

## REVIEWS

A. H. SMITH & L. R. HESLER. *The North American species of Pholiota*. (Hafner Publishing Company, 1968). Pp. 402, 519 text-figures, 90 plates presenting 115 black-and-white photographs. Price \$ 22.50.

Drawing on long experience and numerous, well annotated collections Dr. A. H. Smith and Dr. L. R. Hesler have published another monograph on a group of North American agarics, viz. the genus *Pholiota* in a very wide sense, including *Flammula*, *Kuehneromyces*, *Pachylepyrium*, *Phaeolepiota*, some species of *Hypholoma* and a large part of *Phaeomarasmius*.

The general chapters in the first 36 pages deal with the history of the genus, the new classification proposed by the authors, the macroscopic, microscopic and chemical characters and the intergeneric relationships of *Pholiota*. The bulk of the book comprises a taxonomic treatment of the genus and includes extensive descriptions and drawings of the most important microscopic characters of 205 species arranged in 48 groups called stirpes, 16 sections and 7 subgenera. More than half of the species are new. The keys are scattered throughout the entire taxonomic section. This is a great inconvenience as they lead to names without page numbers, leaving the reader with the choice of either adding the page numbers to the keys himself or else repeatedly looking up the appropriate keys or descriptions in the index. The 115 black-and-white photographs are of excellent quality and very instructive.

The most interesting feature of the book is undoubtedly the authors' wide conception of the genus *Pholiota*. The fusion of *Pholiota* and *Flammula* had already been more or less generally accepted but the re-insertion of *Kuehneromyces* and *Phaeolepiota* in *Pholiota* and the transfer of *Pachylepyrium*, many species of *Phaeomarasmius* and some species of *Hypholoma* to *Pholiota* are new.

A first thought could be that for practical reasons the authors wished to publish a book covering all the North American *Pholiota*-like fungi, but the introductory chapters show that they regard *Pholiota* as they circumscribe it as a natural genus. I am convinced that many agaricologists will disagree with them on this point.

One of the disadvantages of a large genus conception as adopted here can be that the wider the conception the greater the variation of characters within the genus, rendering the gaps still separating it from related genera relatively less important. Subsequently such an enlarging of a genus can sometimes be stopped only artificially. In my opinion the authors have done just this by, for instance, considering the colour of the spore-print to be decisive for the distinction of *Pholiota* from *Hypholoma*. Consequently because of their brown spore-prints *H. elongatipes* (= *H. elongatum*) and *H. myosotis* are placed in *Pholiota*. Both species, however, strongly resemble *Hypholoma* in habit and colours and have a subcellular subpellis (hypoderm) in common with most of the other species of *Hypholoma*. This character is not discussed in the book.

In the brown-spored series of genera the difficult delimitation of *Pholiota* against *Galerina* is another result of the "inflation" of *Pholiota*. Actually smooth-spored species of *Galerina* section *Porospora* fit perfectly in the authors' description of *Pholiota*. At the foot of page 31 however it is stated that "the important feature between the two genera [viz. *Pholiota* and *Galerina*] is the shift in emphasis of the important characters." Is this way of separating two genera perhaps not a bit too subjective? Further, would the same reasoning applied to *Phaeomarasmius* not have led to maintenance of the latter genus in its wide sense? In this connection it is interesting to observe that the species of *Pholiota* stirps *Aurea* (in which *Phaeolepiota aurea* is placed beside species of *Phaeomarasmius* with isodiametric cells on the cap) do not seem to fit in

the genus description on p. 37. But this may have something to do with the terminology for the covering layers of the cap.

In the genus *Pholiota* it is certainly very difficult to distinguish between the remnants of the universal veil on the cap and the surface layer(s) of the cap itself. This question demands clearly defined terminology. In the present book it is difficult to understand what is meant by cuticle, cutis, epicutis, hypoderm and subcutis. In many cases, both in the introduction and the descriptions the first three and the last two terms seem to be interchangeable. It becomes still more complicated when it develops that terms like epicutis (p. 55) and cutis (pp. 58, 171) are sometimes used for an outer layer that is almost certainly formed by the universal veil (see under *Phaeolepiota* and *Flocculina* in Reijnders' book of 1963 on the development of the agaric fruitbody) and that does not belong to the "cuticle" proper.

For the European mycologist it is disappointing that the extent of European knowledge of "*Pholiota*" species is somewhat poorly presented. The common *P. gummosa* cannot be named as this is classified as a species without chrysocystidia. *Pholiota henningsii* is not mentioned in the book; when this species is keyed out however one arrives at *P. paludosella*, a species so similar that it could be identical, but in that case the name *P. henningsii* would have priority. The new species *P. pseudosiparia* is very similar to *Naucoria wieslandri* as conceived by Kühner & Romagnesi but that name does not occur in the book.

It would be a pity if too much criticism were to overshadow my admiration for this impressive piece of work. It is unquestionably a milestone in the study of the brown-spored agarics and it adds greatly to our knowledge of that group. It deserves a place on the bookshelf of every student of agarics.

C. BAS

P. H. B. TALBOT. *Principles of fungal taxonomy*. (The MacMillan Press Ltd, 22 April 1971). Pp. 274, 86 figures. Price £ 3.00, paper edition £ 1.50.

Compared with many other textbooks, "*Principles of fungal taxonomy*" is a thin volume, comprising little more than 270 pages. It had to be thin, for its aim was "to give a concise account of fungi, suitable for a short undergraduate course in mycology." As a consequence, descriptions of orders and families have been abridged to the utmost, while the number of genera treated are limited to a minimum. Author names have been omitted. Illustrations are comparatively few, but among them are some rarely if ever seen in other textbooks (Figs. 12, 13).

There are thirteen chapters. Subjects of a more general nature, like fungal morphology and reproduction, are dealt with in Chapters 1-7, while Chapters 8-12 are concerned with the descriptions of the slime-moulds and the various subdivisions of the Eumycota.

The outstanding feature of the present book is that the descriptions of the major taxa are preceded by a detailed treatise of general structures and processes.

Chapter 2, introducing the concepts "systematics, taxonomy and nomenclature," is an exceedingly useful account that is recommended for re-reading from time to time.

A minor error may be pointed out. The author states of the indusium of *Dictyophora* (p. 237) that "there is a lacy network suspended from the margin of the pileus." The truth is that the indusium is a veil attached to the top of the stipe under the cap and extends below the latter for some distance.

The moderate price of the paper edition is an asset.

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