

supported by such an extensive acquaintance with the subject, as this great embryologist has in his "*Scholien und Corollarien zu der Entwicklungsgeschichte des Hühnchens im Eie.*"¹ These principles are presented in the form of general proportions, rather than in the shape of a diagram with definite systematic names, and this may explain the neglect which it has experienced on the part of those who are better satisfied with words than with thoughts. A few abstracts, however, may show how richly the perusal of his work is likely to reward the reader.

The results at which K. E. von Baer had arrived by his embryological investigations, respecting the fundamental relations existing among animals, differed considerably from the ideas then prevailing. In order, therefore, to be correctly understood, he begins, with his accustomed accuracy and clearness, to present a condensed account of those opinions with which he disagreed, in these words:—

"Few views of the relations existing in the organic world have received so much approbation as this: that the higher animal forms, in the several stages of the development of the individual, from the beginning of its existence to its complete formation, correspond to the permanent forms in the animal series, and that the development of the several animals follows the same laws as those of the entire animal series; that consequently the more highly organized animal, in its individual development, passes in all that is essential through the stages that are permanent below it, so that the periodical differences of the individual may be reduced to the differences of the permanent animal forms."

Next, in order to have some standard of comparison with his embryological results, he discusses the relative position of the different permanent types of animals, as follows:—

"It is especially important that we should distinguish between the degree of perfection in the animal structure and the type of organization. The degree of perfection of the animal structure consists in the greater or less heterogeneity of the elementary parts, and the separate divisions of a complicated apparatus,—in one word, in the greater histological and morphological differentiation. The more uniform the whole mass of the body is, the lower the degree of perfection; it is a stage higher when nerve and muscle, blood and cellular tissue, are sharply distinguished. In proportion to the difference between these parts, is the development of the animal life in its different tendencies; or, to express it more accurately, the more the animal life is developed in its several tendencies, the more heterogeneous are the elementary parts which this life brings into action. The same is true of the single parts of any apparatus. That organ-

¹ Ueber Entwicklungsgeschichte der Thiere, Beobachtung und Reflexion von Dr. Karl Ernst von

Baer, Königsberg, 1828, 4to.—See also *Acta Nova Acad. Leop. Caesar.* vol. 13, and *Meckel's Arch.*, 1826.