

exist in the original acid in the form of water, inasmuch as the correct formula of this acid should be regarded as $C_{36}H_{42}O_4$.

I have not attempted to give rational formulæ for the caoutchou body or for its oily distillates. I have merely given these results the obtaining of which involved very considerable labor on my, own part and that of my assistant Dr. Edgar Everhart, in the hope that some one will repeat the work with such large quantities of material as eventually to obtain by fractional distillation or otherwise, homogenous products.

CRYPTIDINE.

BY ALBERT R. LEEDS.

When xyloidine-acrolein, prepared as stated in a preceding article was subjected to dry distillation some oily drops of peculiar smell were given off. A considerable amount of this substance, therefore, after careful purification was thoroughly dried at a temperature of 110° and finely pulverized. Small portions of about 20 grms. each were introduced into a small tubulated retort, placed in an air-bath and subjected to distillation, carried on very slowly to avoid carbonization. No record could be taken of the temperature of the distillation since it exceeded 360° . At first, before decomposition set in, a small amount of water came over which was of a slightly acid reaction, and which was rejected. When the temperature rose higher and decomposition began, a distillate composed of oily drops mixed with water of an alkaline reaction, came over. The residue in the retort consisted of a porous carbonaceous mass, extremely difficult of combustion. The alkalinity of the distillate, was due to free ammonia given off in considerable quantities during the operation, the retort at the end being filled with its fumes.

About 155 grms. of the xyloidine-acrolein were thus distilled in small portions at a time and the distillates collected. The water was separated from the oil by filtering through a wet filter, and heated for several hours at a temperature of 100° till the weight was constant. The yield from 155 grms. of the xyloidine-acrolein was 11 grms., or a little over 7 per cent.

Several unsuccessful attempts were made to purify the distillate, but no constant boiling point could be obtained. A small amount

of carbonaceous residue was left in the distilling flask at the close of each experiment.

The crude oil has a disagreeable smell and a very bitter taste. It forms crystalline salts with acids; sulphuric, hydrochloric, acetic, etc. Finally, the best method of purification was found to be that of decomposing its hydrochloric acid salt by means of alkali. The mother liquor, obtained by treating the oil with hydrochloric acid and consisting of a bad-smelling, thick liquid, was drained off from the crystals, and these were further cleaned by pressing between filter paper. The crystals were then dissolved in a small amount of water and filtered from an insoluble oily scum. The aqueous solution was allowed to crystallize, and the crystals were treated in the same way until quite pure. Finally the aqueous solution of the salt was decomposed with a little caustic potash. The precipitated oil was freed from the alkali, by repeated washing with water, filtered and thoroughly dried at 100°. The dried and purified oil was redistilled at 270° a boiling point that remained constant. It is reddish yellow in color, and possesses a disagreeable odor.

The final analysis was made on this product and gave a formula corresponding to cryptidine, $C_{11}H_{11}N$

	Found	Calculated
C.....	84.45 pct.	84.08 pct.
H.....	7.38 pct.	7.00 pct.
N.....	8.99 pct.	8.92 pct.

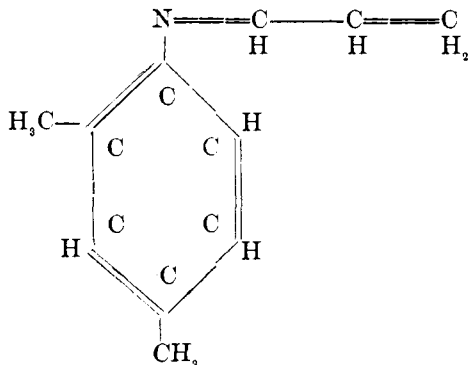
The hydrochlorate crystallizes in fine thin, colorless, tubular crystals which may, by careful heating, be sublimed, although a partial decomposition takes place. On analysis it yielded 18.04 per cent. Cl, theory 18.34 per cent. required.

When to an aqueous solution of the hydrochlorate a solution of platonic chloride is added, there is instantly a precipitation of a fine yellow crystalline compound of the double salt of cryptidine and platonic chloride. The double salt is soluble in water, but is precipitated on the addition of platonic chloride in excess. It was purified by washing with alcohol in which it is insoluble and crystallizing from water.

It will be noted that this is the first successful attempt to form cryptidine synthetically, and that it likewise yields the oil directly and in a state of purity.

This synthetic formation of cryptidine, affords a valuable opportunity of obtaining an insight into its probable structural con-

stitution. The constitution of xylidene-acrolein, it was the meta compound which was employed, might be represented as



The oxygen of the acrolein is represented as combining with the two atoms of the nitrogen, in order to account for the fact that the metaxylidene-acrolein is entirely devoid of basic properties, and cannot be made to form salts. On heating, two atoms of hydrogen are given off, one from the extremity of the acrolein chain the other from the benzene ring. This being the case, the extremity of the chain is brought round to form by the union of the bonds thus opened another ring.

In other words the Cryptidine would contain the benzene ring, and a side ring with the N atom occupying the usual position of the C atom, the bonds being probably distributed as in the annexed diagram.

