

advantages, with none of the disadvantages, of the alkaloid. Tanret has recently shown that caffeine is very soluble in aqueous solutions of the benzoate, cinnamate and salicylate of sodium. The first dissolves it in chemically equivalent quantities, so that the natro-benzoate of caffeine will contain 50 per cent. of caffeine. The natro-cinnamate and the natro-salicylate of caffeine each contain as much as 62.5 per cent. of caffeine. All three salts dissolve in two parts of hot water, and they remain in solution after the water cools. This discovery of Tanret's has given a decided impetus to the employment of caffeine, and already we have the published results of a number of accurate observations made with them in cases of heart failure. By far the most important observations made in the pharmacology and therapeutics of these salts is that of Prof. Riegel of Giessen. The great advantage of Tanret's salts is their stability and easy solubility. They can also be used hypodermically without giving rise to any but the slightest irritation.

Pharmacology of Caffeine.—The action of this drug on the heart is, in many respects, similar to digitalis, except that it has a more powerful action in influencing the circulation of healthy persons than the latter drug. That digitalis has very little influence in slowing the heart or raising the blood-pressure in a normal condition of the circulation is a matter of almost every day observation. Prof. Riegel has recently published the results of several experimental investigations that he made on six healthy young adults, with the view of determining what, if any, influence caffeine had on the normal circulation. In all these experiments the drug (the natro-salicylate) was administered hypodermically, in doses of 0.50 ($7\frac{1}{2}$ grains). In every case he found—1st, That the action of the heart was slightly slowed. 2nd, There was increase in the tension of the pulse. These effects were manifested half an hour after the injection, and lasted several hours. The slowing of the pulse generally amounted to about 10 beats per minute.

The fact, however, that caffeine has a considerable effect on the healthy circulation, does not necessarily imply that its effects on a diseased heart would be more pronounced than that of a