

the dilution of specific immune serum increased as shown in Table I. Clumping did not occur in the tube containing no immune serum.

A similar phenomenon can be demonstrated by increasing the viscosity of normal plasma with gum acacia. The following experiment illustrates the effect of various dilutions of acacia, while the concentration of specific immune serum in plasma remains constant.

TABLE II.

Dilution of acacia gum	10%	5	2½	1¼	Control
Normal plasma containing type II antipneumococcus serum 1-10 (Disc)	++++	+++	+	±	—

Effect of acacia in enhancing the specific agglutinative effect of type II antipneumococcus serum on type B Friedländer bacilli. Macroscopic agglutination after 2 hours at 37°C.

Clumping is markedly increased in the stronger concentrations of acacia. Agar, gelatin, glycerin, egg white, and starch paste are less effective than acacia in favoring agglutination.

5978

Streptococcic Agglutination in Glomerulonephritis.

B. J. CLAWSON AND MACNIDER WETHERBY. (Introduced by George Fahr.)

From the Departments of Pathology and Medicine, University of Minnesota.

The streptococcic agglutinating titers of the serums of 20 patients with glomerulonephritis were determined for a strain of streptococci recovered from the blood of a patient having acute rheumatic fever. This strain had been kept on media for 9 years. It produced a green discoloration faintly on sheep blood agar when incubated at 37°C. for 24 hours. It cross agglutinated in high dilution (1:50,000 and more) with many other strains isolated from patients with acute rheumatic fever and with several strains recovered from the blood of patients having chronic arthritis.

In determining the titers the various dilutions of the serums and the suspensions of the streptococcus were incubated in Wassermann tubes in a water bath at 40°C. for 2 hours and then placed in the icebox until the next morning when the agglutinating titers were read.

All serums agglutinated in dilutions as high as 1:800. Five

agglutinated at 1:800, ten at 1:1,600, one at 1:3,200, three at 1:6,400, and one at 1:12,800. The greatest number in any one dilution agglutinated at 1:1,600.

The height of the agglutinating titers of the serums in glomerulonephritis with the above strain of streptococcus was decidedly higher than that found with the same strain with the serums of 110 normal individuals, 50 patients with acute rheumatic fever, and 300 patients with chronic arthritis. The greatest percentage of the serums in these 3 conditions agglutinated the streptococcus at the dilution of 1:200, but in each there were many serums which failed to show agglutinins in dilutions as low as 1:50 and 1:100.

The height at which agglutination with the serums in glomerulonephritis took place was also higher than that found in a limited number of cases of scarlet fever, bacterial endocarditis, and ulcerative colitis.

Several of the serums from the cases of glomerulonephritis were tested for agglutinins for *B. typhosus*. A positive agglutination occurred in one at a dilution of 1:50.

Three serums from patients suffering from renal insufficiency associated with essential hypertension were also tested for streptococcic agglutinins. The highest titers at which agglutination occurred were 1:50 in 2 and 1:400 in one.

The relative height of the streptococcic agglutinating titers in glomerulonephritis suggested (1) an etiologic relationship and (2) a possible biologic method for differentiating renal insufficiency due to glomerulonephritis from renal insufficiency associated with primary hypertension.

5979

Subcutaneous Nodules in Chronic Arthritis.

B. J. CLAWSON AND MACNIDER WETHERBY. (Introduced by George Fahr.)

From the Departments of Pathology and Medicine, University of Minnesota.

In 200 patients with chronic arthritis subcutaneous nodules were found in 59 (29.5%). Forty-nine of the 58 cases were 50 years of age or older.

The nodules when removed often had a definite capsule but in some cases this was poorly defined. When sectioned and examined grossly, multiple areas of necrosis were usually seen, surrounded