

life, all their extremities are formed for swimming. Their legs are exceedingly short, and placed far backwards; so that these birds are compelled, when resting on their feet on the shore, to raise their bodies in a perpendicular attitude, in order to place the centre of gravity immediately above the base of support; a posture which gives them a strange and grotesque appearance.

I have already alluded to the lengthened legs and feet of the waders, the utility of which to birds frequenting marshy places, and shallow waters, is very obvious. Their legs are not covered with feathers, which would have been injured by continual exposure to wet. But birds of a truly aquatic nature have their toes webbed, that is, united by a membrane, a mechanism which qualifies them to act as oars, and, indeed, gives them a great advantage over all artificial oars, that have been constructed by human ingenuity; for, as soon as the expanded foot has impelled the water behind it, the toes collapse, and, while it is drawn forward, it presents a very small surface to the opposing water. Their plumage is so constructed as to prevent the water from penetrating through it; and for the purpose of preserving it in this condition, these birds are provided with an oily fluid, which they carefully spread over the whole surface of their bodies. The Swan, and many other water-fowls, employ their wings as sails, and are carried forwards on the water with considerable velocity, by the mere impulse of the wind.

Birds excel all other vertebrated animals in the energy of their muscular powers. The promptitude, the force, and the activity they display in all their movements, and the unwearied vigour with which they persevere, for hours and days, in the violent exertions required for flight, far exceed those of any quadrupeds, and imply a higher degree of irritability, dependent, probably, on the great extent of their respiratory functions, than is possessed by any other class of animals.