Archimedes, opposite page 272. In none of these cases is it stated that these portraits are fanciful. It is true that historical material, including portraits of mathematicians, is usually of secondary importance in a mathematical text-book and may be omitted entirely, but when it does appear therein it should be reliable in order to inspire the student with due confidence and cultivate high ideals as regards truth.

Fanciful portraits of the same mathematician may naturally differ very widely, and this wide difference sometimes discloses nothing in regard to the known characteristics of the individual concerned. According to the *Bulletin of the American Mathematical Society,* Volume 40, page 189 (1934), under the heading "International Mathematical Congress Medals," an international committee was appointed to decide on awards to be made at the Oslo Congress (1936). The task of designing a suitable medal was entrusted to a Canadian sculptor who completed a medal showing a fanciful head of Archimedes, one of the greatest mathematicians of antiquity.

Since it was then well known that no reliable portrait of Archimedes was extant recourse was had to a collection of over thirty fictitious portraits then owned by D. E. Smith (1860–1944) and placed by him in the library of Columbia University. These show the views of many different artists and differ widely from each other. This procedure may be of interest to some who do not believe that the results obtained thereby have much scientific value. It is also of interest because it was used by such a large body of mathematicians, including some of the most noted at that time, and hence may appear to exhibit a widespread indifference as regards mathematical history.

The appearance of a considerable number of fanciful portraits in our elementary mathematical text-books is an element of the American history of mathematics which seems to have as yet received little attention. In fact, the history of the development of mathematics in our country has as yet received little attention. Important beginnings along this line were made by F. Cajori's work entitled "The Teaching and History of Mathematics in the United States" (1890) and by the small volume due to D. E. Smith and Jekuthiel Ginsburg, entitled "A History of Mathematics in America Before 1900." The former was published by the U. S. Bureau of Education and the latter by the Mathematical Association of America in 1934.

G. A. MILLER

UNIVERSITY OF ILLINOIS

SCIENTIFIC BOOKS

RADIO'S MEN OF SCIENCE

Radio's 100 Men of Science. By ORRIN E. DUNLAP, JR. New York: Harper and Brothers. 1944. $3.50.

To paint word portraits of the hundred men who have contributed most to radio is indeed no small task, but the author has succeeded in producing a profoundly interesting story and, within the limits dictated by space, he has given as full an account of the achievements and personalities concerned as could reasonably be expected. The result is a book which is full of interest from beginning to end.

Naturally, when one spreads the development of radio over a hundred individuals, there is likely to be ample room for divergence of opinion as to the appropriate choices which have been made. This is more particularly the case since many of the individuals named have paid their contribution, not to radio directly, but rather to some piece of apparatus or device which ultimately found its use in that field, but which was not invented with wireless primarily in mind. In those fields which pertain more particularly to radio itself, one might question the omission of certain names having to do primarily with measurements of the Kennelly-Heavisidean Layer and of the complex nature of the layer.

It would be out of place to make too much of minor points of technical criticism, but the elementary student of physics is so frequently castigated for failing to realize that Ohm's Law implies merely a proportionality between voltage and current, that one is rather concerned to find the sin for which he is so castigated supported in the citation of Ohm's Law given on page 34, to the effect that "A current flowing in any closed circuit is proportional to the force or voltage and inversely proportional to the resistance of the wire."

The author is to be congratulated upon having accomplished a very worth-while task and on having produced a book which is not only informative, but one which should serve as an inspiration to many young people whose ambitions urge them to simulate the outstanding inventors of the science of radio.

W. F. G. SWANN

BARTOL RESEARCH FOUNDATION,
SWARTHMORE, PA.

ELECTRICAL COMMUNICATION

Electric Circuits and Fields. By HAROLD PENDER and S. REID WARREN, JR. 509 pp. Illustrated. 8½ by 5¼ inches. New York: McGraw-Hill Book Company. First edition. 1943. Cloth, $4.00.

THE rapid development of electrical communication