

THREE REPRINTS FROM THE ENCYKLOPÄDIE

Neuere Untersuchungen über Funktionen reeller Veränderlichen, nach den Referaten von L. Zoretti, P. Montel, und M. Fréchet. By A. Rosenthal. Leipzig, Teubner, 1924. 351 pp.

Neuere Untersuchungen über trigonometrische Reihen. By E. Hilb and M. Riesz. Leipzig, Teubner, 1924. 40 pp.

Neuere Entwicklung der Theorie partieller Differentialgleichungen zweiter Ordnung vom elliptischen Typus. By L. Lichtenstein. Leipzig, Teubner, 1924. 58 pp.

The first article is a revision of the corresponding article in the French Encyclopedia, prepared under the direction of Professor Borel by Professors Zoretti, Montel and Fréchet. The original plan was to translate the French article as it stood, but a desire for greater completeness and accuracy led to an arrangement for its revision instead. As a result of the interruption in the work caused by the war, a ten year interval elapsed between the conclusion of this arrangement and the publication of the article. Hence the new material added in the revision took on the proportions of an entirely new article, the present version being about two and a half times the size of the original one. The additions are all indicated by the symbols *...*, in accordance with the agreement made with Professor Borel and the usage in the French revision of articles appearing first in the German Encyclopedia.

The first part of the article, which forms the revision of the portion of the original article due to Zoretti, deals with the theory of point sets, and is based both on the literature prior to 1912 (the date of the French edition) and subsequent to that date. In the chapter entitled "Verallgemeinerungen" the author gives a brief account of work in General Analysis, to which he refers as "die weitgehenden Untersuchungen von E. H. Moore und seinen Schülern." He stresses particularly the very great generality of the results attained. A detailed account of these results is not given, since such an account would belong more properly in the article by Pincherle on functional operations and equations (ENCYKLOPÄDIE, II A 11), which was completed before the publication of any of the work in General Analysis.

The second part of the article forms the revision of the portion of the original version contributed by Montel, and deals with integration and differentiation. Among the noteworthy additions to be found in this part may be mentioned work on integration due to Pierpont, F. Riesz, Denjoy, Hellinger, and Perron, and the notion of the approximate derivative due to Khintchine and Denjoy.