

groups, as suggested by different entomologists. The Lepismæ show their degradational character in their larval forms and in other approximations to the Myriapods, and the Podurellids appear to be still inferior in having the abdomen elliptic in some segments.

(2.) The orders of *Spiders* suggested by the principles of cephalization are in precise parallelism with those of the Decapod and Tetradeapod Crustaceans. They are, first, *Araneoids*, including all the *Pulmonates*, except the Pedipalps; second, *Scorpionoids*, or the Pedipalps from among the *Pulmonates*, and the Chelifer group from among the *Trachearians*; third, *Acaroids*.

The *Araneoids* are *Brachyural Spiders*; the *Scorpionoids*, *Macrural*; while the *Acaroids* are *degradational*. The last show their degradational character in having no division between the abdomen and cephalothorax; so that, while *Insects* have the body in *three* parts, head, thorax, and abdomen, and ordinary *Spiders* in *two*, cephalothorax, and abdomen, the *Acaroids* have it *undivided* (page 326). Thus, one of the most prominent characteristics marking the descent from *Insects* to *Spiders* becomes the characteristic of a further descent among *Spiders* themselves—illustrating a common principle with regard to such subdivisions. (See p. 350 beyond.) The propriety of making the *Acaroids* a distinct group appears therefore to be well sustained.

The usual subdivision of *Spiders* into *Pulmonates* and *Trachearians* depends on *internal* characters, which is not the fact with any other subdivisions in the table beyond. Moreover, these names, though *seeming* to mean much, are not based on any *functional* difference between the groups. *Spiders* have many relations to *Crustaceans*; and it is natural that the subdivisions in both should depend on the same methods of cephalization, the amplificative and analytic (p. 335).

(3.) The two orders of *Myriapods* are examples, one of case *a*, the other of case *b*, under multiplicative decephalization (p. 325).

The close relations between *Isopods* and the higher *Myriapods*, suggest that they are of like grade under their respective types, that is, betatypic.

(4.) *a*. Under *Decapod Crustaceans*, the subdivisions are *three*, as remarked upon by the author, at page 326 of this volume.*

The *Anomurans* are only degradational *Brachyurans*, and do not represent an independent type of structure. The *Schizopods*, similarly, are degradational *Macrurans*, with which they should be united. The *third* type is that of the *Gastrurans*, which are peculiar, among *Decapods*, in having the viscera extend into the abdomen, one of the marked degradational features of the type. They are the *Stomapods* of Latreille; but this author, in his last edition, made the group, in connection with the *Schizopods*,

* See also vol. xxv, [2], pp. 337, 338.