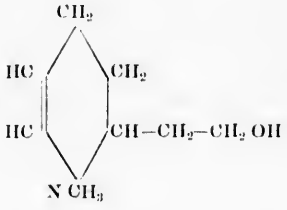
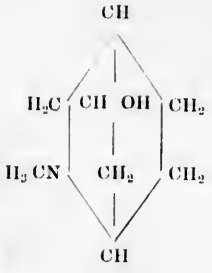
äthyl alcohol, giving the unsaturated atropaic acid. By treatment of this with hypochlorous acid, the chlorinated acid is obtained, which on treatment with nascent hydrogen gives tropaic acid. The acid part of atropin having been synthesised, Ladenburg, on the ground of some cleavage products of tropin, has suggested the formula I, which has been changed by Merling, with the consent of many chemists, to formula II.



I.



II.

Although neither of these compounds has as yet been completely synthesised, yet, tropin has been built up again from one of its decomposition products which, according to Merling's formula, must be dihydro benzyl dimethylamin. This latter is a derivation of tropidin methyl ammoninm hydrate, which is, in its turn, derived from tropin by dehydration. Now Merling showed that the monocyclic compound, the α methyl tropin, combined with two molecules of hydrochloric acid to hydrochlor α methyl tropin hydrochloride, which, with sodinm hydrate, gave the base hydrochlor α methyl tropidin. This changed to tropidin methyl ammonium chloride, which broke up by distillation into tropidin and methyl chloride. The transformation of tropidin into tropin was previously accomplished by Ladenburg.

The next alkaloid, which is of great importance medically, is cocain. This compound bears a close relation structurally with the foregoing as Wilstätter showed, and also with the alkaloid α tropin found in Javanese coca leaves.

Cocain, on saponification, splits up into ecgonin benzoic acid and methyl alcohol. From this decomposition one may infer that ecgonin contains an acid and a hydroxyl group, of which the latter one is benzoylated and the former methylated in cocain. Ecgonin is very similar to tropin, and Einhorn has been able from the former body to prepare the latter. By dehydration ecgonin yields an hydro ecgonin which gives off carbon dioxide air on suitable treatment yielding tropidin. The relation between tropin and ecgonin, according to the newer formulæ, may be easily seen by comparing the two formulæ.