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.

Much of the content of the volume is based upon a series of 10 publications by the author and collaborators under the collective title "Zur Systematik der Actinomyceten." In the preface there are listed the names and addresses of 20 culture collections in 11 countries to which reference is made in the text.

The language throughout is clear and straightforward. The amount of detail would be almost overwhelming to the user were it not for its logical arrangement and a series of indices to the names of "Genera and Species" (12 pages with approximately 1,000 entries) and an "Index of Antibiotics" (8 pages with approximately 800 entries).

The Foreword and each of the nine chapters have individual lists of references headed "Literature." The total of 114 pages includes at least 2300 items. Noteworthy is the long list of Japanese references.

The volume includes a "Vorbemerkung" and 9 chapters, each worthy of review.

Chapter 1 notes the characteristics of the actinomycetes which definitely align them with the bacteria rather than with the fungi. A dichotomous key is given to the 3 families and 16 genera recognized. The genera Actinopycnidium Krasil'nikov 1962, Actinosporangium Krasil'nikov and Yuang Chiseng 1961, Chainia Thirumalacher 1955, and Streptoverticillium Baldacci 1958 are placed in the genus Streptomyces Waksman and Henrici, as are the thermophilic genera Thermopolyspora Henssen 1957, Thermoactinomyces Tsiklinsky 1899, and Thermomonospora Henssen 1957.

Speciation in the genus Streptomyces Waksman and Henrici is considered in Chapter 2. The characteristics recognized as significant in species differentiation are enumerated, with emphasis upon type of sporulation and spore morphology. A dichotomous key is given to the 41 species recognized on this basis. This is followed by a succinct description of each species in alphabetic order.

All species are binary combinations, with author and reference cited. In each case the type or neotype strain is indicated under the designation Typus (Holotypus) or Typus (Neotypus). This is followed by a brief characterization of not more than ten lines. At the close is a notation giving the page or pages on which a further discussion of the status of the name is given.

The discussions referred to are quite pertinent, usually indicating the strains studied and giving reasons for species recognition.

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