however, as well as the effect of other chemical agents is being more extensively investigated.

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Influence of the Hypersensitive State in Experimental Streptococcus Viridans Bacteremia.

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While studying the localization of *Streptococcus viridans* at sites of local antigen-antibody reactions in rabbits sensitized to horse serum, it was observed that there was a difference in the rate of disappearance of these organisms from the blood stream when injected intravenously into normal animals and animals sensitized to horse serum. Bull[1] observed the fate of bacteria injected into normal dogs and rabbits. Bail[2] made similar observations, and Hopkins and Parker[3] and Wright[4] studied the fate of bacteria in normal and immunized animals. More recently Boone, Chase and Brink[5] made some similar observations working with intestinal absorption of *B. prodigiosus* in dogs during acute anaphylactic shock. There has not been found so far in the literature any work concerning the rate of disappearance of *Streptococcus viridans* from the bloodstream of hypersensitive rabbits.

A strain of *Streptococcus viridans* was isolated from an apical abscess of a tooth at necropsy. The hourly growth rate in broth was established. A determination of the quantity (pour plates) of organisms injected was made at the time of inoculation. The volume of the suspension in saline was kept constant at 1 cc. Inoculations were made into the marginal ear vein of the rabbits. Blood cultures, both pour plates and broth, were taken from the femoral vein at intervals of 15 minutes for the first hour, then half hourly for 3 hours, then hourly for 8 hours, and finally every 24 hours until the animal died or until the cultures remained negative.

Three groups of animals were used. Group A, normal animals, received injections of organisms only. Group B, normal animals,

[1] Bull, *J. Exp. Med.*, 1914, **20**, 237.

[2] Bail, *Arch. f. Hyg.*, 1905, **52**, 272.

[3] Hopkins and Parker, *J. Exp. Med.*, 1918, **27**, 1.

[4] Wright, *J. Exp. Path. and Bact.*, 1927, **30**, 185.

[5] Boone, Chase and Brink, PROC. SOC. EXP. BIOL. AND MED., 1931, **29**, 1.

received horse serum and organisms, simultaneously. The sensitized animals (Group C) received both horse serum and organisms.

Of 8 animals in Group A, 3 received 185 million organisms per cc. The remaining 5 received 10, 20, 100, 560 millions and 1 billion respectively. In Group B, 2 rabbits received 33 and 44 million respectively. In Group C, 4 animals received quantities 36, 44, 117, 200 million per cc. respectively. The amount of horse serum used was ½ cc. and 1 cc.

Results. Group A (Normal). In rabbits injected with quantities of organisms in the ranges of 10 million to and including 185 million, the blood cultures became negative after 1½ hours. When 560 million organisms were injected the blood cultures became negative only once at 2 hours and positive again until death. In rabbits receiving one billion organisms, the blood cultures remained positive throughout, septicemia resulting in death of animal within 74 hours.

Group B (Normal animals). The horse serum injected simultaneously with the organisms had no effect in prolonging the bacteremia. The blood cultures becoming negative at 1½ hours.

Group C (Sensitized animals). The blood cultures remained positive even though minimal doses of organisms were used. In some rabbits the cultures remained positive for as long as 72 hours.

The normal animals receiving doses in the range of from 10 million to 185 million gave cultures at the 15-minute period which had counts varying from 8 to 38 organisms per cc. of blood. In the sensitized animals, however, even those receiving inoculations of organisms within the same range, the 15-minute culture gave 400 organisms or over per cc. of blood. The only instance in which the 15-minute count reached a high number for normal animals was one which received an injection of one billion organisms; here the count rose to 439 organisms per cc. In sensitized and normal animals developing a prolonged bacteremia, there was a diminution of the count after the first 15 minutes. A low level was maintained from the second hour to the eighth hour when a secondary rise occurred progressing in some cases to 24 hours, after which the count diminished rapidly. In one instance only a septicemia developed. This was in the normal animal receiving an initial inoculation of one billion organisms.