

constant, that even the uninitiated will recognize a Turtle as a Turtle, as readily as they will know a Bird to be a Bird.¹ It is not so with the other orders of Reptiles, the Snakes and Lizards. It is certainly easy to recognize in a Rattlesnake and a Leguan two entirely different animals, but it needs a scientific investigation, and indeed a very accurate one, to distinguish the Rhinophis as a Snake, from the Anguis or Ophisaurus as a Lizard; indeed, in English, the Ophisaurus is commonly called a Snake, the Glass-Snake. All Turtles, on the contrary, are distinctly comprised by all civilized languages under one name. What, then, is this something which so forcibly strikes the eye of the unlearned, and is so graphically expressed by the familiar names of these animals? It is the stiff backbone, spreading into the shape of a shield: Schild-kröte, German, shield-toad; turtle, Saxon, perhaps from tart or tartsche, the shield of the old Germanic tribes; testudo, in Latin.

Let us now consider, from this point of view, the remaining orders of the Reptiles, the Serpents and Saurians, and we shall see what deep truth is hinted at by this name of "Schild-kröte." The Snake moves only by means of the lateral motions of its vertebral column, together with the ribs; the Turtle only by means of its feet; and the Lizard, which stands between the two, by means of both together. We have a gradual series from the Apodes, or footless Reptiles, which creep upon the stomach, the Snakes, through the Lizards, up to the highest Reptiles, namely, the terrestrial Turtles, which stand upon four supports; and, to gain a true insight into the characters of the order of Testudinata, it is important to trace this series through its successive links. In so doing, we find the Pythons moving like all other serpents by means of horizontal undulations of the vertebral column, and the pressure of the ribs attached to it. But the anatomist finds, concealed under their anal scales, traces of hind feet, and even of the pelvis. These rudiments of limbs have as yet no locomotive function, but they hint at what is afterwards to appear in the higher types of the same class. The lowest Lizards, (and every zoölogist considers as such the family of Glass-Snakes, Scincoidæ,) begin with the European Anguis, in which traces of hind feet are concealed under the skin, but the only real

¹ Simple and trivial as this statement may seem, it involves a principle which neither naturalists nor general observers appear yet fully to understand, namely, that natural groups are not necessarily equally distinct, and that groups which seem equally distinct are not necessarily of the same value. No higher group in the animal kingdom is more clearly defined than the class of Birds, with perhaps the sole exception of the Turtles; but then Turtles constitute only an order in the class of Reptiles, and not a class

for themselves; while the Reptiles as a class by no means present that uniformity of appearance so characteristic of the Birds. What is true of these two types within their limits is equally true of hundreds of other types within other limits. Much of the uncertainty perceptible in our classifications, from the highest divisions down to the limitation of the species, arises from a constant neglect of the universal inequality which pervades both the animal and the vegetable kingdoms.