Book Reviews

Science, Medicine and History. Essays on the evolution of scientific thought and medical practice written in honour of Charles Singer. E. Ashworth Underwood, Ed. Oxford Univ. Press, London–New York, 1954. vol. I, xxxii + 563 pp.; vol. II, viii + 646 pp. Illus. + plates. $45 the set.

These monumental volumes contain a collection of valuable essays written in honor of Charles Singer by 95 authors working in many scientific fields. They are a fine tribute to a man now in his 79th year, but still actively at work, whose scholarly contributions extending over half a century, run to a total of 23 books and more than 400 titles. His full bibliography is given at the end of the second volume. The editor contributes a biographical note that outlines the life and achievements of Charles Singer and of his wife, Dorothea, who has worked with him in most of his studies and is herself an international authority on medical and scientific manuscripts.

Many of the contributors have become interested in the history of science through the published work or personal stimulation of this remarkable couple. Their homes, in Oxford, in London, and now, since 1934, in "Kilmarth," Cornwall, have been meeting centers for a multitude of fellow-scholars. During the war years the Singers worked energetically to assist colleagues able to reach England from the ravaged Continent and to enable them to resume their work. The devotion of a great circle of friends is touchingly expressed in the introduction by Sir Arthur MacNalty, who writes:

> Charles Singer, now advanced in years but ever young in spirit, must indeed be happy when he reflects on the great contributions to knowledge which he has made during his life. He has founded a School of Historical Research in Medicine and Science, illuminated it with thought and wisdom, and given forth its teaching with eloquence and literary distinction. . . . We contributors put aside our wonted avocations to add our leaves to the chaplet of laurels, which we offer as a tribute to our honoured leader. To all and to each of the writers this self-imposed task has been a labour of love.

The finely written essays lay before us a wealth of historical and critical material, most of which has not been previously published. Some of the papers assume a rather technical form, but the majority are written for the general scientific reader, leading him easily through stirring accounts of discovery and development of practice and theory. The essays exhibit a variety of distinguished styles, as if the writers, imbued with the spirit of their master, were all seeking to match his own excellence. We meet here a group of scholars who are sympathetically engaged in a broad program of studies at the highest level of achievement.

The essays are divided into eight groups, or books. The sequence opens with 11 essays dealing with "The ancient world." These include studies of ancient archeology (Childe), chemistry (Partington), astronomy (Gregory), magic (Jenkins), and medicine (Dawson, Leake, Jones, Peck, Gask). A second book of nine essays deals with "The medieval world," discussing early medicine in Norway (Grön), England (Bonser), Italy (Bayon), Belgium (Tricot-Royer), and Germany (Sigerist). There follow 13 essays on "The Renaissance," dealing with the School of Ferrara (Castiglioni), astronomical textbooks (Johnson), nautical science (Cortesao), herbalism (Arber), medical curricula (Campbell), Vesalius (Monteiro, Montagu, O'Malley), the psychiatry of Paracelsus (Galdston), and Thomas More (MacNalty). The first volume ends with a fourth book entitled "The new philosophy," containing seven essays dealing with Francis Bacon (Farrington, Thorndike), astronomy (Dingle), Boyle, Hooke, and Mayow (McKie), and the influence of Aristotle on biological thought (Pagel).

The second volume opens with a group of eight essays on "The insurgent century" (17th), so named by Charles Singer. It includes discussions of Johannes Vander Linden (Sarton), astrological diagnosis (Miller), Jean Martet (LeFanu), Banister (Sorsby), "The society of chymical physitians" (Thomas), and John Bulwer (Norman). There follows a sixth book, containing seven essays, dealing with "The eighteenth century." It includes studies of dental anatomy (Lindsay), pathology in North America (Krumbhaar), von Berger's textbook of physiology (Underwood), and Benjamin Rush (Trent). "The nineteenth century and after" contains 17 essays, among which are studies of the influence of 19th century diffraction patterns in astronomy on 20th century x-ray crystallography (Glaser and Wrinch), Schopenhauer's biology (Russell), Richard Owen (Cave), Bütschli (Goldschmidt), Thomas Young (Turner), Corvisart (Cawadias), Kane's polar explorations (Corner), Gall and Spurzheim (Temkin), Pierre Flourens (Olmstead), Villemin (Cummins), abdominal surgery (Cope), and the evolution of the general practitioner in England (Bishop). The volume ends with an eighth book, containing 18 essays, under the title "Conspectus generales," including discussions of nature-mysticism in the philosophy of science (Needham), Asiatic motifs in American folklore (Hatt), "The golden ages" (D'Arcy Thompson), heredity (Darlington), history of physiology (Franklin, Fulton), and the evolution of cardiology (Guthrie). The final paper, entitled "Marginalia," comes from the pen of Sir Charles Sherrington. It gives reminiscenses of his early days in English hospitals and medical laboratories and is notable as probably his last published work. He corrected the proof shortly before his death in 1952, in his 95th year.

Never before has such a galaxy of notable students come together in such an enterprise. These volumes

are commended to all who, immersed in narrow routines or in specialized studies, wish to broaden their horizons and renew their appreciation of the history of our science. Old and young, venerable scholar and graduate student, will here find interest and inspiration for their further endeavor.

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Electronics. An electrical engineering approach. George F. Corcoran and Henry W. Price. Wiley, New York; Chapman & Hall, London, 1954. x + 459 pp. Illus. $7.

This is primarily an introductory textbook on active or electronic circuits. After a cursory treatment of such physical electronic topics as ballistics, space charge, and thermionic emission, the text proceeds through a discussion of vacuum diodes, multielement vacuum tubes, linear active circuits, nonlinear active circuits, feedback, principles and application of gas-filled tubes, germanium diodes, transistors, and transistor amplifiers.

The authors have made a laudable attempt to emphasize fundamental principles. This emphasis is particularly evident in the chapters on transistors and oscillators, and to a certain degree in the material on feedback. However, in the chapter on linear operation this point of view is not carried out to the same extent. For example, the nodal analysis method is introduced at the very end of the chapter when it could have been profitably used throughout the preceding material. In the chapter on vacuum diodes the authors fail to seize the opportunity to explicitly point out the piecewise linear method of analyzing a nonlinear problem. Aside from these lapses, I feel that this is a creditable piece of work with respect to the treatment of the active circuits.

In view of the good treatment of circuits, it is extremely unfortunate that the material in the first two chapters constitutes such a handicap to the remainder. I assume that the authors intended to treat certain electric and magnetic field quantities as vectors since they are printed in boldface type. These quantities are then treated with a complete disregard for their vector character. This can only serve to create confusion or false impressions regarding the fundamental quantities of electric and magnetic fields in the mind of the student. In addition, the relationships between electric and magnetic fluxes and their corresponding densities as given are valid only for uniform fields, but this is not pointed out.

I believe that this textbook suffers from a certain lack of consistency in approach and from some fundamental deficiencies which considerably reduce the effectiveness of presentation. Despite these shortcomings, however, it compares favorably with others in its field.

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The Permanent Revolution in Science. Richard L. Schanck. Philosophical Library, New York, 1954. xvi + 112 pp. $3.

I have read this book through slowly and carefully —it is a short book—yet I have no feeling of having understood what the the author was trying to say. There is a horrid suspicion in my mind that the trouble may be with me rather than with the book, which makes for difficulty in writing a review. The jacket "blurb" says that "it is the thesis of the author that a common method has been emerging in the different sciences which recaptures the dynamism of teleology without the fallacy of local cause and which preserves the field theory of mechanism without asserting invariance of behavior of the element." That sentence, I suspect, summarizes the book nicely; and anyone to whom this seems clear and cogent will probably enjoy the book itself.

Much of my trouble in reading can be traced to vocabulary allergies. The book is about "methodology," a word which, by itself, causes an almost immediate suspension of my thought processes. Philosophy, the author points out, will wither away as methodology develops, and somehow all sorts of things like ethics, aesthetics, progress, and "relative absolutes" will come into flower as this withering proceeds. The "revolution" in the method of science that the author is writing about finds its clearest expression in Marx and Freud—which may explain my confusion. Dialectic keeps bobbing up throughout the text, and there I have to struggle with another allergy. In my case, then, there was a complete failure in communication—but I neglected to take antihistamine before starting to read.

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Recent Progress in Hormone Research. vol. IX. Proceedings of the Laurentian Hormone Conference. Gregory Pincus, Ed. Academic Press, New York, 1954. 467 pp. Illus. $9.50.

This is a report of a special interim meeting of the Laurentian Hormone Conference held at Shrewsbury, Massachusetts. Its deliberations were strictly confined to techniques, and there was no discussion, except only incidentally and casually, of the broader concepts involving the function, origin, and control of the steroid hormones. This fact is clearly indicated in an obscure position in the preface to volume IX where the title of the conference is given as "Methods of steroid determination in blood and urine." The book, therefore, stands apart from companion members of the series, which, up until now, have been mostly concerned with physiological and clinical matters.

It is a highly valuable and useful volume, in fact a must for anyone who is interested in measuring or determining in a precise way the steroids found in blood and urine. It is not, however, recommended to the general reader unless he has a broad and intimate