

THE RIDDLE OF THE UNIVERSE

his attention was exclusively given to one half of evolutionary science, the science of the evolution of the individual, embryology, or, in a wider sense, *ontogeny*. The other half, the science of the evolution of species, *phylogeny*, was not yet in existence, although Lamarck had already pointed out the way to it in 1809. When it was established by Darwin in 1859, the aged Baer was no longer in a position to appreciate it; the fruitless struggle which he led against the theory of selection clearly proved that he understood neither its real meaning nor its philosophic importance. Teleological and, subsequently, theological speculations had incapacitated the ageing scientist from appreciating this greatest reform of biology. The teleological observations which he published against it in his *Species and Studies* in his eighty-fourth year are mere repetitions of errors which the teleology of the dualists has opposed to the mechanical or monistic system for more than two thousand years. The "telic idea" which, according to Baer, controls the entire evolution of the animal from the ovum, is only another expression for the eternal "idea" of Plato and the *entelecheia* of his pupil Aristotle.

Our modern biogeny gives a purely physiological explanation of the facts of embryology, in assigning the functions of heredity and adaptation as their causes. The great biogenetic law, which Baer failed to appreciate, reveals the intimate causal connection between the *ontogenesis* of the individual and the *phylogenesis* of its ancestors; the former seems to be a recapitulation of the latter. Nowhere, however, in the evolution of animals and plants do we find any trace of design, but merely the inevitable outcome of the struggle for existence, the blind controller, instead of the provident