

which I have not seen in its youngest state. In the Trionychidæ, this flat, orbicular form is preserved through life, and in the Emydoidæ during the first four or five years, at least; but by and by the shield assumes the more or less elliptical and higher form of the adult, according to the different genera and species. This change takes place earlier in the Chelydroidæ and Cinosternoidæ than in the Emydoidæ, and earlier still in the Chelonioidæ.¹ In this last family, the characteristic features of the adult are already sketched out in the first year, though not yet fully developed. In the family of Chelydroidæ, the embryonic characters are prevalent for two years at least; in that of Cinosternoidæ the characters of the young do not disappear before the fourth year. It is nevertheless true that each family has its special pattern.

The young Turtles are mostly so different from the adult, in all their features, that it is very difficult to identify them. At all events, it requires a long experience to recognize them, in these first years, for what they are. Our systematic works, even the most recent, furnish, in fact, the painful evidence that these young Turtles have repeatedly been mistaken for distinct species. On the other hand, it is worth mentioning, that Turtles belonging to the same genus, as the genera are circumscribed below, show already in the youngest state slight peculiarities which at least indicate the genus, though the generic characters are by no means all developed. In the family of the Emydoidæ, I have further observed that the young approximate the lower Testudinata, not only by their remarkable similarity with the Chelonioidæ in the earlier stages of their embryonic development, but also by their mode of life, which is much more aquatic than that of the adult of the same species. This agrees remarkably well with the law, which seems to exist throughout the animal kingdom, that aquatic animals rank lower than the terrestrial representatives of the same groups.² It may be remembered in this connection, that in a large number of Insects the larvæ live in the water, while the perfect Insects are entirely aerial. Still greater differences, in the mode of life and the form of the young and adults, may be observed among parasitic Worms. Among Vertebrates, similar differences are particularly obvious in the class of Batrachians, in which the young of some of their representatives are entirely aquatic, whilst the adults live exclusively upon land. At least, this is the case for the highest among them, the Toads. These remarks in relation to the development of the form, and the mode of life, which is more or less connected with the form, may be sufficient to show how important the study of young animals is with reference to a correct appreciation of their true relations.

The following table gives a complete view of the changes which our common *Chrysemys* undergoes in its form.

¹ See Part III. for further details.

² Compare Part I., Sect. 9, p. 30.