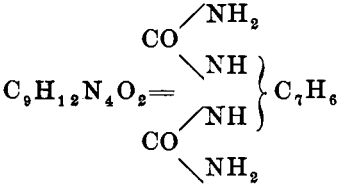
BENZUREÏDE.

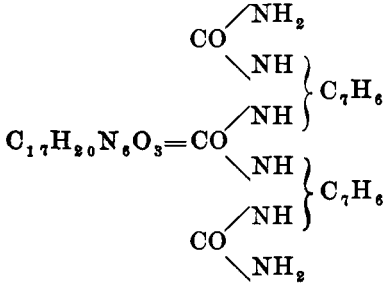
By Albert R. Leeds.

In the Ann. Chem. Pharm., vol. 151, p. 192, Schiff describes the products obtained by the action of Benzaldehyde on Urea. I have had occasion to repeat this work, and have obtained the following results.

Two molecules of urea were dissolved in alcohol and added to one molecule of benzaldehyde. Sufficient alcohol was added to dissolve the urea in the cold, and the flask containing the solution was allowed to stand, loosely plugged with cotton wool, for several weeks. Minute, crystalline needles were slowly deposited. They were purified by washing with ether and dried over sulphuric acid. They yielded on analysis C 52.04 p. ct. and H 5.85 p. ct. (theoretical C 51.92 p. ct., H 5.77 p. ct.), and proved to be the Benzodiureïde of Schiff.



Urea and benzaldehyde, dissolved in alcohol in the cold, were added together in the proportion of three molecules of urea and two molecules of benzaldehyde. The solution was heated in a flask connected with a return cooler for a number of days upon a water bath. Most of the alcohol was finally expelled, when the compound crystallized out in very brilliant, white needles. After purification by washing with ether they gave, on analysis, the formula of dibenzotriureïde, C 56.46 p. ct., H 6.00 p. ct. (theoretical C 56.66 p. ct., H 5.88 p. ct., or



Deeming it probable that the simplest form of combination between urea and benzaldehyde or benzureïde might be found by varying the conditions of the reaction, the experiment was tried of introducing the two substances, dissolved in absolute alcohol and in molecular proportions, into a sealed tube. This was heated for 48 hours at a temperature of 95°, at the expiration of which time an abundant porcelain-like, white deposit had formed. No pressure was noted on opening the tube. Its contents, after purification, were found to consist of fine, white, crystalline needles. On analysis they gave C 56.56 p. ct. and H 6.18 p. ct., showing that the substance thus formed was not benzureïde but dibenzotriureïde. It does not melt, but begins to decompose and give off a crystalline sublimate at 200°.

The dibenzotriureïde was described by Schiff as a compact, crystalline mass, in which no especial form could be recognized, and for which he gives no melting point or analysis.