

Book Review

Vanky, K. 2002. *Illustrated Genera of Smut Fungi*. 2nd Edition. APS Press – The American Phytopathological Society. St. Paul, Minnesota, USA, 238 pp. ISBN 0-89054-297-X.

This is a second edition of an excellent monograph titled “Illustrated Genera of Smut Fungi” first published in 1987 (Cryptogamic Studies 1:1–159. Gustav Fisher Verlag, Stuttgart) by an eminent Romanian specialist Prof. Kalman Vanky. Since 1987 great changes took place in the knowledge on taxonomy of smut fungi and the number of known genera increased by around 50%. This second edition presents up-to-date knowledge on *Ustilaginales*, a basidiomycetous fungi parasitic on higher plants and contains the following parts.

In “Introduction” (p. 1) the author points that according to the classical concept, the smut fungi are plant parasitic basidiomycetous microfungi possessing teliospores but recent ultrastructural studies have shown that some microfungi do not have teliospores. This causes a need for new approach to taxonomy of 1450 smut fungi distributed in 77 genera. It must be mentioned that there are about 350 synonyms to the species and about 50 to the genera, including 10 anamorph genera.

In part “The classification of smut fungi” (p. 2–3) the new classificatory system of smut fungi reflecting also phylogenetic relationship is presented. The 1450 known smut fungi possessing teliospores are classified into 2 classes, 8 orders, 26 families and 77 genera. These classes are: Class I. *Ustilaginomycetes* with three subclasses: 1. *Entorrhizomycetidae*, 2. *Ustilaginomycetidae*, 3. *Exobasidiomycetidae*, and Class II. *Urediniomycetes*.

In part “Results and problems of the classification of smut fungi” (p. 4–10) several examples are presented concerning changes and problems in the taxonomy of the smut fungi. It may be emphasized that since 1987 descriptions of many new species and thirty new genera have been published.

In part “Host plants of the smut fungi” (p. 11) some information on 4100 plant hosts of smut fungi at family and order levels are given. Over 800 smut fungi are known on *Gramineae* followed by 220 species on *Cyperaceae* and 108 on *Compositae*.

In part “Septal pore and host-parasite interaction in smut fungi” (p. 12–16) interactions between smut fungi and host-plants are discussed and illustrated.

Part “Classification of smut fungi and allied taxa” (p. 17–21) presents a list of names of classes, subclasses, orders, families and genera with number of species. A list of synonyms, excluded genera and anamorphs is also included.

Part “Key to the genera of smut fungi” including *Microbotryales*” (p. 22–25) is arranged by plant host classes and by spores, peridium and sori morphological features of smut fungi.

Part “Glossary” (p. 26) presents over 50 important morphological and taxonomic terms.

Part “Descriptions and illustrations of genera” (p. 27–209) forms the basic part of the book and contains descriptions of 89 genera of which 77 are accepted and 12 are considered doubtful or have been excluded from the smut fungi. Only smut fungi which develop teliospores are included into this part. *Ustilaginomycetes*, which do not have teliospores (e.g. *Exobasidiales*) are omitted. On the other hand *Microbotryales* are treated in this book despite being placed under the *Urediniomycetes*.

Each genus and species has a concise diagnosis with excellent drawings of infected plants, and light and scanning electron microscope photos of fungi spores.

In addition to references (p. 211–230) useful information on regional floras, descriptive manuals, phylogeny and classification general literature are provided.

Without any doubt this book will be welcomed by plant pathologist and mycologists all over the world and should be present in all botanical and agricultural libraries.

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