two systems are thus coextensive. Since on R_{2n} the g^1_{n-1} is defined by the generators of one system of the hyperboloid, *the envelope of the lines containing the* G_{n-1} *is the section of the tangent cone to the hyperboloid from the center of projection.*

6. If ϕ_n, ϕ'_n, ϕ''_n be three cones of order n containing the n bisecants from $(0, 0, 0, 1)$, then, since the $n-1$ remaining edges of intersection with the cone R_{2n} from the same point lie in a plane, the equation of the defining monoid may be written

$$w = \frac{x\phi'_n}{\phi_n} = \frac{x\phi''_n}{\phi'_n},$$

from which the equation (1) results. Incidentally, these equations furnish a means for reducing c_{2n} to c_{2n-1}, namely, the ∞^2 plane sections of the monoid from a point on R_{2n}, lying on one of the $n-1$ simple edges.

7. If R_{2n} has also actual double points or cusps, ϕ_n will not in general pass through them, hence in the plane curves c_{2n} we can distinguish between projection of actual double points and apparent double points. Actual double points will not always absorb two coincidences in the $[n-2]$ involutions, but when $p < \frac{1}{2}(n-1)(n-2)$, the projection curve can not be written in the form (1).

For other curves on the hyperboloid, the maximum number of basis lines of a net formed by bisecants will not be reached; but when no actual double points occur we may say that the projection curve c_n with $p > \frac{1}{6}(n-1)(n-2)$ cannot be birationally transformed into any curve of order less than $n-1$.

CORNELL UNIVERSITY,
August, 1907.

NOTE ON CERTAIN INVERSE PROBLEMS IN THE SIMPLEX THEORY OF NUMBERS.

BY PROFESSOR R. D. CARMICHAEL.

(Read before the American Mathematical Society, September 5, 1907.)

Legendre* has considered the problem of finding the highest power of a prime p contained in $m! = 1 \cdot 2 \cdot 3 \cdots m$. Let m be written in the form

$$(1) \qquad m = a_0 p^\alpha + a_1 p^\beta + a_2 p^\gamma + \cdots,$$

* A. M. Legendre, Théorie des nombres, 3d ed., I., p. 10.