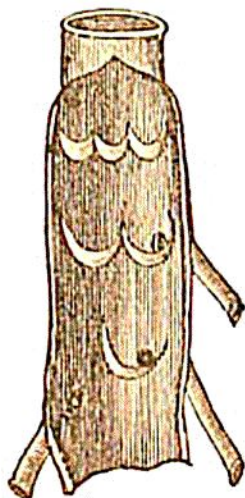


of time, without disorder and without weariness. To those who venture their lives in a ship, it has often been said that there is only a plank between them and destruction; but in the body, and especially in the arterial system, there is in many parts only a membrane, a skin, a thread." Yet how well has every part been guarded from injury: how providentially have accidents been anticipated: how skilfully has danger been averted!

The impulse which the heart, by its powerful contraction, gives to the blood, is nearly expended by the time it has reached the veins: nature has accordingly furnished them with numerous valves, all opening in a direction towards the heart; so that as long as the blood proceeds in its natural course, it meets with no impediment; while a re-

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trograde motion is effectually prevented. Hence external pressure, occasionally applied to the veins, assist in promoting the flow of blood towards the heart; and hence the effects of exercise in accelerating the circulation. Valves are more especially provided in the veins which pass over the muscles of the extremities, or which run immediately beneath the skin; while they are not found in the more internal veins belonging to the viscera, which are less exposed to unequal pressure.

These valves are delineated in Fig. 365, which represents the interior of one of the large veins.

The situation and structure of the valves belonging to the hydraulic apparatus of the circulation furnish as unequivocal proofs of design as any that can be adduced. It was the observation of these valves that first suggested to the mind of Harvey the train of reflections which led him to the discovery of the real course of the blood in the veins, the arteries, and the heart. This great discovery was one of the earliest fruits of the active and rational spirit of inquiry, which, at the era of Bacon's writings, was beginning to awaken the human mind from its long night of slumber,