

## THE RIDDLE OF THE UNIVERSE

in grasp of its nature than all its predecessors ; it has solved many great problems that seemed insoluble a hundred years ago ; it has opened out to us new provinces of learning, the very existence of which was unsuspected at the beginning of the century. Above all, it has put clearly before our eyes the lofty aim of monistic cosmology, and has pointed out the path which alone will lead us towards it—the way of the exact empirical investigation of facts, and of the critical genetic study of their causes. The great abstract law of mechanical causality, of which our cosmological law—the law of substance—is but another and a concrete expression, now rules the entire universe, as it does the mind of man ; it is the steady, immovable pole-star, whose clear light falls on our path through the dark labyrinth of the countless separate phenomena. To see the truth of this more clearly, let us cast a brief glance at the astonishing progress which the chief branches of science have made in this remarkable period.

### I.—PROGRESS OF ASTRONOMY

The study of the heavens is the oldest, the study of man the youngest, of the sciences. With regard to himself and the character of his being man only obtained a clear knowledge in the second half of the present century ; with regard to the starry heavens, the motions of the planets, and so on, he had acquired astonishing information forty-five hundred years ago. The ancient Chinese, Hindoos, Egyptians, and Chaldæans in the distant East knew more of the science of the spheres than the majority of educated Christians did in the West four thousand years after them. An eclipse of the sun was astronomically observed in China in the