A reassessment of mycological systematics. It is infrequent for fundamental changes to be made in the classification of any large group of organisms. However, unlike other disciplines it is possible in mycology to do just this because the delimitation of classes, orders, etc. has not settled down. Kreisel's recent publication* may shatter some of the traditional ideas on classification but are they replaced by more satisfactory groupings?

A general account covering 47 pages introduces the reader to the main part of the publication. This general part is a welcome condensation of the facts signalling the position of the fungi amongst the lowly organisms and introduces biochemical, subcellular and cellular information including notes on gross-morphology of vegetative and fruiting phases and sexuality patterns. Symbiosis covering lichens, mycorrhiza and insect-fungus relationships are briefly discussed and mycogeography mentioned.

The rest of the publication of 154 pages covers the formal description of classes, orders etc. accompanied by keys and examples. Five classes are recognised, the Chrytridiomycetes, Ascomycetes, Basidiomycetes and Zygomycetes, and now with equal status the Endomycetes. The first class and the Zygomycetes have 4 constituent orders each following a traditional pattern; the Ascomycetes is split into the Euascomycetidae and the Loculascomycetidae, with 12 and 9 orders respectively. The Basidiomycetes has three subclasses, the Hymenomycetidae (8 orders), Gastromycetidae (11 orders) and the Phragmobasidiomycetidae (4 orders), and a residual group covering the Tilletiales, Brachybasidiales and *Digitatispora* suspended within the classification. However, I would suggest that work is available which does not make this last group necessary. It is very welcoming to see at each stage in the classification the insertion of members of the former Fungi Imperfecti, accompanied on pp. 133–135 by a useful table of imperfect-perfect relationships.

One of the greatest surprises for many will be the uniting of the Kickellales, Harpellales, Eccrinales and Amoebidales, all from the doomed Phycomycetes, with the Ustilaginales (Basidiomycetes in the traditional sense) and the Taphrinales (Ascomycetes in the traditional sense). The justification for this is tenuous but it will provide a forum for heated discussion, as will the inclusion of all the hypogeous Ascomycetes in a single order.

It is welcoming to see the placement of *Russula* and its relatives in a separate order from the other agarics but the separation of the boletes and their relatives at ordinal level may not be as desirable. What has been necessary in the past is for somebody 'to take the bull by the horns' and split the Secotiaceae by placing its respective members amongst the other Basidiomycete families; this has now been done by Kreisel.

The club-fungi, polypores etc. are found distributed in five orders, the Cantharellales, Poriales and Tulasnellales, and the Polyporales which covers both agaricoid and poroid elements; the Dacrymycetales probably very rightly is connected to the Poriales but one wonders why it should be separated from the majority of the other hymenomycetous heterobasidiae. The splitting of the wide assemblage of morphological forms originally placed in the Aphyllophorales may have been foreseen but one wonders whether the splits were really necessary and if so whether they have been made in the right places. I think not but this needs careful reconsideration now the present publication is to hand. As is becoming customary and very necessary the lichens are discussed as part and parcel of the fungi, indeed when possible scattered through the recognised families and orders.

Almost as an appendix, but adequately discussed, the systematic account concludes with the rather anomalous and mixed assemblage—Hypochytridiomycetes, Oomycetes, Hydromyxomycetes, Myxomycetes and Plasmodiophoromycetes.

The nomenclature of some of the proposed taxa in some cases is questionable but this will be solved in time and does not detract from the rest of the publication. The illustrations are in the main copies of familiar, or in some cases less familiar, text-figures supported by some original figures and eight plates showing macromorphology of 27 non-lichenised and 6 lichenised fungi. The last unfortunately do not show all the features which one would have hoped for. The figures showing evolutionary trends will be useful to teaching as will the excellent bibliography. Many of us have been aware of Dr. Kreisel's capacity for work; this publication illustrates his aptitude for studies at both specific and higher levels. There is no doubt that this text will make one look again at Ainsworth's 'General purpose classification' which will stifle mycological teaching if taken literally, as can already be seen in recently published mycological works. We must thank Dr. Kreisel for a valuable mycological contribution which will stimulate much needed discussion.

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* H. Kreisel, Grundzüge eines natürlichen Systems der Pilze, with 61 text figures and 8 plates, G. Fischer Verlag, Jena. Price £3·70; 1969.