

treated very briefly, and some knowledge of various special operations is presupposed. A familiarity with the preceding volumes would not be sufficient preparation for the intelligent reading of the present one.

VIRGIL SNYDER.

A SYNOPTIC COURSE FOR TEACHERS.

Elementarmathematik vom höheren Standpunkte aus. Von F. KLEIN. Teil I: *Arithmetik, Algebra, Analysis.* Vorlesung gehalten im Wintersemester 1907–08. 5 + 590 pp. Teil II: *Geometrie.* Vorlesung gehalten im Sommersemester 1908. 6 + 515 pp. Ausgearbeitet von E. HELLINGER. Autogr. Leipzig, in Kommission bei B. G. Teubner, 1908–09.

THE volumes under review contain a course of lectures intended for prospective teachers of mathematics in the secondary schools of Germany. The objects of the course and the reasons for giving it are so well stated in the introduction to the first volume and are of such vital interest in their application to conditions in our own country, that it seems desirable to quote at length.

“In recent years”—thus does Professor Klein begin his first lecture—“a widespread interest has developed among university teachers of mathematics and the natural sciences regarding the proper training of teachers for our secondary schools. This movement is of quite recent date; for a long period previously our universities were concerned exclusively with the higher science without any reference to the needs of the secondary schools and, in fact, without attempting to bring about a connection with secondary mathematics. But what is the result of such a practice? The young student at the outset of his university work is brought face to face with problems that do not serve to remind him of what he has previously studied and naturally he proceeds to forget all of it quickly and thoroughly. On the other hand, if after leaving the university he enters upon his work as a teacher, he is required to give instruction in the established courses in elementary mathematics and, as he is unable without assistance to bring his new work into relation with his advanced mathematics, he soon adopts the old traditional methods and his university studies become merely a more or less pleasant memory which has no influence on his teaching.