

An oil was obtained which, when dry hydrogen chloride was passed into its solution, evolved chlorine, and deposited an oily solid salt. At 115°-120° it lost methyl chloride and there remained a crystalline substance which, however, was not the amide and contained chlorine. This was saponified with caustic soda, but the acid formed melted at 205°-210° and still contained chlorine. It is evident that at some stage the benzene ring became chlorinated. But the fact that methyl chloride was evolved on heating indicates that the methyl was united to oxygen.

A little preliminary work was done with the brom-amides, they being more easily prepared pure than the corresponding chlor derivatives. While the results were not conclusive, they indicated that either methylation occurred on the nitrogen atom or that a rearrangement of the amide to the amine had taken place. For a distinct isonitril odor was observed when the saponified product was boiled with chloroform and caustic potash. Besides when m-nitro benzbromamide was methylated a substance was obtained with quite different properties from those in the former cases. It contained a large amount of bromine, though almost inactive. A small amount of the substance gave a distinct test for formaldehyde (resorcin and sulphuric acid). This might indicate that a molecule of the brom amide had added itself to the methine (CH₂) group, thus:



This on saponification would give a derivative of formaldehyde and would contain inactive bromine.

The work will be extended in this and other directions as soon as opportunity offers.

NOTE ON THE APPARENT DETERIORATION OF FORMALIN.

BY THOMAS LARGE.

Attention of chemists and naturalists is called to the following facts: A stock of formalin, purchased from a prominent firm, for 40 per cent. formaldehyde, was kept at the Biological Station of Illinois for three years, where it was subjected to winter temperatures. When temperature was low a precipitate of white paraform (?) appeared, and was

redissolved with higher temperatures. In the past summer some difficulty was experienced with it in preserving larger fishes in warm weather. A sample of the formalin was submitted to Dr. Palmer, Professor of Chemistry in the University of Illinois, for examination. The following is his report on it: "We find that it contains $38\frac{1}{2}$ per cent. of formic aldehyde. This is practically the quantity that is supposed to be contained in commercial formalin, i. e., 40 per cent. formic aldehyde. I find that nearly one-half of the formic aldehyde is polymerized, i. e., about $18\frac{1}{2}$ per cent. is in the form of the polymer tri-oxymethylene. I am not sufficiently familiar with the use of the formalin as a preservative to be able to state whether this polymerization will interfere with the use of the formalin as a preservative, but would suggest that possibly the formalin has proved unserviceable because nearly half of the constituent which is expected to do the work is in the form of the polymer, and probably unserviceable."

NOTES ON THE EXAMINATION OF VEGETABLE POWDERS.

BY JOHN S. WRIGHT.

[Abstract.]

Brief accounts were given of the methods employed in preparing vegetable powders for microscopical studies, especially through the use of clearing and other microchemical reagents. References were made to the work previously done along this line and to the literature of the subject. Histological characters of vegetable powders were discussed, particular attention being paid to the value of the microscope as a means of identifying and detecting adulterations in granulated and powdered drugs and spices.

THE STAINING OF VEGETABLE POWDERS.

BY JOHN S. WRIGHT.

[Abstract.]

The use of differential stains to aid in the study of the histological elements of vegetable powders is in many instances important. If in