

lescent or obsolete body-articulations, and by often wanting the nervous ganglia excepting the anterior; by usually a Gastropod-like breadth and aspect, an *amplificate* feature; by being in general *urothenic*, even the highest having a caudal disk for attachment; and in an up-and-down movement of the body in locomotion, *Mollusk-like*, instead of the worm-like lateral movement of the Annelids. The fact of this mode of movement has been recently made known to the writer by Dr. Wm. C. Minor, as a distinctive feature of the Bdelloids. Quatrefages remarks that the Planarians and Trematodes may well be regarded degraded forms of the Hirudines, and the three tribes are arranged in one group by Burmeister.—Third, *Gephyreans* (of de Quatrefages), or *Holothurioid* (*Radiate-like*) Worms, including the genera, *Echiurus*, *Sipuncula*, etc.<sup>7</sup>—Fourth, *Cestideans*, or *Protozoic* Worms, including the Cestoids, in which there is no normal digestive system, and the segments are independently self-nutrient.<sup>8</sup>

The orders of these classes of Articulates are the following:

|                   | Insecteans. | Crustaceans.    | Worms.      |
|-------------------|-------------|-----------------|-------------|
| Alphatypic,       | —————       | —————           | —————       |
| Betatypic,        | Insects.    | Decapods.       | Annelids.   |
| Gammatypic,       | Spiders.    | Tetradecapods.  | Bdelloids.  |
| a. Degradational, | Myriapods.  | Entomostracans. | Gephyreans. |
| b. " "            | —————       | —————           | Cestideans. |

6. *Subdivisions of the orders of Insecteans and Crustaceans into tribes.*—(1.) The orders of *Insecteans* have each three divisions, excepting that of Myriapods in which but two have been recognized. The three of Insects are indicated on pages 323, 335. The fact that Insects are, in type-idea, *flying* Articulates gives special importance to the wings in classification. The *first* order includes the *Prosthenics*, in which the anterior wings are flying wings, as the Hymenoptera, Diptera, Neuroptera, Lepidoptera and Homoptera. The *second* consists of the *Metasthenics* or *Elytrotters*, in which the anterior wings are not used in flying, or but little so, as the Coleoptera, Strepsiptera, Orthoptera and Hemiptera. The Hemiptera and Homoptera, united in one tribe by most entomologists, are hence profoundly distinct. The *third* tribe, or *Apters*, embraces the Lepismids and Podurellids; the remaining Apterous insects being distributed among the other

<sup>7</sup> The Holothurioid characteristics are well exhibited by de Quatrefages in Part ii, p. 248 and beyond, of *Recherches Anatomiques et Zoologiques faites pendant un voyage sur les Côtes de la Sicile, etc.*, in 3 vols. or parts, the second by de Quatrefages. Paris.

<sup>8</sup> The *Acanthocephali*, according to van Beneden and Blanchard, are Nematoids, (with which they agree in form and general structure) although without a digestive system. Blanchard states that there is reason for believing that the digestive system becomes atrophied with the growth of the animal, and mentions that cases of like atrophy occur even in species of *Gordius* and *Nemertes*.