

become somewhat more "virulent" in that such tumors grow more rapidly and produce more extensive metastases of a more epithelial type.

Animals that have failed to take the first inoculation of tumor are very seldom susceptible to a second or third implantation. The blood serum of such refractory animals gives no reaction of fixation with cancer extract, and when injected simultaneously with cancer in susceptible rats leads to no prevention of the growth of the tumor. The refractory blood, however, when injected previously to or at the same time with the tumor in naturally insusceptible rats gives a larger percentage of "takes" than in control animals.

If a tumor is removed during the "premetastatic" period a second implanted tumor seldom grows. Subsequent to this period a second implanted tumor does grow.

When a primary growing tumor is left and a second implanted during the premetastatic period, not only does the second tumor fail to grow but the first tumor entirely disappears in many instances. In cases in which the resorption of original tumor was incomplete, from lack of sufficient time the primary tumor showed regressive changes in the nature of cell degeneration or a marked increase of connective tissue stroma.

A reaction of fixation was found with the blood of a few animals with tumor during the premetastatic period but never during metastatic period. The premetastatic period then would seem to be characterized by an active defence on the part of the animal body and during this period reimplantation of tumor increases this resistance to such an extent that the original tumor is destroyed. When this period is passed metastases occur and a second implanted tumor grows.

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Influence of temperature upon pepsin.

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While studying the destruction of pepsin by shaking pepsin solutions it was thought essential to make some study of the spon-

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