anabolism, although a brief account of the "history of foods in man" is included. Growth and reproduction are considered in separate chapters which, as presented, introduce some measure of confusion, since aspects of embryonic development and differentiation are discussed in both of these chapters rather than in one comprehensive and integrated account. The discussion, furthermore, is too often vague and, because of unwarranted oversimplification, inaccurate. Fifteen pages of the chapter on reproduction are devoted to an elementary consideration of Mendelian genetics. Chapter 8 is concerned with responsiveness; chapter 9 with adaptation; and chapter 10 with biology, evolution, and human affairs. The last three chapters are, like the preceding ones, survey chapters. There is a 20-page glossary and a 14-page index.

The author states that "this book constitutes a mild revolt against what appears to be an almost frantic race for volume and abundant description." But at least the good, large textbook is able to accomplish what has eluded Buffaloe —careful and detailed description to facilitate *understanding*.

CHARLES S. THORNTON
Department of Zoology,
Michigan State University, East Lansing

History, Production, Use

Steroid Drugs. Norman Applezweig. McGraw-Hill, New York, 1962. xv + 742 pp. Illus. $25.

It is an amazing pleasure to find that in a 700-page book, half filled with chemical formulas and tables, the other half is a series of delightful essays which are written so that any scientific person can understand most of them.

The author, a chemist, was involved in early developmental work on sources of steroid materials, and he writes entertainingly of the historical aspects, especially of the finding of useful precursors in Mexico. The second section, on production processes, is somewhat more technical, and the nonbotanist will have some difficulty in determining what plants are referred to. However, the streamlined descriptions of the routes from varied precursors to various steroid hormones, intermediates, and derivatives are invaluable. To the outsider these steroid genealogies have been immensely baffling, but in this text, and especially in the flow chart on pages 82 and 83 (from *Chemical Week*), the story is easy to trace.

The third section deals with the applications of steroids in drug therapy. The author points out that, with the introduction of prednisolone, the door of chemical manipulation was widely opened and that large numbers of derivatives as well as the natural substances are available for use in treatment. Some enhance previously known effects, some antagonize, some innovate. Applezweig says (with at least relative truth) that although an organism can exist without steroids or their glandular sources, it cannot exist successfully under these conditions; the available compounds allow several kinds of success. Five main classes of therapeutic steroids are considered in detail: androgens, estrogens, progestins, glucosteroids, and mineral corticoids. The rise of anabolic agents and the continued usefulness of steroid estrogens (particularly partly purified mixtures and the 3-methyl ether of ethinylestradiol) in the face of cheaper synthetics, such as diethylstilbestrol, are noted for the first classes. Progesterone is involved not only in female reproduction, but it is a source in the body for several other steroids; what is given to produce the progesterone effect may be diverted to other uses. Some of the newer progestins, such as the retroprogesterones and 6-α-, 17-α-derivatives, are potent and have strictly progestational effects. Others, like the 19-nor series, have additional effects that have led to their widespread use as antifertility agents. In his discussion of the glucocorticoids, the author visualizes their action in stress or inflammation as the provision of extra energy to combat the process by assisting in the transformation of protein to sugar. Therefore, one must expect to produce one disease (protein destruction) if he is to benefit another (inflammation). The final class, aldosterone, the natural salt retaining hormone, is somewhat like the orphan viruses—looking for a disease —but, in this case, one in which it can be turned to good advantage.

Then follow chapters on steroid pharmacology, stress, cancer, renal and cardiovascular diseases, atherosclerosis, and the like; the chapter on the ovarian cycle and reproduction will be particularly useful in orienting workers in other fields.

Finally, the latter half of the book is a mine of specific chemical information, which is arranged in tabular form. The biologically active steroids are grouped for naming on the basis of 15 different fundamental compounds (for example, prednisolone, prednisone, and cortisol), and they are classified and coded according to 21 types of action (for example, anabolic, androgenic, and activity on the circulatory system). Then the structural formulas of 1400 compounds are given—a unique and tremendously valuable list.

WINDSOR CUTTING
Laboratory of Experimental Therapeutics, Stanford University

New Books

Mathematics, Physical Sciences, and Engineering

Advanced Inorganic Chemistry. A comprehensive text. F. Albert Cotton and G. Wilkinson. Interscience (Wiley), New York, 1962. 974 pp. Illus. $14.50.

Aerodynamically Heated Structures. Proceedings of the conference held in July 1961. Peter E. Glaser, Ed. Prentice-Hall, Englewood Cliffs, N.J., 1962. 374 pp. Illus. $15.

The Aim and Structure of Physical Theory. Pierre Duhem. Atheneum, New York, 1962. 366 pp. Paper, $1.65.

Applied Geophysics, U.S.S.R. Nicholas Rast, Ed. Pergamon, New York, 1962. 429 pp. Illus. $15.

Basic Concepts of Physics. Arthur Beiser. Addison-Wesley, Reading, Mass., 1961. 351 pp. Illus. $7.75.

Bibliography and Index of Geology Exclusive of North America. vol. 25. Marie Siegrist, Mary C. Grier, and others. Geological Soc. of America, New York, 1962. 771 pp.

Block and Graft Copolymers. R. J. Ceresa. Butterworth, Washington, D.C., 1962. 212 pp. Illus. $7.50.

Calculus. vol. 2, *Calculus of Several Variables with Applications to Probability and Vector Analysis*. Tom M. Apostol. Blaisdell (Random House), New York, 1962. 540 pp. Illus.

Chemical Analysis. The working tools. vols. 1–3. C. R. N. Strouts, H. N. Wilson, and R. T. Parry-Jones, Eds. Oxford Univ. Press, New York, 1962. vol. 1, 483 pp.; vol. 2, 489 pp.; vol. 3, 280 pp. Illus. $23.55.

The Chemical Composition and Properties of Fuels for Jet Propulsion. Ya. M. Paushkin. Translated by William E. Jones. B. P. Mullins, Ed. Pergamon, New York, 1962. 480 pp. Illus. $15.

Cloud Physics and Cloud Seeding. Louis J. Battan. Doubleday, Garden City, N.Y., 1962. 156 pp. Illus. Paper, $0.95.

Experimental Physical Chemistry. Farrington Daniels, J. W. Williams, Paul Bender, Robert A. Alberty, and C. D. Cornwell. McGraw-Hill, New York, ed. 6, 1962. 640 pp. Illus. $7.95.