the light microscope after various pertinent staining procedures. It is not electron microscopy or morphology in the sense that it illustrates bacterial anatomy and fine structure, but rather a collection of photographs that show what one will see in the laboratory when the organisms are cultivated. Atlases of this type have been very popular in the past. Such an atlas, produced by Lehmann and Neumann in the early 1900's and translated by Breed in the 1930's, became the standard work on the subject in the United States. However, most of the figures in that atlas were produced from drawings, and the colored plates were not comparable to what the student would see in the laboratory. With the development of color photography and advances in color printing, one of the present authors produced a new atlas (1947). In the production of this volume, *Bacteriology Illustrated,* advances in the art of illustrative reproduction and some editing and condensation of the material have resulted in a volume that is more usable and not so unwieldy as its predecessor. The text is very brief but pertinent.

The volume is divided into three sections. The introduction (37 pp.) covers methods of staining, cultivation, and classification. The next section (69 pp.) consists of 3- to 5-page descriptions of 16 bacterial genera of medical importance (plus 3 pages on organisms closely related to bacteria); in each case, gross morphology, staining character (either in culture or in tissue, or both), the usefulness and results of biochemical tests, and animal inoculation are considered, and about three or four color photographs of the material discussed are provided. In the third section (30 pp.), on diagnostic methods, most of the illustrations are diagrams, not photographs. In fact, most textbooks are singularly lacking with respect to good photographs of colony form and individual stained cells, largely owing to the present tendency to use electron micrographs for illustration.

The present book fills a definite need. It is well done, and the illustrations (to be viewed in tungsten light) are well reproduced and well printed. Such volumes are expensive to produce.

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National Bureau of Standards Monograph

Ionospheric Radio Propagation. Kenneth Davies. U.S. Department of Commerce, Washington, D.C., 1965 (order from Superintendent of Documents, Washington, D.C.). xiv + 470 pp. Illus. $2.75.

The National Bureau of Standards has been for many years the most important organization in ionospheric research and radio propagation prediction, and its publications are well known throughout the world. *Ionospheric Radio Propagation,* written by Kenneth Davies with the cooperation of members of the NBS staff, is an authoritative and clearly written book that will take its place as the essential basic reference work in the field. It will also be widely used in teaching, although it does not contain problems. Especially attractive is the price, only $2.75 for the 470-page, hard-bound volume with an attractive blue cover.

The volume is intended to replace *NBS Circular 462,* which has been widely used as a basic ionospheric propagation reference in the past. In comparison with the *Circular,* the present volume includes more coverage of electron production processes, the geomagnetic field, magnetoionic theory, and oblique propagation, and less coverage of frequency prediction and atmospheric noise, since they are covered in other publications. Other topics include a general description of the ionosphere and of the sun, theories of wave propagation, synoptic studies of the ionosphere, signal strength, ionospheric disturbances, scatter propagation on very-high frequencies, and propagation at low and very-low frequencies.

Ionospheric Radio Propagation is intended for research workers and communications engineers who have some background knowledge of radio propagation via the ionosphere, but the coverage is more descriptive than mathematical, and a great deal of hard information is included. The material is taken primarily from the published literature, but lecture notes from a course in radio propagation, which was given at NBS in 1961 and 1962, have also been drawn on. The book contains many useful tables and charts, such as the ARDC model atmosphere, photoionization data, world maps of the geomagnetic field, and sunspot activity curves; also included are the basic equations describing wave behavior in ionized media, meteor echo properties, sounding techniques, and the like. Perhaps the easiest aspect of this excellent volume to fault is the index. A greater use of subentries would have been helpful. For example, there is only one entry for the F2 layer, and it is followed by a list of 51 page numbers.

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Contemporary Biology

The Biology of Cells. Herbert Stern and David L. Nanney. Wiley, New York, 1965. xii + 548 pp. Illus. $7.95.

The Biology of Organisms. William H. Telfer and Donald Kennedy. Wiley, New York, 1965. xiv + 374 pp. Illus. $6.95.

These two volumes fill a place between the standard inclusive textbooks and the innumerable specialized paperbacks, and they do it extremely well. Their professed intent is to present contemporary biological science and to do so on a level that will challenge the interest of the better-prepared students now entering our colleges. With these books in hand, no student will have any doubt that he is experiencing instruction on a much deeper level than he found in his AIBS–BSCS courses. The material is clear, readable, and up-to-date. Both volumes are selective and, although one might occasionally wish that some other selection had been made, the choices are good choices. Moreover, it is important to remember that those old texts of the 1920's and the 1930's were also selective. The Opisthobranchs, for example, a remarkable group of mollusks with much to teach, were usually not even mentioned.

Both volumes pay some attention to the fact that science itself is a growing thing with a past and, we hope, a future. No student will find them such a thin slice of the contemporaneous that he is left holding a brittle if brilliant piece of veneer.

The authors of the volume on or-