

ical associations as may hereafter be decided upon. From its inception, the work of the institute should be divided into at least four departments, each with a departmental head of equal power and voice; the four departments being (a) chemistry, (b) pharmacy, (c) pharmacology, (d) practical therapeutics; over these four responsible officials there being a director, whose duties shall be largely executive.

Of course, as the institute grows, other departments may be necessary, but from the beginning the four enumerated above are essential, if the institute is to do work worthy of its proposers.

This summary of my thoughts is presented for discussion this evening, with the full appreciation that the suggestions offered are fragmentary. But there is at least something tangible in them, no matter how you may chance to view them; which is more than can be said of most of the discussion of the institute up to the present time.

### LOCAL ANESTHETICS—NITRIC ACID COLOR TEST.\*

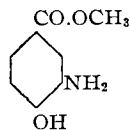
BY TORALD SOLLMANN.

This investigation started with the observation that an American sample of procaine gave a deep rose color with nitric acid. Further comparisons showed that this was due to a rare impurity, all other samples of procaine being only very slightly colored. The nitric acid test therefore appears to be a rapid method of assuring the absence of this unknown impurity. Although the pharmacology of this impurity is not known, official requirements should be framed so as to exclude it.

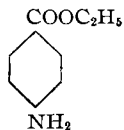
The nitric test was then applied to other local anesthetics. With the exception of orthoform-new, these remained colorless, even on drying. Orthoform-new gave a well-defined color reaction, and can therefore be easily differentiated from all the other local anesthetics. The test is positive even when applied directly to very complex mixtures, f. i., to orthoform lozenges.

A glance at the structural formula of orthoform, which gives the test, and the related anesthetics that do not give it, indicates that its reaction depends either on the introduction of the OH group, or on the different position of the NH<sub>2</sub> group—presumably the former.

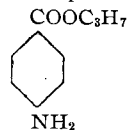
Orthoform-new.



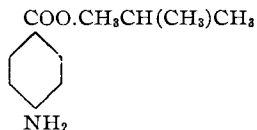
Anesthesin.



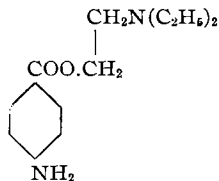
Propaesin.



Cycloform.



Procaine.



\* From the Department of Pharmacology of the Medical School of Western Reserve University, Cleveland.

The nitric acid test consists simply in adding a drop of concentrated, colorless nitric acid to a little of the dry powder, on a white plate. The results with procaine are shown in Table I, those with other local anesthetics in Table II. The melting points of the procaine samples were furnished by the Chemical Laboratory of the American Medical Association. It is noteworthy that the sample giving the color-reaction also had a melting point below that of all the other samples, *viz.*, 152-152.5 as against 153-155 degrees.

The positive reaction of orthoform and the negative result with all of the others, agree with the statement of Gadamer, *Lehrb. d. chem. Tokikologie*, Goettingen, 1919, page 490. He also examined a few further anesthetics that are not available at this time, and which are added to the table on his authority.

TABLE I.  
RESPONSE OF PROCAINE SAMPLES TO NITRIC ACID TEST.

Sample (code).	Color.	Melting point (° C.)
Novocaine, Hoechst, powder	Practically colorless	.....
Novocaine-epinephrin tablets	Practically colorless	.....
Novocaine, Koechl, tablets	Practically colorless	.....
Procaine, R 121817	Practically colorless	153-154.5
Procaine, M 82318	Light yellow	154-154
Procaine, H	Light yellow	153-154.5
Procaine, A 89997	Very slight brown	153-154
Procaine, A 12918	Very slight brown	153.5-154.5
Procaine, R 82018	Slight brown	153-155
Procaine, R 82318	Slight brown	.....
Procaine, R 121817	Practically colorless	153-154.5
Procaine, R 82018	Slight pinkish	154-155
	Brown	
Procaine, R 82318	Slight pinkish	153-154.5
	Brown	
Procaine, R 5218 (three samples)	Deep rose pink	152-152.5

TABLE II.—RESPONSE OF LOCAL ANESTHETICS TO NITRIC ACID TEST.

The following remained colorless, even on drying with the acid:

Anesthesin (2 samples)	Cycloform (2 samples)
Alypin (tablet)	Euphthalmin
Apothesin	Holocaine (Gadamer)
Beta-eucaine lactate (2 samples) and hydrochloride	Propaesin
Cocaine	Stovaine (Gadamer)

The following give color-reactions:

Nirvanin: yellow (Gadamer)

Orthoform-new: faint pink, changing rapidly to violet and finally red (distinction from other local anesthetics).

## SOME EFFECTS OF THE WAR UPON CRUDE DRUG IMPORTATIONS.\*

BY CARL L. ALSBERG, ARNO VIEHOEVER, AND CLARE OLIN EWING.<sup>1</sup>

Few industries derive their raw materials from such varied sources as does the drug industry. Camphor from Formosa, cloves from Zanzibar, asafoetida

\* Based upon an illustrated lecture delivered by C. O. Ewing before Scientific Section A. Ph. A., Chicago meeting, 1918.

<sup>1</sup> A contribution from Bureau of Chemistry, Department of Agriculture, Washington, D. C.