SUMMARY.

VOLS. III. AND IV.

GENERAL SUMMARY OF THE CONTENTS.

Special Results of Observation in the Domain of Cosmical Phenomena.— Introduction.

Retrospect of the subject. Nature considered under a two-fold aspect: in the pure objectivity of external phenomena, and in their inner reflection in the mind. A significant classification of phenomena leads of itself to their casual connection. *Completeness* in the enumeration of details is not intended, at least in the representation of the reflected picture of nature under the influence of the creative power of imagination. Besides an actual or external world, there is produced an ideal or an inner world; filled with physical symbolic myths, different according to race and climate, bequeathed for centuries to subsequent generations, and clouding a clear view of nature. Fundamental *imperfectibility* of the knowledge of cosmical phenomena. The discovery of *empirical* laws, the insight into the *causal connection* of phenomena, *description of the universe, and theory of the universe.* How, by means of existing things, a small part of their *genetic history* is laid open. Different phases of the theory of the universe, attempts to comprehend the *order of nature.* Most ancient fundamental conception of the Hellenic mind: physiologic phantasies of the *Ionian school*, germs of the scientific contemplation of nature. Double direction of the explanation of natural phenomena, by the assumption of material principles (elements), and by processes of rarefaction and condensation. Centrifugal revolution. Theories of vortices. The Pythagoreans; philosophy of measure and harmony, commencement of a *mathematical* treatment of physical phenomena. The order and government of the universe according to the physical works of Aristotle. The *communication of motion* considered as the cause of all phenomena; the tendency of the Aristotelean school but little directed to the opinion of the *heterogeneity of matter.* This species of natural philosophy bequeathed in fundamental ideas and form to the Middle Ages. Roger Bacon, the *Mirror of Nature* of Vincentz of Beauvais, *Liber Cosmographicus* of Albertus Magnus, *Imago Mundi* of the Cardinal Pierre d'Ailly. Progress through Giordano Bruno and Telesio. Clearness in the conceptions of *gravitation* as *mass attraction*, by Copernicus. First attempt at a mathematical application of the *doctrine of gravitation*, by Kepler. The work on the *Cosmos* by Descartes (*Traité du Monde*) nobly undertaken, did not appear until long after his death, and only in fragments; the *Cosmotheoros* of Huygens, unworthy of the great name. Newton, and his work *Philosophiæ Naturalis Principia Mathematica.* Endeavor toward a knowledge of the universe as a Whole. Is the problem solvable of tracing back to one *principle* all physical knowledge, from the law of gravitation to the