

concludes his Report on the Keratosa with general considerations on the systematic importance of comparative physiology, which, according to him, shall solve the difficult problems that no morphological science, neither comparative anatomy nor comparative ontogeny, may be able to solve.

My own systematic principles, based on classificatory work of thirty years, and practically employed in my General Morphology (1866), as well as in my Monographs of the Radiolaria, Calcispongiæ, Medusæ, and Siphonophoræ, start from quite an opposite point of view. My firm conviction is, that every systematic task can be solved only by morphological, not by physiological work. I cannot find, in the immense systematic literature of zoology and botany, a single work in which any important progress has been made by the help of comparative physiology; I cannot even understand in what possible way this science should be useful. All classificatory works, clearing our views on the natural system of major or minor groups, are based only upon morphological researches either of comparative anatomy (in the widest sense) or of comparative ontogeny and palæontology. Morphology and physiology, the two main branches of biological science, are of equal value and equal importance, but their methods and aims are totally different, and in systematic work, in the distinction and phylogenetic arrangement of forms, morphology alone is applicable, not physiology. Dr. Poléjaeff himself, although so emphatically praising the latter, has in his classification employed only the former; he has not demonstrated the way in which classification shall be elucidated by comparative physiology.

The second important point in which my systematic views are quite opposed to those of Dr. Poléjaeff, is the true meaning and the proper signification of the systematic categories, or of the larger and smaller groups of forms, which are distinguished in each system as classes, orders, families, genera, species, varieties, &c. Two different and opposite conceptions are possible in this respect: either all these categories are artificial and of only relative value, divisions produced by the logical mind of the systematic naturalist, or they are all natural and possess an absolute character, founded on their morphological differences and justifying their absolute distinction. We may briefly call this latter the dogmatic conception, the former the critical conception of the systematic categories.

The dogmatic conception, supported by Dr. Poléjaeff, has been explained in the most ingenious manner by Louis Agassiz, in his well-known essay on classification (1859). He undertook the task of giving an absolute definition to each of the systematic categories, and to prove that they are distinct not only in a relative and quantitative respect, but also in an absolute and qualitative respect. I have given a careful critical analysis of these views in chapter xxiv. of my General Morphology.¹ I have stated there that each absolute definition of any category, in the sense of L. Agassiz, is perfectly

¹ *Generelle Morphologie*, vol. ii, pp. 374-402.