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The Shwartzman Phenomenon in the Knee Joints of Rabbits.

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(Introduced by Howard T. Karsner.)

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The Shwartzman phenomenon affords a new experimental method for the study of the local reactivity of joints to bacterial products.

The bacterial filtrates employed in this investigation were (1) from *B. coli* prepared by the method described by Ecker and Rimington¹ and (2) from *B. typhosus* supplied us through the kindness of Dr. Gregory Shwartzman.

The preparatory factor was injected lateral to and below the patella with the knee flexed, in amounts varying from 0.01 to 0.40 cc. of filtrate. Simultaneous injections were made into the skin of most animals. The intravenous injection of the 'reacting factor' was given from 20 to 30 hours later and animals were sacrificed from 1 to 192 hours after receiving the reacting factor in amounts usually of 1 cc. per kilogram body weight.

Seven control animals received only the 'preparatory factor' and were sacrificed at intervals corresponding to those of the experimental series.

The Shwartzman phenomenon was elicited in the synovial membranes of the knee joints in 6 of 11 rabbits tested. The reaction occurred with less frequency and severity in the joints than in the skin. Attempts to elicit the reaction in pleural and peritoneal cavities were negative. In rabbits sensitized simultaneously in knee joint and skin a severe skin reaction was not necessarily associated with a severe synovitis and vice versa.

The criteria employed for the recognition of the reaction were histologic and based on the presence of endovascular damage, followed by thrombosis and necrosis of the vessel with exudation of leucocytes and hemorrhage.

¹ Ecker, E. E., and Rimington, C., *J. Hygiene*, 1927, **27**, 44.

² Shwartzman, G., *J. Exp. Med.*, 1928, **48**, 247.