

as are discovered by this method in the case of institutional patients. The State Department of Health takes this opportunity to again recommend that private physicians make this test a matter of routine wherever possible.

It is regrettable that such a large percentage of specimens of blood submitted for the Wassermann test by private physicians through other channels than the Laboratory directly are unsatisfactory or are broken in transit. Even when not broken almost all of unbroken specimens are hemolyzed due in large measure to the shaking received during transportation through the mail. Wherever the facilities of the local boards of health would permit it is recommended that the serum be withdrawn from each specimen and submitted as such rather than the whole blood be sent to the Laboratory. It would be comparatively easy for each agent of the local board of health to send one of its representatives to the Laboratory to learn the technique of withdrawing serums. A single day so spent would be of advantage to the physicians whom these boards of health serve.

#### DIAGNOSTIC WORK FOR THE DEPARTMENT OF ANIMAL INDUSTRY.

On May 1st 1916 the Department of Animal Industry formally transferred its pathologic work to the State Department of Health. This work is now being carried on in the Wassermann Laboratory. The following table gives a list of the examinations made.

TABLE III

	Positive	Doubtful	Negative	Unsat.	Total
Complement Fixation Tests for Glanders	154	95	732	4	985
Diagnostic Examination for Rabies	13		28	6	47
Miscellaneous Examinations:					
Staphylococcus Septicemia	1				
Hemorrhagic Septicemia	1				
Anthrax	6				
Oesophagostomum Columbianum	1				
<i>Glanders in tissue</i>					10

Total

The following is a brief description of the routine examination in the State Laboratory. All specimens for a given day are tested and the positives and doubtfuls from the first test are withdrawn and retested on the same day. This renders technical error practically impossible and admits of a concentration of time on the most significant reactions tested on that day. I may say that the most prolific source of poor Wassermann work is dependent on uncontrolled tests and a failure to properly identify each specimen as it passes through the complicated machinery required for Wassermann examination.

I had hoped to talk of the incidence of the disease in the various groups examined by the State Laboratory. But this in itself would constitute a discussion covering a much longer period than we can afford to spend at this time. I can say, however, that during the period of five months, <sup>4 to 5 months</sup> 4223 patients were examined, serologically, 15% of these patients had been infected with syphilis. 475 were positive by the Wassermann test and 55% of these 475 were not suspected of having the disease, until a Wassermann examination had been made. This has the largest significance, when one considers that the majority of these patients were in good hospitals where excellent facilities for clinical examination were present. The conclusion is therefore easily reached, that even in the hands of an expert clinician syphilis, although present, is difficult of detection.

#### DIAGNOSTIC SIGNIFICANCE OF THE TEST.

Positive indicates that the patient has been, or is, infected with the causative agent of syphilis. In this community very rarely an acute febrile condition such as pneumonia and malaria may give a positive reaction.



results should be obtained before reaching any conclusion as to the absence of syphilis.

My chief interest is in doubtful reactions and yet it is the most difficult problem to stimulate a similar amount of interest in the physicians and institutions who avail themselves of the services of the Laboratory. The usual reaction to a doubtful report is either that it means nothing or that possibly it would be wise to submit another specimen. When this is done and the second report is given as negative both patient and physician are delighted and feel no further necessity for another examination. I cannot too strongly insist that doubtful means that there is a grave suspicion of a syphilitic infection, and in my experience persistently or predominatingly reactions always mean syphilis.

#### THE RAPID SIGNIFICANCE.

In this field our experience is not so mature. I can only offer you an outline of my personal experience which has been founded on many hundred cases of treated syphilis. But before doing this it will be best to consider the pathology of the disease. As the result of an infection with a spirochaeta pallida there is <sup>effected</sup> ~~formed~~ in the blood and serous fluids of the individual a chemical or physico-chemical change. We speak of this as antibody formation which symbolically explains certain serologic reactions. <sup>proper</sup> Treatment of the disease is directed toward ridding the body of the infectious agent. It has nothing whatsoever to do directly with the so-called antibody. <sup>entirely the patient's blood</sup> On the other hand when the body has been freed of the infecting agent there is, in many instances, a gradual disappearance of specific antibodies and a return to the serologic metabolism of the uninfected individual. When the infection has had months or years of duration before treatment and the Wassermann reaction has been consequently firmly established <sup>so positive</sup> the disappearance of this reaction cannot be expected to follow a few injections of salvarsan or a few months of mercury by any of the methods now used.

One case will illustrate what I have just said. A patient after having received several months of anti-specific treatment consisting of salvarsan and intramuscular mercury had a persistently positive reaction during the course of her treatment and a month following it. One year later this patient was re-examined and a negative result obtained. She had had no anti-specific treatment during the interim. The conclusion is obvious. Her treatment had killed the spirochaetes. It was ample in <sup>character</sup> time and in amounts. Time only was necessary to make the positive reaction fade into a negative one.

When I am asked what the significance of appositve reaction is in a treated case my answer is a question. What has been the character, <sup>of the treatment</sup> amount and <sup>duration</sup> ~~time devoted to treatment~~? Is the patient clinically free from symptoms? If these questions are satisfactorily answered and the character, time and amount of treatment been adequate in my experience, I suggest that the clinicians desist <sup>from</sup> further treatment, simply watch the patient clinically and to submit specimens <sup>for a while at least</sup> at intervals of 3 to 6 months ~~each~~ each.

A persistent negative in a treated case is rarely accompanied by clinical symptoms and would indicate a cure, but only under the proviso that a previous Wassermann test had been positive.

Doubtful therapeutically means that the reaction is beginning to shift toward the negative phase.

*In conclusion let me say this.*

Prompt recognition and intelligent treatment of this disease is a public health problem of the first importance, and the State Department of Health wishes every physician and every institution, public and private to cooperate in the <sup>control &</sup> eradication of the disease. <sup>& the prevention</sup>

*of time late manifestation of it which are so destructive of health and life itself -*