

Schnell, D.E.: **Carnivorous Plants of the United States and Canada**. Second Edition. - Timber Press, Portland 2002. 468 pp. Hardcover price 39.95 USD. ISBN 0-88192-540-3.

It has been the ever increasing interest in carnivorous plants of mostly layman wide public in the USA and Canada within the last 10 years that has led to new editing of this book. The author, a retired US physician-pathologist, is undoubtedly a greatest expert of carnivorous plants in North America. To the world-wide "carnivorous" public, he is well-known as a founder and editor-in-chief of the world most known, special dedicated hobbyists' international journal *Carnivorous Plant Newsletter* issued in Fullerton, CA, USA, and as an author of many dozens special papers. He has been devoting to the study of carnivorous plants of the USA and Canada for over 50 years. After the first edition of this book issued in 1976 faced a great success, it is expectable even a greater success of the second, greatly extended and revised edition. In the second edition of the book, the author has included all items of knowledge and news on the biology and cultivation of carnivorous plants which have been obtained since the first edition of the book. That is why the list of references comprises 335 items. However, it is difficult to say unambiguously what is the greatest benefit of the second edition. Undoubtedly, it is the unity of a very high professional level of the book together with great arrangement, understandability, and interesting interpretation and of full array of colour photographs and other illustrations. Detailed identifying descriptions and particulars of North American carnivorous plant species are joined in the book with general characteristics of carnivorous plants and their habitats.

In the detailed and expanded introductory chapter, the author presents a general ecophysiological characteristics of carnivorous plants and their typical habitats and explains trapping mechanisms in various groups of carnivorous plants, prey attraction, composition of prey in various carnivorous species, nutritional value of prey, digestion of prey, and utilization of different nutrients. In a further part of this chapter, ecological relationships of carnivorous plants to their pollinators, comensals, and cleptoparasites are explained and single typical habitats of carnivorous plants in North America together with their reasons for being endangered are discussed. At the end of the chapter, various aspects of carnivorous plant cultivation are discussed with an emphasize on the selection of proper substrate and soft water for watering.

In the next chapters arranged after genera, individual North American carnivorous plant species are systematically treated; there are in total 45 species. Each species has a detailed colour photo. In many species, a

separate colour photograph is also devoted to inflorescence and typical natural habitat. Information on each species includes the origin of scientific and local English name, detailed identifying plant description, historical and recent distribution in the USA and Canada (unfortunately the historical distribution is very often much wider than the recent one) very often supplemented with a well-arranged map, description of habitats, natural varieties, natural and artificial hybrids (e.g., in *Sarracenia*, it is a rather extended text), and biological properties (pollination, reproduction, trapping mechanism, digestion of prey, etc.). Detailed cultivation instructions end up each text for each species. Out of all carnivorous plants, the most numerous species in the North American nature are bladderworts (*Utricularia*). Totally 19 *Utricularia* species are stated in the book. Concerning with this difficult taxon, the author keeps the classical taxonomical concept by P. Taylor (1989) and admits the reluctant taxon *U. macrorhiza*. In systematic part of the book in a special chapter, four potential North American carnivorous plants have been included. However, it will take a certain time and a further study to admit them fully as carnivorous plants. They are *Capsella bursa-pastoris* (shepherd's purse, the imbibed seeds of which can capture mosquito larvae or fine animals by use of mucilaginous coating), *Ibicella lutea*, *Catopsis berteroniana*, and *Dipsacus fullonum* (common teasel). In this way, the author has turned the attention to an ever hot topic what is the essence of plant carnivory. The last chapter is devoted to conservation of carnivorous plants and their habitats. Here, the author discusses, frequently on the basis of his unrepeatable personal memories, the reasons of endangering of many carnivorous plant species and their habitats in North America and suggests effective measures for their conservation.

The high quality of the book is amplified by 200 colour photographs of carnivorous plants and their habitats and about a dozen of high-quality black-and-white illustrations. The overwhelming majority of colour photographs are of a high quality but some dozens of photographs showing fine species (e.g., bladderworts) from a greater distance are partly unsharp. The book is also supplemented with voluminous glossary of botanical terms at the end. By its high scientific and professional level, the book will attract professional botanists dealing with carnivorous plants (not only North American!) generally, but by its well-arranged and interesting character, it will undoubtedly enjoy and illuminate also all world amateur growers of carnivorous plants.

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