

## THE RIDDLE OF THE UNIVERSE

tional self-production of the purposive structure." Thus have we got rid of the transcendental "design" of the teleological philosophy of the schools, which was the greatest obstacle to the growth of a rational and monistic conception of nature.

Very recently, however, this ancient phantom of a mystic vital force, which seemed to be effectually banished, has put in a fresh appearance; a number of distinguished biologists have attempted to reintroduce it under another name. The clearest presentation of it is to be found in the *Welt als That*, of the Kiel botanist, J. Reinke. He takes upon himself the defence of the notion of miracle, of theism, of the Mosaic story of creation, and of the constancy of species; he calls "vital forces," in opposition to physical forces, the directive or dominant forces. Other neovitalists prefer, in the good old anthropomorphic style, a "supreme" engineer, who has endowed organic substance with a purposive structure, directed to the realization of a definite plan. These curious teleological hypotheses, and the objections to Darwinism which generally accompany them, do not call for serious scientific refutation to-day.

Thirty-three years ago I gave the title of "dysteleology" to the science of those extremely interesting and significant biological facts, which, in the most striking fashion, give a direct contradiction to the teleological idea "of the purposive arrangement of the living organism." \* This "science of rudimentary, abortive, arrested, distorted, atrophied, and cataplastic individuals" is based on an immense quantity of remarkable phenomena, which were long familiar to zoologists

\* Cf. *General Morphology*, vol. ii., and *The Natural History of Creation*.