In earlier papers (see Science, vol. 66 (1927), p. 581 and abstracts in this Bulletin), the author studied the derivative dw/dz, where $w=\phi(x, y)+i\,\psi(x, y)$, the components ϕ and ψ being arbitrary. In the present paper he studies dw_1/dw_2, where w_1 and w_2 are any such polygenic functions. To each point $z=x+iy$ corresponds a circle in the derivative plane, as in the simpler case, but the correspondence between the directions $m=dy/dx$ and the points of the circle is now a general homographic correspondence instead of being uniform (rate $-2:1$). The only cases in which dw_1/dw_2 is uniform are when w_2 is an analytic function of $x+iy$ or of $x-iy$, in the latter case the rate being $(2:1)$. If all the derivative circles reduce to points, w_1 must be an analytic function of w_2. To all the points of the z plane corresponds a congruence of homographic clocks. If a congruence is given arbitrarily, necessary and sufficient conditions are obtained for its being identifiable with a derivative congruence.

25. Professor T. R. Hollcroft: *The lines of an algebraic surface.*

In this paper, the number of invariants necessary and sufficient for a surface to contain a line or a given system of lines is found. From this is obtained the maximum number of independent lines or lines of a given system lying on an algebraic surface of given order. These limits hold when the surface is otherwise non-singular. When the surface has multiple points, lines, or curves, and these are accompanied by sets of lines on the surface, the lines of such sets do not account for additional invariants. The monoid is an example of this.

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A CORRECTION

On page 139 of the March-April issue (vol. 34), the last sentence in the abstract of paper No. 17 is incorrect and should have been omitted.