

and the remaining rats, which were the progeny of splenectomized parents, were observed for 23 weeks. In no case was there evidence of an increased appetite nor of variation from the normal growth rate.

Erythrocyte count on five of the "second generation" splenectomized rats gave no indication of anemia following the operation.

63 (1810)

Determination of optimum amount of antigen in complement fixation tests.

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A study of the quantitative relation between antigen and antibody in complement fixation, suggested a simple procedure for determining the optimum amount of antigen in these tests. Wassermann, protein and bacterial antigens were employed with their specific antisera. It was observed in the case of the Wassermann antigens (alcoholic, cholesterinized and Noguchi), that each one appears to possess an optimum concentration for binding complement with positive sera. This concentration could be determined only with weak positive sera, preferably those giving + and ++ reactions. The stronger positive sera do not seem to be markedly affected by the quantity of antigen employed.

The procedure consists in first determining the antigenic unit, or smallest quantity which gives complete fixation with some positive serum. A weekly positive serum is then pipetted into a series of 10 tubes, employing the same quantity used in the regular tests. The first tube then gets $\frac{1}{4}$ unit antigen; the second, $\frac{1}{2}$ unit; the third, 1 unit, etc.; the last tube getting about 10 units of this ingredient. After the fixation period, it will be observed, on adding sensitized cells, that certain tubes—not necessarily those containing the largest amount of antigen—will show the maximum amount of fixation. The number of antigenic units contained in these tubes being known, therefore, that number showing the maximum fixation, represents the optimum amount of antigen to

be used in the daily tests. Necessarily this titration is to be repeated with 4 or 5 different sera.

In the case of the protein (edestin and phaseolin) and bacterial (*B. abortus* and *B. mallei*) antigen-antibody complexes, it was observed, after obtaining the antigenic unit, that increasing the number of units within the limitations of the complement fixation test, did not affect the strength of the reaction. One unit and as many as 8 units of antigen were found to give similar results. It would appear that the optimum amount of specific antigen for complement fixation tests is not the largest amount which may produce fixation, in view of the unnecessary increase in colloidal ingredients, but rather the smallest amount conducive to safety, as for example, 2 units.

64 (1811)

The prevention and control of parathyroid tetany.

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If the signs and symptoms following parathyroidectomy are the result of an intoxication, as some investigators believe (Paton, Findlay, Watson, Burns, Sharpe, et alii), a vigorous diuresis if more or less continuously maintained by means of the intravenous injections of physiological saline solutions might prevent the onset of tetany or rapidly lead to a disappearance of all symptoms of tetany if the tetany was first allowed to develop, providing the poison or poisons responsible for the condition were water-soluble and were excreted by the kidneys.

Dogs were accordingly injected intravenously two or three times daily with ordinary Ringer's solution following thyroparathyroidectomy. All injections were made with a Woodyatt pump delivering 42 c.c. per minute. The animals received 33 c.c. or more per kilo body weight at each injection. In some animals calcium-free Ringer's solution was injected from the start. In others, we changed from ordinary Ringer's solution to a calcium-free Ringer's solution to study the importance of the calcium ion in the Ringer's solution. The animals were fed a mixed diet consisting chiefly of meat.