypic synonyms are provided for species reported or described from material collected within the Antarctic. All taxa are illustrated by very beautiful line drawings, accurately showing various details of the plants described. These illustrations by H. Bednarek-Ochyra are of a very high standard and make the Flora even more accessible to the user. The book also contains many taxonomic and nomenclatural changes: 4 new combinations, 51 new synonyms and 14 new lectotypes. The work ends with a comprehensive list of the literature cited (in all 366 items), an index of scientific names and a short biographical note about the author. In addition to its great intrinsic value, the book commands attention for its clarity and style, both of a very high order.

It is noteworthy that "The Moss Flora of King George Island" is the second descriptive flora of exotic cryptogamic plants written by a Polish author, following Marian Raciborski's "Dies Pteridophyten der Flora von Buitenzorg", 1898.

R. Ochyra's work is a milestone in the recognition of the mosses of Antarctica and should serve as a model for all similar works in future. The usefulness of this book extends far beyond King George Island will provide a basis for the successful determination of mosses from all Antarctica. I believe that this Flora will attract many readers, not only among bryologists, but also among botanists investigating the vegetation of the south polar areas in general.

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The moss flora of King George Island, Antarctica. Cracow, Poland: Polish Academy of Sciences, 279 pp. Google Scholar. Ochyra, R. Buck, W.R. 2003. Records of Holocene environmental changes in terrestrial sedimentary deposits on King George Island, Antarctica: a critical review. *Ocean Polar Research*, 26, 531-537. CrossRef Google Scholar. Van der Putten, N., Stieperaere, H., Verbruggen, C. Ochyra, R. 2004. KEYWORDS: Plant Communities; Sea Bird Nests; Mosses; Lichen. JOURNAL NAME: *American Journal of Plant Sciences*, Vol.3 No.5, May 30, 2012. ABSTRACT: We investigate the plant composition in the Skuas nest at Hennequin Point, located in the Admiralty Bay Area, King George Island, Antarctica. Sample of 61 activity nests were analyzed. 21 plant and lichenized fungi species were found in the nest composition, being the mosses *Sanionia uncinata* (Hedw.) Loeske and *Polytrichastrum alpinum* (Hedw.) G. S. Smith the most frequent species found in the Skuas nests. *Usnea antarctica* Du Rietz was the most frequent Ochyra R. The moss flora of King George island, Antarctica. Kraków: W. Szafer Institute of Botany, Polish Academy of Sciences; 1998. Ochyra R. *Schistidium lewis-smithii* (Bryopsida, Grimmiaceae) - a new species from the maritime Antarctic, with a note on the Australian *S. flexifolium*. *Nova Hedwigia*. 2003;77:363-372. <https://doi.org/10.1127/0029-5035/2003/0077-0363>. *Drepanocladus longifolius* (Amblystegiaceae), an addition to the moss flora of King George Island, South Shetland Islands, with a review of Antarctic benthic mosses. *Polar Biol.* 2009;32:1415-1425. <https://doi.org/10.1007/s00300-009-0636-z>. Sollman P. The genus *Bryoerythrophyllum* (Musci, Pottiaceae) in Antarctica. *Pol Bot J.* 2015;60(1):19-25. <https://doi.org/10.1515/pbj-2015-0004>.