Elliot C. Howe (1828–1899)—*Stropharia Howeana* (Peck).
William Herbst (1833–1907)—*Sparassis Herbstii* (Peck).
George Edward Post (1838–1909)—*Postia Lanuginosa* (Boissier & Blanche).
Joseph Trimble Rothrock (1839–)—*Rothrockia cordifolia* (Gray).
Harry Hapeman (1858–)—*Sullivantia Hapemani* (Coulter).

The biographies of all these worthies are presented in exhaustive and attractive style and will be a valuable source of reference to the future medical historian. Some of them, such as Adam Kuhn, B. S. Barton, Jacob Bigelow, George Engelmann and Asa Gray, are, of course, of great importance in the history of American botany. Alexander Garden, of the gardenia, or cape jessamine, was a prominent figure in the group of South Carolina physicians which Welch has pronounced to be the most important in the colonial period. The volume is extensively illustrated with rare portraits, facsimiles and beautiful photographs of the plants. To Dr. Kelly's friends it will always have a personal interest because he has put so much of his lovable self into it.

F. H. Garrison
Army Medical Museum

The Deaf. Their Position in Society and the Provision for Their Education in the United States. By Harry Best. New York, Thomas Y. Crowell Co. 12mo. Pp. 340. Cloth.

There is, perhaps, no more accurate indication of the state of civilization reached by any people than the extent to which its handicapped classes are assisted to overcome their disadvantages and to approach a normal position in society. Judged by this standard, the people of the United States are rapidly advancing. Mr. Best has gathered a mass of very valuable data concerning a much-misunderstood class and embodied it in his book in a clear, intelligent and interesting arrangement.

It would be well if some way could be found to compel the reading of this book by every commissioner of education in the country, as well as by others to whom the citizens have entrusted the shaping of educational procedure. The problem of the deaf has passed from the realm of charity to that of education, and the solution of it has become an integral part of the task of every public-school system. If the knowledge contained in Mr. Best's book could be assimilated by those in educational authority throughout the country, the deaf would be immensely benefited.

Like every other human activity that has not as yet been reduced to an exact science, the effort to enable the deaf to overcome their great handicap opens the way to many differences of opinion as to how it can be most efficiently accomplished.

Mr. Best endeavors to state the facts and let his readers arrive at their own opinions. But he very properly sums up his book in a few general conclusions.

He finds the matter of paramount importance to be the preventing of deafness, and that, up to the present time, this has received only minor attention, but is likely to receive a greater proportion hereafter because of the present general warfare against disease, and the campaign for eugenics. He points out that the two elements to be principally controlled are consanguineous and syphilitic marriages, as well as marriages between persons having deaf relatives, and second, the element of watchful supervision over the ears in connection with such diseases as scarlet fever, meningitis, measles, etc., since three fourths of the cases of adventitious deafness come as a secondary result of infectious diseases. Fifty-two per cent. of the cases of total deafness occur before the age of two years. If, through some agency like the "Child Bureau" of the national government, parents could be informed of the exceptional danger to the hearing during the first two years of life, they might be induced to secure more medical supervision of their children's ears, noses and throats during the early years. That, combined with increased intelligence concerning this matter on the part of physicians, would reduce the percentage of early deafness.

Second in importance to the prevention of

deafness comes the education of the deaf. Mr. Best calls attention to the extraordinary fact that in many states the laws for compulsory education do not apply to the deaf, whereas they ought to apply to them with greater force than to the hearing, as the deaf are in more extreme need of special training. He says that "in the wide sweep of education the deaf have been the gainers as no other people in the world have been." "Yet," he continues, "the victory of the deaf is not complete. So long as people look upon them as an unnatural portion of the race; as of peculiar temperament and habits . . . just so long will the deaf be strangers in the land in which they dwell." He goes on to say that "there is still more or less conflict as to methods (of instruction), but this does not seem vital to the success of the schools." In this opinion it would seem that Mr. Best is mistaken. The one thing that makes the deaf "strangers in the land in which they dwell" is the use of a foreign language, the language of the fingers and of gesture. This situation has been created by the "*method*" by which they have principally been educated. That the employment of these silent means of communication is not necessary is amply demonstrated by the fact that *all* the deaf children of Massachusetts have for many years been educated wholly by means of the common communication of the race without recourse to the foreign language of the hands, and that the largest school for the deaf in the world, the Pennsylvania Institution for the Deaf, is so conducted. If this can be done in Massachusetts and Pennsylvania, what state is willing to acknowledge that the intelligence of its citizens and the extent of its educational capacity is less than that of any other state? It would seem, therefore, that the *method is vital* to the success of the schools in gaining a complete victory.

Mr. Best finds that 18.2 per cent. of those born deaf can use speech as a means of communication. Are the other 82 per cent. of too low an order of intelligence to acquire this ability? Certainly not. They have not acquired it because they were not given the same chance fortunately enjoyed by the 18 per cent. who were taught by the proper methods.

At the opening of a chapter on "The Use of Signs as a Means of Communication," the author says: "Deaf children can not be educated as other children, and in the schools there have to be employed special means of instruction." So far as this "special means of instruction" refers to the use of a language of the hands in communication the statement is entirely false. Deaf children have been educated in large numbers without special means of communication, and it has been the error into which this writer has fallen that has been largely responsible for the isolation of great numbers of the deaf. This error was brought here by an unfortunate chance, from France, where it was long since abandoned. But, as the author points out, the trend of progress is plainly indicated to be away from the initial error of silent methods and toward the normal speech method.

There can be no objection to deaf adults using any form of communication between themselves that they desire or find convenient, and the ability to use the sign language and finger spelling can be acquired by any one in a very few weeks. But an ability to communicate with hearing people by means of speech and speech reading can not be acquired except through long and patient effort from childhood and should therefore be used exclusively during the educational period. As the use of the speech method becomes more universal the "differentiation from the rest of their kind," and the lack of absorption in the body politic to which the author refers will steadily decrease, since they will no longer be so largely "removed from the usual avenues of intercourse."

Mr. Best finds that though an early disappearance of deafness does not seem likely, it is apparently decreasing. His second chapter is entitled "The Deaf as a Permanent Element of the Population." His third chapter takes up the deaf with relation to the state; the attitude of the law and of legislation toward them. He finds that "legislation discriminatory to them has practically disappeared, and in judicial proceedings particular usage has almost entirely passed away."

Chapter four takes up the "economic con-

dition of the deaf." He states that "50 per cent. of the deaf over 20 years of age are reported in gainful occupations, the percentage for the general population being 50.2 per cent. In the five great occupations, agriculture, manufacture, service, trade and professions the proportions are about the same for the deaf and the general population. Their own achievements have thrown out of court the charge that they are a burden upon society."

John D. Wright
The Wright Oral School,
New York City

Natural Sines to Every Second of Arc, and Eight Places of Decimals. By Emma Gifford. Published by Mrs. Gifford, Oaklands, Chard, Somerset, 1914. Pp. vi + 543. Price £1.

It is evident to any one who takes the trouble to consider the matter that this is an era of efficiency in the computations of the laboratory and observatory as well as in the work of the great industrial plants of the world. The astronomer, the physicist, and he whom Sir George Greenhill often delights to refer to as the "mere mathematician" are all conscious that the time is past when the individual investigator should compute if he can get some instrument, human or mechanical, to do this work for him. And so we have in our day a remarkable surging forward of the flood of computing devices—slide rules of many types, listing machines, comptometers, cash registers which mechanically add, and all sorts of other devices which do for the computer what he one time was forced to do for himself at great expenditure of energy. And we also have, but in less marked degree, a number of new tables, ingenious little ones like those of Professor Huntington, and ponderous newly-computed ones like those on which M. Andoyer is still engaged. All these aids to computation are healthy signs that the scholar joins the "sharp-lined man of traffic" in seeking the greatest efficiency in his exhausting labors.

Of the recent tables for saving the time of the computer no one is more noteworthy than the one of natural sines which has been computed and recently published by Mrs. Gifford. Georg Joachim computed such a table to ten figures and to every ten seconds, and this was published in 1596, after his death. This table was again printed in 1897, but was carried to only seven figures. Mrs. Gifford, however, has prepared a table extending one figure further than this, namely, to eight places, and has carried it to every second instead of every ten seconds. It is therefore apparent that here is by far the most complete table of natural sines that has ever been attempted. And not only is it the most complete but it is a model of convenience, so that the computer who has occasion to use a table of this kind will have good reason to thank Mrs. Gifford for her great care and patience.

It is hardly possible that such a table can be free from errors, particularly in cases where the last figure is near 5. Aside from this, however, a rather extensive use of the work by one computer for some months has revealed only a single error, namely, in sin 56′ 40″. Mrs. Gifford is correcting the tables in this and other minor respects, however, before issuing them.

The tables should have place in every college library and in every physical laboratory, observatory and mathematical workshop.

David Eugene Smith

Principles of Physics. By Willis E. Tower, Charles H. Smith and Charles M. Turton. P. Blakiston's Son & Company. 1914.

The teaching of high-school physics presents difficult problems. For each teacher there is undoubtedly a "best" text, and it is highly desirable that every teacher have a number of good texts from which to make the selection that seems, in practise, to be the best suited to himself. For this reason the text of Tower, Smith and Turton should be welcome. It does not claim to possess striking peculiarities, but rather to incorporate the best ideas found through extended experience of the authors.

The authors have attempted to adopt what they consider to be the conclusions reached by the "new movement in the teaching of physics." An introductory chapter is followed by one which is given to the explanation of a