

ization is higher in which the separate parts of an entire system differ more among themselves, and each part has greater individuality, than that in which the whole is more uniform. I call type, the relations of organic elements and organs, as far as their position is concerned. This relation of position is the expression of certain fundamental connections in the tendency of the individual relations of life; as, for instance, of the receiving and discharging poles of the body. The type is altogether distinct from the degree of perfection, so that the same type may include many degrees of perfection, and, *vice versa*, the same degree of perfection may be reached in several types. The degree of perfection, combined with the type, first determines those great animal groups which have been called classes.¹ The confounding of the degree of perfection with the type of organization seems the cause of much mistaken classification, and in the evident distinction between these two relations we have sufficient proof that the different animal forms do not present one uniserial development, from the Monad up to Man."

The types he has recognized are:—

I. *The Peripheric Type.* The essential contrasts in this type are between the centre and the periphery.² The organic functions of life are carried on in antagonistic relations from the centre to the circumference. Corresponding to this, the whole organization radiates around a common centre. There exists besides only the contrast between above and below, but in a weaker degree; that between right and left, or before and behind, is not at all noticeable, and the motion is therefore undetermined in its direction. As the whole organization radiates from one focus, so are the centres of all the organic systems arranged, ring-like, around it, as, for instance, the stomach, the nerves and vessels, (if these parts are developed,) and the branches extending from them into the rays. What we find in one ray is repeated in every other, the radiation being always from the centre outwards, and every ray bearing the same relation to it.

II. *The Longitudinal Type,* as observed in the *Vibrio*, the *Filaria*, the *Gordius*, the *Nais*, and throughout the whole series of articulated animals. The contrast between the receiving and the discharging organs, which are placed at the two ends of the body, controls the whole organization. The mouth and the anus are

¹ From this statement it is plain that Baer has a very definite idea of the plan of structure, and that he has reached it by a very different road from that of Cuvier. It is clear, also, that he understands the distinction between a plan and its execution. But his ideas respecting the different features of structure are not quite so precise. He does not distinguish, for instance, between the complication

of structure as determining the relative rank of the orders, and the different ways in which, and the different means with which the plans are executed, as characteristic of the classes.

² Without translating verbatim the descriptions Baer gives of his types, which are greatly abridged here, they are reproduced as nearly as possible in his own words.