in Chapter 5. We mention particularly the proof of Bloch, the idea of which begins to play an important role in the most recent investigations. Theory of entire functions is discussed in Chapter 6. In the exposition of the general theory the author uses mainly ideas of R. Nevanlinna. The end of the chapter is devoted to the beautiful recent proof by Ahlfors of the theorem of Denjoy-Ahlfors concerning the asymptotic values of entire functions. Chapter 7 (67 pp.) treats of various problems of analytic continuation and of related questions. We mention theorems of Hadamard, Fabry, Wiegert-Faber, Pólya-Carlson, and many others. The book ends with the very appropriate application of the general theory to the theory of zeta-functions (Chapter 8, 33 pp.).

Several remarks might have been made concerning various details of exposition, a few lapses and mistakes might have been mentioned. In particular it is the reviewer's opinion that the reader will find many difficulties in reading and understanding Chapter 4, on uniformisation, and that this important and difficult branch of function theory is still lacking an adequate exposition. All these remarks will be of comparatively minor importance, however. Most, if not all of the defects will be probably eliminated in the third edition of this extremely useful and suggestive book, which undoubtedly will appear before long.

J. D. Tamarkin

Vorlesungen über Geometrie. By A. Clebsch and F. Lindemann. Volume I, Part I, Number 3, second augmented edition. Leipzig and Berlin, Teubner, 1932. xvi+101+ii pp.

The portion of the second edition which is at last published in full covers, in 869 pages, the same topics which were treated in 284 pages of the first edition. The principal divisions are:—1. Introductory Considerations, Ranges and Pencils, 2. Curves of the Second Order and Second Class, 3. Introduction to the Theory of Algebraic Forms. The three numbers were issued in an inconvenient manner. Number 1, published in 1906, had pp. 1–480, and broke off in the middle of a chapter on collineations in the ternary domain. Four years later, the publishers put out pp. 481–768, and again stopped *in medias res*, this time in a consideration of sundry problems from the theory of binary forms of higher order. Now, after the lapse of twenty-two years, we have the final pp. 769–869 in a pamphlet which also contains a table of contents and an index for the whole of Part I. It seems unlikely that more of the second edition will ever be published. Since the first, or 1876, edition had 1700 pages, it appears that the second edition covers only about a sixth of the original work.

In the issue now under review Lindemann completes his introduction to the theory of algebraic forms by discussing individual problems which show the connection between binary forms of higher order and the theory of linear differential equations, spherical and Lamé functions. The treatment is by means of extensions of certain theories due to Hilbert. The last two chapters use invariant-theoretic ideas about binary cubic forms, in conjunction with the representation of binary forms in the complex plane, to furnish a general principle which unifies a part of the immense group of theorems about noteworthy points and circles of the triangle. The discussion here is particularly elegant, but it presupposes a considerable knowledge of the geometry of the triangle.

C. A. Rupp