

generalizations respecting the mode of formation of animals; for he first discovered, in 1827, the ovarian egg of Mammalia, and thus showed for the first time, that there is no essential difference in the mode of reproduction of the so-called viviparous and oviparous animals, and that man himself is developed in the same manner as the animals. The universal presence of eggs in all animals and the unity of their structure, which was soon afterwards fully ascertained, constitute, in my opinion, the greatest discovery of modern times in the natural sciences.¹

It was, indeed, a gigantic step to demonstrate such an identity in the material basis of the development of all animals, when their anatomical structure was already known to exhibit such radically different plans in their full-grown state. From that time a more and more extensive investigation of the manner in which the first germ is formed in these eggs, and the embryo develops itself; how its organs grow gradually out of a homogeneous mass; what changes, what complications, what connections, what functions they exhibit at every stage; how in the end the young animal assumes its final form and structure, and becomes a new, independent being, could not fail to be the most interesting subject of inquiry. To ascertain all this, in as many animals as possible, belonging to the most different types of the animal kingdom, became soon the principal aim of all embryological investigations; and it can truly be said, that few sciences have advanced with such astonishing rapidity, and led to more satisfactory results.

For the actual phases of the mode of development of the different types of the animal kingdom, I must refer to the special works upon this subject,² no general

zig, 1830-42, 2 vols. 8vo. — VALENTIN, (G.) Handbuch der Entwicklungsgeschichte, etc., Berlin, 1835, 1 vol. 8vo. — Lehrbuch der Physiologie des Menschen, Braunschweig, 1843, 2 vols. 8vo. — LONGET, (F. A.) Traité de Physiologie, Paris, 1850, 2 vols. 8vo. — KÖLLIKER, (ALB.) Microscopische Anatomie des Menschen, Leipzig, 1840-54, 2 vols. 8vo. fig. — See also OWEN'S Lectures, etc., SIEBOLD und STANNIUS'S Lehrbuch, and CARUS'S Morphologie, q. n. p. 27, and p. 18. I might further quote almost every modern text-book on physiology, but most of them are so evidently mere compilations, exhibiting no acquaintance with the subject, that I omit purposely to mention any other elementary works.

¹ BAER, (C. E. n.) De Ovi Mammalium et Hominis Genesi, Königsberg, 1827, 4to., fig. — PURKINJE, (J. E.) Symbole ad ovi avium historiam ante incubationem, Lipsiæ, 1830, 4to. fig. — WAG-

NER, (R.) Prodrömus Historiæ generationis Hominis atque Animalium, etc., Lipsiæ, 1836, 1 vol., fol., fig. — Icones physiologicæ, Lipsiæ, 1839, 4to. fig.

² The limited attention, thus far paid in this country to the study of Embryology, has induced me to enumerate more fully the works relating to this branch of science, than any others, in the hope of stimulating investigations in that direction. There exist upon this continent a number of types of animals, the embryological illustration of which would add immensely to the stock of our science; such are the Opossum, the Ichthyoid Batrachians, the Lepidosteus, the Amlia, etc., not to speak of the opportunities which thousands of miles of sea-coast, everywhere easily accessible, afford for embryological investigations, from the borders of the Arctic to the Tropics. In connection with Embryology the question of Individuality comes up naturally.