

but the chapter is a valuable one and the omission means a loss to German readers.

The chief variation in the text of the works of Archimedes as given by Heath lies in the inclusion of the recently found Methodus and fragment of the Stomachion. The former will appear in volume III of the new Heiberg edition, and the latter is already in volume II.

Dr. Kliem has done an excellent piece of work. The book is well printed, better indeed than the English edition, and it will bring to the German scholars a piece of work of the best scholar in England in the field of Greek mathematics. Reviewers so commonly refer to the lack of an index that it seems almost hopeless to get publishers to realize the annoyance that is caused by the want of such a time-saving feature. In neither the English nor the German edition is an index given, although in a work of this kind, where a scholarly introduction contains many details to which a table of contents cannot refer, it would be of great value.

DAVID EUGENE SMITH.

Geheimnisse der Rechenkünstler. P. MAENNCHEN. Mathematische Bibliothek, Bd. XIII. Leipzig, B. G. Teubner, 1913. iv + 48 pp. Price, 80 Pfennige.

AGAIN have Drs. Lietzmann and Witting made all lovers of mathematics their debtors for an entertaining little volume in their new series of handbooks. They have set out to give to the world a series of popular essays on the non-technical phases of mathematics, and thus far they have been successful in showing to their readers the brighter side, sometimes the less serious side, but always an interesting side of the science. To this rule the recent monograph by Professor Maennchen is no exception. The very title is attractive, and the dialogue between the Publikum and the Rechenkünstler, while very Teutonic, is cast in a pleasing style that keeps the reader's interest throughout.

The nature of the work can best be understood by a few quotations, but the interest of the reader will doubtless be fostered if the reviewer refrains from giving the explanations which Dr. Maennchen sets forth in the text.

The Publikum asks for the cube root of a perfect cube of five figures, whereupon the Rechenkünstler asks for the last three figures and is told that they are $\dots 683$. He at once states that the cube root is 27.

The Publikum then asks for the cube root of 45,118,016, and the Rechenkünstler at once states that it is 356. When asked for the cube root of a perfect cube of seven figures he calls for the last three figures only, and upon being told that they are $\dots 313$ he at once says that the cube root must be 217, although he is ignorant of the other figures.

The Publikum then sets the problem to find the seventh root of a twelve-figure number, and is asked to state the last figure (in this case $\dots 7$) and then to give all the figures in any order it chooses (in this case given as 887621111107, although the whole number was really 271,818,611,107). The answer is at once given as 43.

Among some of the more difficult problems worked out mentally, the method being stated in the text, are the following:

The fifth root of 11,576,155,017,345,132,257 is 6497. The eleventh root of a number of fifteen figures (952,809,757,913,927) is given as 23, the computer being told the figures in any order whatever (in this case, 012235577789999).

The thirty-first root of a perfect power, the number having thirty-five places, is given as 13, the computer not being told even a single figure. The number is 34,059,943,367,449,284,484,947,168,626,829,637.

The second half of the book is devoted to the Easter problem, the famous Elberfeld horses, the multiplication methods of Ferrol (which are shown to be applications of processes known for many centuries), the relation of the properties of nine to the Fermat problem, and the further proposition of Fermat with respect to a^{p-1} .

DAVID EUGENE SMITH.

Konforme Abbildung einfach-zusammenhängender Bereiche.

Von E. STUDY. Zweites Heft, herausgegeben unter Mitwirkung von W. BLASCHKE. Leipzig, B. G. Teubner, 1913. iv + 142 pp.

THIS is the second volume* of a series of lectures on geometric topics by Study and deals with the conformal transformation of singly connected domains, a subject which, after a long period of stagnation, has in recent years received the attention of a number of investigators. In the center of these researches stands the possibility of the conformal mapping of a given

* See review of vol. 1, in this BULLETIN, vol. 19, pp. 15-18.