pelled in a direction contrary to its proper course, it raises the loose edge of the valve, which, being applied to the opposite side of the canal, effectually closes the passage. On the contrary, it presents no obstacle to the natural flow of the contents of the vessel, both edges being then closely applied to the same side. Frequently two, or even three valves are used at the same part, their edges being made to meet in the middle of the passage, like the flood-gates, or locks of a canal.* Among the numberless instances of express contrivance which are met with in the examination of the fabric of animals, there is, perhaps, none more striking and more palpable, than this admirable mechanism of the valves.

As we ascend from the simpler to the more complicated systems of organization, adapted to a greater range of faculties, we find greater diversity in the mechanical means employed for carrying on the functions of life. Textures of greater strength than can be constructed by membranes alone become necessary for the security, the support, and the defence of important organs; and more especially for the execution of extensive movements. For obtaining these advantages a peculiar species of fibres is provided, formed of a much denser substance than even the most consolidated forms of cellular texture. The animal product termed *albumen* possesses a much stronger cohesive power than *gelatin*, which is the basis of membrane. The addition of albumen, therefore, procures the quality required; and the fibres which are produced by its combination with gelatin are opaque, and of a glistening white colour. By interlacing fibres thus composed, a close texture is formed, which is exceedingly tough and unyielding. These *fibrous textures*, as they are termed, while they retain the flexibility of membranes, greatly surpass them in strength; but, being at the same time incapable of extension, they are necessarily devoid of elasti-

* Fig. 27, representing the section of a vessel, is intended to show the position of the valves when applied to the sides of the vessel, by the stream moving onwards in the direction pointed out by the arrow. In Fig. 28, they are seen closing the passage by the retrograde pressure of the current.