

grade); as that in passing from the type of Megasthenes (Quadrumanes, Carnivores, Herbivores and Mutilates) to that of Microsthenes (Chiropters, Insectivores, Rodents, and Edentates); or from that of Decapods to that of Tetradeapods among Crustaceans—in which latter case, unlike the former, there is also *retroferent* decephalization; and so, generally, in passing from a higher to a lower type, it being equivalent to passing to a type of smaller and weaker life-system. See further, this volume, pp. 8 and 338.

B. FUNCTIONAL.

2. *Retroferent*.—A transfer of functions backward that belong anteriorly in the higher cognate type.

Under this method, there are the following cases:

a. A transfer of members from the cephalic to the locomotive series; as the transfer of the fore-limbs to the locomotive series in passing from Man to brute Mammals; that of a pair of maxillipeds or posterior mouth-organs to the locomotive series in passing from Insects to Spiders; that of two pairs of maxillipeds to the locomotive series in passing from Decapod to Tetradeapod Crustaceans.

b. A transfer of locomotive or prehensile power and function, more or less completely, from the anterior locomotive organs to the posterior.

c. A transfer of the locomotive function, more or less completely, from the limbs (these often becoming obsolete) to the body, and mainly to the caudal extremity.

Under *b* and *c*, the condition may be described as—

(a) *Prosthenic*, (from the Greek *πρῶ*, *before*, and *σθενος*, *strong*), if the anterior locomotive organs have their normal superiority.

(b) *Metasthenic* (from *μετα* *after*, etc.), if a posterior pair is the more important and the anterior are weak or obsolete.

(c) *Urosthentic* (from *ουρα* *tail*, etc.), if the posterior part of the body, or the caudal extremity, is the main organ of locomotion.

Ordinary flying Birds are *prosthenic*, while the *Præcoces* (Gallinaceous Birds, Ostriches, &c.), being poor at flying, or incapable of it, are *metasthenic*, and they thus exhibit their inferiority of grade. Hymenopters, Dipters, Lepidopters, &c., among Insects, are *prosthenic*, while Coleopters, Orthopters, Strepsipters, etc., in which the fore-wings (the *elytra*) do not aid in flight, or but little, are *metasthenic*. Fleas, which are degradational species, related to Dipters, have the third or *posterior* pair of legs much the longest and strongest. Among Macrural Crustaceans, the strongest legs are, in the higher species, the *first* pair; in others inferior, the *second*; in others still inferior (the Penæids) the *third* pair.