

a new theory as to disease, or stated what he believed to be a new fact, it was quite sufficient to show that it was opposed to the opinion of Galen, to bring down shame and disgrace upon the heretical innovator. Although Galen studied, among other places, at Alexandria, it is very probable that his knowledge of anatomy was gained chiefly from the dissection of animals whose structure was supposed to come nearest to man, hence his anatomy is not always the most correct.

Previous to Galen's time, it was thought the arteries carried vital spirits or pneuma, and so convinced were the ancients of this "physiological fact" that, although they were fully aware that when an artery was wounded it bled, they used all their ingenuity and powers of reasoning to explain how it was that a tube containing air *should* bleed when cut. They held that the air first escaped through the wound and then blood came from the veins by communicating channels, to fill the vacuum. Galen fully exposed the absurdity of this belief, and, by experiments on animals, showed that the puncture of an artery by the finest needle immediately gave rise to hemorrhage, and that no discharge of vital spirits took place. He also placed ligatures on the arteries at two points, and demonstrated that the portion of the artery between the two ligatures contained only blood. The Alexandrian anatomists said: "Nature could not have made two kinds of vessels, both intended to contain blood." But Galen replied: "You might as well say that the several stomachs of ruminating animals were not all intended as the recipients of the food, but that one was meant for solids, one for liquids, and one for spirits; they are all the recipients of the same thing, but each, nevertheless, has its separate use. So it is with arteries and veins." (Galen's *Opera Omnia*, Vol. IV, p. 722; quoted by Dalton.) Galen could not explain why two sets of vessels existed to carry blood, but he knew both contained blood, and this he satisfactorily proved by experiment. He did not, as was then (and is now) too commonly the case, start a theory and endeavor to make the facts dove-tail into it, but founded all his theories on experiment and observation, as every true philosopher should. It is very improbable that there were any opportunities