

# THE INCREASE OF THE NATURAL CAPACITY FOR RESISTANCE BY THE PRODUCTION OF HYPERLEUCOCYTOSIS.

Dr. Martin Hahn, privatdocent of the Hygienic Institute of the University of Munich, has published (*Berliner Klin. Woch.*, November 28, 1896) the results of some highly interesting investigations, which we summarize in the following abstract :

Buchner demonstrated that immunity cannot be explained by simple phagocytosis, as exudates lose none of their bactericidal power when the leucocytes are killed by freezing. In these cases we do not deal with a phagocytic function of an organized cell, but with the decomposition or secretion products of the leucocytes, which impart a greater bactericidal energy to exudates than is present in blood-serum.

These observations are significant in their bearing on the theory and practical treatment of infectious diseases. The fact that leucocytes, where they occur in great number, impart to the respective medium, presumably through the products of their secretions, a bactericidal energy, suggests that we may increase by artificial means the natural resistance of the human organism, which is identical with the bactericidal energy of the blood. Not every increase in the number of leucocytes possesses the same value in increasing the bactericidal action ; the kind, origin, biological condition, etc., of the leucocytes are important factors.

Assuming that resistance is augmented by certain alexins, it would seem that the injection of these substances would be efficient, but it has been shown by Buchner that human resistance cannot be increased in this way owing to the neutralizing antagonisms of the alexins produced by different animals. Accordingly the writer has attempted the production of a hyperleucocytosis.

Unambiguous results were obtained only by experiments on dogs. The number of leucocytes in the arterial blood was determined, and the animals were then given subcutaneous injections of remedies stimulating leucocytosis. For this purpose albuminoids, such as albumose or nuclein, were employed, the latter in the form of a yeast nuclein solution, placed at the writer's disposal by the firm of Parke, Davis & Company. Good results were obtained from a nucleinic acid donated by the same firm. As large quantities of such preparations can be administered to the dog, it is easy to double the original number of the leucocytes in a short time. This is usually accompanied by a rise in temperature, varying according to the remedy used. In the dog it rarely exceeds