cases it is entirely appropriate, but the application to the Geiser and Bertini involutions is decidedly sketchy.

The book closes with a well written chapter on the n-line, developing from the beginning the essentials of the Clifford-Morley chain.

The press work is excellent and the proof reading faultless. The authors have succeeded in presenting the power and the fascination of the uses of inversive geometry in a competent and dignified way.

VIRGIL SNYDER

Le Calcul Vectoriel. By Alex. Véronnet. Paris, Gauthier-Villars, 1933. xviii+252 pp.

Except for a few chapters on the fundamental operations, this book is concerned almost entirely with the analytical properties of vectors in n dimensions. With a set of n coordinates is associated a vectorial number having those coordinates as components. A function of the coordinates is then regarded as a function of the vectorial number and operations of differentiation are defined analogous to those for a single variable. By taking the unit vectors as variable, the operations of tensor analysis are given a natural and simple interpretation. The treatment is formal in the sense that there are no convergence or limit proofs. No special notation is used, it being the view of the author that the reader should know from its significance what type of scalar or vector each letter represents. There are no problems or applications to physics. This book, particularly the chapter on tensors, should prove valuable collateral reading for the student interested in the analytical or multiple-algebraic phase of vector analysis.

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