

The Pharmacopeia of the United States of America (the United States Pharmacopeia)

Fourteenth revision (U.S.P. 14) and the First U.S.P. 14 Supplement. By authority of the United States Pharmacopoeial Convention, Inc., meeting at Washington, D.C., May 14 and 15, 1940. Prepared by the Committee of Revision and published by the Board of Trustees. Pp. lv+1068+4. (Easton, Pa.: Mack Publishing Co., 1950.) 9 dollars.

THE fourteenth revision of the United States Pharmacopeia became official on November 1, 1950, only three and a half years after its predecessor. This short period is a sign of the rapid advance of therapeutics and a testimony to the energy of the Committee of Revision. The new work is about 10 per cent longer than its predecessor and contains nearly two hundred new articles.

The drugs thus introduced include acetanilide, aureomycin, chloramphenicol, chloroguanide (proguanil AN), chlorophenothane (DDT), dimercaprol (BAL), diphenhydramine (Benadryl), folic acid, heparin sodium, naphazoline (Privine, but not Prisco), nikethamide, raspberry juice, streptomycin, trimethadone (Tridione), tripelennamine (Pyribenzamine, but not mepyramine), tubocurarine, tyrothricin, and vitamin B₁₂. The list of omissions includes neoarsphenamine, rhubarb, senna, strychnine, tannic acid and thyroxin. Suramin is omitted and then reintroduced in the first supplement, which becomes official on the same day as the Pharmacopeia (for which this simplified spelling is adopted). Most of these changes were inevitable, though it is perhaps surprising that acetanilide and raspberry juice are introduced now, and that nikethamide was not introduced sooner. It seems likely that thyroxine will be reintroduced before long.

The Committee is to be congratulated on this work, which is very up to date and will be much studied not only in the various American republics where it has official status, but also in other countries which are busy preparing new editions of their own pharmacopœias. It is hoped that before long the appearance of the international pharmacopœia will simplify the labours of the various national committees. In the meantime, there is evidence of collaboration between the British and American committees. Most of the new American names are the same as the new British names, although the Americans evidently could not go so far as to adopt the therapeutically suggestive name 'leptazol' to describe the drug which they now introduce as pentylenetetrazol.

J. H. G.

Physical Chemistry

By Prof. Walter J. Moore. (Prentice-Hall Chemistry Series.) Pp. ix+592. (New York: Prentice-Hall, Inc., 1950.) 6.65 dollars.

PROF. W. J. MOORE has written for university students who have acquired a knowledge of physics and of advanced mathematics. Indeed, the book affords a fine opportunity of testing a student's ability to apply his mathematical knowledge. As is to be expected, the author's approach to the subject is by the way of thermodynamics. The contents comprise: physicochemical systems, the laws of thermodynamics, chemical equilibrium, the kinetic theory, the structure of atoms and molecules, nuclear physics, particles and waves, chemical statistics, crystals, liquids, electrochemistry, surface chemistry, and chemical kinetics. Each chapter opens with a brief, scholarly written, historical account of the

concept in question. This is followed by the formal treatment, which is precise, critical and thorough. The author does not make a gift of the mathematical expressions of the laws and relationships he discusses, but builds up his equations from first principles. Each chapter ends with abundance of questions, numerical problems and well-selected reading references. This is an excellent book, but suitable only for those whose mathematical equipment goes at least as far as partial differentiation. G. F.

Transformation Calculus and Electrical Transients
By Prof. Stanford Goldman. Pp. xiv+439. (New York: Prentice-Hall, Inc.; London: Constable and Co., Ltd., 1949.) 30s. net.

IN the theory of electric transients, the technique of the Laplace transform is a convenient central topic from which Prof. S. Goldman surveys impedance operators, complex variables, partial differential equations, and special functions, particularly the Bessel functions. The Laplace technique is developed from the beginning, and the more advanced student of electrical engineering, at or near postgraduate level, should benefit from the careful interweaving of pure mathematics with electrical theory. Attention is given to rigorous demonstration, but where proofs are omitted, for reasons of length or difficulty, references are supplied. The reader is expected to have a sound knowledge of the calculus, and an acquaintance with the concept of complex numbers and with elementary differential equations. The Laplace transform itself is studied as a transformation relating $f(t)$ to $F(s)$ (the author uses s in place of the more usual p) by the equation

$$F(s) = \int_0^{\infty} e^{-st} f(t) dt.$$

This mode of presentation is often more easily grasped by the technical student than the equivalent 'operational' calculus of Heaviside. The electrical theory excludes the non-linear network, but the study of the linear network is fairly comprehensive and up to date, including, for example, a discussion of the stability of feed-back amplifiers.

The Colloid Chemistry of the Silicate Minerals

By Prof. C. Edmund Marshall. (Agronomy, a Series of Monographs prepared under the auspices of the American Society of Agronomy, Vol. 1.) Pp. ix+195. (New York: Academic Press, Inc.; London: H. K. Lewis and Co., Ltd., 1949.) 5.80 dollars.

THIS useful monograph assembles in logical fashion the various aspects of our present knowledge of colloidal systems involving silicate minerals. After a summary of the main types of silicate structures the author discusses the distinctive properties of the zeolites, notably the adsorption of vapours. The major part of the book, however, deals with the clay minerals. Prof. C. E. Marshall has done a real service in thus bringing together the diverse facts on the physics and chemistry of clay systems which have been revealed in recent years by a variety of techniques. Each chapter is documented with a good list of references and a nice balance has been struck. The reader will benefit from the author's wide and critical reading in being guided immediately to the more important papers in the field. There is much in this short book of value not only to workers in the field of soil science but also to mineralogists and to chemists interested in colloidal phenomena generally.