

## EISENHART'S DIFFERENTIAL GEOMETRY.

*A Treatise on the Differential Geometry of Curves and Surfaces.*  
By LUTHER PFAHLER EISENHART. Boston, Ginn and Company, 1909. xii + 474 pages.

THE plan of this book is similar to that of a number of mathematical treatises which have recently been published in the United States. It is intended to serve as an introduction to the subject of differential geometry for use in graduate courses; at the same time it contains accounts of recent researches on special topics by the author and by other writers which will be of interest to any reader and may well serve as an inspiration to further investigation on the part of the student.

The writer of this review has found the book an exceedingly useful one to have in the hands of students in a course in differential geometry. It contains numerous examples, some inserted in the text to illustrate particular discussions, and others of a more general character at the end of each chapter. Many of these examples are difficult for the elementary student to handle, but a suitable selection can readily be made. In the course referred to the book was used for reference, for the examples, and as a basis for reports by students. It was not found practical to follow closely the arrangement of material or the details of the discussions of particular subjects. These are matters, however, which depend much upon the individual taste of the instructor and the character of the students with whom he has to deal, and the fact that the book presented in many cases a different view-point from that of the lecturer seemed to enhance rather than to diminish its value.

In these days of the popularity and elegant methods of the theory of functions of a real variable, it is interesting to note that much of the theory of surfaces can be developed without the use of imaginaries, and to see also that the existence and uniqueness theorems for real differential equations can be applied with economy in many places. Professor Eisenhart has made use from the start of expansions in series. It is true of course in some cases, as for example with minimal curves and surfaces, that the theory would be incomplete or difficult to phrase without the in-