white rats with transplanted tumors of the Flexner sarcoma type. Kimura determined the nitrogenous and mineral constituents of the urine and reports an increase in the total nitrogen in the form of urea and allantoin paralleled by an increase in sulfate and phosphate excretion, indicating an increased rate of protein catabolism. Kimura was unable to find any protein and found only a trace of allantoin in normal rat urine, whereas in this laboratory protein has been found as a fairly constant constituent of rat urine and allantoin has been shown to be the predominant end product of purin metabolism in the rat by Hunter, Givens, and Guion.[4]

Summary. In the course of the growth of Sarcoma 180 in white mice the excretion of nitrogen diminishes chiefly at the expense of urea and of the urinary protein, with the latter tending to disappear entirely. The excretion of the other urinary constituents is practically unaffected.

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Formaldehyde Inhibition of Tryptic and Peptic Digestion of Egg White.*

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In connection with a study of the action of formaldehyde on certain bacterial suspensions,[1] parallel observations were made of its effect on trypsin and pepsin. Little work has been reported on the influence of formaldehyde on tryptic and peptic digestion of proteins. Johannessohn[2] found that preparations of trypsin vary in their susceptibility to this aldehyde; activity of one preparation was unaffected by 20 hours standing with 1% formaldehyde, while that of another was inhibited by 1/20% formaldehyde. He also reported that pepsin was not inactivated by 10% formaldehyde in 24 hours.

In our experiments, however, formaldehyde in low concentrations had a marked inhibitory effect on the action of both trypsin and pep-

[4] Hunter, A., Givens, M. H., and Guion, C. M., *J. Biol. Chem.*, 1914, **18**, 387.

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[1] Miller, C. P., Jr., and Boor, A. K., PROC. SOC. EXP. BIOL. AND MED., 1933, **30**, 829.

[2] Johannessohn, Fritz, *Biochem. Z.*, 1917, **83**, 28.

sin on egg-white. Complete inactivation was not accomplished, however, by the presence of 4% formaldehyde as shown by 18 hour digestion. (Table I.)

TABLE I.

% Formaldehyde During Digestion	cc. N/10 NaOH used in Formol Titration of Products of Egg White Digestion with	
	Pepsin	Trypsin
Control	8.00	10.00
.004	8.00	8.00
.04	8.00	7.70
.02	6.50	.95
.4	2.63	.55
.8	2.00	.35
2.0	1.80	.20
4.0	.50	.04
8.0	0	0

Allowance has been made for control protein subjected to same conditions of temperature and hydrogen ion concentration for the period of digestion.

Two solutions of raw egg white containing 0.25% and 2.5% protein respectively and 0.4% trypsin* were divided into 10 cc. volumes, and each series treated with varying concentrations of formaldehyde. The reaction was adjusted to pH 7.4 and the mixtures allowed to digest at 37-40° for 18 hours. Similar concentrations of macerated coagulated egg white were digested with 0.1% pepsin at pH 2.5. At the end of the digestion period the liquids were neutralized and the extent of digestion determined by means of Sorensen's formol titration method.

The results in the case of the series containing 2.5% egg white are given in the accompanying table.

* A commercial product of high grade sold under the label "Special Trypsin" by the Wilson Laboratories, Chicago. The pepsin, from the same firm is designated of 1:10,000 potency.