passing through the sextic s' whose parameters are $\varkappa'$, λ', μ', ν'. Hence: *Any two curves of the above mentioned family of sextics lie on a cubic surface.*

As a special case we have for $\varkappa' = \varkappa$, $\lambda' = \lambda$, $\mu' = \mu$, $\nu' = \nu$ the theorem of Steiner: *A cubic surface can be inscribed to the Hessian F along any sextic curve of the family.*

CORNELL UNIVERSITY, ITHACA, N. Y.

ON THE SIMPLE ISOMORPHISMS OF A HAMILTONIAN GROUP TO ITSELF.

BY DR. G. A. MILLER.

(Read before the American Mathematical Society at its Fifth Summer Meeting, Boston, Mass., August 20, 1898.)

IF all the operators of any group G_1 of a finite order g_1 are transformed by each of the operators of one of its subgroups they are permuted according to a substitution group that has a 1, α isomorphism to this subgroup. The value of α will, in general, be different for the different subgroups and it will assume its maximum value α_1 when G_1 is transformed by all of its operators. The α_1 operators of G_1 that are commutative to each one of its operators constitute an abelian characteristic subgroup of G_1. Hence the factors of composition of G_1 are the prime factors of α, together with the factors of composition of the corresponding quotient group I_1.

I_1 is evidently simply isomorphic to the substitution group which is formed by all the permutations of the operators of G_1 when every operator of G_1 is transformed by each one of its operators. This substitution group must always be intransitive, since each operator is commutative to itself and hence the substitution group cannot contain any substitution that involves all the elements of the group. When G_1 is a simple group each of the transitive constituents of this substitution group must be simply isomorphic to G_1.

From the fact that the given substitution group which is simply isomorphic to I_1 must be intransitive and does not contain any substitution whose degree is equal to the degree of the group we may easily derive some important