scope covers the essentials necessary for medicine and surgery. Practitioners reviewing their anatomy, and students, should find the book as usable as it has always been.

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A History of Mathematics. From antiquity to the beginning of the nineteenth century. J. F. Scott. Taylor & Francis, London, 1958. xiii + 266 pp. Illus. + plates. 63s.

A one-volume history of mathematics cannot be exhaustive, and in the selection of his material the author is likely to betray his predilections. Scott evidently prefers algebra and analysis to geometry, for over half a dozen pages are assigned to Bhaskara—more than the length of the entire chapter on the "Beginnings of modern geometry." There is evident as well a penchant for the enumeration of details of notation and methods, as over against an analysis of the growth of ideas; this explains, perhaps, an occasional lapse in historical-mindedness. For example, the assertion (page 115) that during the first half of the 17th century "there appeared an entirely new creation, namely the study of probability," is belied by the earlier statement (page 92) that in Cardan's *De ludo aleae* "the beginnings of the theory of probability are plainly discernible." Again, Scott accepts (page 129) Lord Moulton's claim that "the invention of logarithms came on the world as a bolt from the blue," despite the history of prosthaphaeretic methods and of relations between geometric and arithmetic progressions. And unconcern for continuity of tradition is aggravated by an unconventional arrangement in which chronological order sometimes is rudely violated. Thus "Mathematics in the Orient" *follows* the account of Hindu and Arabic trigonometry and the Latin medieval period.

The reader with a sense of proportion will be prepared for some inaccuracies in such a work as this. Scott attributes first to Plato (page 20), later to Brahmagupta and Mahavira (page 74), a routine method for Pythagorean triads which is but a special case of a device used earlier by the Babylonians, and he describes Heron's algorithm for square roots (page 42) with no indication that it had been known before in Mesopotamia. The undervaluation of pre-Hellenic mathematics may be an outcome of a handicap under which the author seems to have worked—a heavy dependence upon older secondary sources, such as Cantor rather than Neugebauer on the origin of sexagesimal numeration and Child rather than Hofmann on the calculus priority controversy. There is, on the other hand, a laudable reference, especially for British mathematicians, to important primary sources.

The author's reputation was established years ago through his *Mathematical Work of John Wallis* (1938) and his *Work of René Descartes* (1952), and the present volume is entitled to a comparable place of honor on library shelves. Every here and there Scott affords us commendable new emphases, such as the prominence given to the nongeometrical portions of Euclid's *Elements* and to ancient trigonometry. Noteworthy also are sections on the theory of numbers (including the summary of Gauss's *Disquisitiones Arithmeticae*) and on Newton's use of the binomial theorem for fractional exponents. It will be a crotchety reader indeed who fails to find a quota of sections to his fancy, and the physical appearance of the volume should appeal to the meticulous booklover.

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Adventures in Medical Education. A personal narrative of the great advances in American medicine. G. Canby Robinson. Published for the Commonwealth Fund by Harvard University Press, Cambridge, 1957. xii + 338 pp. Plates. $5.

In the course of a long and distinguished career as a medical educator and administrator, G. Canby Robinson has actively participated in many of the fundamental changes that have revolutionized American medical schools, and along with them medical research and practice, during the present century. Robinson entered the Johns Hopkins Medical School as a student in 1899, six years after it opened, when that school, and a few others, were spearheading the reform to come. In 1910, the year that Abraham Flexner published his shattering analysis of American medical schools, Robinson joined the first staff of the Rockefeller Institute Hospital. Three years later he became a member of the faculty of Washington University Medical School in St. Louis, during the period of its reorganization. In 1920 he became dean of the School of Medicine at Vanderbilt University, where he directed the reorganization of that school, and in 1927 he accepted a post as head of the New York Hospital–Cornell Medical College center, which was also to undergo reorganization. Here, however, Robinson ran into difficulties, which he attributes primarily to the financial crisis caused by the depression and to inadequate organizational integration between the hospital and the college, compounded by the selfishness and antagonism of some of the faculty. Virtually forced to retire in 1934, Robinson returned to Baltimore for work on the social aspects of medicine and, subsequently, on the organization of the wartime blood donor service. However useful this work, the later phases of his career inevitably form an anticlimax.

It is clear from this brief recital that Robinson has had an unusually full opportunity to study medical education in all its aspects. He has undoubtedly been motivated by the highest ideals. His observations therefore deserve attention. He stresses, for example, the importance of opportunities for full-time clinical teaching and research—a view that needs frequent restatement in the face of continuing opposition—and his book further illustrates this point by citing the number of men from the Rockefeller Institute and Johns Hopkins—pioneers in full-time clinical teaching and research—who were involved in the reorganization and reform of other medical schools after 1910.

Nevertheless, I must confess to some disappointment in the book. Robinson's style of writing, while clear, lacks vigor, and, more important, too much has been left unsaid. Robinson was involved in two really significant controversies in his career, one at Vanderbilt and one at Cornell, yet neither is adequately described or explained. The conflicts and therefore the drama in Robinson's career have largely been omitted. What remains is an incomplete account of an important career—an account less human and less interesting than it might have been, but useful nevertheless to medical historians and educators for the comments on men and events and for what it reveals of Robinson's own personality. Perhaps the kindly spirit that has prompted him to minimize the conflicts in this autobiography helps to explain his failures as well as his successes.

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Nature Is Your Guide. How to find your way on land and sea by observing nature. Harold Gatty. Dutton, New York, 1958. 287 pp. Illus. $4.95.

It is a shattering experience for an individual or group of individuals to be lost in the out-of-doors with no assurance of what to do to remedy the situation. The purpose of this book is to help the traveler who may be concerned

with finding his way by recounting the many aids that Nature offers. By learning to recognize these natural aids, it is possible to use them as guideposts in pathfinding in remote places.

The author discusses the methods of navigation employed by the early explorers and primitive races who had few, if any, mechanical aids and depended largely on observing natural phenomena. These methods may be employed today in locating position and direction. On the sea, in addition to the position of the fixed stars as direction guides, the author describes the kinds of clouds and their relation to unseen islands. He shows how the characteristics of the winds, the waves, the swells, the migration routes of birds, and even the odors encountered may be significant aids to navigation.

On land, the effects of sun and wind on snow, sand, vegetation, and animal or insect habitats, such as ant hills, are as important to observe as the contours of the hills, direction of water courses, and other natural guides. Keen perception of the stimuli of the five senses and experience in interpreting these stimuli can convey the impression of a mysterious sense of direction in an individual so schooled. However, the author rejects the theory of any such sixth sense.

This is a fascinating as well as an instructive book. In the 25 chapters the almost countless problems involved in successful route-finding over water and snow, in forests, deserts, mountains, and even in cities, are presented. Of special interest are the chapters devoted to the habits of sea birds.

A foreword to the book has been written by Lieutenant General J. H. Doolittle, who recounts the many years of service that Harold Gatty rendered to the U.S. Army Air Corps when he was in charge of air navigation research and training.

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Kurds, Turks and Arabs. C. J. Edmonds. Oxford University Press, London, 1957. 435 pp. Illus. $6.75.

The expectant reader will find very little here concerning Turks and Arabs —hence the title, while perhaps well meant, is somewhat misleading. However, there are many data about the Kurds, a people on whose history and culture Edmonds is a recognized authority. We are treated to a discussion of "politics, travel and research in northeastern Iraq 1919–1925," and of events in southern Kurdistan impinging heavily on the Mosul question, involving Great Britain–Iraq and Turkey. Edmonds was political officer in the disputed Mosul province.

C. J. Edmonds is one of those dedicated British civil servants who has given the best years of his life in the service of his country abroad, spending the greater part of his fruitful career in Iraq. In its discussion of the events leading up to the Mosul question, the book is extremely useful for its presentation of the British point of view, as seen through the eyes of one of the principals. Edmond's expert opinion made him a logical member of the Anglo-Iraqi delegation on the commission appointed by the League of Nations to investigate the dispute and to recommend a solution. Contrary to a statement made by another author—and incorporated in this book (page 434, footnote)—to the effect that the strong vested interest of the British in the oil of Iraq was a major factor in the decision, one is surprised to note Edmond's reflection that oil was not a matter of "outstanding importance" at the settlement of the Mosul dispute. At any rate, it is to be credited to the British that, through their influence, Mosul was not separated from the Baghdad and Basra provinces—a circumstance which made the state of Iraq a viable entity. Edmonds, who was adviser to the Ministry of Iraq from 1935 to 1945, has supplemented his field knowledge with the temper of time and perspective. One regrets that he could not bring us up to date on events which figure so much in the current dispatches.

Scholarship and mastery of source material are evident in this book. There is a fund of bibliographic references for the student to check for himself. Drawing upon personal diaries and documents available to him, Edmonds pays fine attention to details. Antiquities and archeology, ethnographic history, genealogy, geography, politics, and intrigues are all interwoven into a delightful mélange. And when the reader tires of the recitation of journeys through endless strangely named villages and ranges, he will be able to find diversion in Edmond's translations of Kurdish poems, each one a treasure.

In relentless pursuit of law and order, the indefatigable political officer was equally at home in the saddle or in the slip stream in an open cockpit. We are amazed at his account of the Hollywood-like escapades of a particularly unruly Kurdish sheikh from Sulaimani, who on one occasion absconded with the treasury, the municipal printing press, and a body of native troops in order to wage a personal propaganda war for independence. This thorn in the British side always managed to escape when the net grew too close for him or when the punitive airplane bombings proved especially distracting. Interspersed in Edmond's account are nostalgic memories of holiday parties and hunts that tided him over the duller moments.

One receives the impression that Edmonds has pulled together his past published material for this work, with new additions, and that this offering is his last word on the subject. Let us hope that this latter is not true, and that we shall hear more from him soon.

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Physik und Technik der Atomreaktoren. Ferdinand Cap. Springer, Vienna, Austria, 1957. xxix + 487 pp. Illus. $15.25.

This is a first attempt to publish in the German language a book covering the entire subject of reactors from the point of view of physics and engineering. The book is based on lectures given by Cap at the University of Innsbruck (Austria). The level of the book lies somewhere between that of a textbook for students of reactor engineering and a source book for specialists. It will serve as an introduction to the subject, but the serious student will find it necessary to refer to the original literature. The extensive bibliography will aid him in such efforts. Many problems are offered at the end of each of 49 sections. The loose enclosure of four pages of corrections will give the reader satisfaction if he is hunting for further misprints.

In chapter 1 the fundamental aspects of nuclear physics are presented: the mass formula of Bethe and Weizsaecker, a treatment of radioactive decay, nuclear reactions, the Breit-Wigner formula, cross sections, neutron physics, fission, and fusion of nuclides.

Chapter 2 is devoted to a description of the energy losses of neutrons, elastic and inelastic scattering, energy distribution after a collision, slowing down in hydrogen and other materials, influence of resonances and temperature, and neutron chain reactions.

Chapter 3 discusses the theory of neutron diffusion. Transport theory is used only in the introductory section of the chapter and for improvement of more approximate results. Two sections about diffusion with slowing down and Fermi age theory close this chapter.

From chapter 4 on, the book deals with reactor applications. Homogeneous reactors are dealt with in chapter 4. Some of the topics offered are the critical volume of a one-group reactor, its criticality equation, reactors of different shapes, multigroup theory, influence of a reflector, dynamical behavior of re-