burne, of New York, reported their experience. All seem to have agreed in regard to the value of the treatment in rheumatism, but in regard to other complications, results were somewhat conflicting.

Previous to 1911, Corbus had given as large a dose as from 6 to 12 c.c. in two days, in cases of acute epididymitis, with surprising results. In 1911, he used this serum in a case of gonorrheal rheumatism accompanying prostatic infection. At this time, 16 c.c. were given in three days. A complete cure was obtained in two weeks. Later, Corbus decided on intravenous administration as recommended by Cole and Weaver. As the complement-fixation test for gonorrhea is a reliable guide for systemic invasion, he selected this method of diagnosis as a key to the administration of the serum.

From a study of the twenty-four cases reported, Corbus concludes that when the test is negative, the serum should not be used, and that the intensity of the positive complement-fixation test offers a reliable guide as to whether or not the serum will be efficient, as the efficiency and intensity are in direct proportion.

The amount injected should be at least from 36 to 45 c.c., administered intramuscularly, from 12 to 15 c.c. a day, for three days. Serum-sickness, if distressing, should not be alarming. A negative complement-fixation test after two or three months shows a complete cure.

SYPHILIS.

A Statistical Study of Syphilis. A careful study by C. J. White[1] of the relation of syphilitic symptoms to subsequent tabes dorsalis or general paralysis was prompted by the gradually growing conviction that the men and women who suffer most from recurrent cutaneous syphilis are not those who become tabetics and paretics, and conversely that the victims of tabes dorsalis and general paralysis are not referred to the skin clinic for the treatment of recurrent or persistent late cutaneous syphilis.

(1) Trans. Sec. on Derm., A. M. A., 1914, p. 157.

With the steady and insistent growth of this feeling, the literature has been consulted from time to time, but with disappointingly negative results as to statements based on actual figures, for the authorities on nervous disorders are, as a rule, strangely silent on this phase of the question, and the writers on skin diseases do not often concern themselves with the nervous sequelae of the disease. There are, however, a few exceptions to this rule.

Collins says: "It would be interesting and extremely useful to know what proportion of syphilitics develop nervous diseases, but so far no statistics on this subject have been at all convincing."

Jelliffe, in considering so-called parasyphilis, relies "with considerable confidence on a completely negative history of syphilis."

Dercum states: "Every physician of experience knows that in parasyphilis the history of the original infection, *i. e.*, the primary lesion, is often difficult to elicit, often denied, and often uncertain. Particularly is this true of paresis; it is almost equally true of tabes. Scars of primaries are rare, histories of secondaries commonly wanting. Does this not suggest a possible difference in character of infection? A number of men were syphilised by one woman and all developed paresis (Morel, Lavallée and Bellières); five men, all infected by the same glass-blower, became tabetic or paretic (Brosius). Nonne, Marie, Bernhard, and Erb have related similar experiences. Truly gummatous lesions in paresis are excessively rare."

Nonne believes that the question as to "who will become paralytic or tabetic has not been settled," and that "there is a special genus of spirochete which has especial affinity for the nervous system."

Ravaut remarks that "even in very extensive malignant precocious syphilis the spinal fluid is most often negative."

Jeanselme notes that "in the natives of southeastern Asia, where malignant cutaneous syphilis is so prevalent, one seldom sees tabes or general paralysis."

Pollitzer's observations, extending over many years,

tend to prove that "the mild cases—those without skin lesions—give us most of our cases of late syphilis of the nervous system."

J. Allen Hoffman draws attention to the frequency in China of primary, secondary and tertiary syphilis and to the extreme infrequency of parasyphilitic conditions, and asks whether syphilis alone is responsible for dementia paralytica or whether other factors, such as debauched living or a different oriental strain of spirochete, tend to produce parasyphilis.

Finally, Dr. E. D. Bond writes that in the records of 1625 necropsies at the Massachusetts State Hospital for the Insane at Danvers, he can find mention of only four instances of cutaneous syphilitic lesions, and these were all of an early or late secondary character.

From these meagre quotations it would seem true that those who suffer most from cutaneous syphilis are spared the fatal nervous consequences of the disease, and, conversely, that the victims of syphilis of the brain and cord, perhaps unfortunately, escape the earlier cutaneous accidents of the malady. Nevertheless, it seemed wiser to base these beliefs on fact rather than on hearsay or the general statements of other writers, and so these statistical studies were undertaken.

From Sept. 1, 1904, when the modern record system was established in the out-patient department of the Massachusetts General Hospital, to April 1, 1914, the diagnosis of syphilis has been made in 5,453 individuals, exclusive of 798 cases of tabes dorsalis and 202 examples of general paralysis. The resulting facts enumerated are based on the study of the first 1,016 cases of syphilis, the last 500 of tabes dorsalis, and the first 178 examples of general paralysis. As a result of the study of these 1,694 case records, the following deductions are made:

Of the syphilitics, 69 per cent. were infected between the twentieth and fortieth year of age.

Hereditary syphilis does not tend to show itself cutaneously at birth.

The initial sore was recorded in only 292 patients, a percentage just under 58 of the persons seen in the primary or secondary stages of the disease. Of this

number 239 were in men and 53 in women, a percentage respectively of 47 and 10. These low proportions, extraordinarily meagre in the women, are in all probability misleading, however, for they include only those primary lesions actually seen, and not those possibly hidden away in the urethral, vaginal, or uterine passages. Examinations of these obscure mucous surfaces were not made unless symptoms demanded them. Thus, many hard chancres have undoubtedly not been recorded in these computations, but, nevertheless, these striking figures decidedly emphasize the fact that we must not depend on the presence of the initial lesion in making our diagnosis of syphilis in hospital ambulants.

Among these 292 chancres there were twenty-seven extragenital, a rather unexpected percentage of 9. They were found on the lips in nineteen cases, on the nipple twice, and on the tonsil, tongue, chin, eyebrows, cheek, and finger in one instance each.

The clinical symptoms of syphilis vary much in individuals. Men are more liable to leukoplakia, cerebral symptoms, mucous plaques, alopecia, iritis, and pain; while women are more prone to early and late skin manifestations, pharyngitis, condylomata, and headache.

Of these 1,016 recent and old syphilitic cases, only eight had developed tabes, seven men and one woman, and only one had become paretic; and of these nine parasyphilitics just three, or less than 0.3 per cent., had exhibited any late cutaneous lesions.

Of the total number of patients, 20 per cent. made but one visit, 52 per cent. continued their treatment during six months, 45 per cent. during one year, and 38 per cent. during two years or more.

Tabes dorsalis attacks men and women in the ratio of 6 to 1, and appears between the thirtieth and fiftieth years of life in 76 per cent. of the cases. The youngest tabetic was 21. In 45 per cent. of the tabetics, syphilis was acknowledged or found actively present (Wassermann test not included). Tabes developed in 11 per cent. within five years from the date of the primary infection, and in 61 per cent. within fifteen years. Of these 500 tabetics, only about 3 per cent. had ever mani-

fested any late cutaneous syphilids. Pain was the most frequent early symptom of tabes, and the legs were the first part of the body to evince the disease.

Although dealing with a class of patients approximately equal numerically as to native and foreign birth, 94 per cent. of these paretics were descendants of, or more recently emigrants from the British Isles. Paresis arises in 70 per cent. between the thirtieth and fiftieth years of life, but the youngest paretic was 16 and the oldest 76. In 30 per cent. of the paretics syphilis was acknowledged or had been treated in the hospital (Wassermann test not included). The lapse of time between the original syphilitic infection and the first paretic symptoms was distributed more or less equally numerically from one to thirty years. Of these 178 paretics, merely 1 per cent. and a fraction had ever suffered from late cutaneous syphilis.

Scrofulous Adenopathy in Hereditary Syphilis. In the chapter on secondary adenopathy of syphilis, Fournier has described a type which begins in the usual manner, but differs in that the glands persist, grow larger until they attain the size of an egg, and then break down into discharging sinuses, as do the tuberculous glands. The condition is due to a syphilitic infection of a tuberculous individual. The second infection serves to light up the first.

Karl Vignolo-Lutati,[9] however, shows that the reverse may be true, namely, that an hereditary syphilitic child may develop glands which in every way simulate the tuberculous, and that they may be due in a measure to low-grade tuberculous infection, but that the etiological factor is syphilis.

He reports seven such cases, ranging from six to thirty years of age. All had been treated for scrofulous glands, and several had been treated by operative measures for tuberculous joints. All had definite signs of congenital lues, and most of them a definite history of infected parents. The Wassermann reactions were positive, but the tuberculin reactions, with a few exceptions,

(9) Arch. Derm. Syph., June, 1914.

were negative. All promptly reacted to antisyphilitic treatment.

We have, then, in these cases, a *scrofuloid adenopathy* in congenital syphilitics, closely resembling the tuberculous, but which readily yields to proper medication.

Syphilitic Sore Throat Diagnosed as Diphtheria. A. L. Glaze[2] reports a mistake in diagnosis which might have had most serious consequences for all concerned.

A young woman, aged 23, living in the country, married six years, with one child aged 5, gave birth to a normal child. At this time, apparently, the mother was in perfect health, but labor proved to be difficult, requiring instrumental interference. The puerperal period was uneventful till the ninth day after delivery, when the patient was seized with a severe sore throat, which grew progressively worse.

In view of the fact that sporadic cases of diphtheria had prevailed in the community during the autumn (although there was none in the immediate neighborhood at that time), and in the presence of a white membrane in the throat, the family physician administered diphtheria antitoxin, 5,000 units. The members of the household were given immunizing doses. At the second visit, as no improvement was noted, another dose of 5,000 units was given. During this day an eruption, vesicular and papular, began to show on the face and around the edges of the hair. The family was calmed by the explanation that the eruption was expected as a result of the action of the antitoxin. The light doses received by them did not produce similar symptoms. At a later date, local manifestations of the disease still proving rebellious, a third dose of 5,000 units was injected. Ten days later the eruption had become widespread, appearing all over the body. A different treatment was instituted, but the family became dissatisfied, and the doctor in charge was dismissed.

Because of the fact that the patient's mother did not "believe in doctors," three weeks elapsed before another physician was called. At this time symptoms of an unusually malignant case of syphilis were in evi-

(2) Jour. Amer. Med. Ass'n., March 28, 1914.

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dence. Complete anorexia, profound melancholia, and weakness marked a serious condition. The characteristic eruption consisted of lesions as widespread and numerous as those which a severe case of discrete small-pox might exhibit. Iritis, ulcerative blepharitits, and a mouth and throat as sore as those of the worst pellagra sufferer completed the patient's misery. The Wassermann test was strongly positive. The woman's husband, confronted with the facts, admitted having become infected during his wife's pregnancy. He had been treated with salvarsan in a neighboring city.

Malignant Syphilis. A remarkably virulent infection, which resisted treatment, is reported by Ch. Laurent.[2]

The patient was a young married woman, 33 years of age, in good physical condition, who had, when first seen, a cicatrizing chancre, vaginal and buccal mucous patches, and a typical roseola. She was given three injections of neosalvarsan at 8-day intervals. Later a series of injections of gray oil was commenced, but was discontinued because of intolerance, and two more injections of neosalvarsan given. Despite this treatment, the buccal lesions returned; severe stomatitis and nephritis complicated the management of the disease. Gallyl was tried with little success. Ulceration of the mouth and tonsils continued until the carotid was eroded and death occurred. Autopsy was refused.

Spinal Fluid in Secondary Syphilis. In a paper read before the Thirty-eighth Annual Meeting of the American Dermatological Association, in Chicago, Wile and Stokes[3] show that the view that the central nervous system is attacked late in the incidence of syphilis, and that the various forms of cerebrospinal syphilis are manifestations of the tertiary nature of the disease, is no longer tenable. That there exists in the nervous system a peculiar tendency to latency and to slow, insidious development of the disease process is undeniably a fact. The fate of every syphilitic, however, with regard to the incidence of cerebrospinal lues, whether this occur early

(2) Bull. Soc. fran. Derm. Syph., April, 1914.
(3) Jour. Cut. Dis., September, 1914.

or late in the course of the disease, is in all probability determined in the first months of the infection.

The infection of nerve tissue by the *Spirocheta pallida* is without doubt dependent on several factors. Individual susceptibility, neuropathic heredity, alcoholism, and trauma are all to be reckoned with. Moreover, the strain of the organism, hypothetically at least, may also be a determining factor in the localization of the disease process to the nervous system. That certain individuals infected from the same source are prone to such involvement of the nervous system is a clinical fact well-recognized. Our ignorance of the life history of the spirochete does not permit us to speak definitely as yet concerning the various strains. That there exist, however, in the same strain and in the same culture organisms of different degrees of virulence, different resistance, and vastly different viability, is an observation familiar to all who have worked with the *Spirocheta pallida* in the living state. It appears to the authors that the explanation of the selective action of this organism on certain systems will in time be discovered through the unraveling of its life history and its separation into definite strains. Occasional involvement of the nervous system in the first months of syphilitic infection has been known clinically as long as the disease has been carefully studied. The isolated palsies, symptoms referable to basal meningitis and hemiplegia, have been noted quite early in the disease, and have been interpreted as evidence of precocity rather than as part of the secondary syndrome. It was not until a study of the spinal fluid early in the course of the disease was undertaken that special attention was called to a true early involvement of the nervous system in syphilis.

A series of thirty-six cases, representing all types of secondary syphilis, was studied by the authors. In all cases clinically there was undoubted infection. Of these cases 66.7 per cent. showed evidence in the fluid of invasion of the central nervous system. Obviously, this number does not represent all who will subsequently show positive reactions, for a single examination can not be taken as conclusive evidence of absence of men-

ingeal lesions. Any of the findings—lymphocytosis, increased albumin, globulin, and the positive Wassermann test—may be present, alone or in different combinations, and each indicates an invasion of the central nervous system. The high ratio of early involvement as opposed to the low ratio of late involvement in the total number of syphilitics shows the former to be a transitory phenomenon. Papular or follicular eruptions were most frequently found accompanied by central nervous system invasion. The reactions were not encountered so frequently among those whose general health was good, or whose treatment had been vigorous.

Aortitis and Abolition of the Oculo-Cardiac Reflex. It has been demonstrated that a large number of the cases of aortitis and practically all of the aortic aneurysms are of syphilitic origin; the proof offered by the positive reaction of the Wassermann test, and by the efficacy of antisyphilitic remedies in such conditions has been irrefutable.

The relation existing between the aortic lesions and syphilis has been affirmed by such men as Babinski, Voguez, Mibierge and Béclère, based not only on the evidence yielded by the biologic and therapeutic reactions, but also on the fact of the co-existence of aortitis with symptoms which are undoubtedly syphilitic. Among these symptoms, the Argyll-Robertson pupil is one of the most commonly observed in aortic lesions of syphilitic origin, and has become almost pathognomonic.

Along with this syndrome, so well-known and recognized that no one will dispute its diagnostic value, Loefer and Mougeot[4] place another which, they claim, is a common finding in aortitis. This is the abolition of the oculo-cardiac reflex, which consists in slowing of the pulse by ocular compression. This slowing is produced by the action of the ophthalmic stimulation on the medulla oblongata and the vagus, and is in direct ratio to the bulbar and vagus irritability.

The authors were the first to point out the almost constant absence of this reflex in tabes, and the parallelism existing between this absence and the Argyll-Robertson

(4) Prog. Méd., May 30, 1914.

pupil. It is, therefore, of diagnostic significance in nervous syphilis, and is of as much value as the absence of the pupillary reflex.

Likewise in aortitis and in aortitic aneurysm the absence of the oculo-cardiac reflex is a frequent finding as is the Argyll-Robertson pupil. In 70 per cent. of syphilitic aortitis the sign was absolute, and in 30 per cent. somewhat attenuated.

Absence of the two reflexes usually co-existed, but either one may be wanting. The absence of both was less common in aortitis than in tabes. The authors insist that the absence of the oculo-cardiac reflex is a veritable cause for alarm, as an indication of involvement of the aorta. The abolition of the reflex is somewhat paradoxical, inasmuch as in mediastinal tumors the slowing of the pulse is not only usually present, but, furthermore, is usually accentuated by ocular pressure.

Spirocheta Pallida in the Blood of Paretics. Working with Donulesco, Levaditi[5] used the method of Uhlenhuth and Mulzer. Immediately after removing the blood, it was injected into the scrotum and testicle of rabbits. The organism was grown from only one of the six cases they worked with. After 127 days, a bilateral scrotal lesion appeared, in which actively motile organisms were found with the dark-field microscope.

Extragenital Chancre. A shop-girl, 30 years old, with an indurated lesion on both upper and lower lips, presented herself to Heinemann,[6] to whom she and her family were well known. She was allowed very little freedom, and, having been disappointed in a love affair, was having nothing to do with men. She had kissed no one but members of her immediate family for some months previously.

The lesions were typical chancres, located slightly to the left of the median line; that of the under lip was somewhat more lateral-ward than of the upper. There was marked regional adenopathy, but no exanthem. The organisms were demonstrated in the exudate, and the

(5) Compt. rend. Acad. d. sc., November, 1913.
(6) Berl. klin. Wochenschr., July 13, 1914.

Wassermann reaction was reported positive by two laboratories.

A careful consideration of the case resulted in exclusion of coitus *per orem*. The possibility of the drinking cup being the means of transmission was remote. She was finally asked if she habitually put the shop pencil in her mouth when writing, and she answered in the affirmative. She was given a pencil and told to write. Being left-handed, the points of contact were always to the left of the median line. It was then discovered that another shop girl had a lip chancre antedating that of the patient.

Urethral Chancre. Walker[7] reports the case of a young man who consulted him concerning a chronic urethritis, which resulted from an acute gonorrheal infection one year previously. The meatus was found slightly reddened and moist. Both urines were clear with few shreds. Bacteriologic examination is not mentioned.

The patient was given treatment for chronic anterior and posterior urethritis with prostatic infection.

One month later, the patient complained of a hard area on the under side of the penis, and also of intense burning micturition. Examination showed an indurated area, oval in shape, on the floor of the urethra, about one inch from the meatus. There was no enlargement of the inguinal glands. The patient stated that five days before, on the advice of a friend, he had used a urethral injection of strong sulpho-naphthol. Immediately after this he experienced severe pain along the course of the urethra, which lasted several hours. Later, on urinating, he passed some blood and several shreds, some an inch in length. The latter undoubtedly were parts of the urethral lining. The following day he had difficulty in urinating because of pain, and for the first time noticed the hard area described.

The induration was interpreted as being due to inflammatory tissue. All local treatment was stopped for the time being. The patient acknowledged exposure to

(7) Boston Med. and Surg. Jour., January 8, 1914.

venereal disease several times during the past two months.

Two weeks later the patient developed a well-marked secondary rash of syphilis. The Wassermann reaction was positive. On Feb. 28, 1913, he was given 0.9 gm. of neosalvarsan intravenously. Two similar doses were given at three-week intervals. The rash had disappeared on March 20. The indurated area gradually diminished in size following the first injection of neosalvarsan and had entirely disappeared by April 25. Since then the patient had been on mercurial treatment.

Unilateral Hutchinson Tooth. The true Hutchinson tooth, obliquely implanted, convergent at the base and divergent at the distal end, with a serrated free border, is always a result of the localization of the *Spirocheta pallida*. These localized organisms have been demonstrated by Pasini.

Ordinarily, more than one tooth is involved, but *a priori* there appears no reason why only one incisor might not be affected, and such is the case reported by Audry.[8] The patient was a girl 14 years old, with a leutic labyrinthine deaf-mutism. She had previously been successfully treated for double interstitial keratitis. There were typical cutaneous disseminated, ulcerating, gummatous lesions present. There was also a chronic hemorrhagic nephritis, and a strongly positive Wassermann reaction. All of these manifestations except the deaf-mutism subsided promptly on further treatment with arsenobenzol.

The dentition, with the exception of the left superior median incisor, was approximately normal. This tooth was fairly regular in shape, but had a slightly serrated edge and a color somewhat grayish compared with that of the other teeth. It was about one-third shorter than its mate, and implanted obliquely, both antero-posteriorly and latero-medially. Although Gaucher has described an inter-incisor deviation occurring in hereditary syphilis, nevertheless Audry says there can be no doubt about this tooth being an unilateral Hutchinson tooth.

(8) Ann. de Dermat. et de Syph., Vol. 5, 1914, p. 100.

Frequent Occurrence of Suprapubic Chancres in Algeria. Brault[1] calls attention to the frequent occurrence of chancres in the native population. These people, both male and female, have a practice, which is quasi-ritual, of shaving the pubic hair. The razors pass from hand to hand, obviously without sterilization, and the excoriations produced by the shaving, and by the short hairs, allow an easy entrance for the *Spirocheta pallida*.

Diagnostic Methods.

Comparison of the Wassermann and Luetin Reactions in 744 Individuals. The tests here recorded were performed by E. B. Vedder and W. B. Borden[8] in the U. S. Soldiers' Home at Washington, D. C., in the course of an investigation to determine the prevalence of syphilis in that institution.

The inmates of the Soldiers' Home are all discharged soldiers who have served twenty or more years in the army, or who have been discharged for some disability incurred in the service. Practically all the inmates, therefore, suffer from some disability or chronic disease, and the great majority are well along in years; 80 per cent. are between the ages of 50 and 80. There is a fair number of cases of locomotor ataxia, and a considerable number of men suffer from circulatory disturbances, and liver and constitutional diseases. Under such circumstances it might reasonably be expected that a large proportion would show evidences of having suffered from syphilis. This was considered, therefore, an exceptionally good opportunity to test the relative efficiency of the Wassermann reaction and the luetin test.

Both tests were accordingly performed on as many men at this institution as possible. No selection of cases was made, but all the men in each building were taken in order.

The luetin was furnished by Dr. Hideyo Noguchi of the Rockefeller Institute. The luetin was injected according to the prescribed technic, and three readings

(1) Bull. Soc. fran. Derm. Syph., April, 1914.
(8) Jour. Amer. Med. Ass'n., November 14, 1914.

were made at weekly intervals thereafter. Double plus was used to indicate a very severe reaction; plus minus to indicate a slight reaction. Only the double plus and plus reactions were considered to be diagnostic of syphilis.

The results of this examination are shown in Table 1.

TABLE 1.—RESULTS OF EXAMINATION.

Reaction.	++	+	±	—	Total
Wassermann	100.	56.	123.	465.	744
Per cent.	13.30	7.52	16.53	62.50	
Luetin	45.	194.	165.	340.	744
Per cent.	6.04	26.07	22.17	45.70	

Tables 2 and 3 bring out still more clearly the relation between the luetin and Wassermann tests.

TABLE 2.—COMPARISON OF WASSERMANN AND LUETIN TESTS.

			Luetin			
Wassermann			++	+	±	—
100	++	=	8	27	21	44
56	+	=	6	16	13	21
123	±	=	8	26	29	60
465	—	=	23	125	102	215
744		=	45	194	165	340

TABLE 3.—COMPARISON OF LUETIN AND WASSERMANN TESTS.

			Wassermann			
Luetin			++	+	±	—
45	++	=	8	6	8	23
194	+	=	27	16	26	125
165	±	=	21	13	29	102
340	—	=	44	21	60	215
744			100	56	123	465

From these tables it is evident that the Wassermann and luetin reactions do not give corresponding results. The plus reaction to the luetin test may undoubtedly be considered a positive reaction. The plus Wassermann, on the other hand, is very suggestive, but not diagnostic unless confirmed by history or physical signs.

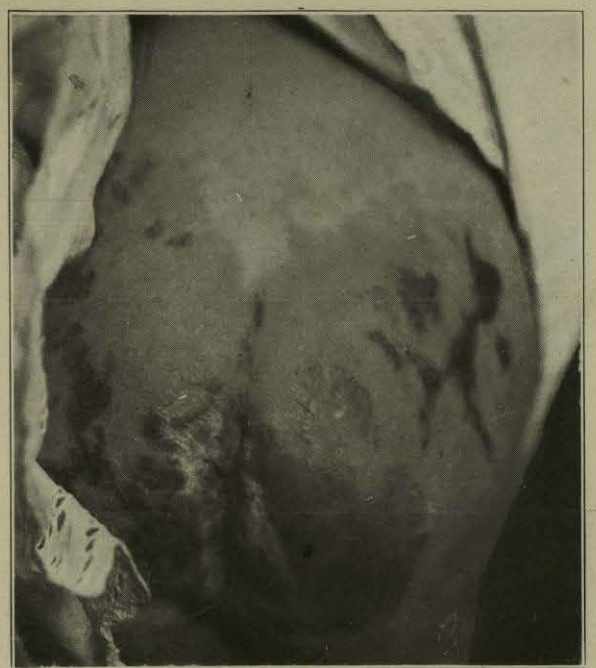
But even if one count double plus and plus reactions as a positive indication of syphilis for both the Wassermann and luetin tests, and plus minus and negative reactions as negative, it is apparent that, while by the Wassermann reaction there are only 156 positive out of 744, or 20.82 per cent., by the luetin test there are 239 positives out of 744, or 32.11 per cent. The luetin test is, therefore, more delicate than the Wassermann as a routine test in the class of cases examined, or else it is giving a number of false positives. The former is the correct explanation, judging from the accumulated experience of other observers who have performed the luetin test on a considerable number of persons in whom syphilis could be excluded and who have never obtained a positive reaction. The great majority of patients in this series who had a positive luetin reaction had some history or physical sign indicating syphilis.

It may further be seen that of 588 cases (465 — and 123±) negative by the Wassermann, 182, or 32.6 per cent., of the 588 cases were positive by the luetin test; while of the 505 cases (340 — and 165±) negative by the luetin test, 99, or 19.6 per cent., of the 505 cases were positive by the Wassermann. It is therefore clear, providing the results of both the luetin and Wassermann tests were accurate, that these two tests complement each other to a certain extent. In other words, had the investigators used the Wassermann reaction alone, and counted both double plus and plus reactions, there would have been 156 positive, or 20.8 per cent., of syphilis; with the luetin reaction alone, there would have been 239 positive, or 32.1 per cent., of syphilis. But by using both tests, there were 338 positive (156 positive by Wassermann, 239 positive by luetin, minus fifty-seven positive by both tests), or 45.4 per cent., of syphilis.

It is also interesting to note that there were only fifty-seven cases, or 7.66 per cent., that were positive to both tests, while 406 cases, or 54.57 per cent., were negative by both tests, leaving 281 cases, or 37.76 per cent., that were positive by one test but negative by the other.

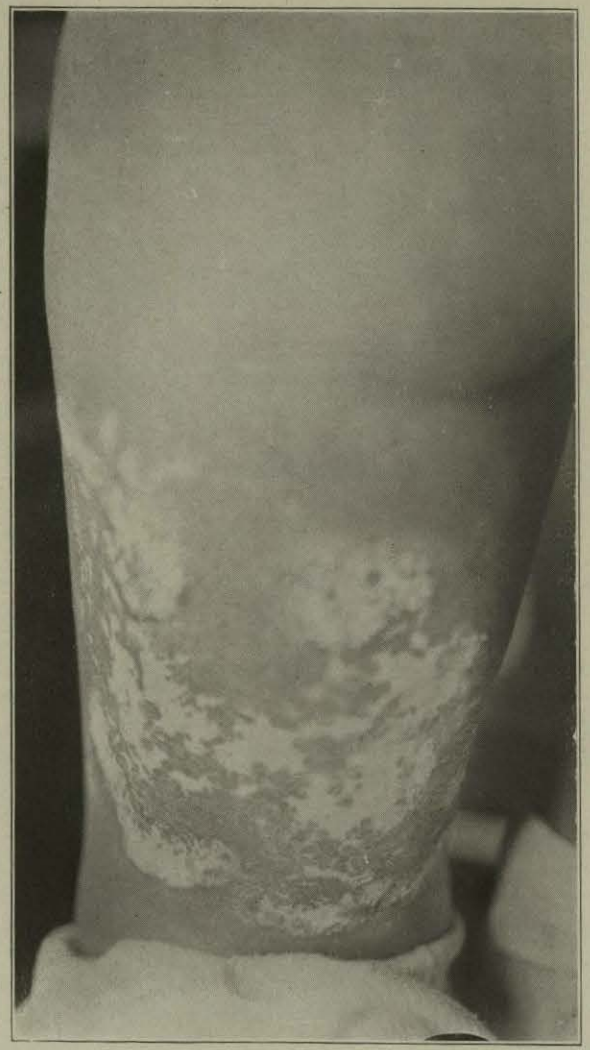
The latest estimation of the practical value of the luetin reaction by Noguchi confirms the opinions pre-

PLATE VII.



Lues congenitalis in a child sixteen months of age, showing the vulval condylomata lata.—*From the Dermatologic Clinic, Post-Graduate Medical School, Chicago.*
Collection of Dr. P. F. Shaffner.

PLATE VIII.



De-pigmented scar in a colored woman following a tubercular syphiloderm of the leg.—*From the Dermatologic Clinic, Post-Graduate Medical School, Chicago.*

viously expressed, that the Wassermann reaction is much more constant in primary and secondary cases, but that the luetin reaction gives a higher percentage of positives in tertiary, latent and treated cases. Their experience amply confirms the latter statement. Eighty per cent. of the men in this series were between 50 and 80 years of age, and when syphilis was present it was with rare exceptions in the tertiary or latent stages.

It is believed that the use of a cholesterolized antigen renders the Wassermann reaction more efficient, and that a number of undoubted syphilitics who give a negative reaction with other antigens will give a positive reaction with a cholesterolized antigen. But even if this be granted, it is apparent that in tertiary, latent and treated cases the luetin test is considerably more efficient in detecting syphilis than the most efficient Wassermann reaction.

Value of the Herman-Perutz Reaction. Margarethe Stern[3] gives a modification of the reaction and the result obtained in a series of 332 sera.

A stock solution, containing sodium glycocholate 2 g., cholesterol 0.4 g., in 100 c.c. of 95 per cent. alcohol, is made and diluted as needed. Of this solution, 0.2 c.c. is diluted 20 times with distilled water, and mixed with 0.4 c.c. of the inactivated serum, and 0.2 c.c. of a freshly prepared 2 per cent. sodium glycocholate solution. The mixture is left at room temperature for 20 hours. Only a definite precipitate is considered a positive reaction. A great variation in different specimens of sodium glycocholate was found, and the author advises the use of Merk's. The reactions were controlled with the Wassermann reaction, using alcoholic human heart, and cholesterolized ox-heart antigens.

It was found that the Herman-Perutz reaction is in a high degree characteristic for syphilis, but not absolutely specific, inasmuch as there occurred a positive reaction in one of 53 control sera.

In known luetic sera the Herman-Perutz reaction gave 20 per cent. fewer positive reactions than the Wassermann. On the other hand, with 4 per cent. of certain

(3) Arch. Derm. Syph., March, 1914.