

the force with which the toes grasp the perch. All this takes place without muscular effort or volition on the part of the bird. It remains in this position with more security on one foot than it would have done by resting upon both; because, in the latter case, the weight of the body being divided between them, does not stretch the tendons sufficiently. In this position, the bird not only sleeps in perfect security, but resists the impulse of the wind and the shaking of the bough.

The great length of the toes of birds enables them to stand steadily on one leg; and in this attitude many employ the other foot as a hand; especially parrots, whose head is too heavy to be readily brought to the ground. Some birds, which frequent the banks of rivers, are in the practice of holding a stone in one foot, while they rest upon the other: this contributes to increase their stability in two ways; first, it adds to the weight of the body, which is the force that stretches the tendons, and causes them to grasp the bough; and secondly, it also lowers the centre of gravity.

The stork, and some other birds belonging to the same order, which sleep standing on one foot, have a curious mechanical contrivance for locking the joint of the tarsus, and preserving the leg in a state of extension without any muscular effort. The mechanism is such as to withstand the effect of the ordinary oscillations of the body, when the bird is reposing; but it is easily unlocked by a voluntary muscular exertion, when the limb is to be bent for progression. On these occasions the ball of the metatarsal bone is driven with some force into the socket of the tibia.\*

I must content myself with this general view of the mechanism of birds; as it would exceed the limits within which I must confine myself, to enter more fully into the peculiarities which distinguish the different orders and families.

\* This mechanism is noticed by Dr. Macartney, in the Transactions of the Royal Irish Academy, vol. xiii. p. 20, and is more fully described in Rees's Cyclopædia, Art. BIRD. He observes that both Cuvier and Duméril have committed an error in referring this peculiarity of structure to the knee instead of the tarsal joint.