

WASSERMANN LABORATORY.

1915

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The following gives the classification of the results obtained on each specimen:

	Positive	Negative	Doubtful	Unsatisfactory	Insufficient Serum of Spinal Fluid for Test
Blood	653	4800	360	126	
Spinal Fluid	127	346	47	8	
Total	780	5146	407	134	22

During its first month the Laboratory examined specimens for 10 State institutions, 2 private hospitals and 1 local board of health. It has now tested specimens from 15 State institutions, 25 private hospitals, 8 local board of health and 2 city institutions.

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Laboratory, where patients could be bled upon the recommendation of their private physicians. As a result of this announcement, during the period from July to November 1st, 32 specimens were received through ^{four state} district health officers, District 4 leading, with a total of 27 specimens, and 42 patients were referred to the Laboratory for the test, thus making a total of 74 specimens which were tested on the recommendation of 39 physicians.

From November 1st to December 1st a total of 55 specimens were obtained from private physicians submitted by the direction of ^{the state} district health officers, District 4 again leading with 36. During this same period 142 patients were referred to the Laboratory by private physicians and 71 physicians who had never applied before sought the services of the Laboratory. Hence it will be noted that there has been growth, not only with regard to the number of cases tested, but also with respect to the number of private physicians and private institutions availing themselves of its facilities.

Since the establishment of the Laboratory ^{we have} ~~the assistant director has~~ collected from all institutions (1179 specimens of blood) At the same time the technique of obtaining blood was demonstrated to the district health officers and to the physicians in these institutions who assisted in the collection of specimens.

During the first five months 5290 tests were made and the following table shows the analysis of these tests on 4223 patients. ~~this table is long but it seems necessary to include each institution separately in order to give some idea of the incidence of the disease in various groups, chiefly because some institutions do not have the test made as a routine, although it is always advised.~~ The largest number is from the Psychopathic Hospital, where 1824 tests were made on 1144 patients.

PSYCHOPATHIC SUBJECTS,

An inspection of column I shows 101 cases of unsuspected syphilis in this group which were discovered after the Wassermann report was made. Columns II and IV are most interesting because 76 cases were diagnosed as general paresis or cerebro-spinal syphilis either on the history or the symptoms, wherefore 51 additional cases were diagnosed as paresis (always of syphilitic origin) or cerebro-spinal syphilis, after the Wassermann report was rendered. (A comparison of these two columns is justified because there is no other rapid method of diagnosis in these diseases so certain as a positive Wassermann test. Certain other laboratory methods when applied to spinal fluids, including the cell count, the globulin content, the obtaining of an increased amount of spinal fluid under pressure, and the "Gold Sol", are each indicative of a pathological condition involving the central nervous system, but none of these is singly diagnostic of a syphilitic condition.) Column XII is equally ^{interesting} in that 22 cases which gave clinical symptoms of general paresis were determined to be non-syphilitic by repeated negative Wassermann examinations. Further the diagnosis in most of the institutions can be made with the aid of the Wassermann reaction within five days of the arrival of the patient in the hospital, thus making a proper and rapid disposition of the patients possible.

The State Board of Insanity has recently appointed an expert to investigate and treat those afflicted with syphilis in our State insane institutions. This work could not be adequately done unless Wassermann examinations were made.

DELINQUENT AND FEEBLEMINDED SUBJECTS.

Here again we see ~~How~~ ^{valuable} the ^{Wassermann test} ~~laboratory~~ ^{test} is in the diagnosis of cases unsuspected of the disease. A comparison of columns I and II illust-

rate, this point. Data are accessible in this Laboratory which show ~~con-~~
~~clusively~~ ^{little or} that there is [^]no connection ~~whatsoever~~ between syphilis and organ-
ic involvement of the central nervous system such as is found in individuals
who are hydrocephalic or who belong to the various types of spastic paraly-
sis accompanied by feeble-mindedness.

After the examination of over a 1000 cases in the Massachusetts School
for Feeble-minded, Dr. Fernald, superintendent of the institution, has direct-
ed his field worker to investigate the families of the inmates giving a pos-
itive or doubtful Wassermann reaction. He reports in many instances that a
history of syphilis is obtained upon mere mention of the fact that the pa-
tient's blood had been examined. In other instances the families have ad-
mitted a history of syphilis either in the inmate or in one of the parents,
when confronted with the fact that the inmate's blood was positive for syph-
ilis.

CRIMINAL SUBJECTS.

Inspection of column II shows that 23 cases of syphilis out of a total
of 74 were only ^{diagnosed} ~~identified~~ after a positive Wassermann reaction. Further it
will be noted that this is a highly infected group, yielding 40% of syphilis
and 4-8/10% of doubtful cases in a total of 165 inmates.

4.8%

TUBERCULOUS SUBJECTS.

Out of a total of 432 cases of tuberculosis ^{also had} ~~in which 39 (9%) were in-~~
~~fect~~ ^{and 34 of these cases gave} ~~ed with syphilis~~ [^]no history or clinical evidence of the disease ~~could be~~
~~obtained in 54 cases~~ until a positive Wassermann reaction was found.

PATIENTS SUFFERING WITH MALIGNANT DISEASE.

This group is largely interesting because the Wassermann test excludes
syphilis as a cause of symptoms which might otherwise be those of some mal-
ignant growth. The Laboratory has ^{urged} ~~strongly advised~~ all physicians and insti-

tutions to make a routine Wassermann examination on every patient who clinically appears to be suffering from some malignant growth.

Insulin
~~ACUTE GENERAL HOSPITAL~~ *Syphilis*

As this title indicates persons suffering from all manner of disease are admitted for observation and treatment. A glance at columns I and II will again show how strikingly valuable the test has been in the identification of unsuspected syphilitics. *(over)*

GROUP OF PREGNANT WOMEN INCLUDING
NEWBORN INFANTS.

During the past two months the Laboratory has made arrangements with the Boston Lying-In Hospital and the New England Hospital whereby in the former instance a Wassermann test is made as a routine on all patients admitted to the Pregnancy Clinic and in the latter case whereby blood is obtained from the *after birth of each mother (Batal blood)* ~~patient~~ *each baby at birth.* In neither of these groups has a history of syphilis been obtained and yet an inspection of column II shows that it ~~does~~ *exists* exist. Dr. Hewell, of the Boston Lying-In Hospital, has effected a plan whereby Dr. Post and Dr. Smith, of the Massachusetts General Hospital, examine all cases in which a positive or doubtful Wassermann reaction has been obtained. In this way the proper anti-syphilitic treatment may be given. Some of the patients thus referred have not gone to the Massachusetts General Hospital, and their failure to do so constitutes in itself a second group which the Lying-In Hospital intends to investigate in order to compare it with the group which has had the anti-syphilitic treatment recommended. *Whenever a positive Wassermann reaction is found in any of the patients these hospitals recommend anti-syphilitic treatment.*

SYPHILIS IN PATIENTS UNDER TWELVE.

Although the number of specimens submitted is small, inspection of

Further it is important to notice that roughly
 $\frac{1}{6}$ th of all patients admitted to this type of hospital
had syphilis, as a direct cause ~~or as a~~ ~~complication~~
~~factor~~ of their symptom ~~factor~~ or as a complication.

Laboratory to aid physicians and institutions in every possible way, by this test, in the diagnosis of syphilis. Further it desires to encourage cooperation with local boards of health whereby they may become centers for the collection of ^{specimens} blood. This would render the ~~testing~~ service more accessible to physicians in all parts of the State. Such cooperation could be effected by appointing certain days on which ^{specimens could be obtained from patients} patients could be bled by the local ^{private} health board on the recommendation of their physicians; these specimens could then be sent to the Laboratory by the local board of health where they would be promptly tested and a report sent to the physician and a duplicate to the local board of health. Of course it would be necessary for the local board to grant tests only under conditions similar to those employed by the Laboratory or district health officers.

(2) Standardization of the Wassermann Test in Massachusetts. The Laboratory wishes to cooperate with any private or public laboratory in effecting a uniform standard for Wassermann examinations. The New York City Board of Health ~~has recently appointed a committee with this object in view.~~ *Wright (copy)*

During the past three years this Laboratory and the Pathological Laboratory at the Massachusetts General Hospital, under the direction of Dr. Wright, has engaged in the most friendly cooperation, as a result of which the standards and materials are absolutely identical. *Wright*
The Boston City Board of Health plans to begin its Wassermann work on January 1st, 1916, and already plans have been effected whereby the standards of their laboratory will be the same as those employed in this Laboratory. The method of submitting specimens to the City Board of Health with respect to the manner of obtaining its service, name initials, etc., are based on the same general principles employed in this Laboratory. Thus at the present time, largely through the efforts of our own Laboratory, a ^{big} step has been

At present a friendly cooperation exists bet.
the State^{Wk} Lab. and the labors of the Mass. Gen. Hosp. &
the ^{B^{of}} City Board of Health whereby the standards &
materials are practically identical.

made toward the standardization of the Wassermann Reaction in the State of Massachusetts.

(3) Research. By the method of filing, employed in this Laboratory, the history of each ~~positive~~ ^{short history of each case} case may be followed during the residence of the patient in the institution; also in the majority of instances the case histories of patients from private physicians may be studied. It is possible from these records to contribute, ~~as we believe hardly possible in any other community,~~ toward a broad and comprehensive study of the diagnosis, epidemiology and treatment of all types of syphilis.

Throughout what has been previously said it is evident that the Laboratory fosters the spirit of investigation and is willing and ready to increase its efficiency, wherever this is possible. At this time investigation is being carried on with regard to the employment of certain technical methods with the idea of increasing the accuracy of its methods ^{new technique} of ~~examination~~. This investigation was stimulated by a recent trip of the assistant director to New York, where a study was made of the methods employed in the city Board of Health, the Rockefeller Institute, the Presbyterian Hospital, the Mt. Sinai Hospital, and the Vanderbilt Clinic at Vanderbilt University. ~~It can be said, however, that the methods employed in these various institutions do not seem to give them any advantage over those used in our own Laboratory.~~

~~Apart from the regular routine of the Laboratory, and the investigation previously mentioned,~~ ^D special work is being carried on in connection with the State Board of Insanity, which includes a titration of positive spinal fluids with the hope that some light may be thrown upon the differential diagnosis of the various types of syphilis of the central nervous system.

MEANING TO PUBLIC HEALTH.

The prompt recognition and treatment of syphilis is a public health problem of the first importance. It means a decrease in the incidence of those obstinate late manifestations of the disease, which affect the heart, the bloodvessels, the brain, and spinal cord, the results of which are usually serious, and often incurable or may only be relieved after great suffering, and expense to the patient, his family or the Commonwealth, if he becomes a public charge. It means a decrease in the number of miscarriages, still births, and congenital syphilitics who either die early or are often greatly handicapped constitutionally. It prevents in many cases needless major surgical operations by correctly diagnosing a syphilitic condition. In all of these instances a correct Wassermann test gives larger value than the sum total of all ~~other~~ ^{other} methods of diagnosing the disease.

A few examples are added to illustrate the foregoing: General paresis is by far the most important psychosis effecting both sexes during middle and later life and its early diagnosis is of the greatest social significance. Consider ^{is a victim of this disease} ~~the instance of~~ ^{an operator in any of our great} a ~~great captain of industry or~~ ^{one} who has within his control the lives of many persons, ~~as in the case of a locomotive engineer, or conductor, who becomes a victim of this disease~~ ^(over) and the diagnosis becomes tremendously important ^{might} ~~because of a likelihood of the former ruining~~ a ~~previously~~ ^{might first} successful business, with the loss of work to many employees or the latter ~~failing~~ to properly carry out those precautions necessary to safeguard the public in railway transportation. A case similar to the last was recently tested in this Laboratory.

In the tuberculous group was a patient, with a negative sputum, who was interesting and instructive inasmuch as after two years of residence in one

If not merely nervous or being affected
with this form of syphilis

Intermittent
for Tuberculosis
of the State sanatoria, there was no improvement. Syphilis was discovered and admitted after a positive Wassermann report was rendered. The cost ^{of this man} to the Commonwealth including the services which he may have rendered to the community, would easily pay for the expense of the Laboratory ~~at its present~~ rate for fully three months. Although the work in the tuberculous group has just begun, there is every reason to believe that there are ^{other} instances of unsuspected syphilis equally as striking.

Sometime ago a patient came from the Pacific Coast to this city for an operation for a supposed malignant growth involving the eye. The eye was removed and an extensive and disfiguring operation performed. Subsequently a Wassermann test was done on this patient's blood, which gave a positive reaction. The patient remained in the East for anti-syphilitic treatment and the so-called "malignant growth" rapidly healed.

FUTURE DEVELOPMENT.

✓ There is no reason why, with the present rate of increase, ~~that~~ the Laboratory should not more than treble its tests during the next year. However, inasmuch as the same materials may be largely used in performing the gonococcus fixation test it is suggested that this work be undertaken, as soon as possible. The education of the physicians in the Commonwealth in the great applicability which this test has in the prevention of these disastrous pelvic disorders peculiar to women, is most important. Its employment ^{on} each ^{person} ~~person~~ before marriage would constitute a ^{great} ~~great~~ advance ^{in steps} in public health.

APPROPRIATION.

The Laboratory was opened with an inadequate appropriation and while it has operated within the amount provided this has been possible only on the

's salary
basis of a temporarily reduced salary list. The technician, in no way measures the service which she renders both in spirit and in technique. This may be said with equal truth with regard to the accurate, careful work of the stenographer. The Laboratory attendant is prompt, faithful, intelligent, and efficient, and is deserving of an increase in salary. Each individual engaged in this work has lent his whole soul to its success and during the past six weeks some have been compelled to maintain long hours, in order to secure prompt, efficient and accurate service.

The present rate of testing is about 1500 specimens per month. There is a rapidly increasing number from private physicians which greatly augments the clerical and technical work. To adequately carry on this work \$6000 per year is needed *for the present -*

The director and assistant director wish to express their thanks to each member of the Public Health Department for the enthusiasm and cooperation manifested, which has made the work pleasant and has contributed largely to the success which the Wassermann Laboratory has enjoyed.

Signed *Hilton*
Asst. Director
Wassermann Laboratory