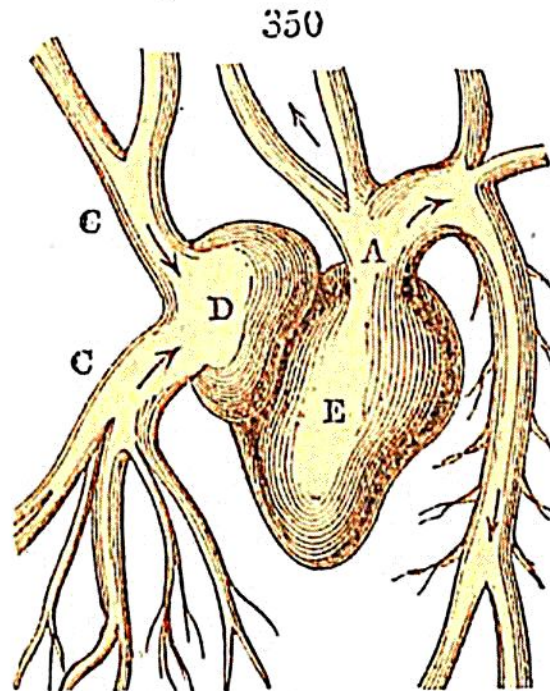


structure. The supply of blood to the heart, being in a constant stream, produces a gradual dilatation of the cavity which receives it; and the muscular fibres of that cavity are not excited to contraction, until they are stretched beyond a certain point. But in order effectually to drive the blood into every part of the arterial system, where it has great resistances to overcome, a considerable impulsive force is required, implying a sudden as well as powerful muscular action. This object is attained, in all vertebrated animals, by providing a second muscular cavity, termed a *ventricle*, into which the first cavity, or *auricle*, throws the blood it has received from the veins, with a sudden impulse; and thus the ventricle, being rapidly distended, is excited to a much more quick and forcible contraction than the auricle, and propels the blood it contains into the artery, with an impetus incomparably greater than could have resulted from the action of the auricle alone. Fig. 350 represents the heart with its



two cavities; *D* being the auricle, and *E* the ventricle; together with the main trunks of the veins (*C, C,*) which convey the blood into the auricle; and those of the arteries (*A,*) which receive it from the ventricle for distribution over the whole system.

The force of contraction in the principal cavity of the heart being thus increased, it becomes necessary to provide