

**BOOK REVIEWS**

L. Stuchlik (ed.). 2014

**Atlas of Pollen and Spores of the Polish Neogene. Vol. 4. Angiosperms (2)**

Authors: Leon Stuchlik, Maria Ziembinska-Tworzydło, Aleksandra Kohlman-Adamska, Irena Grabowska, Barbara Słodkowska, Elzbieta Worobiec, Ewa Durska

Published by W. Szafer Institute of Botany, Polish Academy of Sciences, Kraków, Poland, Paper back, 466 pages, 133 plates, ISBN-13: 9788362975235

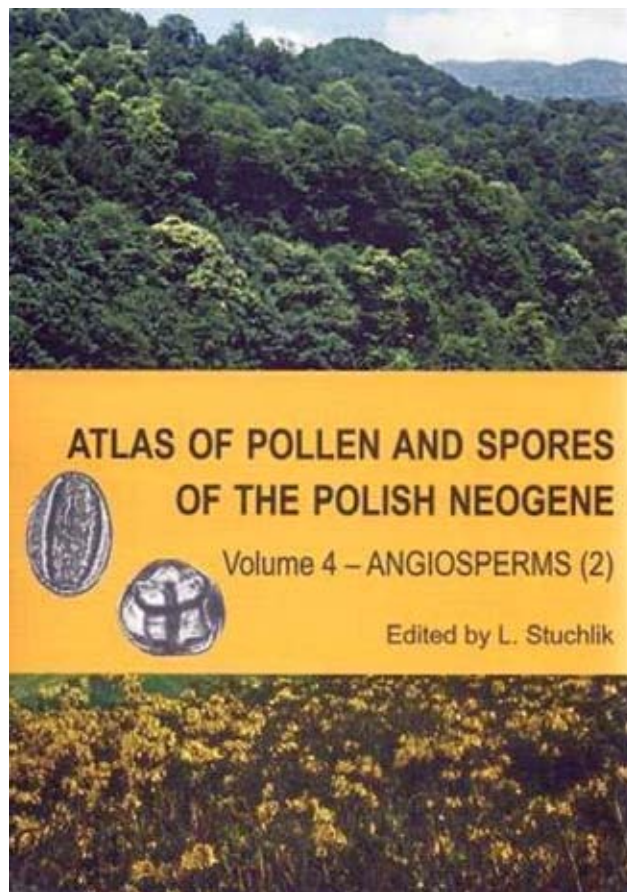
**Dimiter Ivanov**

Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, Acad. Georgi Bonchev St., bl. 23, 1113 Sofia, Bulgaria, e-mail: dimiter@bio.bas.bg

The last volume of the *Atlas of Pollen and Spores of the Polish Neogene* [vol. 4. Angiosperms (2)] was brought out. In 2001, the first volume of this significant project appeared, followed by another three volumes. The project has started as an attempt at summarizing the palynological studies on Polish Neogene carried out in the course of more than 60 years of palynological research. The Atlas includes taxonomic information obtained from more than 300 taxa of the Neogene pollen flora. The authors intended a complete overview of all identified pollen and spore taxa from the Neogene sediments of Poland.

Some of results were published in international and Polish scientific journals, but others were stored only in the archives of the Polish geological institutions as, for instance, the Polish Geological Institute in Warsaw, Geological Department of Warsaw University, Museum of the Earth at Polish Academy of Sciences in Warsaw, Institute of Geological Sciences of Wrocław University, and Władysław Szafer Institute of Botany, Polish Academy of Sciences in Cracow.

The predominant trend in the descriptions of pollen and spores in palynological literature published between the years 1950 and 1980 was the morphological method, in which the creation of new genera was based on morphological features of the dispersed palynomorphs. As a rule, this system did not provide sufficient useful information about the botanical affinity of the fossil taxa. Subsequently, the botanical



approach gained more ground and many palynologists have started to describe new genera, in which the botanical affinity of the palynomorphs was taken into consideration. The rules of the International Code of Botanical Nomenclature have not been followed in many cases. In the *Atlas of Pollen and Spores of the Polish Neogene* series, the authors make efforts to remedy the erroneous descriptions and identification.

Atlas of Pollen and Spores of the Polish Neogene, vol. 4 contains description and photographic documentation of the sulcate and colpate groups of pollen grains. Altogether, 212 species are described belonging to 75 fossil genera, 57 of which have botanical affinity indicated in the name.

All described fossil taxa are included within 55 extant families and 27 orders. In general, five new genera and 44 new species are described and 26 taxa have their diagnoses complemented, 26 new combinations are given, and new status is proposed for two taxa. All described pollen species have been documented by 134 photographic plates. Microphotographs have been taken with a light microscope (LM) and some more important details are documented with the help of a scanning electron microscope (SEM). The layout of Atlas of Pollen and Spores of the Polish Neogene, vol. 4, morphological descriptions and illustrations of pollen generally followed the make of the preceding volumes.

All taxa are ordered according to their botanical affinity and morphology by means of two morphological groups (sulcate and colpate), while the described genera are included in extant orders (Stevens et al. 2012). Families are ordered alphabetically in the orders, and genera and species are also ordered alphabetically within the families, with the exception of type species placed directly after the genus description.

I believe that the Atlas will be of great value to scientists dealing with stratigraphy and palaeobotany of the European Neogene, as well as to students of palaeobotany, palaeoecology and palaeophytogeography.

Chavdar Gussev & Rossen Tzonev. 2014

### **Natural Habitats of European Importance in the Protected Area Strandzha**

Directorate of Strandzha Nature Park, Malko Tarnovo. Paperback, 304 pp. ISBN 978-954-92404-5-0 (in Bulgarian)

[Природни местообитания от европейска значимост в Защитена зона „Странджа“]

**Ana Petrova**

Department of Plant and Fungal Diversity and Resources, Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, Acad. Georgi Bonchev St., bl. 23, 1113 Sofia, Bulgaria, e-mail: ana\_petrova@abv.bg

The book presents the natural habitats of European importance on the territory of a protected area within the network of Natura 2000 – BG0001007, which territorially almost coincides with the Strandzha Nature Park. The main goal was to provide accessible and scientifically grounded information for identification of the natural habitats, their protection, maintenance and restoration, as well as for enhancing the awareness, understanding and capacity of the target groups in relation to the habitats, their protection and maintenance.

The authors have described the composition, functions and prospects of these territories. Varied scientific information has been generalized in the result of the authors' researches of long standing into the flora, vegetation and natural habitats in the different parts of the Bulgarian section of Mt Strandzha, which corresponds to the protected area in the domain of natural habitats at the time of declaring the network of Natura 2000 in 2007. The inclusion of the natural habitats is based on the Standard Form



adopted by the National Council for Biodiversity in 2012 and on the information provided by the project “Mapping and determination of the environmental status of natural habitats and species – Phase I”. The authors have excluded some of the natural environments, owing to lack of scientific evidence of their existence within the area. As a result of their re-estimation, 32 natural environments are described in the book.

Each item includes the following information: code and name of the habitat, its classification under EUNIS and PAL.CLASS, environmental status according to the *Red Data Book*, description of the habitat and plant and animal species related to it, environmental maintenance, illustrations and literature.

The manual comprises information about the natural habitats as an element of biological diversity in Bulgaria and about the European environmental network Natura 2000 in the country. Protected Area Strandzha BG0001007 is also discussed in detail: the subject and objects of protection, target natural habitats, subject of protection according to the Standard Form (2012), physical and geographical characteristic of the area, flora and vegetation, fauna, place and functional ties of the protected area with other protected areas in the Black Sea bio-geographical region.

The information about each natural habitat is supplied with many original colour photographs made by the authors and by six other authors, as well as with photographs from the archives of the Directorate of Strandzha Nature Park. A photo gallery is attached at the end, with 26 photographs of characteristic species of the area, a list of 135 species of conservation important higher plants, as well as a list of the protected animal species included in Supplement 3 to the Biological Diversity Act. A glossary explains the meaning of 181 terms used in the book, which certainly would facilitate the use of provided information by a wider circle of specialists. The References include 127 entries for better orientation of the users.

The book addresses many target groups, both owners and users of farmland and forest territories in the protected area, NGOs related to biodiversity protection, officers and experts at the Ministry of Environment and Waters and other ministries, administrations, the judiciary, professors in the educational establishments in the Burgas district, etc.

The book is undisputed success for its authors and valuable manual to all interested in the biological diversity of Mt Strandzha.

Burkhard Biel & Kit Tan. 2014

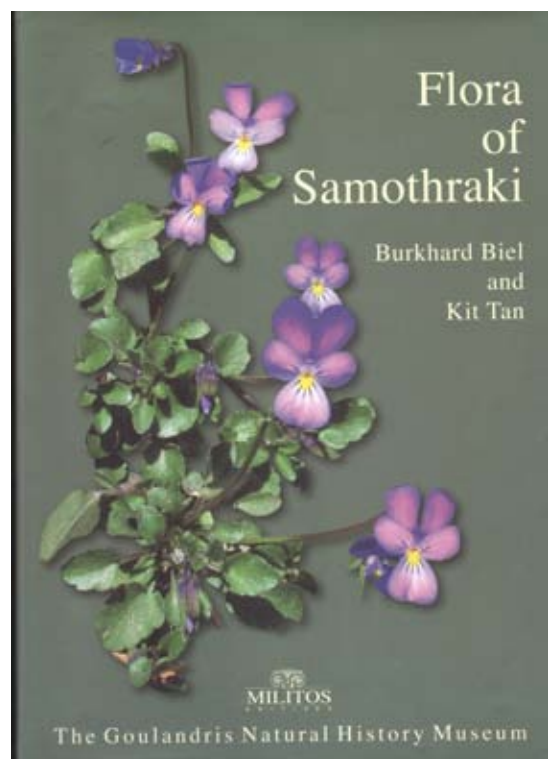
### **Flora of Samothraki**

The Goulandris Natural History Museum, Kifissia – Greece.  
224 pp. Hardback. ISBN: 978-960-464-585-5

**Vladimir Vladimirov & Ana Petrova**

Department of Plant and Fungal Diversity and Resources,  
Institute of Biodiversity and Ecosystem Research, Bulgarian  
Academy of Sciences, Acad. Georgi Bonchev St., bl. 23, 1113  
Sofia, Bulgaria, e-mail: vladimir\_dv@abv.bg

Samothraki is a small island of only 178 km<sup>2</sup> in the North Aegean area, Greece. Its geographic position, mostly mountainous relief reaching up to 1624 m at the peak of Fengari, Mediterranean climate and unique landscapes make it very interesting for botanical exploration. Moreover, despite its very small territory, the island contains nearly 25 % of the total Greek flora! As stated in the book, I. Dörfler was the first to collect plants on Samothraki in 1890 and the results were



published by A. von Degen in 1891. Since then several important contributions have been published, e.g. by Katsikopoulos (1936), Ade & Rechinger (1938), Stojanov & Kitanov (1943, 1944). In May 1997 a student excursion from the University of Copenhagen was undertaken on the island under the supervision of Arne Strid and Kit Tan (luckily, V. Vladimirov had the chance to attend it and was personally fascinated by Samothraki and its plant diversity). The results were published next year (Strid & Tan 1998) reporting 962 species of vascular plants. In more recent years particularly active in the botanical exploration of the area has been the first author of the book, B. Biel. Both authors have discovered numerous floristic novelties for the island, many of which have been published in *Phytologia Balcanica*, especially in the series '*New floristic records in the Balkans*' (20 contributions for the period 2006–2013!). Mainly due to their efforts, the number of the known vascular plants grew to 1441 species, all listed in the book – a significant increase of nearly 50 % in only a 15-year period!

The book comprises Summary, Introduction and seven chapters.

**Chapter I** – '*The island of Samothraki*' briefly presents the history and cultural sites of the island, its position, geology, climate and land use. Special attention is paid to the Saos mountain ridge and to the water-courses and wetlands. Although the book is devoted to plant diversity of the area, a brief overview of the fauna is presented.

**Chapter II** – '*Botanical exploration*' gives details about the study of the flora and vegetation of the island. It is interesting to mention some facts – over 170 days of field work in the period 2000–2013, more than 760 visited sites and nearly 3000 herbarium vouchers collected by the first author make the solid basis for the book!

**Chapter III** – '*The flora of Samothraki*' provides information about the phytogeographical relationships and endemism, endemic and rare taxa, as well as aliens, ruderal and weedy species. Seventeen local endemics and numerous rare plants and regional endemics make Samothraki a small biodiversity hotspot of regional and even global significance. It is interesting to note that 11 endemic species have been described in the past 15 years, e.g. *Allium samothracicum*, *Anchusa samothracica*, *Campanula saonissi*, *Centaurea samothracica*, *Eragrostis multiglandulosa*, *Galanthus samothracicus* (nomenclature of endemics seems rather

easy ... considering the specific epithets!). The authors pay attention to the need for urgent protection of their habitats and small populations. A photo and a dot-distribution map (1×1 km UTM grid squares) for each of the 17 local vascular plant endemics are provided. On the other hand, a significant increase in the ruderal, alien and weedy species on the territory of the island is observed compared with the studies of previous authors from the first half of the 20<sup>th</sup> century.

**Chapter IV** – '*The vegetation of Samothraki*' is devoted to brief description of the natural and present vegetation of the island. Twenty-one vegetation units are covered making references to the respective EUNIS habitat types, and when relevant – to the habitats of the EU's Habitats Directive, Annex I. Most widely distributed are psudomacchie (ca. 14% of the island's surface), macchie (12%), *Juniperus matorral* (8.7%), *Sarcopoterium* (6.8%), etc. A map of the vegetation units is provided.

Particularly noteworthy is the deep concern of the authors about the conservation of the island flora and vegetation.

**Chapter V** – '*Protection of vegetation and sites*' provides details about the human impact, protective measures and NATURA 2000 sites. Especially vulnerable are the coastal wetlands. The authors appeal for urgent conservation measures to protect the flora, vegetation and landscapes and minimise the adverse effects of such human activities as sheep and goat (over)grazing, pig farming, extreme adventure sports.

**Chapter VI** – '*Species lists*' gives a complete list of all recorded 1441 species of vascular plants. Richest families are: *Asteraceae* (177 taxa), *Poaceae* (164 taxa), *Fabaceae* (139 taxa), *Caryophyllaceae* (89 taxa), *Brassicaceae* (68 taxa). The general layout follows that of *Flora Europaea* (Tutin et al. 1964–1980), however, the families, genera and species are arranged in alphabetical order. Alignment with the taxonomic concepts in the plant groups covered in the published two volumes of *Flora Hellenica* (Strid & Tan 1997, 2002) has been done too. For some more widely distributed taxa a distribution map (by 1×1 km UTM grid squares) is provided. Also, some of the species are illustrated by colour photographs, however, we could not guess what selection criteria were used (perhaps availability of personal photos of high quality). One must pay attention that some species are illustrated in the text, whereas others – in the 15 plates, each of 12 colour photographs, supplemented at the end of the book (a

PLATE 9



*Castanea sativa*



*Frankenia hirsuta*



*Fumaria densiflora*



*Erodium ciconium*



*Geranium tuberosum*



*Geranium columbinum*



*Hypericum athoum*



*Hypericum olympicum*



*Hypericum triquetrifolium*



*Ajuga chamaepitys* subsp. *chia*



*Ajuga orientalis*



*Salvia viridis*

reference to the respective plate is provided in the text after the taxon name!).

Cryptogamic taxa, such as bryophytes, algae, and lichens, have not been neglected either. For bryophytes 268 species are listed mainly based on collections by R. Düll (spelled Duell in the reference list) and B. Biel. The list of algae includes 11 species of macroalgae collected by B. Biel. The list of the 297 species of lichens and lichenicolous fungi is authored by H.J.M. Sipman, and includes taxa collected by himself and Th. Raus as well as by some other collectors, e.g. Ö. Szatala, B.F.M. Abbott and R. Düll. As stated in the book, this list is not exhaustive, since the group of lichens is yet poorly studied on the island.

**Chapter VII** includes a list of 96 references cited in the text, acknowledgements, index to vascular plants, index to mosses, index to algae and index to lichens.

The book reads very well. The colour photos and maps inserted in the text make reading much more enjoyable and cheerful. Data are highly reliable – for each listed taxon the authors provide a full citation of a

single herbarium voucher or, in some rare cases – bibliographic citation when no herbarium specimen has been seen. Moreover, for some taxonomically intricate groups the identification of the herbarium specimens has been checked by widely recognised specialists in the respective group (specialists and taxonomic groups are listed in the acknowledgements).

The book is of interest not only to researchers into the Greek flora and mycota. Plant lovers, professional and amateur botanists and mycologists interested in the Balkan flora and mycota will be certainly satisfied when reading or consulting the book. It will be a valuable source of information for researchers in particular taxonomic groups, since many of the taxa have their southernmost or northernmost distribution limits on Samothraki, and thus the island is of special phytogeographical interest. The book is admirably published in English and Greek editions by the Goulandris Natural History Museum (Kifissia, Greece) on the occasion of the Museum's 50th anniversary of its founding. Translation for the Greek edition was carried out by Dionysis Mermvgykas.

## BOOK ANNOUNCEMENTS

### Vladimir Vladimirov

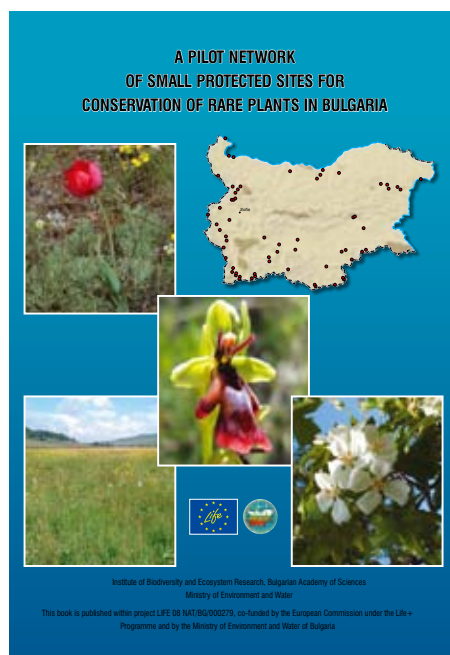
Department of Plant and Fungal Diversity and Resources, Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, Acad. Georgi Bonchev St., bl. 23, 1113 Sofia, Bulgaria, e-mail: vladimir\_dv@abv.bg

**Bancheva, S., Velev, N., Vladimirov, V., Valyovska, N., Goranova, V., Delcheva, M., Ivanova, D., Natcheva, R., Pedashenko, H., Peev, D., Stoyanov, S., Stoyanova, K. & Hardalova, R. 2014**

#### ***A Pilot Network of Small Protected Sites for Conservation of Rare Plants in Bulgaria*** (ed. V. Vladimirov)

IBER–BAS & MoEW, Sofia. 172 pp. Hardback. ISBN 978-954-9746-32-7  
(IBER–BAS), 978-954-8497-10-7 (MoEW).

[*Bulgarian edition*: Банчева, С., Велев, Н., Владимиров, В., Вълвовска, Н., Горанова, В., Делчева, М., Иванова, Д., Начева, Р., Педашенко, Х., Пеев, Д., Стоянов, С., Стоянова, К., Хардалова, Р. 2014. *Пилотна мрежа от малки защитени местности за опазване на редки растения в България* (ред. В. Владимиров). ИБЕИ – БАН & МОСВ, София. 172 с. ISBN 978-954-9746-31-0 (ИБЕИ–БАН), 978-954-8497-09-1 (МОСВ)]



**Content:** Instead of a foreword, Conservation of plant diversity in Bulgaria, Origin, concept and evolution of Plant Micro-Reserves: the pilot network of the Valencian Community (Spain) (by E. Laguna), The project ‘A Pilot Network of Small Protected Sites for Plant Species in Bulgaria Using the Plant Micro-Reserve Model’, Bulgarian national network of small protected sites: “plant micro-reserves”, Treatment of 47 species (3 bryophytes + 44 vascular plant species, References, Annex 1: List of the protected sites by Regional Inspectorates of Environment and Water (RIEW), administrative districts and municipalities.

The book describes the main result of a Life+ project – a pilot network of small protected sites for conservation of rare plants using the model of plant micro-reserves. A total of 47 species and 62 protected sites are presented. The information is arranged by species, and for each species is given its conservation status in Bulgaria, short morphological description, original data on the biology, habitats, distribution in the country, threats to the populations, and the taken and still needed conservation measures. For each protected area is provided the exact location and size, a brief presentation of the habitats and plant species of conservation concern, and the limitations specified in the Order for its official designation. Species and protected sites are illustrated with original colour photographs. A map of all designated sites is provided.

One of the book chapters is authored by Emilio Laguna, one of the founders of the plant micro-reserve concept, who describes the origin, evolution, current state and the future challenges of the network in the Valencian Community, Spain.

**Petrova, A. 2014**

***Photoguide to the Orchids of Vrachanski Balkan Nature Park* (ed. B. Assyov)**

Directorate of Vrachanski Balkan Nature Park, Vratsa. 80 pp. Paperback. | ISBN 978-954-2953-37-1 (in Bulgarian)

[Петрова, А. 2014. *Фотоопределител на орхидеите на Природен парк ВРАЧАНСКИ БАЛКАН* (ред. Б. Асьов)

Дирекция на Природен парк „Врачански балкан“, Враца].

**Content:** Introduction, *Orchidaceae* (incl. morphology and biology, nomenclature and conservation), Orchids in Vrachanski Balkan Nature Park (incl. 36 species and one hybrid), Alphabetical index to species names, References.

The book includes general information about *Orchidaceae* as well as treatment of 32 species recorded in the nature park, additional 4 species that are likely to occur there but have not been recorded yet, and one hybrid. Traditional generic concepts are used. For each species the following data are provided: current scientific name and most often used synonyms, vernacular name in Bulgarian, Description and biology, Habitats and populations, Distribution in Bulgaria, General distribution, Conservation status, Threats and conservation measures, Interesting facts about the species. All species are illustrated by original high-quality colour photographs.



