may be followed readily by all whom this paper may interest.

Geometrography is treated didactically in the Traité de géométrie of Rouché et de Comberousse (7th edition, volume 1, Gauthier-Villars, Paris, 1900), in the *Archiv der Mathematik und Physik*, April and May, 1901, and more fully in my La géométrografie, Paris, Naud, in press, 8vo. 100 pp.

CONCERNING THE ELLIPTIC $\wp(g_2, g_3, z)$-FUNCTIONS AS COÖRDINATES IN A LINE COMPLEX, AND CERTAIN RELATED THEOREMS.

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Introduction.

Systems, that have appeared from time to time, of coördinates for the Kummer surface, each more or less related to the elliptic functions, suggest that the existence of such systems of coördinates may be but the partial manifestation of a more general truth ; that is to say, since the Kummer surface is definitely related to a line complex of the second order, *i. e.*, is its surface of singularities, any system of coördinates on such a surface ought to arrange itself under a more general system relating at least to the complex of second order, and presumably to the general complex.

The following paper concerns itself with this general question and its application to the Kummer surface and certain other configurations.

§ I.

If we write the general quartic which enters into the discussion of the elliptic functions in the form

$$F(z) \equiv z^4 + \alpha z^3 + \beta z^2 + \gamma z + \delta \equiv \prod_{1,2,3,4.} (z_2^{(\kappa)} z_1 - z_1^{(\kappa)} z_2) = 0,$$

and if

$$(i, \varkappa) \equiv \begin{vmatrix} Z_1^{(i)} & Z_2^{(i)} \\ Z_1^{(\kappa)} & Z_2^{(\kappa)} \end{vmatrix},$$

then $F(z)$ has the following irrational invariants :