interested in the cytological background to the interplay of cytology and biochemistry.

This work is more valuable, of course, in those areas that have tended to be neglected in recent years. For example, more than 30 pages (including 15 pages of tables!) are devoted to summarizing the results of attempts to stain nuclei vitally. A really successful solution of this problem would be a great asset, and such a conscientious summary of past experience is invaluable. Similarly, workers on cell division will appreciate the 5 pages of tables detailing the duration of various mitotic phases in a wide variety of materials.

The weakest aspect of Milovidov's book is the treatment of its stated subject—the physics and chemistry of the nucleus. Three hundred-odd pages are devoted to physics, some 60 to chemistry. What is reflected is the dominant fashion of a period in which it was felt that special merit attached to the assignment of a numerical value to any physical property of a biological system, however irrelevant to biological problems, and the restatement of visual observations in the language of the colloid chemistry of the time. A more recent book on the same subject would probably reverse the relative emphasis on chemical and physical aspects, and it is wholesome to wonder how this would appear in the same perspective.

Unfortunately, this volume lacks what would be a most valuable bibliography, whose publication is promised as part two of the complete monograph.

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Reviewed in Brief

The Physical Basis of Life. J. D. Bernal. London: Routledge and Kegan Paul, 1951. 80 pp. 6s.

One point not often dealt with in works concerning the origins of life is that of the genesis of organic compounds, especially those with a complexity comparable to that of proteins. Professor Bernal starts his monograph by outlining this problem and then considers some possible mechanisms in a frankly speculative but stimulating fashion. The title may be misleading because this work, a Guthrie lecture, deals almost entirely with the origins and early organization of biological processes. The discussion might be divided into the following sections: Possible ultraviolet photosyntheses, the rise of an organic molecule population, the initiation of living processes, the development of photosynthetic life, and, finally, some remarks on the organization of cellular processes. Throughout, the discussion is admirably annotated by N. W. Pirie.

The Structure and Mechanical Properties of Metals. Bruce Chalmers. New York: Wiley, 1951. 132 pp. $3.50.

This brief monograph, the second in a series on the structure and mechanical properties of metals, published under authority of the Royal Aeronautical Society, deals first with the structure of pure metals, using evidence from x-rays as well as heat treatment and etch figures. It then discusses the structure of alloys, making ample use of equilibrium diagrams and a brief outline of problems as they are encountered in disordered alloys and in diffusion.

Age hardening is illustrated in aluminum copper and copper beryllium. A chapter on the effect of the distortion of structure, using modern ideas about dislocations and surface arrangements, is followed by material on heat treatment, and this, in turn, is followed by a chapter on structure determination. The monograph closes with a discussion of the mechanical properties and their dependence on structure. The text is nonmathematical throughout and should be useful for engineering students and practical engineers as an introduction to the modern concepts of structure and metallic properties.

Selective Toxicity with Special Reference to Chemotherapy. Adrien Albert. New York: Wiley; London: Methuen, 1951. 228 pp. $1.75.

Biologists generally should find this little book an extremely useful guide to the physiological action of a variety of organic compounds. In many ways the volume complements the recent monograph of Danielli because, where Danielli deals largely with the theoretical aspects of cell pharmacology, this book approaches such problems from a practical or experimental viewpoint. The subject matter differs from a pharmacological review in that it presents information from the fields of microbial, insect, plant, and animal physiology. The fact that the author is able to relate the problem of selective toxicity to so widely separated groups of living organisms is most commendable.

The monograph starts with a consideration of a definition of selective toxicity and the feasibility of such an action. The complexity of the subject matter is such that probably an empirical approach, such as that adopted, is best at the present time. The chapter dealing with the physiological effects of hydrocarbons and other nonreactive substances is perhaps least satisfactory, because it is here that theory can best be applied. Viewed as a whole, however, the work is a most satisfactory contribution.

Scientific Book Register

Radiations from Radioactive Substances. Reissue. Sir Ernest Rutherford, James Chadwick, and C. D. Ellis. New York: Cambridge Univ. Press, 1951. 588 pp. $11.00.

Totem and Taboo. Some Points of Agreement between the Mental Lives of Savages and Neurotics. Sigmund Freud; authorized trans. by James Strachey. New York: Norton, 1952. 172 pp. $3.00.

The Chemistry and Technology of Food and Food Products, Vol. III, Rev. 2nd ed. Morris B. Jacobs, Ed. New York–London: Interscience, 1951. Pp. 1,773–2,580. $15.00.

Fundamentals of Automatic Control. G. H. Farrington. New York: Wiley, 1951. 285 pp. $5.00.