

It is, however, a very old remedy, being mentioned even by Dioscorides, who considered it very beneficial in palpitations; "*it fortifies the heart*," he says.

Botkin was led to employ it, owing to its popularity as an "anti-dropsical" remedy among the Russian peasantry.

He alleges that he has always found it a reliable cardiac tonic, even in some cases surpassing digitalis. German Sée considers that in many cases it is the equal, and in a few cases the superior, of digitalis. Leyden, Lubinski, Fränkel, Stiller and others maintain, on the other hand, that in all cases it is inferior to digitalis; and in many cases, they say, it entirely fails to strengthen a weak heart.

At least, a part of this marked discrepancy of opinion is clearly due to the fact, that the various experimenters referred to employed preparations of different strengths, and made from different parts of the plant. Some used an extract (watery or alcoholic) from the flowers, while others used an infusion of the whole plant.

The strength of convallaria preparations depends much on their place of growth and the time the plant is collected. Russian plants are said to be superior, while American are inferior to all others. The flowers contain in greatest abundance the glucoside convallamarin, to which the plant owes all its medicinal properties,—at least its cardiac properties—for, in addition, there is another glucoside, which has been called convallaria, which possesses marked intestinal irritant properties, but is destitute of any cardiac tonic powers.

*Pharmacology.*—When applied to the heart of a frog, the different preparations of convallaria have a distinct tonic action. They slow and render the heart's movements more powerful. A similar action is observed in warm-blooded animals, although not so marked. Sphygmographic tracings taken from the pulse of man, after a few doses of convallaria, show that not only is the number of pulsations diminished, but the amplitude of the contractions is increased.

If administered in over-doses to either cold or warm-blooded animals, it brings the heart to a systolic arrest.