lowing an inflammatory reaction, a hard swollen lump perhaps 5 mm. in height, and somewhat over a centimeter in diameter. A similar, but deeper, localized process resulted from a subcutaneous injection into a rabbit. The lesions appeared to reach a peak in 5 days, at which time incisions were made. These revealed encapsulated deep pockets of a caseous pus, from which pure cultures of the original organism could be secured. Thus far the disease has obviously not been reproduced, and the animal lesions might be explained by supposing the response to be due to an organism not necessarily connected with the human skin infection. However, the study reveals consistently the presence of the coccus described, and the presence of no confusing types. An attempt to reproduce the infection more accurately will be the subject for further investigation.

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On the Flavianates of Some Nucleinic Substances.

L. R. CERECEDO. (Introduced by Carl L. A. Schmidt.)

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Due to the lack of dependable methods for their identification, the isolation of nucleinic compounds from biological fluids is not an easy matter. Among the precipitants which might be useful in the isolation of these substances, flavianic acid (1-naphthol-2-4-dinitro-7-sulfonic acid) seemed to be promising. Kossel and Gross[1] found that flavianic acid forms crystalline compounds with organic bases. Among other substances these workers prepared guanine flavianate.

We have prepared the flavianates of cystosine, 5-methylcystosine, 2-amino-4-methyluracil, guanosine, adenosine and cytidine.

It has been found (with O. H. Emerson) that cytidine flavianate is a very useful substance in the isolation of cytidine from yeast nucleic acid. Flavianic acid is more satisfactory than picric acid for decomposing cytidine nitrate. Although cytidine flavianate does not seem to crystallize from an impure solution, it forms beautiful crystals when fairly pure and is a very convenient substance for recrystallizing as it has a very high temperature gradient of solubility. The flavianate is easily decomposed by dissolving it in 5% sulfuric acid at 60° and extracting the flavianic acid with butyl alcohol from

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[1] Kossel, A., and Gross, R. E., *Z. physiol. Chem.*, 1924, cxxxv, 167.

the warm solution. The cytidine sulfate obtained from the flavianate was extremely pure, and one recrystallization proved sufficient to obtain the base in beautiful crystals.

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Studies on the Physiology of Pyrimidines. The Intermediary Metabolism of Uracil.

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In an earlier paper[1] experiments were reported which showed that uracil and thymine, when fed in small amounts to dogs, are metabolized to urea. It was also shown that thymine glycol which is obtained on oxidation of thymine *in vitro*[2] is probably an intermediate step in the oxidation of this pyrimidine in the animal body. These results led the writer to investigate the fate of isobarbituric and isodialuric acids which are oxidation products of uracil *in vitro*[3] as possible intermediate metabolic products of uracil.

Steudel[4] reported feeding experiments with these two substances. He found that they were apparently completely oxidized.

Isobarbituric acid and isodialuric acid were fed to dogs maintained on a nitrogen equilibrium. In every case when isodialuric acid was administered, there was an increase in the urea output, suggesting that this substance was metabolized. In the case of isobarbituric acid, the increase in the urea output after feeding the substance was not as pronounced as after administering isodialuric acid. This may have been due to a lesser absorption of isobarbituric acid on account of its being less soluble.

These experiments seem to indicate that in the metabolism of uracil we are dealing with an oxidation resembling that *in vitro* as follows: Uracil → Isobarbituric acid → Isodialuric acid → urea + 3 C-atom compound.

In the course of these experiments we have observed a peculiar effect of these substances on the sulfur metabolism of the dogs. We

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[1] Cerecedo, L. R., *J. Biol. Chem.*, 1927, lxxv, 661.

[2] Baudisch, O., and Davidson, D., *J. Biol. Chem.*, 1925, lxiv, 233.

[3] Behrend, R., and Roosen, O., *Ann. Chem.*, 1889, ccli, 235.

[4] Steudel, H., *Z. Physiol. Chem.*, 1901, xxxii, 285.