

but both are still buried, as it were, in the general mass of the body. On the contrary, in the culminating Reptile, the Turtle, the neck is completely free from the mass of the body, and so also is the tail; but there is still a sort of visceral chest, inclosing the breast and abdomen.

This general sketch of the essential characters of the Testudinata shows distinctly that their most prominent features are also those which assign to them the highest rank in their class. It is therefore plain, that the Testudinata, being a natural group, constitute an order in the class of Reptiles, acknowledged to be such by most zoölogists, while at the same time this typical group furnishes additional evidence that the characters I have considered above¹ as ordinal characters are marked out, as such, in nature. It remains now to show, what is the degree of complication of their structure which assigns to them that rank in their class. The comparison instituted here, between the leading groups of the true Reptiles and those of the Batrachians, shows already the two series to consist equally of groups presenting a natural gradation in their normal relations. We are, therefore, not only justified in considering them all as natural orders, but this gradation, within their respective limits, goes far also to show that the higher divisions under which they are combined partake of the character of classes, and that Reptiles proper and Amphibians are justly to be considered as two distinct classes.

SECTION IV.

THE SHIELD.

We have found the main ordinal character of the Turtles, in contradistinction to other Reptiles, to consist in the nature of the dorsal column, which, in connection with other elements, forms in Turtles one continuous shield upon the back. This dorsal shield, usually called by the French name "carapace," is connected by a bridge with another shield, commonly called "plastron," which covers the region of the breast and abdomen from below. These two shields together form a hard girdle around the soft organs of the trunk.

If we take a Turtle of that family in which the idea or the type of Turtles is carried out the furthest, namely, a land Turtle, we find these shields built up of two very different elements, the skin and the true bony skeleton. If we analyze such a shield from the outside inwards, we see first a thick very hard and dry epidermis

¹ Part I., Chap. 2, Sect. 3, p. 150.