

cies, and of fatty, cellular and dermal tissues mainly, in species of a feebler life-system. But when the control is less complete, the parts of the bony structure increase *in length* by amplification, especially the more circumferential portions of them—*this amplifying tendency increasing in amount with the distance from the systemic centre or centres*—and the structure is long-amplificate. With a feebler life-system, not able to keep the structure evolved to type-perfection, the limbs may have lax or imperfect extremities, that is, lax as compared with their condition in the typical species under the type.*

2. *Definiteness of the distinction of gross-amplificate and long-amplificate.*—It has been observed that the two higher groups of terrestrial Herbivores are distinguished, the first, by being very generally gross-amplificate in the structures included, and the second by being long-amplificate, and that the two groups are thus quite well separated, there being but few cases of long-amplification in the former, and the gross-amplification in the latter taking place upon long-amplificate structures. It is a general fact throughout the animal kingdom that the long-amplificate groups under a type stand apart from, instead of blending insensibly in this respect with, the typical or gross-amplificate groups. Thus there is a Tipulid group among Dipters; a Grallatorial group among Birds of the tribe of Præcoces; a Heron group among the Altrices; a Serpentarius family among the Accipiters, etc.

The reason for this definiteness of limit between gross-amplificate or typical forms and long-amplificate is apparent from the preceding discussion. To produce the former, there is the systemic control which determines typical proportions and admits only of narrow limits of variation. For the latter, there is a diminished degree of that control, leaving vegetative growth to elongate the structure; and this diminution is not one of gradual stages, but an abrupt step down to the new condition. The limits of typical proportions once fairly overstepped, the structures pass suddenly to amplificate forms of very varied proportions. This capability of elongating the bony skeleton in Sthenomeres is very different from that of mere general enlargement which characterizes the Sthenorhines; and without an abruptness of transition between the two conditions the two types would not stand as far apart as they do in style of amplification.

3. *Axial distribution of force.*—*The retroferent method of decephalization.*—There is another law with regard to the systemic force, to which the above, relating to amplification, is actually subordi-

* The separateness of these two powers is also illustrated by the arrest of development in the brain, in many cases, as shown by fewer gyri and a greater simplicity of folds, while there is an increase of size up to normal dimensions. See W. O. Minor's translation of articles by Dr. Wagner, in this Journal [2], xxxiv, 188, and, in particular, the remark of Dr. Minor on this point, on p. 199.