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Vegetation of the Czech Republic. 2. Ruderal, Weed, Rock and Scree Vegetation.

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(in Czech with English summaries).

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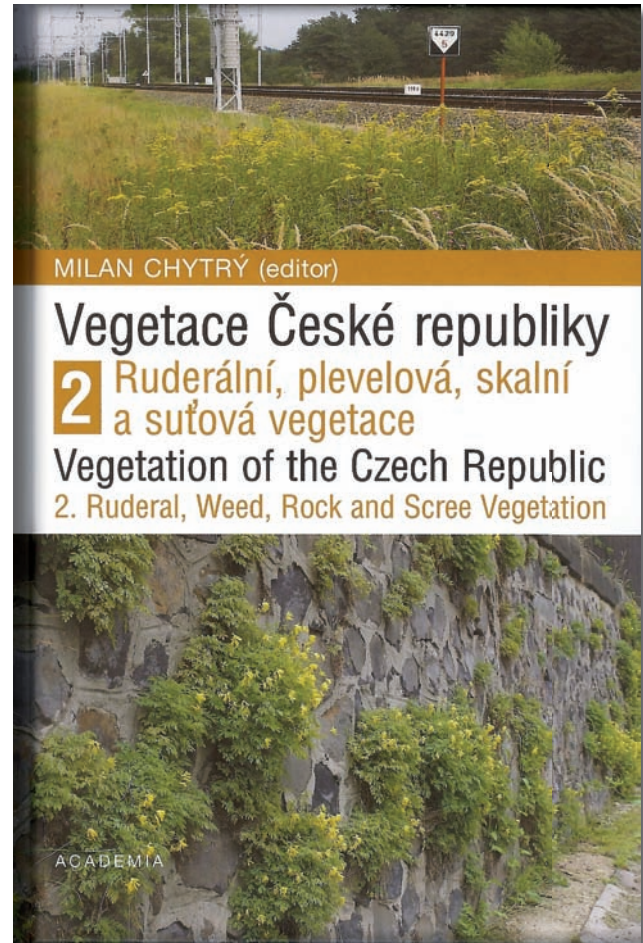
The second volume of the *Vegetation of the Czech Republic* was successfully brought out in 2009 as a result of a revising project of the vegetation of the country. It is devoted to ruderal, weed, rock and scree vegetation. The preparation of this second volume was funded by the Grant Agency and by the Ministry of Education of the Czech Republic. This project was coordinated and implemented at the Department of Botany and Zoology, Masaryk University, Brno. A team of excellent experts working close with Editor Milan Chytrý, in cooperation with the Institute of Botany of the Czech Academy of Sciences have successfully completed the book.

The process of data selection and data analysis followed the methods used in the first volume. Classification at the association level was performed using the Cocktail Method (Bruehlheide 1995, 2000), modified according to Kočí et al. (2003). The advantage of this method was that the associations are defined by unambiguous criteria which allow consistent assignment of any relevé to the particular association. A data set of 82029 relevés has been used.

The content includes the following vegetation types:

The vegetation of trampled habitats (*Polygono arenastri* – *Poëtea annuae*) is dominated mostly by annual species. In the book it is represented by the alliances *Coronopodo-Polygonion arenastri* with four associations and *Saginion procumbentis* with five associations;

The annual vegetation on arable land and ruderal habitats assigned to *Stellarietea mediae* manifested the greatest diversity. It is represented by the alian-



es *Caucalidion*, *Veronico* – *Euphorbion*, *Scleranthion annui*, *Arnosolidion minimae*, *Oxalidion fontanae*, *Spergulo arvensis* – *Erodion cicutariae*, *Atriplicion*, *Sisymbrium officinalis*, *Malvion neglectae*, *Salsolion ruthenicae*, and *Eragrostion cilianensi-minoris*). While *Atriplicion* is represented by 13 different associations, *Oxalidion fontanae* and *Spergulo arvensis* – *Erodion cicutariae* are represented in the country by single weed associations.

Xerophyllous ruderal vegetation with biennial and perennial species (*Artemisietea vulgaris*) is represented by the alliances *Onopordion acanthii*, *Dauco carotae* – *Melilotion*, *Convolvulo arvensis* – *Elytrigion repentis*, *Artemisio* – *Kochion prostratae* and *Arction lappae*. Eleven associations are recognized within *Dauco carotae* – *Melilotion*. Other alliances include 3–4 associations.

The nitrophyllous perennial vegetation of wet to mesic habitats (*Galio* – *Urticetea*) includes some natural types as, for example, the ones growing on the fringes of mesic forests, canopy openings, water banks. That is why it includes a larger proportion of

native species than the other types of ruderal vegetation. It is quite diverse in the country, represented by the alliances *Senecionion fluviatilis*, *Petasition hybridi*, *Impatienti noli-tangere* – *Stachyion sylvaticae*, *Geo urbani* – *Alliarion petiolatae*, *Aegopodion podagrariae*, and *Rumicion alpini*. Besides *Rumicion alpini*, which is described by a single association, all other alliances include over three associations. Being widespread and common in the Czech Republic, *Aegopodion podagrariae* has 10 identified associations.

The herbaceous vegetation of forest clearings and disturbed habitats in forest environment is described by *Epilobietea angustifolii*, with its alliance *Fragarion vescae* that includes seven distinct associations.

Vegetation of rocks, walls and stable screes is classified as *Asplenetea trichomanis* and represented by the alliances *Cystopteridion*, *Asplenion cuneifolii*, *Asplenion septentrionalis*, and *Adrosacion alpinae*. This vegetation occupies small areas in the country and thus the included associations are one or two within each alliance.

The nitrophilous vegetation on walls (*Cymbalarion muralis* – *Parietarietea judaicae*) is represented by the *Cymbalarion muralis* – *Asplenion* alliance and two associations.

Vegetation on mobile screes (*Traspietea rotundifolii*) in the Czech Republic is quite rare and is represented in the book by the alliances *Stipion calamagrostis* and *Galeopsion*. Both encompass four associations.

Synonyms, diagnostic and constant species are recorded for the classes, alliances and associations. Detailed information is given about the classes, alliances and associations. Within each class the associations are arranged in synoptic tables. A comparison

of the associations is illustrated with box-plot graphics by means of the Ellenberg indicator values for soil reaction, continentality, light, nutrients, moisture, and temperature. Altitude and herb layer cover are also added. Distribution maps for the associations are drawn using grid cells, approximately of 6×5.5 km. The maps give the potential distribution of some associations, based either on the statistical predictive model which quantified the relationship between the occurrence probability of a particular association and the explanatory environmental variables, or on the occurrence of particular dominant or diagnostic species. The descriptions of the associations follow a unified structure including information about the species composition, habitats, dynamics and management, overall distribution, variability, and significance for nature conservation. An English summary follows each heading, which makes the book readable outside the Czech Republic. Many original photos illustrate the vegetation types.

Although the presented classification is optimized for the Czech Republic, it could be used for comparisons on a broader scale. The information about the anthropogenic vegetation is valuable in the context of study and prevention of alien species' invasion in Europe insofar as it is known that ruderal and weed communities are the most appropriate for such plants.

For the Bulgarian phytosociologists, the *Vegetation of the Czech Republic* is a valuable source of information and a good example of national synthesis. The book could be also used by experts in nature conservation, high nature value farmland management, students, and persons with broad interests in natural history.