Finally, one is tempted to philosophize concerning the effect of leadership and organization on scientific productivity. Freedom to carry on activities, uninhibited by administrative formalities and restrictions, with provision of excellent assistance and facilities like those at Berlin and Heidelberg, and a supreme interest in the work being done were significant factors in developing the environment in which creative ability could so flourish.

CHARLES N. FREY

Standard Brands Incorporated

Vitamin Methods, Vol. 1. Paul György, Ed. New York: Academic Press, 1950. 571 pp. $10.00.

The first volume of the treatise on vitamin methods deals with the physical, chemical, and microbiological methods of vitamin assay. The presentation of material has been built around the methods employed for assay, rather than around the assays for a specific vitamin. This permits a discussion of principles involved for each type of assay, which is followed by a discussion of variations in technique for the individual vitamins. Most techniques are given in sufficient detail to be used without consulting additional reference sources. Animal assay methods are to be given in a second volume.

The book is divided into five sections dealing with physical, chemical, microchemical, and microbiological methods of assay, and the use of optical instruments in vitamin assays. In the section on physical methods, assays are described for vitamin A and provitamins A by the ultraviolet absorption spectra technique. The difficulties encountered in the application of this method to the assay of vitamins D, E, K, and B_6 are discussed. Fluorometric assay methods for vitamin A, thiamine, riboflavin, and ß-pyracin are given. Chemical methods are described for vitamin A and carotene, vitamins D, E, and K, thiamine, niacin and niacinamide, pyridoxine, choline, inositol, *p*-aminobenzoic acid, ascorbic acid, and pteroylglutamic acid and related folic acid compounds. Microchemical methods are given for vitamin A and carotene, ascorbic acid, riboflavin, phosphatase, iron, and protein.

The microbiological assay section discusses methods utilizing lactic acid bacteria, yeasts, *Neurospora* mutants, and miscellaneous microorganisms. A particularly useful section gives, in two tables with reference keys, a cross index of vitamin assays, the test organisms, and a key to the details of assay procedure. Another table summarizes the preferred method of assay for each vitamin. Assay methods for *p*-aminobenzoic acid, biotin, choline, folic acid, inositol, nicotinic acid, pantothenic acid, riboflavin, thiamine, and vitamin B_6 are described.

The section on the use of optical instruments should be of value to those selecting apparatus for vitamin assays.

MARY S. SHORB

University of Maryland

Antibiotics. George W. Irving, Jr. and Horace T. Herrick, Eds. Brooklyn, N. Y.: Chemical Publishing, 1949. 273 pp. $6.75.

In the period September 1946–January 1947 the U. S. Department of Agriculture Graduate School sponsored a series of lectures entitled "Progress in the Field of Antibiotics." These lectures (with the exception of three dealing with restricted material on penicillin) have been collected as chapters in *Antibiotics.*

Four chapters are devoted to penicillin. These cover the early history, the wartime developments in England and in this country, the government certification program, the development of high-yielding strains of *Penicillin,* and the advances in commercial production of penicillin. It is regrettable that the lectures dealing with the chemistry and synthesis of penicillin and the production of new penicillins biosynthetically could not be included to round out this section. The clinical uses of penicillin and streptomycin are covered in one chapter, and in another the chemistry of streptomycin is presented in the form of charts and equations. Other chapters deal with gramicidin and tyrothricin, the chemical aspects of antibiotics other than those already mentioned, and the use of antibiotics in veterinary medicine. Four chapters deal with the production of antibiotics by microorganisms, basidiomycetes, actinomycetes, and higher plants.

Each chapter is written by a man who has made major contributions in the antibiotic field. The subjects are necessarily covered in a general way, and results rather than methods are emphasized. Thus, little or no mention is made of the techniques of screening microorganisms for antibiotic-producers, of isolation methods such as adsorption, and partition chromatography, of means of characterizing new antibiotics such as paper chromatography and the Craig countercurrent distribution technique. The various chapters do present in an interesting way the general picture of the development and status of antibiotic research up to January 1947. Selected bibliographical references afford a convenient entry to the literature for those who want more detail.

This book should provide an interesting introduction for those who are not familiar with the antibiotic field and a convenient reference source for those who are.

H. E. CARTER

University of Illinois

Genetics, Paleontology, and Evolution. Glenn L. Jepsen, Ernst Mayr, and George Gaylord Simpson, Eds. Princeton, N. J.: Princeton Univ. Press, 1949. 474 pp. $6.00.

This is a collection of papers presented at the Princeton Bicentennial Conference on Genetics, Paleontology, and Evolution. The conference was arranged by the Committee on Common Problems of Genetics, Paleontology, and Systematics, of the National Research Council, and was held on January 2–4, 1947, under the directorship of Prof. Glenn L. Jepsen.