

except the element in which these motions take place? The fish may be said to *fly* in the *water*, and the bird to *swim* in the *air*; but perhaps the movements of the aquatic animal, from its greater flexibility and the number of its motive organs, is more graceful and elegant than those of the aërial. The *feathers* of the one are analogous to the *scales* of the other; the *wings* to the pectoral *fins*; and the *tail* of both acts the part of a *rudder*, by which each steers itself through the waves of its own element.

One distinctive character of fishes is taken from the *scales* that cover and protect their soft and flexile forms from injury. Scales, however, are not peculiar to *fishes*, since many *reptiles*, as the Saurians, and some quadrupeds, as the Pangolin,* are armed by them. Scarcely any species of fish is really without them. In some, upon which, when living, they are not discoverable under a microscope, when they are dead, and the skin is dry, scales are readily detected and detached. These organs vary greatly in form: sometimes they resemble spines, at others they are tuberculated; but most commonly they are plates, often carinated, and varying in shape, some being round, others oval, others again angular; sometimes also they are finely denticulated. In some fish they are separated, in others they touch, often so as to form together the resemblance of a beautiful piece of mosaic, and in many they are imbricated.† In those that rarely approach the shore, and are exposed only to slight friction, they are fastened by a smaller portion of their circumference; but in in-shore fishes they are more firmly fixed, and covered partly by the epidermis, which, in those that live and burrow in the mud, almost entirely envelopes them. Some fishes set up their spines like a hedgehog; and most, when alarmed, seem to have the power of erecting them more or less. Had we the means of ascertaining the situation and circumstances

* Manis.

† Roget, B. T. i. 116.