

head is withdrawn far back, but the skin does not roll off from the neck so far as to fold together before it, as in the Emydoidæ. The humerus is carried round before the body, the knees brought together before the head, and the forearm and hand turned back upon the humerus. See Pl. 3. The knees meet before the humerus reaches directly across the body, and they are somewhat raised above the shoulders, which is made necessary by the rise of the plastron forward, so that the humerus reaches somewhat outward and upward, and not exactly across the body. The blade formed of the forearm and hand is nearly as broad as the opening about this end of the body, and when the knees are brought together the opening is almost entirely closed, and the surface of the forearm and hand exposed before it. The femur is carried to the side of the pelvis, reaching upward as well as forward, so that the knee is raised high up within the carapace; the foreleg is turned down and back upon the femur, and the foot and hip thus brought together occupy the whole open space by the side of the plastron, so that the bottom of the foot and the hind surface of the hip only are exposed. The short, stubbed tail is bent directly forward (when longest a little curved) between the hips, so as to cover most of the surface behind the pelvis. All the parts exposed when the limbs are thus withdrawn are covered with thick, hard scales.

The food of this family is exclusively vegetable. They seem to prefer the succulent stems of plants and fleshy fruits to leaves or grass. I have often seen our Gopher gnawing the stumps of cabbage and the apples falling from the trees, in my garden, as the squirrels do, holding them between their feet. This vegetable diet seems to affect essentially the structure of the digestive apparatus, for in our Gopher (the only genus examined) the large intestine is longer than all the rest of the alimentary canal, including the stomach and œsophagus, whereas in no one of the many genera which have been examined of the families of Emydoidæ, Cinsternoidæ, and Chelydroidæ, does the proportion reach as high as one to five. The lungs are very much larger in the Testudinina than in any other family of the sub-order, which is undoubtedly due to the exclusively terrestrial habits of the animal.

These two peculiarities of structure, the great length of the large intestine, and the large size of the lungs, directly traceable to the habits of life, go far towards giving the middle region of the body its peculiar size and form. A connection will readily be seen also between the proportions of the terminal regions, which are high and short, and the manner of walking and of withdrawing the limbs, inasmuch as the legs move in a plane so nearly perpendicular, and the knee and elbow joints are raised when retracted so high up within the carapace. Again, the equilibrium throughout the body is clearly connected with the steady, straightforward motion in walking. Thus this family exhibits, more closely than any other, the direct relation which exists between the form and structure.