

paratively long, and the fibula is a very slender bone, yet quite distinct from the tibia ( $\tau$ .) The slight degree of motion which is thus allowed between them is useful to the animal, in enabling the feet to lay hold of cornices or other projecting parts of the roofs of buildings, on which the animal fastens itself, and hangs with the head downwards. It is probably with the intention of facilitating this action that the toes are turned completely backwards; and that they are of a curved shape, and generally armed with sharp claws. A bony appendix ( $\Lambda$ ) projects outwards from the heel, for the purpose of supporting the hinder prolongation of the membrane, which often extends between the hind feet, and is farther sustained by the tail, in those species which have the spine prolonged to form one.

Bats are also provided with another instrument for suspending themselves to projecting objects, formed by the thumb ( $\beta$ .) which is, apparently for this express purpose, detached from the fingers that support the wing, and is terminated by a strong claw, which projects, even when the wings are folded, and is useful in progression, by serving as a point of support.

## § 2. *Birds.*

It is in birds alone that we find the most perfect adaptation of structure to the purposes of rapid and extensive flight: in them the frame of the skeleton, the figure, position, and structure of the wings, the size of the muscles, the peculiar nature of their irritability, and even the outward form of the body, have all a direct and beautiful relation to the properties of the element in which nature has intended them to move. In their formation, a new, and in as far as relates to the organs of progressive motion, a more developed type is adopted; still preserving a conformity with the general plan of the vertebral organization, and with the general laws of its development.

The skeleton of birds has the same constituent parts as that of other vertebrated classes: the bones of the anterior