SECTION X.

ON THE BRAIN OF THE DIFFERENT FAMILIES OF NORTH AMERICAN TURTLES.

In the description of the families of Testudinata, given in the preceding sections, only such structural features have been considered as bear directly upon the form of the animal. It would, however, be very interesting to ascertain further, how far the form of all the different organs is also characteristic of families in general, especially since it has already been shown that the development of some of the organs,[1] at least, has an immediate influence upon the form of the body; but I have thus far refrained from making such an investigation, as it would require more extensive comparisons than could properly be introduced in this part of my work. Yet, as I knew, from dissections made upon a large scale, many years ago, that the form of the brain is characteristic of the different families of Fishes, I have thought it desirable to extend these comparisons to the Testudinata, in order not to leave the subject entirely out of sight. The result of this comparison coincides fully with that obtained in the class of Fishes. It stands proved, that while the form of the brain has no immediate bearing upon the form of the skull[2] and of the head in general, it is yet typical in every family.

All Turtles agree among themselves very remarkably in the structure of the brain. From the large hemispheres, the transverse diameter of which is about equal to one half of its whole length, the brain grows narrow forward and backward. The relations of the different parts of the brain are remarkably constant in the whole order of Testudinata; so much so, that, of all the organs, the brain seems the least likely to undergo deeper modifications in one and the same group, and therefore to be not only one of the most important organs of the Vertebrata, but also one of the most characteristic, in a zoölogical point of view. However much the Turtles may assume, in their external organization, characters of the higher Vertebrata, (of Birds and Mammalia, for instance,[3]) still, in relation to the brain, they preserve fully the Reptilian character. Their brain remains slender and long. This fact is very striking when we compare the head of a Turtle with that of a Mammal or that of a Bird.[4] The skull of a Turtle

[1] See Chap. 1, Sect. 11, p. 282.

[2] This result is in glaring contradiction with the doctrines of Phrenology.

[3] Comp. Chap. 1, Sect. 18, p. 308–312.

[4] In these, the brain-box is much more distinct from the bones of the face and jaws than in Turtles.