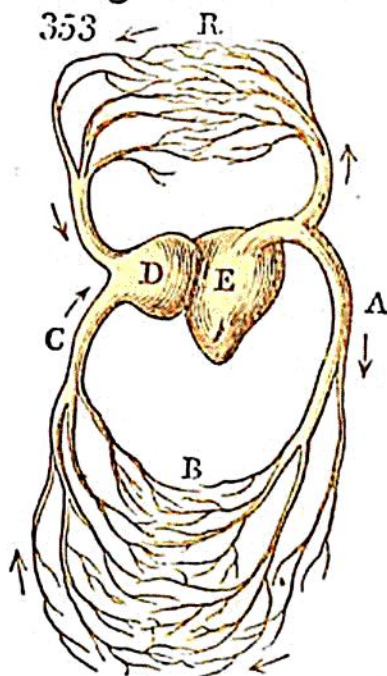


within us, during the whole period of our lives, in every, even the minutest, portion of our frame. How inadequate, then, must be any ideas we are capable of forming of the incalculable number of movements and of actions, which are conducted in the living system; and how infinite must be the prescience and the wisdom, by which these multifarious and complicated operations were so deeply planned and so harmoniously adjusted!

§ 3. *Respiratory Circulation.*

THE object of the circulation is not merely to distribute the blood through the general system of the body; it has, also, another and a very important office to perform. The blood undergoes, in the course of its circulation, considerable changes, both in its colour and its chemical composition. The healthy blood transmitted by the arteries is of a bright scarlet hue; that brought back by the veins is of a dark purple, from its containing an excess of carbon, and is consequently unfit to be again circulated. Whenever, from some derangement in the functions, this dark blood finds its way



into the arteries, it acts as a poison on every organ which it reaches, and would soon, if it continued to circulate, destroy life. Hence, it is necessary that the blood which returns by the veins should undergo purification, by exposure either to the air itself, or to a fluid containing air, for the purpose of restoring and preserving its salutary qualities. The heart and vascular system have, therefore, the additional task assigned them of conveying the vitiated venous blood to certain organs, where it may have access to the air, and receive its

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