ON ALGEBRAIC SURFACES WHICH ARE INVARIANT IN A CERTAIN CLASS OF FINITE COLLINEATION GROUPS*

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1. *Introduction.* Among the algebraic varieties in projective space of 5 dimensions, S_5, and its sub-spaces and projections, there exist examples with notable properties and historic interest.

There is the Veronese surface of order 4 in S_5 obtained by a mapping process based on the ∞^5 conics of a plane. The projection of this surface from an S_1 which has no point in common with the surface upon an S_3 is a Steiner surface, as is well known. Again we have Segre's cubic variety cut out from the hypersurface

$$x_1^3 + x_2^3 + \cdots + x_6^3 = 0$$

by the hyperplane

$$x_1 + x_2 + \cdots + x_6 = 0$$

in S_5. The tangent hypercone from a generic point of this variety to the variety itself cuts a generic S_3 in a Kummer surface.

In what follows I shall consider a V_3 in S_5 defined as the intersection of two hyperquadrics in S_5. In coordinate representation this space shall be given by $S_5 \equiv (y_1, y_2, \cdots, y_6)$ and the two hyperquadrics by

$$y_1y_4 - y_2y_5 = 0, \tag{1}$$

$$y_2y_5 - y_3y_6 = 0. \tag{2}$$

Obviously the V_3 determined by (1) and (2) is also contained in the hyperquadric $y_1y_4 - y_3y_6 = 0$.

If to (1) and (2) the hyper n-ic

$$y_1^n + y_2^n + \cdots + y_6^n = 0 \tag{3}$$

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