

THE WASSERMANN REACTION.

SEROLOGICAL TESTS FOR THE DIAGNOSIS OF SYPHILIS.

By W. J. Hatcher.

The tremendous importance of the Wassermann reaction is now fully recognised, and in some hospitals it is carried out as a routine measure on all patients, irrespective of their clinical history.

Many famous names have been linked with the conquest and control of syphilis, including such famous people as the German Professor Ehrlich with his discovery of 606 and other preparations, the Japanese investigator Noguchi, who working in America so successfully studied the spirochete which is the cause of the disease, but the name of Wassermann will be perpetuated as long as his famous diagnostic test is carried out, and that appears to be a very long time indeed.

The original technique was first introduced by Wassermann and his co-workers in 1906; since then the test has been much modified and is now almost universally carried out in a standard manner laid down by a League of Nations Sub-Committee.

How the Test Works.

The principle of the reaction is not very easy to explain, much research and many scientific papers have been devoted to this absorbing subject. Briefly, however, the reaction may be described as the fixation of complement by certain substances of a lipid nature in the presence of syphilitic serum. Complement is one of the constituents which go to make up the bactericidal action of blood.

The Wassermann reaction is therefore what is known as a Complement Fixation Test, it must not be confused with an agglutination reaction, as for example the Widal reaction, used in the diagnosis of enteric fever.

The Wassermann reaction is a very accurate laboratory test, both for the diagnosis of syphilis and also as an index of the severity of the infection. That is to say, that in general the results of the Wassermann will parallel the activity of the disease. It is the practice to report positive findings as, strong, weak, or doubtful, and in this manner the test is to a very considerable extent quantitative in its findings. The danger of false positive reactions is, at least in this country, almost non-existent and a positive report leaves no doubt in the doctor's mind but what he is dealing with a case of syphilis. It must always be remembered that, like all venereal disease investigations, the results of Wassermann reactions are always strictly confidential.

Collection of Specimen.

Absolutely no preparation of the patient is required and the specimen may be obtained at any time of the day: it is however advisable to remember that most laboratories have certain days set aside for the carrying out of Wassermann reactions. The reason for this is that the setting up of the necessary reagents and the control of the test is a lengthy process and it is much more economical to carry out the largest number of tests possible at one time.

For the actual test a reasonable supply of blood should always be sent, that is to say at least 5 cc., which may be obtained by vein puncture, usually from a superficial vein in the arm. Clotted blood is required, specimens of whole blood are of no use. Whole blood is, of course, blood which has been prevented from clotting by the addition at the time of collection of an anticoagulating reagent, such as potassium oxalate or sodium citrate.

After sterilising, the syringe and needle used for collecting the blood must be very carefully rinsed out with sterile normal saline, any alcohol or water remaining may hæmolyse the blood, rendering it quite useless for the test.

A sterile tube is of course necessary for the reception of the specimen, it is preferable that this tube should be dry, but if it has been sterilised by boiling it may be rinsed out with sterile normal saline. Blood specimens are very difficult to obtain from new born babies and tiny infants, and when the mother is available it is often advisable to first have a test carried out on her. In addition to blood the Wassermann reaction may be carried out on other body fluids and in fact frequently is made on the cerebro spinal fluid.

The Kahn Test.

The Kahn Test is an alternative to the Wassermann reaction, and though it has many very enthusiastic supporters it is in general not so reliable as the Wassermann reaction. The specimens required are the same as for the Wassermann, that is to say 5 c.c. or more of clotted blood, no preparation of the patient being required.

FIGHTING TUBERCULOSIS IN INDIA.

The Tuberculosis Association of India was recently inaugurated by Lady Linlithgow at a meeting at the Viceroy's House, which was attended by representatives of Provincial and States organisations, now affiliated to the central body. The association incorporates the King-Emperor's Anti-Tuberculosis Fund, which now amounts to 82 lakhs (£615,000), and the King George V Thanksgiving Fund, which previously supported anti-tuberculosis activities in this country.

We may hope that, though late in the day, the skilled interest of the Trained Nurses' Association of India has been enlisted; without skilled nursing, the scientific treatment of tuberculosis is impossible.

THE WAR ON BACTERIA.

Important progress in the study of bacteriophages is reported by the All-Union Institute of Experimental Medicine in Moscow, where, under the direction of Professor Yermoleva, a bacteriophage has been prepared which will dissolve cholera vibriones and render them innocuous. Experiments have demonstrated that this bacteriophage can be successfully utilised for prophylactic purposes. "Though cholera has been completely wiped out in the Soviet Union," stated Yermoleva, "it is still necessary to have a remedy against this dread disease."

Another discovery made by the Department for Microbe Bio-Chemistry is that onion, carrot and apple contain bacteriophages. Moreover, Professor Yermoleva (director of this Department) and her assistant (Professor L. Yakobson) have succeeded in preparing a dysentery bacteriophage in tablet form which has retained its properties for about twelve months.

EXPERIMENTAL OPHTHALMOLOGY.

It is reported from Odessa that a Government commission has completed the taking over of the newly constructed building for the Ukrainian Institute of Experimental Ophthalmology, directed by Academician V. P. Filatov. It is a handsome three-storeyed structure situated in the coastal district of Odessa, and has cost 3½ million roubles to build. Its main block has over 300 rooms. The Institute is supplied with the most up-to-date medical equipment. It has an ophthalmic clinic for 150 beds, twelve research laboratories, operating theatres, departments of bio-chemistry, pathological anatomy, etc. The Institute is said to be unique of its kind not only in the U.S.S.R. but in the world in so far as its work will be mainly concentrated on the prevention of blindness from corneal opacity.

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