

sive treatment of thermal energy exchanges between the organism and its environment.

The physiological variables of heat loss, metabolism, growth, endocrine responses, behavioral responses, and temperature changes of the animal are discussed, in some instances, in considerable detail, and the book will therefore be of interest to environmental and comparative physiologists. To a lesser degree it is of interest to those who are concerned with the effects of climate on the economics of the production of pigs as a source of food. Matters not central to this theme appear to have been drawn from limited sources. This has resulted in the omission of important contributions that would have been more useful in making the author's points than some of those selected. For instance, temperature and humidity gradients over an ice-skating rink are referred to, but no mention is made of detailed work in the literature dealing with similar gradients in the Arctic and Subarctic as related to the ecology of both above- and below-ground animals. In addition, this noncomprehensive treatment of subjects not central to climatic physiology has resulted in general statements which may be criticized. The book demonstrates clearly that the author has a great deal of expertise on the measurable responses of pigs to climatic variables, but some of his treatment of comparative physiology lacks depth, an example being the cursory treatment of the calorogenic response to norepinephrine and epinephrine and its relationship to non-shivering thermogenesis.

The book is a useful compilation of existing data on the responses of the pig to climate. Although the author points out that the work is not comprehensive and exhaustive, it appears to be so for the available climatic information on the pig, though not for subjects ancillary to this main theme.

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## Microbiology

**Les Bactéries Anaérobies.** A. R. PRÉVOT, A. TURPIN, and P. KAISER. Dunod, Paris, 1966. xxiv + 2188 pp., illus. \$74.75.

At long intervals, in almost every field, a book is written that organizes and summarizes the accumulated knowl-

edge so completely and clearly that understanding of the field attains a new level. Such, in anaerobic microbiology, was *Les Microbes Anaérobies* by Weinberg, Nativelle, and Prévot in 1937. Such, 30 years later, is *Les Bactéries Anaérobies*. Representing, as it does, 45 years of work by Prévot at the Institut Pasteur in Paris, this book brings together most of what is known about the anaerobic bacteria by a man who knows them well. *Les Bactéries Anaérobies* is concerned primarily with the individual species of anaerobes. The first 67 pages cover the general topics of anaerobiosis, anaerobic bacteria in nature, the possibility of utilizing anaerobes in industry, and the evolution of their classification. The remaining 2100 pages deal with the characteristics of the individual species—215 species of spore-forming and 307 species of non-spore-forming bacteria, divided into 51 genera in 19 families. Where sufficient information is available, each organism is discussed under the headings Synonyms, History, Habitat, Morphology, Physiology, Cultural Characteristics, Biochemical Characteristics, and Pathogenic Properties. Many of the species have been studied in Prévot's laboratory, and the information presented is based on his observations. Also, a selected bibliography is given. For references before 1937 the reader is directed to *Les Microbes Anaérobies*.

The schematic organization of the book is based on Prévot's classification of the anaerobic bacteria, the only unified systematic treatment of all the anaerobic bacteria as yet advanced, but one that is not universally accepted, particularly by British and American anaerobists. It does serve as a satisfactory framework for presenting the information that has here been compiled. Indeed, Prévot's scheme of classification, as outlined in the table of contents, is the only key to *Les Bactéries Anaérobies*, for there is no index. Most microbiologists will find it convenient to have side by side with this book Prévot's *Manual for the Classification and Determination of the Anaerobic Bacteria*, translated by Fredette (Lea and Febiger, 1966), for the latter book is indexed and provides summary descriptions of the bacteria that are covered much more thoroughly in *Les Bactéries Anaérobies*.

The large number of species listed in this book is a disadvantage. Few microbiologists working with the anaerobic bacteria would accept as clearly

distinguishable the more than 500 species given here, nor would they approve the characteristics used to distinguish among some species and some genera. Admittedly, however, it would be difficult to find any two anaerobists who would agree entirely on the number of species of anaerobes that should be recognized. This disagreement is not entirely a matter of different concepts of the definition of a species; it also reflects a lack of information as to the variation allowable within a species. Fortunately, *Les Bactéries Anaérobies* provides a baseline from which we can work to resolve some of these difficulties. It makes evident what information will be needed to determine the identity or nonidentity of various species as well as shows what information is now at hand. It also indicates on what species critical work is most urgently needed. Although one may not agree with Prévot regarding all the species he lists, one cannot help considering *Les Bactéries Anaérobies* an outstanding work on the anaerobic bacteria, a reference book essential for any laboratory working extensively with these organisms.

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## Solids and Liquids

**Theory of Condensed Matter.** Lectures presented at an international course, International Centre for Theoretical Physics, Trieste, 1967. F. Bassani, G. Caglioti, and J. Ziman, Directors. International Atomic Energy Agency, Vienna, 1968. xiii + 1020 pp., illus. \$20.

There exists an understandable inverse relationship between the molecular complexity of a condensed system and the degree to which it is "understood" in a physicomathematical sense. This book stands closer to the mathematical extreme. Except for a few sections on neutron scattering methods and one on the phenomenological theory of superconductivity, it is concerned with modern mathematical methods in the theory of solids and simple liquids. Thorough coverage is afforded to Green's function techniques for electron and phonon states, to recent but more conventional techniques for electron and phonon dynamics, and to statistical methods for the theory of phase transitions, particularly those of magnetism. Discussions of the band