Of these, Mayer's solution, which is a double iodide of mercury and potassium will answer or tannic acid, forming insoluble tannates—(thus indicated in all cases of alkaloidal poisoning if quickly removed from the stomach); the hydrates and carbonates of the alkalies and alkaline earths, certain metallic salts, as mercuric chloride and lead acetate. iodine, iodides and bromides—all cases of chemical incompatability, which facts have to be ever kept in mind by the physician in his prescription writing.

In the assaying of the tinctures or fluid extracts of the alkaloidal drugs the gravometric method is that most frequently used; the volumetric has been tried but not found sufficiently accurate. To illustrate this method the fl. ext. guarana may be taken. It should assay from three to five per cent. of caffeine, which exists as a tannate.

Place ten c.c. of the fluid extract with four c.c. solution of perchloride of iron in a glass mortar and stir in sufficient sodium bicarb, to form a stiff paste. Triturate the magma with chloroform in three portions of ten c.c. each to ensure extraction. Mix the solutions, filter through absorbent cotton, and evaporate to dryness in a tarred capsule on a water bath, weigh and multiply the weight in grains by ten, which equals the percentage of alkaloid present. The rationale of all this is quite simple; the tannin attacks the iron base, the alkaloidal base now becoming attached to the hydrochloric radicle of the ferric chloride as caffeine chloride.

This new compound in turn being decomposed through the agency of the soda bicarbonate—common salt is formed with the evolution of carbonic acid gas, the alkaloid set free is then washed out by the chloroform. The insignificant amount of coloring matter retained about balancing any loss in weight in the manipulation.

This product may be purified by dissolving in hot alcohol, then filter through animal charcoal and dry, by which snow white crystals are obtained. The process of extraction given before excludes tannates, gums, albuminates and inorganic acids. For roots and seeds, such as aconite, ipecac and nux vomica, which contain resins, fats and waxes, also soluble in chloroform, a modification has to be resorted to. Treat the chloroformic solution with a one-in-fifty solution of sulphuric acid, in a bulbed separator, using three portions of ten c. each.

A sulphate is formed leaving the resins, etc., behind. Now mix the acid solutions and render alkaline with ammonia, when the alkaloid will be precipitated. It may now be dissolved out by chloroform, separate, evaporate to dryness, as before, and weigh.

If a green extract of a leaf is presented which contains chlorophyll in addition to the fats, etc.,—as in belladonna or coca,—proceed as above until the acid solution is obtained, then agitate lightly with ether, in two portions of ten c.c. each. This extracts the green coloring matter; then proceed from the acid solution as before indicated.

Since we have mentioned the convenience of the bulb separator, it might be well to direct attention here to its application in Toxicology, for the isolation of an alkaloidal poison from stomach contents. It may