Atlas of Seeds and Fruits of Central and East-European Flora The Carpathian Mountains Region

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Springer, Dordrecht, The Netherlands, 2007, 1046 pp.
ISBN 978-1-4020-5361-0 (HB); ISBN 978-1-4020-5362-7 (e-book)

Lately, there has been much attention on research in biology dealing with various aspects of molecular variation of organisms, including plants. Yet on the other hand, studies on description and comparative analysis of the variation of morphological traits are underestimated and sometimes considered as „not modern and progressive enough". However, without any hesitation, it has to be stated that the background of life sciences is based on the existence of organisms, their individuals (represented by different species) and their complex interactions in space, time and a specific environment. Ecology, as a most complex biological science, is trying to expand the knowledge about the relationship between organisms and their environment. The alpha and omega of all these studies is a good knowledge of organisms on the individual level (i.e. individual species) and their variation, including morphology. The life cycle of plants is a complicated phenomenon with its sequence of appearance of different organs. In this lifetime pattern, sexual reproduction is an important aspect for the survival of individuals and their populations. That crucial role in vascular plants is the production of seeds and fruits. However, surprisingly little attention has been given till now to detailed morphological characteristics of seeds and fruits. Even though the morphological characteristics of seeds are mostly very constant and, therefore, very valuable for the determination of different systematic units, primarily the plant species. There are only few monographs worldwide focused in detail on the morphology of seeds and fruits of plant species naturally distributed in a specific geographic area.

The reviewed book thus fills a gap in our knowledge of plants. It is primarily focused on vascular plants of the Carpathian Mountains, one of the major mountain systems in Europe. The Carpathians cover an area of about 210 000 km^2, they are separated from the Alps by the Danube valley and are spread over parts of several European countries (Czech Republic, Slovakia, Poland, Hungary, Romania, Moldavia, Ukraine and Belorussia). The native flora of the Carpathian Mountains and lowlands is represented by about 6000 species, with introduced and invading flora it has over 7500 species.

The contents of the book are arranged into eleven chapters. The first seven (I.–VII.) summarise information about: I. Authors, II. Preface, III. Acknowledgements, VI. Explanatory notes on the text, V. Register of botanical gardens whose accessions were utilised (1990–2003), VI. Glossary, VII. Pictorial glossary. Chapter VIII, taxonomy and morphology of seeds, is the main and most unique part of the book, and is divided into two parts: A. Gymnospermae (7 families) and B. Angiospermae (172 families). This chapter, i.e. an atlas of seeds, is unequalled by extent and conception. Altogether nearly 4800 species of plants growing in the Carpathian region are covered. Presented for each species are its basic characteristics, detailed morphological descriptions of seeds or fruits, and information about its geographic distribution. Each species description is supplemented by high quality pen-drawings of seeds or fruits. The last three chapters are: IX. References (126, mostly books), X. Key to families of the Spermophyta, and XI. Index of scientific names.

The main purpose of this publication has been to fill a gap in the botanic literature, in which seeds are described only rarely, briefly and deficiently in terms of their importance for the maintenance of existence and differences of plant species. The book will be important not only for botanists and workers at botanical gardens all over the world, but also for universities where botany, ecology of plants and nature protection are taught; for agricultural research and advisory services; for institu-

tions focused on plant protection, plant pathology and weed science, plant breeding, gene banks and nature conservation etc. Institutions not biologically oriented (e.g. in archaeology and palaeontology; forensic science; public libraries etc.) could also make gainful use of this book.

In conclusion, the book written by two Slovak scientists and botanists (Prof. V. Bojňanský and Prof. A. Fargašová), presents an excellent and comprehensive review and integration of the recent knowledge about seeds and fruits of plants occurring not only in the Carpathian Mountains Region, but also in other parts of Europe and elsewhere. The contents of the book are well arranged, and easy to read and follow. As a source of information and atlas, it is aimed at advanced students and postgraduates as well as scientists and practical plant biologists engaged in various branches of plant science, agriculture, horticulture, forestry, nature protection and related disciplines.

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The book is available from the author of this review