

## Humoral Antibodies in Transplantation<sup>1</sup>

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For several years our department has been engaged in studies on humoral antibodies accompanying homograft rejection. This presentation summarizes our previous findings in relation to more recent observations.

A few years ago we became interested in reactions which transplantation sera may induce in the skin of a donor animal. The first experiments [10, 13] were performed on non-inbred albino rats of Wistar and Sprague-Dawley strains. The sera were obtained from animals exposed to a skin homograft or parabiosis. The skin-tested animals were injected intracutaneously with the serum and, two hours later, intravenously with Evans blue. Positive reactions appeared as blue circles, 0.5–2 cm in diameter, surrounding the injection site (Fig. 1). It was found that sera of roughly 40% of the skin-grafted or parabiosed animals gave positive results. The incidence of positive results was higher if the skin test was performed on the donor rat than if it was performed on other unrelated rats. Negative results were obtained if the test was carried out on the recipient itself. This pattern of results, and the fact that the skin-reactive factor under examination proved to be in the  $\gamma$ -globulin fraction of the serum, made plausible the assumption that the factor is an isoantibody.

In recent experiments (to be published) an attempt was made to obtain some information concerning the mechanism of the skin reactions under study. It appeared possible that the antibody introduced intracutaneously combines with antigenic constituents of the skin proper and that this interaction causes a positive skin test. On the other hand, an alternative hypothesis was also entertained that the antibody deposited in the skin combines with some antigen reaching the site of injection via the circulation; in such an instance, the mechanism of the skin tests under consideration would resemble the mechanism of passive cutaneous

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