a deep black colour, and a pearly lustre. The cartilage is always situated within the ligament, sometimes in immediate contact, and forming with it one and the same mass: at other times, placed at a distance, in a triangular cavity, amongst the teeth of the hinge. The closing of the valves produces, in all cases, a compression of the cartilage, the elasticity of which tends, therefore, to separate the valves from each other; that is, to open the shell.

During the life of the animal, the usual and natural state of its shell is that of being kept open for a little distance, so as to allow of the ingress and egress of the water necessary for its nourishment and respiration. But as a security against danger, it was necessary to furnish the animal with the means of rapidly closing the shell, and retaining the valves in a closed state. These actions being only occasional, yet requiring considerable force, are effected by a muscular power: for which purpose sometimes one, sometimes two, or even a greater number, of strong muscles are placed between the valves, their fibres passing directly across from the inner surface of the one to that of the other, and firmly attached to both. —They are named, from their office of bringing the valves towards each other, the *adductor muscles*. Fig. 102, which represents the section of an oyster, shows the situation of the hinge L, the adductor muscle A, and the transverse direction of its fibres, with respect to the valves. When these muscles are not in action, the elasticity of the cartilage attached to the hinge is sufficient to separate the valves: but as they were not intended to open beyond a certain extent, it was necessary to provide some limitation to the action of the cartilage. The adductor muscle might, it is evident, be called into play to counteract that action; but this would require a constant muscular exertion, and a great expenditure, therefore, of vital force. Nature has always shown a solicitude to econo-

102