

Limuloids, appeared in the Silurian. They existed through the Carboniferous era, and under more compacted forms have been continued to the present time, four species now representing the genus *Limulus*, one North American, and three East Asiatic and East Indian. The Carboniferous genera *Belinurus* and *Prestwichia* represent, under an adult form, rather closely, the young of the modern *Limulus*; and *Cyclus* Packard considers as representing a still younger embryonic stage of *Limulus*.

6. **Crustaceans.**—It is stated on page 526, that Trilobites had their culmination in number of genera, and in number, size, and grade of species, in the Lower Silurian. They continued, with few new genera, but under many new species, in the Upper Silurian, and appeared under some extravagant spiny forms during the Devonian; but afterward, in the Carboniferous era, the species were few and simple, only a score being known. The number of new Carboniferous genera yet found is only two, and these are closely related to the Devonian *Proetus*. Here the type ends.

No other subdivision of Crustaceans appears to have passed its culmination in Paleozoic time excepting that of the Ostracoids, or the bivalved Crustaceans (page 525).

The Cirriped or Barnacle tribe, a *degenerate* group, derived from some family of Ostracoids, as remarked on page 421, and one of the lowest stages of Crustacean life, appeared as early at least as the Lower Silurian.

Other tribes of Crustaceans continue to expand. True Isopods make their appearance as early as the Devonian, and probably in the successional line of the Trilobites. The Decapods are represented by Macrurans (or Shrimps) in the Devonian, and by Brachyurans (Crabs) in the Carboniferous.

Trilobites and many of the so-called Phyllopod Crustaceans are examples, as has already been stated, of *multiply* forms, or those having an excessive number of segments and members. The Early Cambrian *Protocaris* of Walcott (page 474) is a good example of a multiply, *Apus*-like Phyllopod, precursor of the true Decapod type. But normal numbers in segments exist in some of the "Phyllopods," even those of the Cambrian, the abdominal segments being reduced in number to six, the normal number in the Crustacean type, and in the same Phyllopods the thorax also has apparently its normal number of body segments; in which case they are not multiply, unless in legs, and these are not in sight in the fossil specimens. With the appearance of Tetradeapods and Decapods in the Devonian, typical numbers, as to body segments and limbs—that is, for all parts of the structure—have full expression; for the Isopods appear to be (in view of the researches of Walcott, Matthew and Beecher) essentially non-multiply Trilobites.

7. **Derivation of Limuloids and Crustaceans.**—As has been suggested by Lankester (and is recognized on page 423), it is probable that all the Articulates are successional to the Rotifers. There is reason for believing, further, that the type of *Annelids*, that of *Crustaceans*, and probably that of *Limuloids*, had their independent Rotifer origin.