

such tables. In Table IV. will be found all of the useful constants used in mathematics, chemistry, engineering, physics, and weights and measures. This table is a very complete one, containing, as it does, reference to almost every standard and constant used in the arts and science. Table V. is a reprint of the Gaussian six-place addition-subtraction logarithms. For determining trigonometric functions, there are two tables, the four-place already mentioned, and also a six-place table. The latter is a departure from the usual method. Generally, in a six-place table, the functions are given for each ten seconds. Professor Jones has made up the table for each minute of the quadrant, the proportional part being given for each second. The tables that follow those just explained consist of prime and composite numbers, squares, cubes, square-roots, cube-roots, reciprocals, and quarter-squares. Finally, we have Bissel's table of coefficients for interpolation, and a table containing the integral for finding the mean or probable error of a result in least squares. We judge from our examination that Professor Jones has prepared the tables with great care. He seems exceedingly anxious to free them of all errors, and to induce that condition of things he offers a reward for an error found in the tables. We have not critically examined the tables, but we note a slight error in the text. On the first page the reference to the pages containing Table IX. should read 118-133 instead of 114-133. We would commend these tables to the computer as being a help to have on one's desk.

G. A. H.

Pioneers of Science. BY OLIVER LODGE, F. R. S., Professor of Physics in Victoria University College, Liverpool, with Portraits and Illustrations. London, Macmillan & Co. 404 p. 8p. \$2.50.

In this work, Dr. Lodge has given the general public and the student a very interesting and readable book. As he states in his preface the book had its origin in a course of lectures on the history and progress of astronomy, delivered by the author in 1887. As is often the case with books based on a course of lect-

ures, it is somewhat disjointed. It is full, however, of interesting matter, and is lavishly illustrated, an unusual feature in works of this class. Its title is unfortunately misleading as the author does not attempt to cover the whole growth of scientific knowledge, but confines himself to astronomy. The book, however, is unique in the endeavor by means of plain, unaffected writing and a wealth of illustration to bring the pioneers of celestial knowledge into almost personal acquaintanceship with the reader, tracing the history of their discoveries and the dependence of one discovery upon another. It is to be commended to students of the history of science as a most useful reference book, and to the general reader as a book at once entertaining and instructive.

J. E. I.

AMONG THE PUBLISHERS.

THE career of the late Sir Richard Burton, the distinguished traveller, was most adventurous and romantic. He was an encyclopædic scholar, and much more than a scholar. He knew and had seen more of dark Africa than most men, and more of Mohammedan lands than any man. His biography, by Lady Burton, will be published shortly by D. Appleton & Co. The book will be decorated with illustrations and maps, as well as portraits. The first part of the story, it is said, will in the main be told in Sir Richard's own words.

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