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The fate of so-called syphilitic antibody in the precipitin reaction.By **HIDEYO NOGUCHI.***[From the Laboratories of the Rockefeller Institute for Medical Research.]*

The Wassermann reaction for syphilis is also present in the majority of cases of leprosy and it is impossible to distinguish syphilitic and leprosy sera by this test alone. With a view of obtaining specific antisera capable of neutralizing the active principles of syphilitic and leprosy sera *electively*, rabbits were immunized with syphilitic and leprosy sera, each giving positive Wassermann phenomenon. Two more rabbits were injected with normal and negative sera for controls. After several injections given intravenously, these rabbits yielded the antisera, all energetically precipitating for human serum. Before testing whether the antiserum prepared by injecting syphilitic serum exerts a *specific* neutralizing effect on the fixing property of that serum only, it was necessary first to determine the complement-fixing capacity of the precipitate formed by a normal serum and its antiserum. It was found that the entire bulk of precipitate formed by mixing 0.1 cubic centimeter of normal serum and 0.02 cubic centimeter of its antiserum can fix 0.05 cubic centimeter of guinea-pig's complement (using my antihuman hemolytic system), but is unable to prevent hemolysis when 0.07 cubic centimeter of complement is used. The precipitates formed by mixing syphilitic or leprosy serum with their corresponding antisera or the antiserum for normal serum were also able to fix guinea-pig's complement in about the same degree as in the instance given above. I next proceeded to investigate whether the anti-syphilitic serum inhibits the occurrence of the Wassermann reaction when added to a strongly positive syphilitic serum. I selected four different syphilitic sera, each capable of fixing 0.1 cubic centimeter of guinea-pig's complement in doses of from 0.003 to 0.005 cubic centimeter by using inactivated sera. To 0.1 cubic centimeter of each serum was added 0.02 cubic centimeter of the anti-syphilitic serum and a precipitate was formed. After one hour's incubation at 37° C.,

0.1 cubic centimeter of guinea-pig's serum was added. To a second tube similarly prepared, besides complement, "syphilitic antigen" was added at the same time. In a third tube, 0.02 cubic centimeter of syphilitic serum, 0.1 cubic centimeter of complement and "syphilitic antigen" were put together. A fourth tube similar to the third but without "antigen" was also prepared as control. These were incubated for one hour at 37° C. and then one cubic centimeter of a one per cent. suspension of washed human corpuscles and two units of anti-human amboceptor (rabbit) were put into each tube. After further incubation hemolysis was observed in all but the third tube. A further analysis revealed that the precipitate formed by syphilitic sera and anti-syphilitic serum fixes the same amount of complement as that by a normal precipitate, *but the complement-binding property of the syphilitic serum in the presence of "syphilitic antigen" disappears after precipitin reaction takes place.* This phenomenon was found to be non-specific, as the antiserum for normal or leprous serum also caused a similar phenomenon. A positive reacting leprous serum could be made negative by any of the antisera in the same manner. No differentiation could, therefore, be made by the use of specific antisera between syphilitic and leprous sera both giving positive Wassermann reactions.

There is a close relation between the precipitin reaction and the disappearance of the Wassermann reaction in syphilitic and leprous sera. A precipitin-containing serum for human serum should not be employed as amboceptor in doing the Wassermann reaction by my system. To insure against this danger, the amboceptor should be produced by injecting rabbits with thoroughly washed human corpuscles.

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The energy metabolism of parturient women.

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Experiments designed to compare the energy metabolism of mother and child just previous to and immediately following parturition were carried out with the bed calorimeter. Three subjects