fountainsprings of human conflict and disharmony. This book is indeed a great achievement not only as a biography of a man consistently mishandled in the past but also as an approach to biographical writing in general. It is not meant to be an exhaustive or definitive study, but it presents an excellent overview of all the acts in the rich Galileo drama.

The Watershed is a reprint of the section on Kepler in Koestler's larger *Sleepwalkers*, which appeared in 1959. It is the liveliest, most scholarly, and best part of that excellent work, and it may well go down in history as the keenest pioneering achievement in depth analysis of a scientific genius, as well as of the nature of progress in science. By utilizing his great gifts as literary master and his powers of insight into the recesses of the human mind in the throes of conflicting beliefs and loyalties, Koestler succeeds in laying the foundation for a new psychology of science, fashioning it into a discipline that combines dissection of the personality of the scientist, the culture of the time, as well as the salient ideas seeking to enter the web of prevailing beliefs, and the diverse interplay of all these factors. The result of this technique is tremendous in its power, and the light it sheds proved to be so brilliant that many pedants in the field were blinded by its glare.

The Watershed makes most fascinating reading. Koestler shows such vast knowledge of the subject, both historically and scientifically, that one doubts whether much can be added. The reader will never forget the other-worldly charm of Kepler, the depths of his feverish brainstorms, the scope of his creativity, and finally the element of historical irrationality in scientific progress, which irritated so many of Koestler's critics, and the bewildering cross-currents of thought that shaped the womb of the scientific revolution. This is a great book, a landmark in biography which no student of science or history can afford to postpone reading.

By comparison with these two biographies, Jaffe's book on Michelson seems run-of-the-mill. It is, however, an honest and thorough account of the life and work of a great physicist; it is well written, readable, and free from biographitis, if one may so describe the needless hawking which often afflicts worshipful biographers.

The reprinting of Tyndall's work on Faraday is a happy symptom of the revival of interest in the full scope of the history of science. As Faraday's associate and successor to the superintendency of the Royal Institution of London, Tyndall discusses primarily Faraday's vast and basic contributions to science in his unique manner, famed for lucidity. His few anecdotes of his personal relations with Faraday help considerably to enliven the portrait of this key figure in modern physics.

MARK GRAUBARD
Natural Science Program, University of Minnesota

Sahara, Desert of Destiny. Georg Gerster. Translated by Stewart Thomson. Coward-McCann, New York, 1961. xi + 302 pp. Illus. + maps. $5.

Gerster's *Sahara* is a prize package of its kind. An awesome mass of factual information, sparingly sprinkled with misinformation, is presented so skillfully that the book is as enjoyable to read as a good novel. Unfortunately, in the sections dealing with prehistory and native customs, fact is mixed indiscriminately with fantasy. Specialists will heave many a weary sigh as they encounter tediously obsolete and confused theories concerning rock paintings and camels, the Hyksos and the Garamantes, the feudal matriarchal free-loving Tuareg and such. Arabic words often defeat the author utterly. For example, *Sah'ra* does not mean "mouse-coloured" but "a desert habitable in spots," a *Gandourah* by definition cannot have a hood, and *Davel Askri* is certainly a strange rendering of *Dar el Askri*. Curious factual errors occasionally creep in too. It is stated that "the early palaeolithic" only "goes back some eight to fifteen thousand years" although "the Early Stone Age" may go back "hundreds of thousands"; Rene Caillié (misspelled Caillé as usual) is said to have been "the first European to reach Timbuctoo"; and so on.

But all of this is relatively unimportant. The immediate future of the Sahara is a matter of rapidly increasing urgency because of the major roles that Moslem Africa and the Mediterranean are beginning to play in the struggle for survival of the West. In this context Gerster shines as a singularly penetrating political and economic analyst.

Water is, of course, the main thing in the Sahara. Obviously even the most primitive native communities cannot live without it, while oil drilling installations consume such enormous quantities that they depend on the discovery of new and practically inexhaustible reservoirs of water. This situation poses a whole series of problems which are clearly explained and discussed most entertainingly.

The bulk of Gerster's book is devoted to the consideration of these and other natural resources. Search, discovery, and exploitation are described minutely and as painstakingly evaluated, all in an easy-flowing style that makes them fascinating. And if the author hasn't heard that the discovery of diamonds near Silet was a hoax, it hardly matters.

Gerster goes on to discuss the impact of modern industrial expansion on native institutions. He closes with a searching and impartial examination of the perilous problems of a near future in which conflicting forces of political aspirations and economic necessity will become increasingly difficult to reconcile.

For students of political science, economics, and human and industrial geography, this book is a real goldmine. Nor can any reader, regardless of prejudice, help but be lost in admiration for the author's forthright and yet charitable objectivity. *Sahara* is a really valuable and palatable contribution in the critical fields of international and inter-religious political economy.

LLOYD CABOT BRIGGS
Peabody Museum, Harvard University

Aedes Aegypti (L.), the Yellow Fever Mosquito. Its life history, bionomics, and structure. Sir S. Rickard Christophers. Cambridge University Press, New York, 1960. xii + 739 pp. Illus. $14.50.

The yellow fever mosquito, *Aedes aegypti,* is one of the insects most widely known to science. It is not only an easily used laboratory animal, but its great significance in past and present public health problems is undisputed. Sir Rickard Christophers' book comprises, under one set of covers, the most exhaustive treatment of any one insect species ever published, and its subject matter is especially appropriate.

An introductory series of chapters treats the historical significance, systematic position, medical importance, and control of *aegypti* and provides an account of the techniques used in its study. Beginning with the egg, the major portion of the book discusses the structure, physiology, development, and bionomics of each life history stage. Various phases of the discussion are illustrated clearly and simply; although only 86 figures are used, many of them are comprised of not a few separate drawings.

One of the book's major contributions is the lavish use, in the text and concluding bibliographies, of the world literature. In a day when the recording and retrieval of information becomes more and more beyond the time and individual energy of the working biologist, such a complete and orderly presentation of references is a very real boon. This is especially true for an insect such as *A. aegypti*, which is the object of the study of so many professionals in the field of entomology and public health. Appropriate references appear at the end of each chapter; they are keyed in the text by author and date and are grouped according to the subject matter to which each applies.

A work of such magnitude has obviously taken years to reach a publishable stage, and errors are of course inevitable. Despite whatever shortcomings have been pointed out by other reviewers, Sir Rickard is to be commended for the great service he has performed in presenting, summarizing, and interpreting the world's knowledge of this important mosquito.

RICHARD H. FOOTE
Entomology Research Division, U.S. Department of Agriculture

Practical Microscopy. C. L. Duddington. Pitman, New York, 1960. x + 237 pp. Illus. $6.50.

This book, based on lectures given at "The Polytechnic," is intended to provide other students and amateurs information for self-training to meet the paramount need "to be satisfied with nothing less than a perfect image." The standard techniques for bright-field microscopy are given in an elementary manner. Phase, interference, and electron microscopy are only mentioned. In a departure from the usual guides, the short chapter on buying a microscope calls to attention magnification and resolution requirements and the hazards of second-hand instruments. In addition to centering and lighting for good seeing, simple counting, measuring, and drawing techniques are described. Photomicrography receives brief treatment. Over a third of the book is given to simple methods for preparing animal, plant, bacteria, textile fibers, hairs, and food and drug specimens. Formulas for common fixing fluids and staining solutions and an index are included.

In the main British students are given much the same introduction as students in this country. The instruments discussed here are mostly British; the British still use turntables for liquid mounts, and the Venetian turpentine mountant is advocated. Köhler is misspelled, and the German word *xylol* is used throughout. High school science students, adult amateurs, and college freshmen should find the book helpful and readily readable.

OSCAR W. RICHARDS
American Optical Company, Southbridge, Massachusetts

Reprints

Advanced Euclidean Geometry. An elementary treatise on the geometry of the triangle and the circle. Roger A. Johnson. John Wesley Young, Ed. Dover, New York, 1960. 332 pp. Illus. $1.65.

Adventures with the Missing Link. Raymond A. Dart. Viking, New York, 1961. 280 pp. Illus. $1.65.

Algebraic Equations. An introduction to the theories of LaGrange and Galois. Edgar Dehn. Dover, New York, 1960. 219 pp. Illus. $1.45.

Animal Treasures. Ivan T. Sanderson. Viking, New York, 1961. 330 pp. Illus. $1.45.

Auguste Comte and Positivism. John Stuart Mill. Univ. of Michigan, Ann Arbor, 1961. 200 pp. $1.75.

Calculus of Finite Differences. George Boole. J. F. Moulton, Ed. Chelsea, New York, ed. 4, 1961. 348 pp. $1.39.

Calculus of Variations. A. R. Forsyth. Dover, New York, 1960. 678 pp. $2.95.

Causality and Chance in Modern Physics. David Bohm. Harper, New York, 1961. 181 pp. $1.35.

Characterisation of Organic Compounds. F. Wild. Cambridge Univ. Press, New York, 1960. 314 pp. $2.95.

The Dancing Bees. An account of the life and senses of the honey bee. Karl von Frisch. Translated by Dora Ilse. Harcourt, Brace, New York, 1961. 192 pp. Illus. $1.95.

Frustration and Aggression. John Dollard *et al.* Yale Univ. Press, New Haven, Conn., 1961. 217 pp. $1.25.

Genetics Is Easy. A handbook of information. Philip Goldstein. Viking, New York, 1961. 253 pp. Illus. $1.45.

Great Ideas of Modern Mathematics. Their nature and use. Jagjit Singh. Dover, New York, 1959. 312 pp. Illus. $1.55.

A History of Science, Technology, and Philosophy in the 18th Century. vols. 1 and 2. A. Wolf. Revised by D. McKie. Harper, New York, ed. 2, 1961. 839 pp. Illus. $5 for 2 vols.

Hobbes. Sir Leslie Stephen. Univ. of Michigan Press, Ann Arbor, 1961. 243 pp. $1.95.

I Sailed with Rasmussen. Peter Freuchen. Viking, New York, 1961. 224 pp. Illus. $1.35.

The Image. Kenneth E. Boulding. Univ. of Michigan Press, Ann Arbor, 1961. 175 pp. $1.65.

The Individual and the Universe. A. C. B. Lovell. New American Library, New York, 1961. 126 pp. Plates. $0.50.

The Integrative Action of the Nervous System. Sir Charles Sherrington. Yale Univ. Press, New Haven, Conn., 1961. 433 pp. Illus. $1.95.

Introduction to the Theory of Linear Differential Equations. E. G. C. Poole. Dover, New York, 1960. 210 pp. $1.65.

The Life and Death of Cells. Joseph G. Hoffman. Doubleday, New York, 1961. 354 pp. $0.95.

Man-Made Sun. J. D. Jukes. Viking Press, New York, 1961. 136 pp. $1.25.

The Mechanism of Evolution. W. H. Dowdeswell. Harper, New York, 1960. 125 pp. Illus. $0.95.

A Modern Introduction to Logic. L. S. Stebbing. Harper, New York, 1961. 543 pp. Illus. $2.75.

Natural Selection and Heredity. P. M. Sheppard. Harper, New York, 1961. 209 pp. Illus. $1.35.

The Nature of Thermodynamics. P. W. Bridgman. Harper, New York, 1961. 248 pp. $1.40.

One, Two, Three . . . Infinity. Facts and speculations of science. George Gamow. Viking, New York, 1961. 352 pp. Illus. $1.65.

The Origin of Species by Means of Natural Selection: Or the Preservation of Favored Races in the Struggle for Life. Charles Darwin. Doubleday, Garden City, N.Y., 1961. 517 pp. $0.95.

The Outermost House. A year of life on the great beach of Cape Cod. Henry Beston. Viking, New York, 1961. 236 pp. Illus. $1.25.

Photoelasticity. Principles and methods. H. T. Jessop and F. C. Harris. Dover, New York, 1961. 192 pp. Illus. $2.

Physics the Pioneer Science. vol 1, *Mechanics, Heat, Sound*; vol. 2, *Light, Electricity*. Lloyd William Taylor. Dover, New York, 1959. 955 pp. Illus. $4 for 2 vols.

Readable Relativity. Clement V. Durell. Harper, New York, 1960. 157 pp. Illus. $1.25.

Religion and Science. Bertrand Russell. Oxford Univ. Press, New York, 1961. 256 pp. $1.25.