Book Review

***Bergey's Manual of Systematic Bacteriology, Volume 1.* Edited by Noel R. Krieg. The Williams & Wilkins Co., Baltimore, 1984, 964 pp. \$80.00.**

With a change in title, the ninth edition of the familiar *Bergey's Manual of Determinative Bacteriology* now becomes the first edition of *Bergey's Manual of Systematic Bacteriology*. Noel R. Krieg serves as editor of the first volume and John G. Holt will serve as the editor-in-chief of the series along with a distinguished editorial board (Chairman, R. G. E. Murray). Volume 1 presents material relating to the gram-negative bacteria of general, medical, or industrial importance, including four divisions (*Gracilicutes*, *Fermicutes* [sic], *Tenericutes*, and *Mendosicutes*) of the kingdom Procaryotae Murray 1968. Three other volumes to be published later will include material for (i) gram-positive organisms other than the actinomycetes, (ii) the archaeobacteria, cyanobacteria, and remaining gram-negative bacteria, and (iii) the actinomycetes. This will permit users to purchase only the volume(s) of interest. Also planned is a future volume similar to the present Shorter *Bergey's Manual*.

As the table of contents of this volume reveals, the material includes systematic material relating to organisms grouped in the following sections:

(i) the spirochetes; (ii) aerobic/microaerophilic, motile, helical/vibroid, gram-negative bacteria; (iii) nonmotile (or rarely motile), gram-negative, curved bacteria; (iv) gram-negative, aerobic rods and cocci; (v) facultatively anaerobic, gram-negative rods; (vi) anaerobic, gram-negative, straight, curved, and helical rods; (vii), dissimilatory sulfate- or sulfur-reducing bacteria; (viii) anaerobic, gram-negative cocci; (ix) rickettsias and chlamydias; (x) the mycoplasmas; and (xi) endosymbionts

In addition to the preface to the volume, the preface to the first edition of *Bergey's Manual of Determinative Bacteriology* is reproduced, together with a short history of the *Manual*. Of prime importance to most users is the series of review essays. Five of these are on bacterial classification, as follows: (i) Classification of Procaryotic Organisms: An Overview (James T. Staley and Noel R. Krieg); (ii) Numerical Taxonomy (Peter H. A. Sneath); (iii) Nucleic Acids in Bacterial Classification (John L. Johnson); (iv) Genetic Methods (Dorothy Jones); and (v) Serology and Chemotaxonomy (Dorothy Jones and Noel R. Krieg). Other essays include Bacterial Nomenclature (Peter H. A. Sneath); Identification of Bacteria (Noel R. Krieg); Numerical Identification (Peter H. A. Sneath); Reference Collections of Bacteria—The Need and Requirements for Type Strains

(N. E. Gibbons, with revision by Peter H. A. Sneath and Stephen P. Lapage); The Higher Taxa, or, A Place for Everything . . . ? (R. G. E. Murray); and an abbreviated list of culture collections. Mention should also be made of the inclusion, in addition to the text and tabular materials, of many excellent photographs (cells, sections of cells, colonies, etc.).

For each taxonomic group there is a prefatory paragraph containing descriptive material (with important characters in bold-face type); this is usually followed by paragraphs on further descriptive information, enrichment and isolation procedures, maintenance procedures, procedures for testing for special characters, taxonomic comments, and often further reading. Reference citations in the descriptive material are included in the valuable comprehensive bibliography. Tables are frequently included to present characteristics of a particular species or differential characters of related species or to separate related taxa.

Probably some users will need to refer to the good and complete Index to Scientific Names of Bacteria to locate material for a species of interest within the volume, unless the user has kept up to date with changes in generic assignment of species.

Volume 1 (and I am certain that this will be true of the future volumes in this series) most certainly should be in all libraries of biology, especially those serving general, medical, and industrial microbiologists. Individuals with taxonomic interest or frequent problems or both will need (and should have) a personal copy. The double column format and page size that is now used for all journals published by the American Society for Microbiology allow presentation of an enormous quantity of material in this volume, and thus it represents a publishing bargain. It can be predicted with confidence that this most valuable compilation will remain the primary resource for systematic bacteriology for years to come. The editor and publisher should be commended not only for the material assembled but also for the clear type faces used and the lack of typographical errors. Many long hours must have been spent in proofing the material in this volume, which will be the systematic "Bible" for those concerned with the organisms discussed. Other workers will eagerly await the appearance of the remaining volumes of the series.

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