

158. A variety of appendages are attached to these rings, such as jointed legs, or in place of them stiff bristles, oars fringed with silken threads, wings either firm or membranous, antennæ, movable pieces which perform the office of jaws, &c. But however diversified this solid apparatus may be, it is universally the case that the rings, to which every segment of the body may be referred as to a type, combine to form but a single internal cavity, in which all the organs are enclosed, the nervous system, as well as the organs of vegetative life, (63.)

159. The muscles which move all these parts have this peculiarity, that they are all enclosed within the more solid framework, and not external to it, as in the vertebrates; and also that the muscular bundles, which are very considerable in number, have the form of ribbons, or fleshy strips, with parallel fibres of remarkable whiteness. Figure 27 represents the



Fig. 27.

disposition of the muscles of the caterpillar which destroys the willow, (*Cossus ligniperda*.) The right side represents the superficial layer of muscles, and the left side the deep-seated layer.

160. The Vertebrata, like the articulated animals, have solid parts at the surface, as the hairs and horns of mammals, the coat of mail of the armadillo, the feathers and claws of birds, the bucklers and scales of reptiles and fishes, &c. But they have besides this, along the interior of the whole body, a solid framework not found in the invertebrates, well known as the SKELETON.

161. The skeleton is composed of a series of separate pieces, called vertebræ, united to each other by ligaments.