SPECIAL PLANE CURVES.

Spezielle ebene Kurven. Von Dr. HEINRICH WIELEITNER. Leipzig, Göschen (Sammlung Schubert LVI), 1908. 8vo. xvi + 409 pp.

THE high standard which the author's book on Algebraische Kurven set is maintained in this admirable treatise both in subject matter and presentation. The fact that it has 189 figures and 282 sections in its text, each of which contains a discussion of several curves, gives an idea of the comprehensiveness of the treatment.

The arrangement of the book is unique and the reader is not bored as though he were reading a curve catalogue, but has his interest continually quickened by the clever manner in which one group of curves leads up to another and the curves of a group are related. Of the two most noteworthy books on this subject, Gino Loria arranges his "Spezielle algebraische und transzendente ebene Kurven" with their historical significance as a background; while F. Gomes Teixeira wrote his "Tratado de las curvas especiales notables" more as an encyclopædia. Wieleitner however takes up the subject from the standpoint of the mode of generation of the curves, without regard to their order or transcendency. The distinctive and most interesting feature of the book is that the author avoids the chaos of separate headings and at the same time makes a connected whole by putting in each family of curves those which arise from the original curves of the group by certain derivations such as inversion, pedal construction, polar reciprocation, evolute formation, and others. Thus certain curves are studied from many points of view and great numbers of the more noted curves are found to possess relations to each other which are fascinating to the reader.

The book contains five chapters headed respectively Cissoids, Conchoids, Other curves with simple kinematic generation, Roulettes, and The method of change of coordinates. We will mention briefly the contents of the first three chapters in order to speak more fully of the important things covered by the last two.

The generalized cissoids are defined as those curves formed by drawing through any point O a straight line G which cuts two arbitrary curves Γ and Γ' at P and P' respectively; the