

logical systems, he will perceive how important must have been the tracts of land that could furnish such piles of detritus.

The tendency of modern research is to give probability to the conception, first outlined by Kant, that not only in our own solar system, but throughout the regions of space, there has been a common plan of evolution, and that the matter diffused through space in *nebulæ*, stars and planets is substantially the same as that with which we are familiar. Hence the study of the structure and probable history of the sun and the other heavenly bodies comes to possess an evident geological interest, seeing that it may yet enable us to carry back the story of our planet far beyond the domain of ordinary geological evidence, and upon data not less trustworthy than those furnished by the rocks of the earth's crust.

III. MOVEMENTS OF THE EARTH IN THEIR GEOLOGICAL RELATIONS

We are here concerned with the earth's motions in so far only as they materially influence the progress of geological phenomena.

§ 1. **Rotation.**—In consequence of its angular momentum at its original separation, the earth rotates on its axis. The rate of rotation has once been much more rapid than it now is (p. 46). At present a complete rotation is performed in about twenty-four hours, and to it is due the succession of day and night. So far as observation has yet gone, this movement is uniform, though recent calculations of the influence of the tides in retarding rotation tend to show that a very slow diminution of the angular velocity is in progress. If this be so, the length of the day and night will