Standardized, Precise Tool

Methods of Tissue Culture. Raymond C. Parker. Harper, New York, ed. 3, 1961. xv + 358 pp. $12.

The 11 years that have elapsed since the publication of the second edition of Parker's manual have witnessed a series of revolutionary changes in tissue culture techniques, which have produced a standardized tool of great precision. The third edition includes and admirably describes the new technology, including treatments of chemically defined media (chapter 6), the preparation of cell suspensions (chapter 8), monolayer culture (chapter 11), suspended-cell culture (chapter 12), cloning procedures and plating techniques (chapter 13), virological procedures (chapter 16), growth measurements (chapter 17), and frozen storage of cell lines (chapter 18). These innovations comprise the body of what may properly be called cell culture.

Although they have not received the general attention accorded the foregoing, several important modifications of older tissue and organ culture techniques have been developed within the last decade, and they have been incorporated into this edition. Among these are the use of reconstituted collagen in place of plasma clot (chapter 10), organ culture on liquid media (chapter 15), culturing on membrane filters (chapter 15), and "organ" culture of reaggregated dispersed cells (chapter 15). Those sections dealing with the logistic aspects of tissue culture (that is, cleaning, sterilizing, media preparation, and the like) have been considerably amended to conform to the recent improvements in these procedures.

The revision has been accomplished by judicious weeding out of obsolete methods, but obsolescence seems to have been judged primarily by whether or not a better method has been developed rather than by what is currently fashionable. Those investigators who have "found the spot" may find this objectionable, but it should be appreciated by those of us who are still searching. In its present edition, this book covers the widest range of techniques adaptable to the many questions which dictate examination in vitro. Any one investigator may have recourse to only a limited number of them today, but since one can never predict with certainty where the search will lead, it seems wise not to prematurely narrow the selection.

To create the impression that this is a mere "cookbook" would be a grave injustice to the potential reader. As in the previous editions, techniques are discussed with reference to their application and to the information that they have yielded, which, after all, is the proof of any pudding. Parker's long association with and achievements in this area eminently qualifies him for the role of "taster."

IRWIN R. KONIGSBERG
Department of Embryology, Carnegie Institution of Washington, Baltimore, Maryland

Journalism and Biology

The Ideas of Biology. John Tyler Bonner. Harper, New York, 1962. xi + 180 pp. Illus. $4.95.

The Ideas of Biology is not a textbook, according to the author's preface, but something else:

"The main purpose of textbooks is to present the facts in as simple and orderly a fashion as possible so that the student can learn them and keep them straight. The main purpose of this book is to assume this basic information and then to stand off as far as possible and see what it means. This is a book on the ideas rather than the facts of biology, although, of course, the ideas have the facts as their foundations."

The reader is thus led to expect a mode of analysis—philosophical?, methodological?—that has the power to endow the subject matter of biology with meanings not to be found in the pages of ordinary textbooks.

The six chapters of the book—self-evidently entitled "The cell," "Evolution," "Genetics," "Development," "Simple to complex," and "Man"—do not fulfill this expectation. The author engages in no special kind of analysis but merely *recounts*, in discursive and somewhat popular fashion, some areas of special interest to biologists. Only its greater generality or the absence of technical detail distinguishes the volume from the usual textbook, and the hinted-at extra dimension of meaning, if present, is undisplayed.

The style, as in all of John Bonner's books, is vivid, graceful, and clear. A few oddities are conspicuous, one example being the claim that development is synonymous with gene action, and another being the assertion that cells have been shown to be no more than bags of heterogeneous chemicals. But these and other slightly unveridical statements may be regarded as stylistic devices designed to lend emphasis or exuberance to the narrative, and they do not detract markedly from an otherwise skillful presentation.

The main body of the book is followed by excellent suggestions for further reading and by a glossary-index. The latter is generally satisfactory, but contains at least one logical circularity, because *antigen* is used to define *antibody* and then *antibody* is used to define *antigen*.

The author makes the reasonable claim that his book might be useful to students as supplementary reading during the latter half of a first-year biology course. But the advantages to be gained are probably not of the sort the author intended. The advantages are those that accrue to good journalism. The journalist of biology and the writer of biological textbooks, however, have aims that are similar: both present the facts in an order imposed by the explanatory ideas available, that is, both try to lead their readers to see what the basic information means by exposing them to a body of theory that accounts for it. Is there another way?

JOHN R. GREGG
Zoology Department, Duke University

A Matter of Approach

Integrated Basic Science. Stewart M. Brooks. Mosby, St. Louis, Mo., 1962. 507 pp. Illus. $7.85.

The novel feature of this superior book, which is devoted primarily to the biological sciences, is its presentation of concise summaries of basic physics, basic inorganic chemistry, and basic organic chemistry at the very start. Upon this foundation of the physical sciences, the author then erects a rich, up-to-date, and quite sophisticated exposition of biology, largely in the form of human physiology. Brooks is a lucid and scholarly writer; his exposition is clear, fluent, and compact, and his knowledge of the vast subject matter he covers is thorough and intimate. Whichever section of this encyclopedic survey of the physical and biological sciences is singled out, it will invariably be found to be well written, rich in content, and up to the latest in the field.