

the source of heat and the direct agent in nutrition. The other the "*πνευμα ψυχικον*" or animal spirits which was elaborated in the ventricles of the brain and passing by the nerves was the cause of consciousness, perception and motion. Strange as it may seem this doctrine obtained even to the 16th and 17th century.

The Alexandrian School, also, well described the cardiac valves, but though their structure and evident function were known, they offered no hint of a circulation of the blood.

To the Alexandrians the diastole was the active phase of the heart, sucking into the right ventricle some blood for the nourishing of the lungs and into the left ventricle some "*pneuma*" for the arteries, the escape of which the valves were to prevent.

To sum up, the school at Alexandria furnished the body at large, on the one hand, with blood by the veins for its nutrition, and on the other, through the arteries with the "*pneuma*" as its controlling force, but acknowledged the possibility of anastomosis between these channels, but this anastomosis was looked upon as pathological and undesirable rather than as a normal process.

About 130 A. D. a star of the first magnitude appeared in the medical firmament. Claudius Galen, who, as the culmination of the knowledge of the olden time, was also destined to be the preserver of medical science through the dark ages. He was the logical successor of Hippocrates, and like the Father of Medicine steered from the hair splitting disputations of many of his contemporaries, toward a rational system founded upon observation.

The doctrine of Erasistratus that the arteries contained *pneuma* or spirits and the veins blood, had been held for centuries, even in the face of haemorrhage from a wounded artery, and all the ingenuity of scholars was employed in explaining the presence there of a fluid which rightly belonged in the veins. The arguments to them were the difference in the structure of the two vessels, and the pulsation in the arteries, supposed only to be a function of the vital spirits.

But Galen with the spirit of his latter day prototype, John Hunter, whose motto was "Don't think! Try it," tested arteries of all kinds by making openings of all sizes in them, and in every case blood flowed out.

To quote his own translated words, "But why nature should have made two kinds of vessels to hold one kind of liquid, or how the spirits taken in by the breath can be transported through the body if the arteries are filled with blood, or how if the spirits be not so transported the pulse and voluntary motion can be preserved, all these are special