

etry, trigonometry, and related branches. The models of star-polyhedra, Poinset polyhedra, and the so-called Archimedian semi-regular solids may be mentioned as desirable for more advanced mathematical considerations.

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DIFFERENTIAL GEOMETRY.

Leçons sur les Systèmes orthogonaux et les Coordonnées curvilignes. Par GASTON DARBOUX. Deuxième édition, complétée. Paris, Gauthier-Villars, 1910. 8vo. i+567 pp.

THE first 323 pages of the present volume constitute a reprint of the first edition, which was reviewed in the *BULLETIN* of January, 1899, by President E. O. Lovett. It was originally Darboux's intention to include in the complete work a number of other subjects, such as the theory of quadratic differential forms. This plan was eventually abandoned, and only such subjects are discussed in the completed volume which is now before us as are more or less directly connected with orthogonal triple systems of surfaces and families of Lamé. From the point of view of the artistic unity of the book, this change of plan is only to be commended. Let us hope however that the Fates may deal kindly with the great master of differential geometry; may the fear, which he expresses in his preface, of being prevented from completing his discussion of these other matters, prove to be unfounded; and may he be permitted to add many further contributions to the science to which he has devoted his life and which already owes him so much.

For mathematics owes a great debt to Darboux. Rarely do we find such a combination of the geometer and the analyst as is present in this master mind. He makes clear, not merely by precept but by example, that it is not enough to express a problem of geometry in analytic form and then solve the differential equations. He recognizes the true task of differential geometry as an exhibition of the complete parallelism between analysis and geometry. Not until this has been accomplished does he rest content with the solution of a problem, and many of his most notable contributions have resulted from this tendency to strive for a complete