

still increased, the vigour of the contractions becomes still greater and the slowing more decided until finally the ventricles come to a standstill in contraction.

A state of tetanus of the cardiac muscle is induced ; this is quite different from the effects of aconite which also slows the heart, and finally brings it to a standstill in dilatation. No better method can be employed to demonstrate the action of digitalis on the heart than to take a frog and bring its heart to a standstill in dilatation by injecting aconite. When this has happened, if we inject digitalis the distended ventricle slowly recovers itself, and soon returns to its normal condition. If we still continue injecting digitalis the systole becomes longer and the diastole less complete, especially at the apex which remains white and firmly contracted. This gradually extends over the whole ventricle, the heart finally comes to a standstill in firm contraction.

When either digitalis or aconite are given in such doses as to produce standstill of the heart, the pulse becomes quick and the blood pressure falls.

"In aconite poisoning the aortic pressure falls because the over distended ventricle is unable to contract upon its contents. Each contraction only sends a small quantity of blood from the upper portion of the ventricle. In digitalis poisoning the aortic pressure falls, because the over-contracted ventricle permits but little blood to get into it and can consequently send but little forward. The result is similar in both cases, but the cause in one case is just the reverse of that in the other."—Balfour.

The action of digitalis on the circulation in full medicinal doses may be summarized as follows :—

1. It makes the ventricles beat more powerfully.
2. It makes them beat slower.
3. It contracts the arterioles.
4. It raises the blood pressure.

These effects take place even after the vagi are divided and the spinal cord destroyed. It therefore follows that they are due (necessarily for the most part) to a direct action on the structures of the heart itself and on the vessels. This is further