

alongside *Biology of Microorganisms* in our school library.

Stuart D. Schnell
Mark Keppel High School
Alhambra, Calif.

MICROBIOLOGICAL APPLICATIONS, by Harold J. Benson. 2nd ed., 1972. William C. Brown Co., Dubuque, Iowa. 1973. 368 p. Price not given.

The intended use for this laboratory manual is in an introductory college course in general microbiology; however, many of the exercises, if not all, could be incorporated into an advanced curriculum in high school. The subject matter is presented in an understanding manner. The pictures and drawing aids would be extremely helpful to the beginning student. The author has compiled one of the most complete microbiologic manuals known to this reviewer. So complete is the manual it could substitute for a textbook. The chapter on microscopy is exceptional. Many new microbiologic techniques are included in this revised manual; for example, fluorochrome acid-fast staining and exercises with L-form and photosynthetic bacteria. The manual is also recommended as an instructional guide for biology instructors who wish to include selected exercises in microbiology in their general-biology courses.

William G. Barnes
Kansas City (Mo.)
School of Medicine

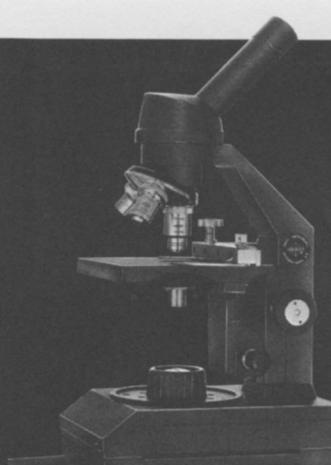
Molecular Biology

SUBCELLULAR COMPONENTS: PREPARATION AND FRACTIONATION, by G. D. Birnie. 2nd ed., 1972. University Park Press, Baltimore. 328 p. \$17.50 (hardback).

Much of the rapid progress in molecular biology and biochemistry is owing to the development of methods for the isolation of components of the cell with minimal damage to them and with a high degree of purity. This textbook is a compilation of some of the better methods. Enough detail is provided to make the book directly useful as a laboratory manual. The contributors have done an excellent job of critically surveying the many published methods and selecting those that provide the best preparations. In their assessments, they usually include documentation of the properties of the fractions obtained. The crucial first step in the preparation of subcellular parts is to disrupt ("crack open") the cell to release its contents. Simple methods available to most laboratories either are not gentle enough or else disrupt only a few of the cells; so only pressure homogenization is considered in detail. Additional chapters consider methods for the isolation of nuclei; biochemical properties of nuclei fractionated by zonal centrifugation;

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and the preparation of mitochondria, lysosome-rich fractions, plasma membrane fragments, brush borders of mammalian intestine, microsomal and submicrosomal fractions, and animal polysomes and ribosomes. The final three chapters are concerned with the separation of polysomes, ribosomes, and ribosomal units by zonal centrifugation, isolation and fractionation of RNA, and isopycnic centrifugation of DNA (formerly termed density-gradient centrifugation to equilibrium).

The writers recognize that the preparation of the same cellular component from different organs or different species frequently requires vastly different techniques; so, when possible, these

differences are discussed. The book is well written and is remarkably free of errors. Charts are used to outline methods in adequate detail.

The book is recommended to biochemists, molecular biologists, and their students. The book is not overpriced, in view of the wealth of information it contains.

Ralph H. Kathan
Cook County Hospital
Chicago

MOLECULAR BIOLOGY: AN INTRODUCTION TO CHEMICAL GENETICS, by J. M. Barry and E. M. Barry. 1973. Prentice-Hall, Inc., Englewood Cliffs, N.J. 144 p. \$4.95 softback, \$9.95 hardback.