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NEW BOOKS SIGNIFICANT IN
SYSTEMATIC BACTERIOLOGY

Identification Methods for Microbiologists, Part A.

Edited by B. M. Gibbs and F. A. Skinner

Author Index, Subject Index. \$6.00

Academic Press, London-New York

Dr. Joan Taylor (President of the Society for Applied Bacteriology, sponsor of this volume) states: "The Society for Applied Bacteriology decided some years ago to hold a meeting devoted to the demonstration and discussion of techniques used in the bacteriological laboratory." This volume is the first of a series to be devoted to evaluation by experts of methods of use in the microbiological laboratory and in general in taxonomy. Of the 29 contributors, 28 are from British laboratories and 1 from Missouri. The authors are competent; several treatments are exceptionally adequate. After rather careful perusal one may well agree with Dr. Taylor in her statement: "Microorganisms, like people, usually behave in a proper manner when examined in a reasonable way."

Many of the chapters include classification of taxa that constitute significant contributions to systematic bacteriology. These will be noted.

Hendrie outlines a dichotomous key to Acetomonas, Pseudomonas, Zymomonas, Aeromonas, Vibrio, Caulobacter and Protaminobacter, with eleven differentiable groups of species recognized in Pseudomonas.

Hayward characterizes the genus Xanthomonas with suggestions of techniques for identification on the level of species.

Sneath delineates the genus Chromobacterium with recognition of two species.

Carpenter, Lapage and Steel briefly define the family Enterobacteriaceae and tabulate the differentiation of the genera Shigella, Escherichia, Arizona, Citrobacter, Klebsiella, Hafnia and Enterobacter. There are several useful tables for identification of the more important species.

Morgan and Gower give a detailed description of the recognized species of Brucella.

Barnes, Impey and Goldberg characterize as members of the family Bacteroidaceae two species of Fusobacterium, one of Sphaerophorus and one of Bacteroides.

Baird-Parker recognizes two species in the genus Staphylococcus, i.e., S. aureus and S. epidermidis, with five groups distinguished in the latter species. Eight subgroups in the genus Micrococcus are characterized.

Sharpe, Fryer and Smith detail techniques for the differentiation of species within the genera Streptococcus, Leuconostoc, Pediococcus and Lactobacillus. A well-selected list of references is included.

Batty and Walker review the characteristics useful in recognition of eleven species of Clostridium. The ten plates with forty photographs (one in color) illustrate the emphasis laid upon techniques for anaerobic surface cultures.

Cann, Hobbs and Shewan stress the value of extensive analysis in the classification of species in the genus Mycobacterium.

Cross and MacIver outline and illustrate the characteristics that should be recognized in any attempt to classify the species and infrasubspecific forms of the genus Streptomyces.

Clarke and Steel outline satisfactory tests for determination of the activity of esterase, β -galactosidase, tryptophanase, and amino acid oxidase, and of acetoin production (Voges-Proskauer reaction) and acid production from sugars.

Goodfellow and Gray discuss the technique of multipoint inoculation methods where large numbers of tests are made simultaneously.

A second "automatic multipoint inoculation for plate cultures" is illustrated by Wagg, Jeffries and Price.

Olds illustrates automation for quick bacterial identification in diagnostic laboratories serving medicine and veterinary medicine.

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Systematik der Streptomyceten unter besonderer Berücksichtigung der von ihnen gebildeten Antibiotica.

(Bibliotheca Microbiologica, Fasc. 6) by Ralf Hütter.

S. Karger, AG. Basel and New York. 328 pp. + 38 fig.
D.M. 98. 1967.

An unusually complete compendium of information concerning the present status of our knowledge of the bacteria belonging to the order Actinomycetales. While keyed primarily to the genus Streptomyces (of special economic significance), the treatment is sufficiently comprehensive to make the treatise of value to students of any of the genera recognized in the family.

Ettlinger's species concept in the genus Streptomyces is outlined in detail in Chapter 2 as constituting the basis for species recognition. Emphasis is laid on morphology of the spores, color of aerial mycelium, morphology of aerial mycelium, and chromogenesis. Additional characters to be noted are: presence of a soluble pigment, antibiotic activity, color of vegetative mycelium, carbon source spectra and physiological characters. A dichotomous key is included to the species recognized.

There are 48 names of species in Chapter 1 not found in Chapter 2, and 9 in Chapter 2 not in Chapter 1. There follows a brief description of each of the 33 species named in the key.

The type species of the genus Streptomyces, S. albus (Rossi-Doria emend. Krainsky) Waksman and Henrici is discussed in detail, together with careful discussions of synonymy, antibiotic production and nomina dubia (more than 80) in Chapter 4.

The remaining five chapters are devoted to a rather rigorous analysis of the species respectively designated as having (V) prasinus or azureus-glaucus aerial mycelium (VI); the streptomycetes producing whorls (VI); those with cinna-momeus aerial mycelium (VII); those with griseus mycelium (VIII) and those with niveus or cinereus aerial mycelium (IX).

The assemblage and organization of the data included was an herculean task. The ultimate consensus as to the taxonomy of Streptomyces will be much facilitated as a result of the publication.

It would require many days to assess the occurrence of errors in so complex a treatise. The reviewer finds relatively few. There are some instances in which ternary combinations designated by their authors as varieties are treated as names of species, as on p. 241 (Actinomyces longisporus griseus is recognized as a species name though designated as a subspecies by the author Krasil'nikov).

Gauze (1957) edited a publication entitled "Problems in the Classification of Antagonistic Actinomycetes," containing separate contributions by five authors. For example, Actinomyces globitriticini is attributed to Gauze et al. instead of to the authors Preobrazhenskaya and Sveshnikova. In some cases the designation nov. spec. is affixed to a species, as in the carry-over of Streptomyces prasinus described by Ettlinger, Corbex and Hütter 1958.

The treatise is encyclopedia in the minuscule world of the Streptomycetes. It should help in the solution of many of the nomenclatural problems of the streptomycetologist.

- R. E. Buchanan