

The discovery of new phenomena and the development of original concepts have presented problems of classification and nomenclature which did not exist twenty years ago. During the War isolated national groups, especially in Britain and the Netherlands, attempted to formulate principles of classification. At Scheveningen, J. M. Burgers presented a tentative report which he and G. W. Scott-Blair had been asked by the International Joint Committee to prepare. Following criticism and discussion, a second edition was completed in March 1949 and is included as an appendix to the Proceedings.

Agreement on such matters cannot be forced and can only come by a slow process of assimilation and development. The report covers only a limited part of the field of rheology, but it is hoped that it may serve as a basis for future discussion and extension.

With regard to the production of the book, the publishers and the organising committee are to be congratulated on having the Proceedings, including all the discussions, published within ten months of the Congress; and in gratitude for this one can afford to ignore the excessive weight associated with the mimeograph type (offset printing) and the not very effective binding. It might, perhaps, have been better to have rearranged the papers by subjects, rather than to have kept the original lectures and sectional papers separate. For example, K. Weissenberg's general lecture, his paper (with S. M. Freeman) in the Theoretical Section, and his description of the rheogoniometer in the Experimental Section, though rightly separated at the Congress, would read better as a whole; and the pairs of biological and psychophysical papers could also profitably have followed one another in the published Proceedings.

In spite of the high price this is a book which should be on the shelves of every rheologist. It is sincerely hoped that it will prove to be the first of a series, and that world conditions will permit later Congresses to represent even more completely the progress of rheology throughout the world.

G. W. SCOTT-BLAIR

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CORRELATION OF NON-MEASURABLE VARIABLES

Rank Correlation Methods

By Maurice G. Kendall. Pp. vii + 160. (London: Charles Griffin and Co., Ltd., 1948.) 18s. net.

IT was in experimental psychology that the methods of rank correlation were first introduced, and Spearman's coefficient ρ has been familiar to statisticians for many years. More recent work on the same lines has produced an alternative coefficient τ (by Kendall) and a general coefficient (by Daniels) of which the above two, and even the familiar product moment coefficient, are particular cases. It is still, for the most part, psychological workers who are interested in this branch of statistics, since many of their observational variables are non-measurable. This has stimulated research in what has proved to be a somewhat difficult mathematical field; and in the book under review Prof. M. G. Kendall has gathered together what is known on the subject, and has given a coherent mathematical treatment to it all. With the growth of mathematical statistics, it seems inevitable that books should begin to be issued on specific topics within the general framework, and

this book is to be welcomed as a worthy addition to such a series.

Beginning with a study of the measurement of rank correlation, the author then introduces a general theory of rank correlation in the straightforward cases and adds a chapter on tied ranks to deal with a difficulty previously disregarded. In the next section the necessary tests of significance are developed. The further topics taken are (a) the problem of m rankings, (b) partial rank correlation, (c) relationship of rank and normal correlations, and (d) paired comparisons. The somewhat novel course is followed of 'inter-leaving' the above topics from 'tests of significance' onward (with the exception of 'partial rank correlation') with separate chapters giving proofs of the results. The idea is not to disturb the continuity of the treatment in the case of those interested only in the applications of the theory by expecting them to study the mathematical details; at the same time, for the benefit of the more mathematically inclined, the full proofs are presented. In the past, text-books on method have either left out the proofs or relegated these to appendixes. The present format is equivalent to putting a series of appendixes at the end of the different chapters, except that they are here numbered as separate chapters. It is really a distinction without a difference, and no one can seriously quarrel with the method. The fate that often attends mathematical proofs relegated to appendixes is that they are not read.

A commendable attempt has been made to formalize the theory, and so put it on a par with other coefficients of statistical theory. It is very unlikely that the last word has yet been said, and undoubtedly there are still difficulties to face. The subject is a live one, however; and for those who wish to go on with it, or to use the best-known methods, the present book will be exceedingly valuable as avoiding on one hand the painstaking business of reading up from scattered publications all that has previously been written on the subject, and on the other as presenting clearly the methods to be followed, with a wealth of illustrative material.

The book concludes with an appendix of some ten sets of mathematical tables (some of them reproduced standard statistical tables) in order to present within the covers of the volume all the tabulated material needed to aid the computations.

JOHN WISHART

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FUNGI FOR INDIAN STUDENTS

Fungi and Plant Disease

By Dr. B. B. Mundkur. Pp. x+246. (London: Macmillan and Co., Ltd., 1949.) 16s. net.

IT is gratifying to find yet another teaching mycologist turning to the work of the late Sir Edwin J. Butler for help and inspiration. In this book, Dr. B. B. Mundkur has undertaken to write on "Fungi and Plant Disease" for students pursuing agricultural or cognate courses in various colleges in India. The author, in his preface, pays high tribute to the pioneer of mycological teaching in India, when he acknowledges his indebtedness to Sir Edwin Butler and to his book, "Fungi and Disease in Plants", published in Calcutta more than thirty years ago. The author of this new work is to be highly congratulated for getting so much information about fungi into a book of comparatively smaller compass.