

## REVIEWS

G. H. CUNNINGHAM, *Polyporaceae of New Zealand* (New Zealand Department of Scientific and Industrial Research. Bulletin 164. Dec. 2, 1965) Pp. 304, 457 text-figures, 7 text-plates. Price £ 3-10-0 (New Zealand currency).

When Dr. Cunningham died in 1962 the manuscript of this monograph was still uncompleted. Miss J. M. Dingley, with the assistance of her staff, undertook to make it ready for publication. The result is a well-edited companion-volume to the previously published "The Theleporaceae of Australia and New Zealand".

Only species are included 'authentic' specimens of which were examined. Under a section "Unknown and Rejected Species" a long list of names is given "of species listed by earlier workers but of which specimens have not been available for study, are not in the region, or which were based on faulty identifications".

There can be no doubt that a work of this kind ought to be in the hands of every mycologist who is concerned with the polypores not only of New Zealand, but also of the neighbouring regions, especially Australia and the Pacific Islands. Another important feature is the revised taxonomic arrangement that has been worked out. The author has built up a system of the polypores that deviates in many respects from other contemporaneous systems. This, and the fact that many species are restricted to New Zealand and Australia, provide other sources of interest to all mycologists who are engaged in working out a natural classification of the polypores on a world-wide basis.

This is not to say that there is no room for criticism. In my opinion the line-drawings are in many cases misleading and even incorrect. One of their shortcomings is the spore drawings. It would seem as though it escaped the monographer's attention that the basidiospores of the hymenomycetes, including the polypores, are characteristically asymmetrical in side-view and that at their base they terminate in an apiculus rather than in a narrow, disrupted tube or band (as is the case in many gastromycetes) or else that they have no apiculus at all. Certain errors are presumably due to faulty composition of the original part-drawings with the result that instead of being a help a number of figures will certainly hinder correct determinations. Highly schematic drawings, where accurate ones might be expected may lead to considerable hesitation in determining specimens. Figure 54 (*Phellinus melanoporus*), moreover, cannot be explained without taking it as drawn from a misdetermination.

A mainstay of the classification adopted is the hyphal structure. Often this is decisive for characterizing a genus, but sometimes genera are admitted in which several types of hyphal structures occur (*Polyporus*). In more than one case an oversimplified description of the hyphal structure is given. From Cunningham's descriptions and drawings no outsider would suspect that the schematic and didactical conceptions that make the various, generally recognized types of hyphal structure easy to understand are actually rarely encountered without complications in the

form of additional features that are also of importance. This tendency to neglect such complications may be one of the reasons why some of the genera have become even more artificial than in certain previous classifications. A case about which specialists may perhaps differ is the incorporation in *Polyporus* of the genus *Abortiporus* (*Heteroporus*). They will regret that there is no discussion on the new genus *Flabellophora* in which a comparison is drawn with certain species of *Rigidoporus*. In *Grifola* several other species are incorporated that are currently kept widely separated like, for instance, species of *Laetiporus* and *Bondarzewia*. The emendations of *Trichaptum*, *Heterobasidion*, *Flaviporus*, *Pseudofavolus*, and *Osmoporus* are no improvement on the current restricted conceptions; in fact I would consider them all very heterogeneous. The transfer of the *Polyporus gramocephalus* group into *Tyromyces* is astonishing and the simplified description of *Amauroderma* as dimitic with binding hyphae misleading. To keep *Fuscoporia*, as emended by Cunningham, generically distinct from certain species of *Phellinus* (like *P. gilvus* and *P. torulosus*), is, with our present knowledge, possible only if two artificial genera are favoured where one would suffice, especially if the second genus is made less comprehensible by the introduction of such species as *Polyporus albomarginatus* and *P. bicolor*.

There are more points that are likely to evoke discussion, but for me the principle advantage of this work is that it has brought together so much information that was widely scattered in the literature and that it gives detailed information on many species occurring in a part of the world from which material is only poorly represented in most of the herbaria of Europe.

M. A. DONK

ALEXANDER H. SMITH & S. M. ZELLER, *A preliminary account of the North American species of Rhizopogon* (Memoirs N.Y. bot. Gdn, vol. 14 no. 2. 1966). Pp. 177, 95 figures, 8 plates (of which 2 in colour). Price \$ 10.00.

For a mycologist interested in such intriguing and mysterious things as hypogeous fungi, but practically never so fortunate as to find one, this "Preliminary account" is a cause for utter amazement, for it deals with no less than 137 species, several of which seem to have been collected by the basketful. Only four species have names with a familiar European ring.

At first sight one may be inclined to doubt the wisdom of distinguishing so many species, the more so since several are separated on the basis of what seems to be mere chemical differences. It appears, however, that not all of the characters used are chemical in nature. Moreover it should be borne in mind that in certain parts of the United States some genera abound in species, both in phanerograms and in fungi, so that perhaps it is not surprising if the genus *Rhizopogon* follows this example.

Although S. M. Zeller is indicated as co-author, the classification is A. H. Smith's, as is the discussion of the value of each character used. This discussion is exemplary in its thoroughness, reflecting Smith's endeavour to find new ways of delimiting the

species. The same trend is also noticeable in the specific descriptions, which give a wealth of detail. There are, however, a few objections.

On page 21 Smith states that "One does record what he observes . . ." and it is certainly true that Smith observed a great deal, but it cannot be denied that some of the information is presented rather unequally. The description of the basidia of *R. anomalus* takes two and a half lines, that of the basidia of *R. semireticulatus* is finished in three words. Of the two species *R. subbadius* and *R. pedicellus*, only the  $\text{FeSO}_4$ -reaction of the former is recorded. There seems little use in mentioning that a columella is lacking (e.g. in *R. lutescens*) if not a single word is said concerning the columella in other species of the same subsection (e.g. in *R. ochraceisporus*, *R. vinicolor*). Spore ornamentation does not seem to be a character of great importance in *Rhizopogon*. If, however, the spores are clearly stated to be smooth, it would be both logical and preferable to find this word in the same place in the spore descriptions. It would make comparison so much easier. In *R. semireticulatus*, for instance, "smooth" is to be found at the very beginning of the sentence, in *R. subgelatinosus* at the very end.

Although more remarks of the same tenor could be made, these examples should suffice. They are minor blemishes, but they could better be corrected, as they detract from the merits of the work.

A final remark is called for: the use of the word "paraphyses" is most unfortunate.

A judgement on the taxonomic value of this monograph can be given only by those to whom its use is a matter of daily routine.

R. A. MAAS GEESTERANUS

REID, D. A., *Coloured illustrations of rare and interesting Fungi I* (Supplement to *Nova Hedwigia* 11. J. Cramer, Lehre, 1966) Pp. 32, 14 text-figures, 8 coloured plates. Price D.M. 25.—.

For the knowledge of the larger fungi, especially the fleshy ones, published coloured plates are of great importance. It is much easier to form a mental picture of the fruitbodies from a good plate than from even an extensive description. Thus nothing can take the place of coloured plates as a means of communication among mycologists. Unfortunately the number of species of which no adequate coloured plates are available is rapidly increasing. Modern technics have not brought us less expensive methods of colour-printing.

This all makes it very opportune that Dr. Reid has started a series of coloured plates of larger fungi of which either no or else only almost inaccessible plates have thus far been published. In this first fascicle eleven species are represented and extensively described. Four of these are new, viz. *Boletus leonis* (= *B. leoninus* sensu auct. non Pers.), *Laccaria purpureo-badia*, *Lepiota marriagei*, and *L. hymenoderma*. The other species depicted are *Boletus queletii*, *B. lignicola*, *B. rubinus*, *Lepiota rhodorhiza*, *L. ochraceofulva*, and *Amanita nauseosa* (transferred from *Lepiota*).

The coloured plates are of a good quality. On Plates 2 and 4 the figures are placed somewhat far apart. Perhaps it would have been possible to include pictures of two or three more species at nearly the same expense. The descriptions are written in a narrative style, which makes them pleasant to read, but a bit time-consuming when it comes to searching for particular information. A case in point is the presence or absence of clamps. In some cases this character is not mentioned at all and it is not clear whether clamps have not been observed or whether the character has merely been neglected. The descriptive terms for colours are apparently adopted from Ridgway but this is not mentioned.

It is somewhat astonishing to find that the new *Lepiota marriagei* has been described without a word about the reaction of the spores in Melzer's solution. Data on the reaction of Cresyl Blue on the spores have been omitted for all species of *Lepiota*. The colour of the spore-print is lacking in several descriptions. Hardly anything is said about the type of soil at the localities, while at times the descriptions of the vegetation of the habitat are rather poor.

Apart from these few minor short-comings, this publication nevertheless meets high demands and the author and publisher alike are to be praised for their initiative. It is to be hoped that many fascicles will follow. However, if it is really the intention that this series reaches the average mycologist the price of the reprints will have to be considerably reduced. Perhaps this could be achieved by printing a greater number of copies, to be sold in cooperation with the regional mycological societies.

C. BAS