

cartesian coördinates of a point on the mean surface of an isotropic congruence, where the functions f and f_1 which enter in these expressions refer to the minimal surface which is the envelope of the mean planes of the congruence. In the present case these functions refer to S_3 , the adjoint minimal surface of S_2 , the latter being the associate of S in the deformation determined by S_1 . Hence we have the following theorem :

The middle envelope of an isotropic congruence is the adjoint of the minimal surface which is the associate surface in the infinitesimal deformation of the sphere, the directrix of the congruence.

PRINCETON,
November, 1901.

KRONECKER'S LECTURES ON THE THEORY OF NUMBERS.

Vorlesungen über Mathematik, von Leopold Kronecker, herausgegeben unter Mitwirkung einer von der Königlich Preussischen Akademie der Wissenschaften eingesetzten Kommission. In zwei Teilen. Zweiter Teil. Vorlesungen über Allgemeine Arithmetik. Bearbeitet und herausgegeben von DR. KURT HENSEL. Erster Abschnitt: Vorlesungen über Zahlentheorie. Erster Band. 8vo., xvi + 509 pp. Teubner, 1901.

In the summer semester of 1841 Lejeune Dirichlet gave, for the first time, a course of lectures under the title of "Zahlentheorie" at the university of Berlin.* These lectures were attended by Kronecker. The subject was soon afterward added to the regular announcements not only at Berlin but also at the other German universities. The fact that during the winter semester of the current university year at least seven of the German universities offered courses on this subject, given by such well-known men as Frobenius, Weber, and Gordan, is sufficient evidence of the abiding interest in the theory which, according to Gauss, excels all other parts of pure mathematics in "its magic charm" and "its inexhaustible richness."

The volume before us is to be followed by a second on the same subject. In these volumes the editor aims to develop the theory of numbers in such a manner as to preserve the personal imprint of Kronecker, but to fill out the lacunæ which the lectures of this great arithmetician naturally pre-

* Under the title of "Anfangsgründe der höheren Arithmetik" Dirichlet offered a course on the theory of numbers at Berlin as early as 1833.