founded, though these characteristics are confined to certain parts, instead of extending to the whole organization.

The next question which we have to consider here is, whether these sub-orders exhaust the natural subdivisions existing between the order and the genera; or, in other words, whether in this class the orders coincide with the families or not, for we have not yet examined the question whether every order has necessarily more than one family or not. My remarks in the third chapter of the first part of this work can leave no doubt that each of the four branches of the animal kingdom contains several classes, for we have seen that every one of them displays the plan of structure on which it is founded, as carried out in different ways and with different means. But we have seen from a supposed case, that if such a class included only a few species, or even several genera, or perhaps one or more families, there might be no foundation for a distinction of orders, if all these species, genera, and families presented only such a diversity of ultimate structure and such modifications of form as would not distinctly indicate among them a difference of rank, an appreciable gradation.[1] But where a class contains groups in which such differences as mark gradation and rank are clearly perceptible, then we have distinct orders, even should these orders coincide with the limits of the families, that is to say, be combined with such modifications of form that, though expressing a gradation, these groups would correspond with the characters upon which families are to be founded. Now it remains for us to examine whether this is the case among Testudinata; and since the Chelonii constitute so natural a sub-order, when contrasted with the Trionychidæ, the Emydoidæ, and the Testudinina, we may select it as a test of the existence of sub-orders in nature, and we shall afterwards extend our remarks to the other minor groups with the view of ascertaining how many divisions of this kind there truly are in the order of Testudinata.

Ever since naturalists have attempted to subdivide the Testudinata, those with pinnate limbs have been considered as a natural group, raised by most to the dignity of a family, and embracing, in all modern classifications at least, two genera, Chelonia and Sphargis, though some authors subdivide farther Chelonia into several genera, and even go so far as to consider Sphargis and Chelonia proper as the types of distinct families. Now, whether that group contains one or two families, it unquestionably exhibits very great uniformity of structure as a group, when compared to the other Testudinata. In the first place, the dermal ossification remains imperfect; next, the limbs preserve through life a character which is uniform in Testudinata, as long as their development is not complete, that is to say,

[1] See Part I., Chap. 1, Sect. 1, p. 5–7.