

taneous deterioration that was seen to take place in solutions standing at corresponding temperatures, and also at body temperature.

One per cent. solutions of a commercial pepsin in hydrochloric acid (0.1 per cent., 0.25 per cent. and 0.5 per cent.) were kept in glass bottles at approximately the following temperatures: 5° C., 20° C., 33° C., 37° C. From time to time samples were tested by Fuld's method, modified somewhat to decrease the error. The following results were obtained for solutions in 0.25 per cent. hydrochloric acid at 37° C. :

<i>Duration of heating in days.</i>	<i>Destruction.</i>	$\frac{x}{t(1-x)}$
0.5 days.	19.5 per cent.	.48
0.84 "	31 "	.53
1.0 "	35 "	.54
1.2 "	39.5 "	.54
2.0 "	53 "	.56
5.0 "	73 "	.54
8.0 "	80 "	.50
12.0 "	86 "	.51

These results seem to indicate that the destruction of pepsin under the conditions described takes place in accordance with the law of the bimolecular reaction, and the formula which seems to apply is:

$$\frac{X}{t(1-X)} = K,$$

where X represents the destruction, in hundredths of the original in time t , and K represents a constant.

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Synthesis of uric acid.

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The possibility of a synthesis of uric acid from lactic acid and urea has been considered by a number of investigators, but when these substances are taken by way of the stomach, all researches alike have failed to disclose any evidence of uric acid synthesis in

mammals. The object of this study was first, to repeat the earlier experiments of Minkowski; second, to find out if slight changes of method would perhaps serve to show a synthesis of uric acid; and third, to consider the problem experimentally in relation to a man suffering from chronic gout. In gout it is possible that an abnormal synthesis of uric acid occurs, and also, since the uricolytic powers of the gouty organism are less active than normal, a synthesis masked in a normal person might be evident in a person suffering from gout.

The results of the experiments may be briefly summarized as follows: when lactic acid is administered to a normal man who has been fed on a purin free diet, there is no resulting increase of uric acid in the urine, even when the amounts of lactic acid are very large — *i. e.*, 20 grams in a dose. In a dog on a purin free diet (milk, eggs, and rice), following the hypodermic injection of lactic acid, and of lactic acid and urea, there was in both instances a slight increase in the percentage of total nitrogen excreted as uric acid. The absolute amounts were also slightly increased as were those of allantoin. These figures are difficult to interpret and we are not prepared to assert without further investigation that there is a synthesis of uric acid in the manner described.

In a case of chronic gout the effects of the lactic acid and urea were entirely obscured by the irregularity of nitrogen excretion; periods of nitrogen retention and excretion making it impossible to estimate the effects of the treatment.

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Some critical considerations on the serum diagnosis of syphilis.

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In its application to the detection of syphilis antibody the Bordet-Gengou phenomenon of complement fixation has received but little consideration in its quantitative aspect. As will presently be pointed out it is only by respecting the quantitative relations of all reagents concerned that the test becomes reliable and delicate. Even with an adequate quantity of antigen, blood cell suspension and the patient's serum the detection of the antibody