

like form which we shall presently see exemplified in the cetaceous tribes. The phalanges are also large and lengthened, forming a kind of oval hand, or rather paddle, the functions of which it is well calculated to perform. The curvature of the humerus is of great advantage to the tortoise in assisting it to turn itself, when, by any accident, it has been laid on its back.

Considerable differences may be noticed in the structure of the several species of *Chelonia*, according to the diversity of their habits. Tortoises which live on land, require more complete protection by means of their shell than turtles, or *Emydes*, which dwell in the water: hence the convexity of their carapace, the solidity of its ossification, its immoveable connexion with the plastron, and the complete shelter it affords to the head and limbs. Turtles, on the other hand, receiving support from the element in which they reside, require less provision to be made for these objects. Their carapace is smaller, has a more flattened form, and cannot afford protection to the head and limbs. These latter organs are proportionally larger, present a greater development of the radius and ulna, and are compressed into a flat expanded surface. Previously to the retraction of the head and limbs within the shell, the air is expelled from the large cavities of the lungs, by the vigorous actions of the abdominal muscles, which exist in these animals as well as in all the vertebrata, although here they are covered by the bones, and compress the lungs by pushing the abdominal viscera against them. This sudden expulsion of air is the cause of the long continued hissing sound which the tortoise emits while preparing to retreat into its strong hold.

The ribs, though they at first assume the form of broad plates immoveably united to the spine, when they have proceeded a certain distance, separate from each other, and resume their usual form; the intervening spaces between two adjacent ribs being here filled up by membrane. The plastron is united with the carapace by membrane, likewise; and the sternum, instead of forming one broad plate of bone, has