
 Book review

Felsenstein, J. (ed.): Numerical Taxonomy. NATO ASI Series, Series G: Ecological Sciences. Berlin, Heidelberg, New York, Tokyo: Springer 1983. X + 644 pp., several figs and tabs. Hard bound DM 149,-.

If numerical taxonomy is defined as the use of statistical or other mathematical methods in the construction of classifications, the title of this sturdy volume is only part of the truth. It contains the more or less shortened texts of 71 papers presented at a NATO sponsored symposium, July 1982, at Bad Windsheim. Most of them, the contributed papers, were limited to 5 pages of print. In my opinion they could for the greater part have been omitted without any harm to readers and science: many are too short to be really informative except to the well-initiated. The most useful part of the volume are the ca. 20 more substantial papers which were editorially limited to 20 pages.

As already mentioned, they cover more than numerical methods in taxonomy and actually several papers contain general discussions on the theory of systematics, phylogeny as well as classification. Cladistics, and more generally the three "schools" of systematics, as they are nowadays recognized by several authors (evolutionary, phylogenetic, phenetic systematics), come surfacing repeatedly, generally in objective language and without undue fanaticism.

The editor arranged the papers in nine sections. "Approaches to classification" contains papers by Cracraft and by Sneath, both general considerations on methods in systematics. "Taxonomic congruence" does not contain any long paper but only 12 short ones. The comparison of classifications arrived at by different techniques is an interesting topic, the brief discussion in the paper by Crisci I found the most generally enlightening one. "Clustering and ordination", the most numerical section of all, has several longer papers. The one by Gower on comparing classifications might better have

been included in the foregoing category. The only non-English paper in the more than 600 pages, a French one, is in this section (Lerman).

The next section is headed "Reconstructing phylogenies" and contains some interesting large papers (Colless, Estabrook, Felsenstein). In the small section "Analyzing morphological variation" Atchley and Hubac wrote the two larger papers on morphometrics. "Geographic variation" is covered by 8 papers, of which those by Sokal on geographic variation analysis, Thorpe on the numerical analysis of racial differentiation, and Endler on the interrelation between history and current ecology as causes of geographical variation, appear to me to be of the most general interest.

"Biochemical applications" consists of six small contributions giving specific examples of the application of numerical methods using chemical characters. A large number of, mostly small, papers come under the heading "General applications". Most of the papers are reports on specific numerical research on specific groups and probably they will all be published more fully elsewhere. Only Legendre (ecological data) and Schnell and Woods (behaviour) produced large papers of a more general contents.

The last section is "Computers in systematics", only 4 papers of which I found the very clear, simple, "basic" one by Felsenstein an attractive contribution. Although it will not give any news to experienced numerical taxonomists, it will do so for novices.

The book is obviously produced from camera-ready copy delivered by the speakers. This implies that the reader is confronted with a good many different typewriters and word-processors. The alternative would undoubtedly have caused a doubling of the price.

C. Kalkman, Leiden