

The young of the family of Chelydroidæ exhibit new features, different from those which we have noticed before in sea Turtles, in Emydoidæ, and in Trionychidæ. When hatched, they start, like the Trionychidæ and Emydoidæ, with a circular body; but their body is relatively much higher than that of the Trionychidæ and Emydoidæ, and flattens out with age. The circular form grows first more and more oval, then oblong, in Gypochelys, (Pl. 5, fig. 23-27,) by a straightening of the lateral margin; while in Chelydra (Pl. 4, fig. 13-16, and Pl. 5, fig. 18 and 19) an oval circumference is permanent throughout life. The ornamental bass-relief which appears upon the surface is not less peculiar in Chelydroidæ. In Gypochelys it exists all over the body; in Chelydra particularly on the upper shield, where the corium rises in the form of larger and smaller warts and ridges. Besides smaller warts, which are spread irregularly all over the body in Gypochelys, and over the shield in Chelydra, we see in both genera three rows of longitudinal ridges formed by the median and the two costal plates of the back. These ridges are homologous to the three longitudinal rows of the young Thalassochelys and of the genus Chelys. The homology of Gypochelys with the latter genus is even carried so far, that, in the adults, the horny plates as well as the corresponding bony shields, when only seen from above, could hardly be distinguished. Even that curious twisting, characteristic of the lateral ridges, is the same in both cases, and the sutures between the costal plates run through them in exactly the same places. We see here a homology of forms connected with the greatest discrepancy of structure; for the true skeleton of Chelys, taken as a whole, is so different from that of the Chelydroidæ, as to justify fully their separation as distinct families.¹ Beyond these three ridges, we find, in the young Gypochelys, two more ridges on the top of the marginal plates. These are wanting in the young and in the adult Chelydra, and nearly so in the adult Gypochelys. Moreover, in the adult Chelydra, the three median ridges fade also more and more with advancing age, and we have seen large adult specimens which were entirely smooth. The lateral and posterior marginal plates of the young of this family are narrower outwardly than where they are attached to the costal plates. This causes the circumference of the posterior half of the trunk to appear deeply scalloped in Gypochelys, but less so in Chelydra, where these indentations disappear more and more with advancing age. At the first sight, the tail would seem, on account of its great size, to be an organ adapted for similar functions as in young Emydoids, in which we found it also relatively very long; but upon closer examination we may soon be satisfied that the round, strong tail of the Chelydroids, though very long, is not a rudder as in young Emydoids, but a support in walk-

¹ See the family characters of Chelydroidæ and Chelyoids, p. 335-346.