

wishes to be understood in some other sense, which his words do not admit (in other words to *crawl* if we may be permitted to use an expressive vulgarism) can appreciate the labor involved in the production of a text-book with this high record of correctness. We can recommend the book, in spite of some shortcomings, as one from which few readers can fail to get much valuable information without undue effort.

MAXIME BÔCHER.

DIFFERENTIAL INVARIANTS.

Invariants of Quadratic Differential Forms. By J. EDMUND WRIGHT. Cambridge Tract No. 9. Cambridge University Press, 1908. viii + 90 pp.

IN these days, when the number of papers in mathematics published each year is almost without limit and the ramifications are no less perplexing in their variety, one is delighted to find here and there a digest of the work in a particular field. These are the pleasures which the Cambridge Tracts hold in store for us, and we owe a debt of gratitude to our fellow-workers who are willing to pause in their researches to give us a panoramic view of their field and thus to turn over to us in nut-shell form the products of their searchings in the works of their colaborers. The author of the tract before us felt that this was its mission and he seems to have attained his hopes.

In his introduction he leads the reader into the domain of his subject by showing him an invariant and then defining it. The example taken is naturally enough the Gaussian curvature of a surface whose linear element

$$ds^2 = dx^2 + dy^2 + dz^2,$$

expressed in terms of two independent parameters u and v , is written

$$ds^2 = Edu^2 + 2Fdudv + Gdv^2.$$

The idea of differential parameter is also suggested at this time. The reader is then acquainted with the magnitude of the field of inquiry and of the two kinds of problems: (i) The determination of all invariants of one or more differential quadratic forms and their relations; (ii) The geometrical and mechanical interpretation of these invariants.