One thinks of a primer as a book with which to begin and as embodying the simplest ideas, with the notion of a gradual progression by means of other books into the more difficult phases of a subject. This is not the case with this book. It deals with the most complex and theoretical sides of electrocardiography. Neither the medical student, who has not the time for this kind of background in electrocardiography—a rubric which must take up a small part of the total time spent in medicine in relation to the other branches of his courses—nor the physician, having only a clinical interest in electrocardiograms, would be anything but hopelessly lost and discouraged by this introduction to electrocardiography. A title which would foretell its real contents would be more satisfactory and not misleading.

There seems to be no occasion for, or purpose in, drawing out so laboriously diagrams of the time lines and lines for amplitude and diagrams of the galvanometer string movements, when actual electrocardiograms with the actual photographed lines could have been used and enlarged if it was thought contributory to the clearness of demonstrating time intervals, elevations of segments, etc. Certainly a reality would have been achieved which the diagrammatic fashion misses. Moreover, when the lines are not accurately drawn equidistant or parallel, one is very conscious of these defects. Moreover, from the point of view of reading and study, the drawing of time lines and voltage lines only immediately surrounding the movement of the galvanometer string is annoying, distracting, and highly artificial.

The reviewer could not find anywhere in the book a reproduction showing what an electrocardiogram actually looks like when taken for clinical purposes. Anyone reading this primer as an introduction would come away with the idea of the cross lines being written only in the field surrounding the electrocardiogram string movement.

Some of the diagrams indicating starlike explosions in the heart detract from the seriousness and depth of the rest of the book.

The assets of the book must be considered in the light of the defects listed above.

The introductory chapter on the theory of the electrocardiogram is good, as are the text relating to the analysis of the waves of the electrocardiogram and over-all analysis of the electrocardiogram, and the chapter on precordial chest leads.

The data relating to myocardial infarction should be brought together in one section instead of being spread out in several parts; for instance, there are descriptions on page 94 and again on page 170. It does not seem wise however, to teach the idea of acute, subacute, and chronic myocardial infarction with the connotation of these words in medicine.

The chapter on "Disorders of the Heart Beat" is not very effective and leaves much to be desired for recommendation to medical students and physicians.

The most useful function this book serves is to bring together in a compact way data relating to the monocardiogram, vector analysis, and ventricular gradient, pointing up the work of Mann, Wilson, Ashman, and Bayley, and the earlier German work. The authors have made a great effort to stress these investigations. This section is well done; at the moment, however, for clinical electrocardiography these analyses have not a great deal of usefulness, and their eventual clinical value is not yet clear. Accordingly, in Chapter V, "The Clinical Applications of the Electrocardiogram," this phase is overemphasized for the state of its importance at the present time.

On page 189, relating to the "Diagnostic Value of the Electrocardiogram," the authors speak of electrocardiographers and clinicians. The reviewer hopes that in medicine there will never be anyone who is called an "electrocardiographer." No one should read or interpret electrocardiograms who is not interested actively in clinical medicine and who is not a clinician.

Much of the data in the Appendix has usefulness. Carter's chart for measuring the angle of the electrical axis might have been included. A list of references also would have been a valuable addition to the book.

This book is not for the beginner or for the medical student, but only for those who, having had an introduction to electrocardiography by other means, wish to go further into the subject.

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The mosquitoes of New Jersey and their control. **Thomas J. Headlee. New Brunswick, N. J.: Rutgers Univ. Press, 1945. Pp. x + 326. (Illustrated.) $4.00.**

This is an enlarged and revised edition of Bulletin 348 of the New Jersey Agricultural Experiment Station, published in 1921 under the same title and long a standard reference for mosquito workers of the United States.

The present volume opens with three short chapters on the "Value of Mosquito Control," "Structure, Classification, and Keys," and "The New Jersey Mosquito Fauna." By far the largest section (200 pp.) is entitled "Mosquito Biology" and includes technical descriptions and illustrations of the adults and larvae of 37 species found in New Jersey. As stated by the author, the bulk of the material in this chapter has been taken directly from the 1904 report of John B. Smith, a noted pioneer in this field. His report has been out of print for many years, and its reproduction in this manner is of undoubted historical value. It would seem, however, that briefer summaries of the pertinent facts, now well established, would fill present-day needs better than the details of the original observations and experiments. Very little new information has been added, except for records of light-trap collections from 1932 to 1941, and one may look in vain in most cases for an account of the present status of the different species or information that has been accumulated during the intervening 40 years. Bulletin 348 and other publications must be referred to for information of this nature. There is evidence that the chapter has not been read critically with respect either

to certain details of bionomics and morphology or to bringing the information up to date. For example, after giving Dr. Smith's observations on the hatching of salt-marsh mosquito eggs, no reference is made to more recent discoveries of the factors that influence hatching. Taxonomic characters of more value than those provided are frequently omitted, and the subject matter on the different species is somewhat unevenly presented.

In a short chapter (18 pp.) on "The Principles and Detailed Procedure of Mosquito Control," the author summarizes, all to briefly, the subject on which he can speak with the greatest authority, having led the work in New Jersey for 30 years or more. His nine basic principles and his opinions on salt-marsh ditching are of great value. A short chapter on "Larvicides" is devoted chiefly to pyrethrum extract emulsion, as developed in New Jersey, and its use in the protection of outdoor gatherings against adult mosquitoes. Petroleum oils and iron or copper sulphate are the only other materials mentioned. No consideration is given to recent developments in the use of DDT.

The remaining chapters cover the subjects of environment, history of mosquito control in New Jersey, mosquito repellents, laws relating to mosquito control, and the economic effect of mosquito reduction. There is a short bibliography of 30 titles, most of which are of early work.

While the volume is local in content and little attention is given to methods employed or work done elsewhere, there is considerable material of general interest.

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***Table of arc sin x* and *Tables of associated Legendre functions*.** **Lyman J. Briggs, Arnold N. Lowan, *et al.* (Prepared by the Mathematical Tables Project, conducted under the sponsorship of the National Bureau of Standards.) New York: Columbia Univ. Press, 1945. Pp. xix + 121; xlvi + 306. $3.50; $5.00.**

These are two further welcome volumes of the series prepared under the auspices of the WPA of New York City and the OSRD.

The first of these volumes tabulates arc sin x to 12 decimal places, for values of the argument differing by 0.0001, and to permit interpolation, tabulates also second differences; for x near unity this plan is somewhat modified to insure more accurate interpolation. Auxiliary tables are provided for convenience in the use of the volume with interpolation.

The second of these volumes tabulates the functions $P_n^m(x)$, $Q_n^m(x)$, and their first derivatives, for integral and half-integral values of n, integral values of m, and real and pure imaginary values of x, and also tabulates the functions $P_n^m(\cos\theta)$ and their first derivatives for integral values of n and m. In the main, tabulations are to six significant figures, for $1 \leqq n \leqq 10$, $0 \leqq m \leqq 4$, and $1 \leqq x \leqq 10$. Tabulation of the derivatives mentioned is especially noteworthy, having been largely neglected in previous tables.

The present volumes are highly useful tools in the current development of mathematics in the direction of numerical computation and physical application. The sponsor, Dr. Briggs, and the director, Dr. Lowan, are again to be congratulated on their planning, preparation, and publication.

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The university at the crossroads. **Henry E. Sigerist. New York: Henry Schuman, 1946. Pp. viii + 162. $2.75.**

It is much the fashion these days to write about university education. Many more people are interested, since many more people are concerned than was the case even a few years ago. In addition, the furor over the peculiar Thomistic revival at Chicago has excited much argument over the purposes and methods of university education.

Dr. Sigerist has been disturbed by the impact of the current cultural revolution, as exemplified by the war, on university, and particularly on medical, education. The title essay of the 12 included in this small volume was written in 1944 for the *Bulletin of the History of Medicine*, in which eight others of the essays were first printed. Two, "Failure of a Generation" and "The Social Sciences in the Medical School," are published for the first time in this volume.

A collection of essays of this sort is bound to be uneven, but all illustrate well Dr. Sigerist's crusading spirit. While there is a strong pessimistic tone to most of the essays, it is applied chiefly against the quite well-known defects of current university education in the United States. Dr. Sigerist seems to think that all will be well if university professors and university-trained people will take a more active part in governmental and social affairs.

Much interesting autobiographical material is offered in the essay entitled "University Education," delivered in 1939 at Johannesburg. In this address, Dr. Sigerist reveals his interest and his prejudices. He also indicates the various men and circumstances which have so profoundly influenced him.

Five of the 12 essays deal with medical educational problems, but in a manner illustrating the way by which medical education may be correlated with a general cultural training. Dr. Sigerist pleads vigorously for an appreciation of the classic contributions on which our culture rests and urges an extension of research into their social and cultural applications.

As director of the Institute for the History of Medicine at The Johns Hopkins University, Dr. Sigerist is in a strategic position to influence cultural trends, particularly with reference to one of the great professions. He need not be disappointed at the relatively slow acceptance of his ideas and proposals. On the contrary, he may take much satisfaction in his own stimulating contributions and in the solid achievements of his many pupils. He is himself exemplifying the reasonable sort of a path which the university may profitably take when it finds itself at a crossroads.

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