

The space devoted above to criticism of individual excerpts is relatively much greater than they deserve, and is apt to give an erroneous effect. The main impression made upon the reviewer is that the book is very readable and even interesting (rarely true of textbooks on statistics), except possibly for the algebraic passages referred to above. Teachers of courses which cannot, or do not, require any knowledge of the calculus, will probably find in this book the text they have long sought.

C. H. FORSYTH

HUDSON ON CREMONA TRANSFORMATIONS

Cremona Transformations in Plane and Space. By Hilda P. Hudson. Cambridge University Press, 1927. xx+454 pp.

The appearance of a first exhaustive treatise in any field of mathematics is a matter of concern to those who pursue the particular subject. Books of that type frequently determine the trend of mathematical thought and progress for a considerable period. Perhaps no topic in algebraic geometry has been in greater need of such exposition than Cremona transformations. The earlier presentations are either elementary or incidental to some immediate geometric need. Existing encyclopedic accounts are rather cursory. Thus a large body of researches on the subject, widely distributed in the journals, has been either inaccessible or unknown to those who might wish to become acquainted with the field.

To digest and to unify this mass of material was a task which demanded not merely a mastery of the subject but also an uncommon capacity for detail. This task Miss Hudson has accomplished in a most admirable manner in the book under review.

The book itself gives an impression of unity which is rather remarkable in view of the diversity of the transformations of which it treats. This doubtless is due to the wisdom of the author in selecting from the field a naturally related group of topics. Only transformations in the plane and in space are considered. For each case these are discussed first with reference to the properties common to all and secondly with reference to their division into various types. The single application considered is to the resolution of singularities of curves and surfaces and a treatment of this is practically inevitable since such singularities are present in the transformations. This is the division of the subject to which most of the author's own contributions have been made. No geometric applications are given except as they may be involved in the construction of a type, or as they may be inherent in the general class such as the isologues of a transformation in superposed planes or the complex associated with a transformation in space. Applications to other fields of mathematics are omitted. No account of Cremona groups, finite or infinite, appears.

The nomenclature of the author is on the whole well chosen even though individual contributors to the subject must generally expect to find that their own notations have not, in all cases, been adopted. Miss Hudson adopts the term *F-system* (*fundamental system*) for the aggregate of points in S whose correspondents in S' are indeterminate; and *P-system*