Book Reviews

Gaul, W., Schader, M. (Eds.): Classification as a Tool of Research. Proceedings of the 9th Annual Meeting of the Classification Society (F.R.G.) University of Karlsruhe, F.R.G., 26–28 June, 1985. Amsterdam: North-Holland 1986. XIII, 502p. – ISBN 0-444-87980-3.

This volume features papers presented at the 9th Annual Meeting of the German Classification Society which was held at Karlsruhe in 1985. The volume consists of 56 papers which are a subset of the 98 invited and contributed papers presented at the meeting. As the editors point out, the papers are often difficult to categorize (an embarrassing admission for experts in classification) and they present them alphabetically by author. It is obviously impossible to even list, not to mention, summarize and evaluate, the large number of contributions in this volume within the limited framework of a book review. For this reason I shall content myself with an general overview of the topics covered. The general distribution of topics is quite similar to that held at recent meetings of the Classification Society of North America, the largest component member of the International Federation of Classification Societies. With one exception to be noted below, this indicates that European and especially German scientists have now fully caught up with advances made by their American colleagues in the 1960's and 70's. There is very little evidence of a lag of information transfer between the various national groups such as was evident in the proceedings of the earliest meetings of the German Classification Society. In fact, what was at one time a largely British and American area of research has in recent years been appreciably enriched by contributions first from France and now from Germany. It is to be hoped that this internationalization of work in the science of classification will continue, aided by the newly founded International Federation of Classification Societies. Symptomatic of the current flow of ideas is the large number of participants from outside Germany who contributed to the meeting and the volume.

Of the 56 papers in the volume, 10 deal with multivariate statistics in the wide sense including analysis of contingency tables. They are perhaps of marginal interest to classification and could as well have been presented as a data analysis or statistics conference. A large portion (16) of the papers is devoted to various aspects of ordination, such as factor analysis, non-metric multidimensional scaling and the like. This is typical of recent trends in classification research although purists might object to ordination being considered an aspect of classification. But the large interplay between clustering and ordination methods in diverse applications of taxonomy as well as the growing number of hybrid approaches, effectively mandate the inclusion of ordination as a tool in classification. Eighteen papers in all treat aspects of cluster analysis but of these fewer than might be expected deal with topics that are currently quite ac-

tive in North American classificatory research. Only two papers deal with matrix comparison techniques, two with optimality criteria and two with proximity measures. The continuing difficulty of finding methods for significance tests of clusters is witnessed by a single paper on the subject. A further 7 papers deal with the theory of classification; most are devoted to the interesting new ideas on concept analysis and representation developed by R. Wille at the Technical University of Darmstadt. Finally, 3 studies are concerned with computer implementation of various methods.

The quality of the contributions varies, as is customary in a volume such as this. In addition to the concept analysis papers I found the following contributions of considerable interest: one by de Leeuw and Meulman relating principal components analysis and multidimensional scaling, one by Herden on developing optimality criteria using measures of mean heterogeneity of a classification, and one by Molliere on determing the real number of clusters. Wishart's suggestions for dealing with messy data (missing values and mixed variables) constitute a useful review.

The book which has been offset from typed and wordprocessed copy suffers in appearance because of the great variety of typefaces employed. One contributor even prepared his manuscript on a dot matrix printer. There is no index.

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MILLS, J., BROUGHTON, Vanda: **Bliss Bibliographic Classification. Second Edition: Class K, Society.** London, GB: Butterworths 1984. 167p.
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Users of the Bliss Classification scarcely need to be told about its sophisticated and flexible faceted arrangement, and readers familiar with the earlier volumes in the second edition do not need information about its inverted schedules - how the classes are cited in an order that reverses the sequence in which they are filed. Similarly, arrays within a facet are cited inversely to their filing order. The notation scheme uses a fascinating alphanumeric notation that is said to be purely ordinal, but in fact also contains expressive hierarchic aspects. The mixed notation permits the more frequently used classes to have simpler notations even when they are low in a hierarchy. The book is beautifully edited and its contents are desplayed in a user-friendly way, with clear headings, an index, and a carefully written 25 page introduction.

These properties are shared throughout the Classification and will therefore be familiar to users of its earlier volumes. What is distinctive about this volume, therefore, is its treatment of "Society" as a class. Those who have used the first edition will also be interested in the changes made in this one. Perhaps most importantly, it reflects a shift in focus from "Sociology" as a *discipline* to "Society" as a *phenomenon*. This means that some categories