

mathematical rigor and intuitive justification and it is obvious that he knew precisely what he wished to do in this respect.

The book will certainly prove to be of great value as a text for teaching the subject of differential equations to technical students. For those interested primarily in mathematics it contains much illuminating material. There is a large collection of instructive problems to which answers are given.

Among the few misprints noted there is only one which might lead to misunderstanding. On page 31, tenth line from the bottom, the third word should be "order" instead of "degree."

W. R. LONGLEY

*Platons Verhältnis zur Geschichte der Mathematik.* By Seth Demel. Leipzig, Felix Meiner, 1929. v+146 pp. Price 6 RM.

This interesting and valuable contribution to the history of Greek mathematics and philosophy appears as the first part of the fourth volume of the *Forschungen zur Geschichte der Philosophie und der Pädagogik*, edited by Artur Schneider and Wilhelm Kahl. The series is setting a high standard of scholarship, and we may venture to hope that a similar set of monographs, showing evidence of the same ideals, may in due time be founded in one of the schools of education in this country.

What Dr. Demel has undertaken is a new study of the relation of mathematics to philosophy in the writings of Plato. The theme is by no means a new one, as he himself is at pains to show. Blass (1861), Rothlauf (1878), Cohen (1878), and various historians of mathematics have already considered it. But Dr. Demel has approached the problem from an angle which differs from those of his predecessors. He has considered the evidences of Plato's knowledge of and dependence upon mathematics in successive periods, as evidenced by his writings. In this he has been aided by the studies of Wilamowitz who, in 1918, considered with great care the chronology of Plato's works as determined largely by his choice of words and his style. The first conclusion set forth is that, in his early period, Plato showed no evidence of any real knowledge of mathematics. Socrates, upon whom he was so dependent, was not interested in the subject, and Plato's knowledge of any writings on the science by such scholars as Theodorus of Cyrene and Hippias of Elis seems to have been slight. In his *Protagoras* he mentions the subject, but sees in it little beyond a few remote analogies, elementary computation, and simple measurement. The first evidence of his conception of any noteworthy connection of mathematics with philosophy is found in the *Charmides*, where he argues that the former is something which transcends the mere utilitarian and has a genuine philosophic value. The same spirit is observed in the *Gorgias*. It is in the *Menon*, however, that Plato seems to have awakened to the real value of mathematics as a subject worthy the attention of the philosopher, and this value is emphasized in his later writings; notably in the *Politicus*, *Theaetetus*, *Parmenides*, *Timaeus*, and *Philebus*.

Throughout the work Dr. Demel has set forth his textual evidence in the original Greek, followed, except in minor cases, by a translation into German.

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