CONCLUSIONS.

1. In revising them onograph for Iris Versicolor, N. F. V, the name *Iris caroliniana* Watson should be replaced by that of *Iris virginica* Linné which is more acceptable by the rule of priority.

2. It is suggested that the section describing Iris Versicolor, N. F. V, be revised so as to distinguish between the drug from the species *Iris versicolor* L. and *I. virginica* L.

3. In order to distinguish the official from spurious species of *Iris,* it is necessary to include in the monograph more specific histological data, in particular, vascular bundle counts and dimensions, and stelar and cortical ratios, and in addition, color of the drug and color reaction with vanillin and hydrochloric acid.

4. Iris Versicolor from the southeastern United States does not seem to be generally adulterated at the present time.

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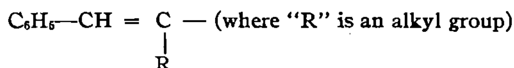
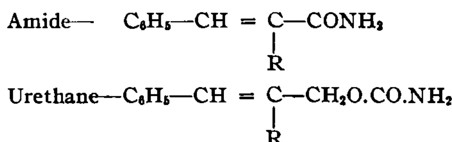
A STUDY OF A NEW SERIES OF URETHANES.*

BY W. A. LOTT AND W. G. CHRISTIANSEN.

As reported in another article, the authors have studied the hypnotic potency of amides and ureides whose acyl residues contain the characteristic grouping:



In order to completely evaluate the grouping in this respect, it was decided to introduce it also into carbinol residues of urethanes; the carboxy group of acids from which the amides (and ureides) are derived being replaced by the carbinol —CH_2OH group. The general formulas for the amides and the corresponding urethanes are as follows:



* Scientific Section, A. PH. A., Washington meeting, 1934.

Two such urethanes (carbamates) were prepared and tested for hypnotic activity against rats; they were found to be inactive.

EXPERIMENTAL.

1. *2-Methyl Cinnamyl Urethane.*—14.8 Gm. (0.1 mol.) of 2-methyl cinnamyl alcohol was dissolved in dry benzene and treated with a 24% benzene solution of phosgene containing 9.9 Gm. of phosgene; the latter was added dropwise with mechanical agitation, and external cooling. The initial temperature was 15° C.; it rose about 5° C. during this addition. After the temperature had fallen to 15° C., 12.1 Gm. of dry, freshly distilled dimethyl aniline dissolved in 50 cc. of dry benzene was added. This caused another moderate rise in temperature. After agitating for one-half hour to complete the reaction, the reaction mixture was washed several times with water, to remove the dimethylaniline hydrochloride. The benzene solution of the chloroformate was partially dried by shaking with anhydrous Na_2SO_4, filtered, returned to the flask equipped with the agitator and treated for one hour with a large excess of 28% aqueous ammonia. The benzene solution of the urethane was washed successively with water, dilute hydrochloric acid, 10% sodium carbonate and finally again with water. By this time a white crystalline product had already appeared in the benzene layer. It was collected by filtration. When the benzene filtrate was dried and concentrated, an additional quantity of the urethane crystallized.

About 12 Gm. of the crude material was obtained as snow-white crystals of melting point 130–131° C. After several recrystallizations from alcohol the product melted at 132–133°.

Assay: % Nitrogen found—7.46; calculated for $C_{11}H_{13}O_2N$: 7.33%.

2. *2-Amyl Cinnamyl Urethane.*—In an exactly analogous manner 2-amyl cinnamyl alcohol was converted to the corresponding urethane. In this case no product crystallized from the benzene solution until after it was dried, concentrated and chilled. From 19 Gm. of the alcohol about 11 Gm. of almost white crystalline product was obtained. After several recrystallizations from alcohol the product was snow white and melted at 77.5–78° C.

Assay: % Nitrogen found—5.60; calculated for $C_{15}H_{21}O_2N$: 5.66%. 7 Gm. of an oily by-product was obtained but not examined.

The alcohols from which these urethanes were prepared were obtained by reduction of the corresponding aldehydes using ethoxy magnesium chloride and the method described by Bogert and Powell (1). These authors also described convenient methods for the preparation of α-alkyl cinnamaldehydes (2).

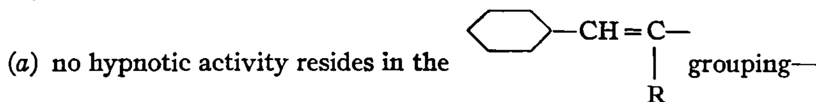
Biological tests with albino rats indicated that these two urethanes had no hypnotic action in doses up to 2 Gm. per kilo.

The biological tests on compounds reported herein were made in the Biological Research Laboratories of E. R. Squibb and Sons and we gratefully acknowledge their assistance.

SUMMARY.

1. Two examples of 2-alkyl cinnamyl urethanes were prepared and found to be lacking in hypnotic activity.

2. Since the urethanes in general are not rapidly hydrolyzed in the animal organism, it is to be concluded that either:

(a) no hypnotic activity resides in the  grouping—

or

(b) the above urethanes are not readily resorbed.

Since in rats, the corresponding amides are active, the latter seems more probable.

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THE ACTIVE CONSTITUENTS OF ERGOT: A PHARMACOLOGICAL AND CHEMICAL STUDY.*[1]

BY MARVIN R. THOMPSON.[2]

During 1929–1930, the writer published a series of ten reports embracing a review of the literature on Ergot and also the results obtained in certain pharmacological and chemical studies on Ergot and its more important pharmaceutical preparations. These reports presented evidence, in confirmation of a rather wide-spread unanimity of opinion, showing, among other things, that:

1. The amino-bases of Ergot (histamine, tyramine, cholines, etc.) could contribute little or nothing to the valuable therapeutic activity of the drug or any of its preparations.
2. The valuable therapeutic activity resided wholly in the "total specific alkaloidal fraction."
3. Of the four then known alkaloids, ergotinine and ergotaminine were comparatively inert, while both ergotoxine and ergotamine were indistinguishable in exhibiting intense activity by pharmacologic methods. Because of this great pharmacological activity, it was concluded that practically the full therapeutic activity of Ergot must reside in ergotoxine and/or ergotamine.
4. Aqueous Extracts of Ergot were practically worthless because they were invariably deficient in ergotoxine or ergotamine, and in addition were improperly standardized or not standardized at all.
5. Fluidextract of Ergot, U. S. P., or similar alcoholic or hydroalcoholic preparations, contained alkaloidal activity in satisfactory amounts and hence, such extracts were concluded to be superior to aqueous types of extracts.
6. Either ergotoxine or ergotamine was completely representative of the valuable pharmacological activity of Ergot, and, therefore, either of these alkaloids should be complete therapeutic substitutes for Ergot or its crude extracts.

Since publishing the above-mentioned reports, the author has continued to experimentally investigate certain phases of the ergot problem, largely because some of the most important conclusions regarding the activity and active principles of ergot have been based, by all workers in the field, upon experimental evidence of a much too indirect type, as for example, results obtained from experiments upon isolated uteri taken from non-pregnant and virgin animals. Such matters as absorption, changes in the uterus caused by pregnancy and the different stages of the œstrus cycle, and inherent differences in susceptibility between different animals, had been neglected by all pharmacologists up to 1930.

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