

Serret's Lehrbuch der Differential- und Integralrechnung.
 Vierte und fünfte Auflage, zweiter Band, bearbeitet von
 GEORG SCHEFFERS. Leipzig, Teubner, 1911. xiv+639 pp.

THE present edition (or let us say issues, since it seems to be dual!) is a reprint, with slight alterations, of the third. Besides the half dozen paragraphs listed in the preface there are three or four more that have undergone some considerable degree of remodelling. This adds nine pages to the bulk of the book. (The convenience of the student has been consulted, in making these alterations, by retaining, with few exceptions, the old paragraph numbering.) Beyond this the changes are those of phraseology.

The novelty of the present edition is an appendix of 46 pages of historical notes—to both the first and second volumes. It is purposed to supply the third volume also, whenever a new edition becomes necessary, with a like apparatus. These notes are in response to wishes often expressed and are welcome. They seem particularly full on matters of mathematical nomenclature, notation, symbols. The desirable custom has been followed of adding to the name of each (no longer living) author the years of his birth and death.

The reference on page 447 to *page* 405 should be to the paragraph of that number (*No.* 405).

FRANK IRWIN.

Ueber die Theorie benachbarter Geraden und einen verallgemeinerten Krümmungsbegriff. Von W. FRANZ MEYER.
 Leipzig und Berlin, Teubner, 1911. xi+152 pp.

THIS supplement to the ordinary text-book on differential geometry has, as its fundamental idea, a generalization of the notion of curvature of a space curve obtained by replacing the tangent at a point of the curve by an arbitrary line through that point. The idea is not new. Articles dealing with certain phases of the subject had appeared five years before the publication of this book. From time to time other papers were published by the author and his students and various other writers. Here these results are exhibited in their relations to one another and are supplemented by new material.

The book opens with a concise treatment of the moving trihedral, curvature, torsion, the Frenet formulas, etc., with reference to an arbitrary line g through a point of the space