

is the case with all the lower zoophytes, such as the *Infusoria*, *Polypi*, *Medusa*, and the simpler kinds of *Entozoa*.

Among *Polypi* and *Infusoria* we meet with a singular mode of acting upon the surrounding fluid by means of very minute and generally microscopic filaments, termed cilia, which the animal, by some unknown power, causes to vibrate with great rapidity. Occasionally, these organs are found even in animals belonging to the higher classes. Wherever they are met with, they perform, as will hereafter be shown, very important functions; sometimes assisting in respiration, at other times contributing to the supply of food, and very generally serving as instruments of progressive motion.

In animals placed a little higher in the scale, we begin to trace the formation of fibres, which at first are irregularly scattered through the soft substance: but as the organization becomes more refined, these fibres are collected into bundles, and compose what are properly called *muscles*. Muscular fibres are attached at their extremities to the parts intended to be moved. In the lower animals, these attachments are principally to the skin, or other external parts, which are subservient to the purposes of progressive motion. In the higher classes, the solid parts, or skeleton, being disposed more in the centre of the system, the muscles are applied to them in the interior of the body, and are more distinctly separated into masses, each having its proper function in the movements of the frame.

The peculiar property which characterizes the muscular fibre is that of suddenly shortening itself, so as to bring its two ends, and the parts to which those ends are attached, nearer to one another. This contraction is performed with astonishing quickness and force, and the accumulated effect of a large collection of these fibres, such as constitutes a muscle, is therefore capable of overcoming great resistances, or of raising enormous weights. Those muscles, which, by means of their nerves, as will hereafter be noticed, are subservient to voluntary motion, are excited into action by an exertion of the will of the animal. There are, however, a great number of other muscles, the contractions of which