

of the system of tubes which arise from the main cavity and branch into the right and left halves of the body alternate constantly in their contractions,—so much so that the one may be in the state of fullest expansion when the other is in the most complete state of contraction; and after a while the reverse will take place, when the last will be fully expanded and the first fully contracted. But in these alternate movements there is a moment when both halves are in a state of apparent equilibrium, though one be in the process of emptying and the other in the process of filling; while at the moment an equal amount of liquid has been pressed from that half which is contracting into that half which is filling, the symmetry is most complete. These alternate contractions are nearly as regular as the movements of diastole and systole of the heart, and take place by a constant balancing of the fluid one way and the other. The difficulty of watching this singular circulation arises chiefly from the necessity of keeping the living animal in one and the same position, as the slightest obliquity will interfere with the perspective, so as to make it altogether impossible to follow the natural movements; and unless the parts are placed in a strictly identical position, those which are in pairs will create confusion, as they may come into various positions, presenting apparently a close connection with parts to which they are not at all related. Again, the peripheric tubes extending in vertical arches over the surface, cover so easily the origin of the different trunks arising from the main cavity, that it is indeed very perplexing to trace them all in their true connection. Add to these difficulties the circumstance, that the arrangement of parts, owing to the bilateral symmetry of the body, appears entirely different when viewed in profile, from the side, or in front, and it will be plain, that, unless the observer keep in mind several distinct images of the various connections of all these stems and their ramifications, in a front view and in a lateral view, combining them in thought with the rapidity with which such an animal may revolve upon itself, it will be impossible for him to trace for a moment its structure while alive; and he will only have constantly before his eyes the tantalizing image of a piece of machinery, apparently very complicated, the structure of which he has to decipher while it is moving, but moving almost too fast to allow him to seize the connection of the different parts as they pass along, and which is not only deranged, but destroyed, the moment it is stopped. It was under such circumstances that I undertook to study the circulation of these animals; and though I succeeded in injecting indigo into their main cavity, and in having it circulate for hours at a time within the body of the same animal before it died, and though I was satisfied that not a particle of the colored liquid had passed into any part of the body into which the liquid before it was colored had not naturally free access, and though it was thus plain to me, that, even after being colored, the circulating fluid continued its normal course, I must say that