from (16), on eliminating h or k, that $h = \mu h_1$, $k = \lambda k_1$, where h_1 and k_1 are integral, and we get

(17) $h_1 a_1 + k_1 b_1 \equiv 0 \pmod{\varepsilon_1}$, $h_1 c_1 + k_1 d_1 \equiv 0 \pmod{\varepsilon_1}$.

The nature of the singularities on the sides of the triangle ABC is readily determined. For instance, suppose in (6) $c > a > 0$. Then (6) gives an expansion for t in ascending powers of $x^{1/a}$, and thence we get for y an expansion of the form

$$y = x^{c/a}(\alpha + \beta x^{1/a} + \gamma x^{2/a} + \cdots)$$

in general, fixing the nature of the singularity for which t is zero.

Bedford College, University of London

SURFACES WITH ORTHOGONAL LOCI OF THE CENTERS OF GEODESIC CURVATURE OF AN ORTHOGONAL SYSTEM*

BY MALCOLM FOSTER

We consider a surface S referred to any orthogonal system. Let G_1 and G_2 be the centers of geodesic curvature of the curves u = const. and v = const. respectively, through any point M of S. As M is displaced over the entire surface the loci of G_1 and G_2 will in general be two surfaces S_1 and S_2, corresponding elements of which are those which result from a common displacement of M. We ask: What are the surfaces S for which the surfaces S_1 and S_2 correspond with orthogonality of linear elements?

The condition that the displacements of G_1 and G_2 be orthogonal for every displacement of M, is that the absolute displacements of these points in the directions of the axes of the moving trihedral at M satisfy the relation

(1) $$\sum \delta x_1 \, \delta x_2 = 0,$$

* Presented to the Society, April 28, 1923.