THE BEGINNING.

THE theory which has been developed, and which considers the earth as an extinct sun, as a star cooled down from its original heated condition, as a nebula, or luminous cloud, which has passed from the gaseous to the solid state—this fine conception, which unites so brilliantly the kindred sciences of astronomy and geology, belongs to the French mathematician, Laplace, the immortal author of the "Mécanique Céleste."

The hypothesis of Laplace assigns to the sun, and to all bodies which gravitate in what Descartes calls his *tourbillon*, a common origin. "In the primitive state in which we must suppose the sun to be," he says, "it resembles one of those nebulæ which the telescope reveals to us, consisting of a more or less brilliant central *nucleus*, surrounded by luminous clouds, which clouds, condensing at the surface, become transformed into a star."

It has been calculated that the centre of the earth has a temperature of about 195,000° Cent., a degree of heat which surpasses all that the imagination can conceive. We can have no difficulty in admitting that, at a heat so excessive, all the substances which now enter into the composition of the globe would be reduced to the state of gas or vapour. Our planet, then, must have been originally an aggregation of aëriform fluids—a mass of matter entirely gaseous; and if we reflect that substances in their gaseous state occupy a volume eighteen hundred times larger than when solid, we shall have some conception of the enormous volume of this gaseous mass. It would be as large as the sun, which is fourteen hundred thousand times larger than the terrestrial sphere. In Fig. 12 we have attempted to give an idea of the vast difference of volume between the earth in its present solid state and in its primitive gaseous condition. One of the globes, A, represents the former, B the latter. It is simply a comparison of size, which is made the more strikingly apparent by means of these geometrical figures—