

nate—which is, that *the force may vary in cephalic concentration, and thereby in its distribution along the principal body-axis.*

It has been shown in this and the former articles that there is often, with descending grade of species, a transfer of force and function backward in the structure—a method of decephalization termed the *retroferent*, and including under it, the *prosthentic*, *metasthenic* and *urosthentic* conditions of structure. These have been illustrated from all departments of the animal kingdom; and with examples from Herbivores in the preceding pages. We refer again to the facts among Crustaceans in this Journal (vol. xxii, 14, 1856, and the chapter in the author's Expl. Exped. Report, p. 1412,) as especially clear and conclusive, and as having peculiar interest because historically the source in the writer's mind of the principles here explained.

Moreover, this backward transfer of force and function manifests itself also in the posterior elongation of the structure and also in some anterior dilation. Conversely, elevation of grade is manifested in the abbreviation of the structure behind, and to some extent also anteriorly, and in the transfer of force and function forward, or toward the cephalic extremity.

This connection of grade with a transfer of force along the body-axis—through a weakening or strengthening of the cephalic concentration—is dependent on the polar or cephalic nature of an animal—a condition remarked upon in Art I, at page 321, and referred to at p. 157 of this paper. The higher the grade of a species under a type, the greater the extent to which the force of the system is gathered in, or toward, the cephalic extremity or pole; and the lower the grade, the more complete its diffusion toward the posterior extremity.*

In the forward transfer attending cephalic concentration, the anterior limbs, as the species rise in prosthentic character, increase in muscular force, so that, as in Carnivores, this force is far greater in the fore-limbs than in the hind-limbs. When the transfer of force toward and about the anterior or cephalic extremity is at its maximum under any type, the structure is *prosthentic* in the highest degree possible for that type. But if the anterior extremity of the body-axis is not in this maximum state, owing to a diffusion of the force posteriorly, the condition is one less prosthentic; by a further loss and diffusion posteriorly, there may be another step down (for such transitions, as we have before found, appear to be by a *saltus*) perhaps to a lower grade of prosthentic, or else, still lower, to a *metasthenic* condition, and attending this, there is often an increasing length of body; by a further loss or diffusion posteriorly, there may be the pro-

* In my last article (Art. II, p. 10) I have referred the amplificate and retroferent methods of decephalization alike to *apocentric* distribution of force—or diffusion away from the principal or cephalic systemic centre. This, although true, is but an imperfect expression of the fact.