Preface

Flowering plants constitute a relatively minor component of the Baltic Sea flora. Their occurrence in the marine environment is determined primarily by their tolerance to salinity. Strictly marine species, which do not occur in freshwater or brackish habitats, are typically characterized by a high degree of stenohalinity. The number of such species, collectively referred to as seagrasses, is limited to approximately 50 taxa worldwide. These plants are exclusively monocotyledonous and belong to the order Alismatales. Despite their taxonomic diversity, seagrasses exhibit a pronounced degree of morphological and functional convergence, reflected in their similar structural organization and growth form. They are generally robust plants that form dense aggregations and extensive underwater meadows, playing a key role in coastal ecosystems. In contrast, in low-salinity marine environments, such as the Baltic Sea, euryhaline species occur that are also widely distributed in freshwater habitats. These plants are typically small-sized and form loosely structured, relatively simple communities, most often composed of species belonging to the genera *Zannichellia* and *Ruppia*. Such assemblages are also present in the Gulf of Gdańsk (Pliński 2007).

This book focuses on flowering plants (currently treated within Tracheophyta; previously referred to as Spermatophyta) and is restricted to angiosperms (Angiospermae; previously Magnoliophytina), which, according to contemporary phylogenetic classifications, comprise several major evolutionary lineages, represented in this volume mainly by monocots (previously Liliopsida/Monocotyledones) and eudicots (previously included within Magnoliopsida/Dicotyledones). The book constitutes an important contribution to the Polish scientific literature in this field. It includes all plant species whose occurrence has been reliably documented in the Gulf of Gdańsk, based on detailed and verifiable literature sources, with particular emphasis on its semi-enclosed part, the Puck Bay, as well as on the Vistula Lagoon and the Szczecin Lagoon, water bodies adjacent to the southern Baltic Sea. It may also be useful for researchers of flowering plants not only in the coastal areas of the western and southern Baltic Sea, but equally in other regions of the Baltic coastal environment, including the eastern and northern coasts, which are clearly less salty than the southern Baltic Sea.

Owing to the predominantly freshwater character of the lagoon systems, the book also includes a number of typically freshwater and semi-aquatic species. The inclusion of these taxa is strictly limited to species documented in publications that provide confirmed records within the spatial range of the Gulf of Gdańsk and the adjacent basins. To broaden knowledge of reed, marsh, and other emergent plant species occurring in terrestrial habitats adjacent to the above-mentioned water bodies, readers are referred to specialist floristic studies, including those by Casper & Krausch (1980, 1981), Afranowicz & Markowski (2004) and Szmeja (2006).

The editorial structure of this publication follows the conventional format of species identification keys, which also function as comprehensive floristic treatments for a defined geographical area. The introductory section addresses selected aspects of the morphology of flowering plants that are essential for understanding the diagnostic characters employed in the identification keys for individual taxonomic units. This is followed by a presentation of field collection methods as well as techniques for the preservation and storage of plant material. The introductory part concludes with a concise historical overview of the taxonomy of aquatic seed plants, including an outline of the currently accepted classification system for this group. This part of the book concludes with a taxonomic scheme for the flowering plant genera described here.

The main body of the book comprises diagnostic descriptions of taxa and dichotomous identification keys for species recorded in the coastal waters of the southern Baltic Sea and in lagoon systems characterized by markedly reduced salinity. Each species account is additionally supplemented with selected source illustrations. The volume is further enriched by original photographs of taxa.