

until the effect of the mydriatic is gone. He advises that the patient receive a small quantity of eserin solution, one grain to the ounce, a drop of which is to be instilled into the eye with the butt end of a match or toothpick. He reports several cases where an attack of acute glaucoma was excited by the cycloplegic.

**Enlargement of the Blind-spot with Gradenigo's Syndrome.**—VERDERAME (*Ann. di ottal.*, 1916, xliv, 538) summarizes Gradenigo's researches which led to the syndrome bearing his name—a disease-complex first described in 1904; the syndrome is characterized by a purulent otitis media with paralysis or paresis of the sixth nerve of the same side. Of the 6 cases observed by Gradenigo, 5 recovered, the other terminated fatally from purulent leptomeningitis. He refers the condition to a circumscribed purulent or simply serous leptomeningitis, which may recover spontaneously, or after operation through the temporal bone, but which sometimes spreads so as to lead to a fatal result. The otitic symptoms are due to infection of the tympanic cavity, which infection may spread to the base of the middle cranial fossa leading to paralysis of the sixth nerve. In a case of this kind, Verderame observed moderate mydriasis, enlargement of the blind spot and slight contraction of the color field; the only ophthalmoscopic signs were hyperemia of the disk and of the retinal vessels. At the end of a week all symptoms had disappeared except the mydriasis; of the significance of which latter symptom the author was in doubt.

## HYGIENE AND PUBLIC HEALTH

UNDER THE CHARGE OF

MILTON J. ROSENAU, M.D.,

PROFESSOR OF PREVENTIVE MEDICINE AND HYGIENE, HARVARD MEDICAL SCHOOL,  
BOSTON, MASSACHUSETTS,

AND

JOHN F. ANDERSON, M.D.,

FORMERLY DIRECTOR OF THE HYGIENIC LABORATORY, PUBLIC HEALTH SERVICE,  
WASHINGTON, D. C.

**Immune Reactions in Scarlet Fever.**—In an earlier work, G. F. and G. R. DICK (*Jour. Infect. Dis.*, 1916, xix, No. 2) reported the results of anaërobic culture from the blood, lymph, spleen, throat and mouth secretions in scarlet fever. Before further study of the organisms obtained in these cultures, they decided to test the various tissues from which these organisms were grown in order to determine whether or not a virus either ultramicroscopic or failing to grow with the cultural methods used was present as the primary cause of the disease. The secondary importance of the organisms obtained could then be demonstrated. The following tests were made on the blood and the results noted: Since antigens in the body fluids

have been found by means of complement-fixation, this test was applied, but although the tests were carried out in various ways, there was no evidence of complement-fixation. The blood of scarlet fever patients was tested for toxicity by injecting it into guinea-pigs with the result that it was found to be more toxic while the patient is acutely sick than during convalescence. The blood was also tested for the presence of living virus by the potassium tellurid test. In the sera of six cases of scarlet fever there was no precipitation of tellurium more marked than in the negative control tests, although the positive controls showed marked precipitation in every instance. The spleen of a child who had died on the second day of scarlet fever was used to prepare antigen, and complement-fixation tests were made with the sera of six cases of scarlet fever. No tests showed complement-fixation. Cutaneous tests similar to tuberculin tests made with extract from the same spleen in four convalescent scarlet fever patients and four diphtheria patients gave uniformly negative results. In testing the tissue from the lymph glands, an antigen was made from lymph glands from various parts of the body of a patient who had died on the second day of scarlet fever and fixation tests carried on with the same sera as in the spleen tests with uniformly negative results. Cutaneous tests with lymph gland extract were negative in three cases of scarlet fever. In the last series of tests, mucus from the mouth and throat was used as antigen for the complement-fixation tests. In sera from four cases of scarlet fever in various stages of convalescence, each used with a different antigen, there was no complement-fixation. In the fifth case, there was a slight fixation of complement with 0.3 c.c. of antigen, but with the serum of a sixth case, the same antigen failed to fix complement. The results of the complement-fixation tests with organ extracts harmonize with the results obtained by some observers but are at variance with those obtained by others. The authors suggest in their summary that it may possibly be that insufficient concentration of antigen explains the negative results and therefore it seems desirable to further continue the study of the immune reactions of cultures obtained from scarlet fever.

**Agglutinins after Typhoid Immunization.**—ROBINSON (*Jour. Med. Research*, 1915, xxxii, 417) states that great individual differences occur concerning serum reactions during typhoid immunization. Agglutinins begin to increase in the blood from four to eighteen days after the first inoculation. The blood gives a positive agglutination at 1 to 60, on the average, sixteen days after the first inoculation. ASCOLE (*Riforma med.*, Naples, 1915, xxxi, 645) states that the serum gives a positive agglutination reaction in every one who has been vaccinated against typhoid.

**Anaphylactic Reactions between Proteins from Seeds of Different Genera of Plants.**—WELLS and OSBORNE (*Jour. Infect. Dis.*, 1916, xix, No. 2) conclude that since chemically similar proteins from seeds of different genera react anaphylactically with one another, while chemically dissimilar proteins from the same seed in many cases fail to do so, we must conclude that the specificity of the anaphylaxis reaction depends upon the chemical structure of the protein molecule.