Poncelet's method of central projection attacked geometrical problems from a purely constructive point of view. Nevertheless the frequently expressed object of the later writings of Monge, as well as those of Carnot and Poncelet, was to introduce into geometrical reasoning the generality and continuity which analysis possessed, and this was largely attained by the interpretation of nations taken over from analysis. Their endeavours were, however, in the sequel crowned by the discovery of a purely geometrical property, the understanding of which has ever since formed the basis of what may be termed modern geometry.

This remarkable property, which may be regarded as revealing the very essence of extension in space or of the "space-manifold,"-inasmuch as it brings the different elements of space into mutual relation,-is the so-called principle of "duality" or of "reciprocity." The 28. Principle of principle of duality is now usually defined to mean that duality. in geometry on the plane or in space, "figures coexist in pairs, two such coexisting figures having the same genesis and only differing from one another in the nature of the generating element."¹ The elements of plane geometry are the point and the line; the elements of solid geometry are the point and the plane. By interchanging these correlative terms, correlative propositions may be written down referring to plane and to space geometry. In projective geometry there are two processes which are correlative or complementary to each other-the process of projection and the process of section. We can project

¹ Cremona, 'Elements of Projective Geometry,' transl. by Leudesdorf. Oxford, 1885, p. 26.