correspond respectively to: (real) Linear vector spaces, Linear vector spaces with a positive definite scalar product, and Linear vector spaces with a scalar product, not necessarily positive definite. Part I (=Chapter 1) is mainly of an introductory nature. Part II is concerned with geometrical considerations in a linear vector space with a positive definite scalar product. Chapter 2 ends with a section entitled "The key to the hypercircle method," and this is where the present review started. Chapter 3 bears the title: "The Dirichlet problem for a finite domain in the Euclidean plane." Chapter 4 is titled "The torsion problem." Chapter 5 deals with various boundary value problems, for example, the equilibrium of an elastic body. Part III contains two chapters, one on geometry and the other one on vibration problems. Somewhat loosely phrased, the general idea is that the minimum principles of Part II become variational principles in Part III.

The printing and format of the book are excellent. The exposition is of the highest order; many an exquisitely turned phrase is to be found among its pages. There is a wealth of figures and every section ends with a set of exercises for the reader. The author's keen concern for actual numerical results is evident from the many specific examples which he has worked out in detail, using a hand computer. Of special interest in this regard is his clear distinction, at the end of Chapter 2, between reliable and unreliable bounds, relative to the usual methods of numerical computation to so many significant figures. The author's point about "the practical computer (who claims to have *solved* a set of equations, when he has not, strictly speaking)" is very well taken.

J. B. DIAZ

Differentialgeometrie. By E. Kreyszig. Mathematik und ihre Anwendungen in Physik and Technik. Series A, vol. 25. Leipzig, Akademische Verlagsgesellschaft Geest und Portig K. G., 1957, 9+421 pp. DM 36.

This book belongs to the type, represented in English by Eisenhart's *Introduction to differential geometry* (Princeton, 1940), in French by Bouligand's *Principes de l'analyse géométrique* (Paris, 3d ed., 1949) and in German and Čech by Hlavaty's *Differentialgeometrie* (Groningen, 1939), written for those who believe that the standard material of classical differential geometry is best presented within the context of or at any rate together with the tensor calculus. Such students and lecturers will find in the present book a pleasant and unhurried presentation of the elementary theory of curves and surfaces