

organization.¹ In bringing these animals together, naturalists make again the same mistake which Cuvier committed, when he associated the Helminths with the Radiates, only in another way and upon a greater scale.² The Bryozoa are as it were depauperated Mollusks, as *Aphanes* and *Alchemilla* are depauperated Rosaceæ. Rotifera are in the same sense the lowest Crustacea; while Helminths and Annelides constitute together the lowest class of Articulata. This class is connected by the closest homology with the larval states of Insects; the plan of their structure is identical, and there exists between them only such structural differences as constitute classes.³ Moreover, the Helminths are linked to the Annelides in the same manner as the apodal larvæ of Insects are to the most highly organized caterpillars. It may truly be said that the class of Worms represents, in perfect animals, the embryonic states of the higher Articulata. The two other classes of this branch are the Crustacea and the Insects, respecting the limits of which, as much has already been said above,⁴ as is necessary to state here.

The classification of the branch of Articulata may, therefore, stand thus:—

1st Class: Worms; with three orders, Trematods, (including Cestods, Planariæ, and Leeches,) Nematoids, (including Acanthocephala and Gordiacei,) and Annelides.

2d Class: Crustacea; with four orders, Rotifera, Entomostraca, (including Cirripeds,) Tetracapods, and Decapods.

3d Class: Insects; with three orders, Myriapods, Arachnids, and Insects proper.

There is not a dissenting voice among anatomists respecting the natural limits of the Vertebrata, as a branch of the animal kingdom. Their character, however, does not so much consist in the structure of their backbone or the presence of a dorsal cord, as in the general plan of that structure, which exhibits a cavity above and a cavity below a solid axis. These two cavities are circumscribed by complicated arches, arising from the axis, which are made up of different systems of organs, the skeleton, the muscles, vessels, and nerves, and include, the upper one the centres of the nervous system, the lower one the different systems of organs by which assimilation and reproduction are carried on.

The number and limits of the classes of this branch are not yet satisfactorily ascertained. At least, naturalists do not all agree about them. For my part, I believe that the Marsupialia cannot be separated from the Placental Mammalia, as a distinct class, since we observe, within the limits of another type of Vertebrata, the Selachians, which cannot be subdivided into classes, similar differences in the mode of development to those which exist between the Marsupials and the other

¹ See above, Chap. I., Sect. 18, p. 74-78.

² Compare Chap. II., Sect. 1, p. 142.

³ Compare Chap. II., Sect. 2, p. 145.

⁴ Compare Chap. I., Sect. 18, p. 78-80.