

CHAPTER XII.

SPHERIC MOTION.

96. Spheric Motion in General. — Spheric motion has already been defined in § 6, and it has been explained that in such motion any given point in the moving body remains on the surface of a sphere described about a certain fixed point as centre. Two bodies having relative spheric motion will therefore have this point as a common centre.

We can study the relative motion of two or more such bodies by imagining that they are cut by a sphere described about the common point as centre, and we can then consider the movement of these spheric sections exactly as we considered the motion of the plane sections or projections of bodies having plane motion. Plane motion may indeed be looked upon as a particular case of spheric motion where the radius of the sphere is infinitely great.

We may therefore suppose that propositions proved with regard to plane motion will hold good, with certain necessary modifications, with regard to spheric motion also. It will be convenient, first of all, to consider the motion of a spheric figure on the sphere of motion, just as we considered in § 5 the motion of a plane figure in the plane of motion. The position of the spheric figure will of course be defined if we know the position of two of its points.

In Fig. 206 (*a*) a figure on the surface of a sphere LMN has the positions of two of its points (A and B) defined. Let the figure, which represents a body having spheric motion, be moved from a position AB to a new position, A_1B_1 ; the movement being executed in a very small period

