and energy to the acquirement of expert skill in special branches of surgery.²

Any progress in any subdivision of a general surgical service redounds to the credit of the whole surgical service, as well as to the special branch in which the advance is made. This fact is occasionally forgotten.

After this brief outline of the subject the question arises, Is the field of plastic surgery large enough and interesting enough to justify a surgeon in specializing in it? For myself I can answer unqualifiedly that it is. Furthermore, I believe that it is only a matter of time, and that the time is rapidly approaching when there will be created in every large surgical clinic a department of plastic and reconstructive surgery, under men especially fitted and trained for this work. Which clinic will be the pioneer in putting this important branch of surgery on an efficient and progressive basis?

ABSTRACT OF DISCUSSION

DR. EMERY MARVEL, Atlantic City, N. J.: Dr. Davis's successes are due to his perfect technic, which ingrafting demands. The general surgeon relaxes and in many cases, perhaps, does not fulfil his whole duty. "A man whose colon had been removed for malignancy and who was subsequently roentgenized, found himself with extreme destruction of the abdominal wall. The condition was so severe that he was incapacitated, but he refused operative procedures. From the anterior superior spine on the left to the anterior superior spine on the right below and the costal margin on the right to 2 inches above the costal margin on the left was a window, including the skin, the fascia, and the right rectus muscle. Dr. Davis covered these immense areas with skin grafts and when I saw the man afterward, the epithelial repair was nearly complete and after six weeks the defect was entirely closed. The testimony is as to the extreme area in which successful skin grafting has been obtained. The average surgeon would not give sufficient time and attention to this work; hence it should be done by the specialist or one who has the patience for such a tedious procedure.

DR. JAMES SAVAGE STONE, Boston: No branch of surgery requires more patience and detailed attention than plastic work. It requires also a very broad knowledge of the underlying principles of general surgery. There are two great groups of plastic work. The first deals with the various congenital malformations and defects; the second, with the results of trauma. In dealing with the congenital malformations there must be a thorough knowledge of the surgery of children and any one who undertakes the surgery of children must of necessity be able to treat well the various congenital defects, among which hare-lip and cleft palate occupy conspicuous places. A knowledge of the laws of growth is essential, especially of the growth of bone. Not only must we take account of the normal epiphyseal growth of bone, but also of the fact that bone grows to meet the demands that are put on it. There is no more striking example of this than the growth of a fibula which is transplanted to take the place of a lost tibia. This is a fortunate example of what nature can do to help the surgeon. The cessation of growth of the bones of the upper jaw and of the central part of the face may be a most unfortunate result of unwise operative interference with growing bone in operations for cleft palate. All these principles and many others must be understood in work with children.

Within the next few years there is going to be an immense amount of reparative work as the result of the war in Europe. Today the wounded men are constantly going back from the battlefields to the different hospitals in the big cities. When their primary wounds have healed so that they have become fit subjects for reparative work, and when the surgeons who now are more than occupied with the urgent life

saving measures are more free, then the immense opportunities for reconstructive work will give those interested in this branch wonderful chances for study and teaching. Reparative surgery will become a part of the general medical preparedness of which we hear so much now. The immense amount of work to be done, and the facilities for study and for teaching will give to plastic surgery an even more important position than that it now holds.

CONJUGAL PARESIS

REPORT OF A CASE *

H. H. DRYSDALE, M.D.

CLEVELAND

Paresis (dementia paralytica, general paralysis of the insane) is a progressive, chronic and incurable malady possessing a highly characteristic symptomatology which concerns the motor and psychic functions. It eventually annihilates intelligence, disrupts the personality and chooses for its victims vigorously constituted individuals who have not previously been afflicted with mental disease. The sole cause is syphilis.

At the onset, the alterations in the psychic life may occur so insidiously as to be practically unnoticed by friends and relatives. A skilled observer, however, even in the absence of physical manifestations, will readily interpret such early signs as failing attention, sluggishness of thought, dampened perceptive acuity, tiresome reiteration, unmotivated gaiety, erratic conduct, etc., as forerunners of this disastrous disease.

In not a few cases the first warning may appear with the ferocity and unexpectedness of an earthquake—an actual mental cataclysm. When the disease is ushered in so acutely, the patient is apt to run amuck and give way to violent impulses. Often a history of recent alcoholism complicates the situation. A serologic investigation of the blood and spinal fluid will, of course, make the differentiation.

The disease, irrespective of the mode of onset, pursues a more or less irregular course which culminates eventually in a state of permanent dementia—that final wreckage of mind which permits of no opportunity for salvage.

In early years, paresis was pictured as an organic brain disease which had for its early manifestations grandiose ideas and extravagance of conduct. With the advent of the Wassermann era and the newly acquired knowledge and improved diagnostic methods which resulted, it became evident that many cases were improperly classified because the individual had not at some time exhibited symptoms of exaltation and grandeur. Today our interpretation of the malady has greatly changed, and it is now customary to recognize three clinical types, namely, the exalted, the hypochondriac and the demential. The exalted and hypochondriac forms are encountered more frequently among the professional and cultured classes; the demential type appears to predominate in women and among those of the poorer classes.

The course of the disease, while progressive, is subject to remissions which have always proved deceptive to the unknowing. These periods of arrest of symptoms may last for months, and in a few cases for several years. Many patients during these "temporary respites" cherish the belief that a genuine convales-

2. Surgical Specialties in Hospitals, editorial, Boston Med. and Surg. Jour., Dec. 2, 1915, p. 859.

* Read before the Section on Nervous and Mental Diseases at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

cence is at hand, and are often permitted to return to business and look after their personal affairs. This, at best, is always a dangerous procedure, as remissions may end abruptly; and if the unfortunate victim is not properly safeguarded, he may dissipate his funds or indulge in conduct which might prove troublesome and costly.

Leading serologists are quite agreed that paresis continues to be a hopeless and incurable affliction. Long continued investigations have disclosed the interesting information that the central nervous system, in these cases, is structurally damaged soon after the invasion of syphilis, and usually years before a physician is consulted. If this is true, the prospect of obtaining a cure for this tragic disturbance is certainly dark. Yet there are some among us who, in spite of the best information on the subject, have become "specific therapeutic enthusiasts," so to speak, and are subjecting well established cases of paresis, under the guise of cerebral syphilis, to intensive salvarsan therapy, and are interpreting ordinary remissions as evidence of their curative skill. Apparently these "alleged" cures are not long lived, as it is becoming quite a commonplace experience to examine patients in an advanced stage of the disease who had just previously passed through an ordinary remission following a course of intravenous or intraspinal medication.

Convulsive seizures occur in fully 60 per cent. of general paralytics. It may happen that the symptoms hitherto slight may become greatly intensified after a convulsion. In other instances, the subsidence of a seizure may mark the beginning of a remission.

The disease confines itself largely to the male sex in the proportion of about 9:1, and makes its appearance usually when the individual is in his prime. The average age of onset is 40 years, and the period of time that intervenes between the infection of syphilis and the development of paresis ranges from two to twenty-five years. Not more than 50 per cent. of the patients admit syphilis, or are aware of having contracted it. Ten per cent. of patients admitted to state hospitals are afflicted with dementia paralytica.

Hereditary syphilis may also lay the foundation for paresis, and it is apparently the usual cause of the infantile or juvenile forms of the disease. Reports of over 100 such cases have been collected.

Fortunately not every syphilitic becomes a paretic. In fact there are in some countries much syphilis but little paresis. In Algiers, for instance, where fully 60 per cent. of the natives are syphilitic, progressive dementia is a rarity. The disease, therefore, requires other elements to bring out its development, and to cover this point, von Krafft-Ebing coined the now famous phrase "civilization and syphilization." Perhaps it may prove, as in the case of malaria, that certain strains or species of the micro-organisms are the true cause of the disease.

Paresis has been observed in a case of a mother and child (Hoch) and in brothers (Collins, Oppenheim). The case of two brothers reported by Collins of New York is especially interesting, as the two boys attended college at the same time, and both have been suspected of contracting syphilis from the same source. Husband and wife may also become afflicted, and it is this phase of the disease which constitutes the subject of my thesis.

If the literature on the subject is a criterion, paresis appearing during the lifetime of both husband and wife is an extremely rare condition.

The "Index Catalogue of the Library of the Surgeon-General's Office, United States Army," makes no direct reference to any cases which may have occurred in the United States, but it does have a record of a few cases which have been reported in foreign periodicals. These, briefly, are as follows:

CASES IN THE LITERATURE

Laignel-Lavastine and Mercier presented the following case to the Society of Psychiatry in Paris, Nov. 21, 1912:

The wife, aged 39, an actress, had impairment of memory, megalomania, dementia, tremors of hands and lips, dysarthria and fixed pupils. Serologic examination disclosed a positive Wassermann reaction on the spinal fluid with increase of albumin and lymphocytosis.

The husband, aged 27, had less marked symptoms. Memory was not impaired, but there was a decided change in personality. Reflexes were responsive except the pupils, which were contracted and immovable. Dysarthria prevailed, and leukoplakia of the corners of the mouth was noted. The spinal fluid showed an increased albumin content, and the Wassermann reaction was positive.

These authors express the view that conjugal paresis is not altogether uncommon, but that few cases are reported because the symptoms do not develop in the husband and wife at the same time.

Ferenczi¹ publishes the report of a case of dementia paralytica in a man and cerebral syphilis in the wife. Both denied having ever contracted syphilis, and no clinical lesions were found in either patient.

The husband, aged 44, presented pronounced dementia, incoherency of speech and action, exaltation, rhombism, and exaggerated deep reflexes.

The wife, aged 44, suffered with paralysis of the motor oculi nerve of the left eye and paresis of the facial musculature. The case was reported prior to the Wassermann era, and the author inferred that because the wife was syphilitic the husband also must have contracted the disease.

Garnier and Sautenoise² state that the object of their communication is to point out that syphilis is the cause of paresis, and they cite a case of a man and wife. The husband was syphilitic for twelve years and the wife for ten years. Both developed paresis and both were the offspring of psychopathic progenitors.

Sipocz³ reports three cases of conjugal paresis and one of taboparesis occurring during his eleven years' service in the psychopathic clinic in Budapest.

Junius and Arndt⁴ have collected among several thousand cases of paresis and tabes in the Anshalt-Dalldorf, during a period of twenty-five years, thirty-eight cases among man and wife. In seven cases, six men had paresis and one wife tabes, in one case, vice versa. One man was married twice. He too was a paretic. With his first wife he had one daughter who developed paresis at the age of 24. The wife finally became tabetic. The second wife was delivered of two still-born children, and she also developed tabes.

AUTHOR'S CASE

The case which I report concerns a man and wife, both of whom are living and inmates of the same institution. Both are afflicted with paresis, which now is in the terminal or advanced stage.

THE HUSBAND

G. L., German, aged 40, a paper ruler by occupation, was first examined, Sept. 1, 1913, in consultation with his physician, Dr. John Neuberger. The patient was a man of moderate stature but poorly nourished, and was somewhat emaciated. His ancestral history proved negative so far as his present condition was concerned. No inherited psychopathic taint was disclosed. His father died of pulmonary

1. Ferenczi, A.: Budapest. Konigl Aerzte-Gesellsc., 1903, xvi.
2. Garnier, S., and Sautenoise, A.: Reflections on a Case of Conjugal Paresis of Syphilitic Origin, Arch. neurol., 1905, xix, 110.
3. Sipocz, G.: Orvosi hetil., 1908.
4. Junius, Paul, and Arndt, Max: Monatsschr. f. Psychiat. u. Neurol., 1908, xxiv, 10.

tuberculosis at the age of 62. His mother and one brother died of organic heart disease, the former at the age of 52 and the latter at the age of 43. Two brothers and one sister are alive and well. The patient was the youngest of a family of five children. As a lad he was healthy and robust. He attended public school until he was 15. Then he went to work as a book binder and later as a paper ruler. He was a hard working, thrifty and industrious man and was considered healthy and strong. At the age of 27 he married.

In July, 1913, his wife noticed an unaccountable change in his temperament. In health he was reserved but most indulgent, affectionate and thoughtful. Now he was hateful, indifferent, and wished to be left alone. The condition was regarded as a "nervous breakdown" by his relatives. Sept. 1, 1913, he was obliged to give up his work, being no longer able to apply himself, and making many mistakes. His employers urged him to take a prolonged rest. This seemed to distress him, and he became quite agitated and disturbed. For hours he would hold his head in his hands and constantly bemoan his fate. He could not sleep; he walked the floor at night, and finally the wife came to realize the seriousness of the situation.

The physical examination disclosed total abolition of the patellar reflexes, tremors of the closed eyelids and separated fingers, fixed and contracted pupils, dysarthria, instability of gait and moderate emaciation. Mentally he was confused and distinctly apprehensive. Many of his answers were incoherent, and he was suspicious of his family. His wife's well intentioned solicitations were angrily repulsed, and he insisted that she leave the room. During her absence he voluntarily told us of having contracted syphilis in 1898. He consulted a physician, and soon thereafter considered himself cured, as all symptoms had rapidly disappeared. Two years afterward, 1900, he married, and finally came face to face with the cold truth that a cure was most unlikely, and that there was great danger of his having transmitted the disease to his wife and child. He further stated that he had carried his "secret" single handed during all these years, and had been hoping against hope that no harm had resulted from his folly and indiscretion.

A provisional diagnosis of dementia paralytica was made, and a specimen of his blood obtained for serologic investigation. Before this was completed, the patient became quite disturbed and boisterously incoherent. He could not be quieted, and assumed threatening attitudes toward the members of his immediate family. Sept. 4, 1913, it was necessary to arrange for his commitment to the Cleveland State Hospital. The result of the Wassermann test was finally reported as positive, four plus.

Since his admission to the institution the disease has pursued a progressive course with few slight remissions. At various times he has suffered with convulsive seizures, some of which were quite severe and prolonged. He is now markedly demented, stupid, untidy, resistive and partially bedridden.

The diagnosis is dementia paralytica (paresis). The Wassermann reaction is: blood, plus four; spinal fluid, plus four. The cell count is 28.

THE WIFE

H. L., a native of Ohio, aged 36, consulted me a short time following her husband's adjudication. Both her grandparents died of senility. Her father died of a complication of diseases, aged 50. One sister died of chorea, aged 30. Her mother and one sister are living and well. All the members of the family, including herself, were unmistakably neurotic. She suffered the usual diseases of childhood but developed normally. At school she was active and alert, but not especially vigorous or robust. Menstruation first appeared at the age of 13 and has since been normal. At the age of 23 she married. The family life was all that could be desired, and the man was at all times a devoted husband and father. She had known him from early childhood, and had every reason to believe that his habits were exemplary; in no manner was he given to excesses. The patient further informed me that she suffered a miscarriage shortly after her

marriage which necessitated a curettement of the uterus. An uneventful recovery followed.

At this point I suggested to her the advisability of submitting to a thorough examination, but this she deemed wholly useless as her health was good. It was then explained that her husband was afflicted with a specific disease, and it was most essential to determine whether or not the disease had been transmitted to her. She refused to consent, and left the office apparently under the impression that I was mistaken in considering her husband's condition incurable. It was also evident that she questioned the cause of his invalidism.

I saw nothing more of this woman until May, 1915, when she returned complaining of nervousness, insomnia and numbness in both lower extremities. She had been visiting her husband regularly at the hospital, and this had greatly depressed her. His condition had grown gradually worse, and he was now a patient in the "infirm" ward. A specimen of her blood was secured for serologic investigation, and this disclosed a positive reaction for syphilis. Treatment, however, was still refused; in fact, she assumed an attitude of total indifference, and declared that she no longer cared what became of her, as there was nothing left to live for.

Two months afterward, July, 1915, I was summoned to her home and found her quite excitable, erotic and rambling in her talk. The pupils were contracted and fixed, the left patellar reflex abolished, the gait quite ataxic, and considerable dysarthria prevailed. She had no recollection of what had transpired the day before, and seemingly had no insight into her condition. Specific medication was pushed, and in a short while all mental manifestations abated and she was quite herself again. Her regular visits to her husband were resumed, and she invariably insisted on making the journey alone.

From this time on her conduct was noticeably irregular, and she became ill at ease with those who were near and dear to her. She neglected her daughter, avoided meeting people, and lost much of her former pride and neatness of appearance. Oct. 14, 1915, I received a message stating that the patient was found wandering about the hospital grounds, and requested that the family be notified. Arrangements were made for her return to the home, where I saw her the following morning. I hardly knew her when I called, as she had lost much in weight, and was profoundly confused and incoherent. During the afternoon she became quite maniacal, and the relatives, finding themselves unable to cope with the situation, took the necessary steps for her commitment to the Cleveland State Hospital.

According to the hospital records the progress of the disease has been exceedingly rapid, and at present she is almost as deeply demented as her husband who was admitted two years previously.

The diagnosis is dementia paralytica. The Wassermann reaction is: blood, four plus; spinal fluid, four plus. The cell count is 30.

THE CHILD

In November, 1915, I had an opportunity of examining the daughter, who was then 8 years of age. She was of slender stature and poorly nourished. She told me that she felt well and was progressing nicely at school. Her aunt, who accompanied her, intimated that she was subject to "colds" and had periods when her appetite was poor. She had never been seriously ill, however, and had exhibited no signs of nervousness.

The clinical examination was practically negative, and no objective neurologic manifestations were elicited. Her mentation was normal, her memory was faithful, her attention good, and her ideas were expressed coherently and connectedly. Temperamentally she was quiet and reserved. The special senses were intact and the eyegrounds were negative. A specimen of her blood was submitted to a Wassermann test, and this was found to be positive for syphilis.

The condition of the child has been made known to the relatives, and the responsibility of her future care now rests with them.

COMMENT

This case presents some very interesting features. The father and mother are now hopeless invalids as the result of the ravages of syphilis. Their only daughter has inherited the disease, and no one can prophesy what her future health will be. The husband contracted syphilis two years prior to his marriage. The symptoms were slight and quickly subsided after a brief period of treatment. Eighteen years of syphilis preceded the development of paresis in his case.

Unquestionably he infected his wife, but just when no one can say. She did, however, become a paretic two years after her husband, who was syphilitic two years before they were married. It would be interesting in this connection to know if the number of years of syphilis preceding the appearance of paresis was the same in husband and wife.

The disease in both cases was of the demential type, and at no time during my observation were there any signs of exaltation or grandeur.

According to the literature, cases of conjugal paresis are rare; but it has seemed to me that members of this section whose experience has been more extensive than my own must surely have encountered conditions of this sort.

Rose Building.

ABSTRACT OF DISCUSSION

DR. JULIUS GRINKER, Chicago: This report brings up a number of reflections on the subject of syphilis and parasymphilis. Many of the ideas in connection with this subject are still hypothetical and in need of further proof. However, clinical reports such as this one seem to throw some light on the problem. For instance, why should the wife contract general paresis and not tabes? It appears as though there might be a special strain of these spirochetes which produce a certain nervous disorder of the tertiary or of the quaternary, or, as it is now called, the parenchymatous type of syphilis of the nervous system. This fact was very strongly brought to my mind when in 1903 I had occasion to study an entire family of syphilitics, most of whom, with one exception, had developed parasymphilis; this exception was the father, who died too young to develop any form of nerve syphilis and whom I had not examined.

The case was this: A man who had contracted syphilis married a woman who had previously been married and as a result of her first marriage had had a healthy son, who later had a healthy family. The first result of this second marriage was the birth of a boy, who early developed normally, attended college, and later entered a countinghouse, doing work satisfactorily. At about 19 years of age he developed juvenile paresis and died. The second child, a daughter, had all the evidences of hereditary syphilis on her body, snuffles and Hutchinson's teeth, but went on to womanhood and then developed an attack of right-sided hemiplegia with aphasia and in addition was the subject of a gummatous meningitis, as I determined on postmortem examination. The third offspring, a boy, developed symptoms of tabes early, with incontinence of urine and the peculiar difficulties that go with hereditary juvenile tabes, until at 19 there appeared an optic atrophy, causing total blindness, but very little ataxia. So slight was the ataxia that the patient could easily find his way through Chicago's busy thoroughfares, having made his living by peddling newspapers. The mother developed optic atrophy and tabes. There is no doubt that all had contracted the disease from the father.

It seems to me that the family tendency may have less to do with the variety syphilis will assume than the fact that there are different strains of one and the same organism. In consequence, we are beginning to believe that there are several strains of spirochetes, and the case reported by Dr. Drysdale would tend to support that theory. Referring to our new treatment of syphilis and whether intravenous salvarsan

injections or intracranial injections are preferable to the old method of administering mercury and iodids, only time and more experience will decide.

DR. JOHN MATTHEW PULLIAM, Fort Wayne, Ind.: I have under observation at present a man who contracted syphilis twenty years ago. He is not married, but has had relations with a woman and presumably they have a child. This man is paretic; he is now undergoing a remission. The woman is paretic, and the daughter, now 17 years old, is paretic. The mother thinks the child is by this man, but is not certain. In regard to the spirochetes, I do not know that it is a question of strains. Tuberculosis manifests itself in many different forms: tuberculosis of the lungs, of the glands, and of the bones. So why could not syphilis affect the brain in a certain individual, in another individual of that family attack the cord, and so on down the line? We could have any part of the body affected and perhaps at the point of least resistance. I think this idea would be more logical than to say that there are different strains of the particular organism. I presume there are, and yet the disease might attack a point of least resistance where the conditions were more favorable to the spirochetes than in any other locality.

DR. LAWSON G. LOWREY, Hathorne, Mass.: We have had in the state hospital three members of one family, father, mother and daughter. The mother developed paresis first, then the father, and then the daughter came to us, not for paresis or any syphilitic disorder, but because of what appeared to be a state of manic depressive insanity. She, however, had a positive blood Wassermann. The mother eventually died and necropsy substantiated the diagnosis of paresis. The father and daughter are still in hospitals, but have been transferred. The father is of excitable type, and it is rather common that people of this class live longer than the more quiet ones. As to whether or not the nervous system is the locus of minor resistance, or whether different strains of spirochetes operate to produce paresis, there is evidence in both directions. It is a problem that must be solved experimentally, one on which a considerable amount of experimental work is now being done, and I believe that at the end of three years we shall know more about the subject than we do today.

DR. C. C. BURLINGAME, South Manchester, Conn.: In view of the work reported by Reasoner, it would seem that there is little doubt as to the existence of distinct strains of the organism. Dr. Reasoner took some twenty strains of the organism and experimentally produced syphilis in rabbits. He found, say, that Strain No. 5 produced a certain lesion of the eye; Strain No. 10, no matter how frequently repeated, never produced those symptoms of the eye. In brief, he has taken certain strains of the spirochetes and produced certain definite lesions which could not be produced with other strains of the organism.

DR. DAVID S. BOOTH, St. Louis: There came under my observation a family consisting of a wife and her two husbands, which I wish to report briefly since I do not know how much may have been sequence and how much coincidence. I was brought into the family to examine the second husband, making a diagnosis of paresis, when I learned that the first husband had been confined for the same disease and had committed suicide in the insane asylum. The second husband was committed to the asylum, and several years after, the wife was also committed to the hospital in the same condition. And one of these two committed suicide; I do not remember which.

DR. WILLIAM RAVINE, Cincinnati: In 1912 I saw a woman brought into the Anton Clinic at Halle a. S., in a state of depression with the physical and serologic findings of paresis. About 15 years before her admission to the clinic her husband was brought in with the diagnosis of paresis; he was sent to the state insane asylum and died of paresis. This woman married two years after the death of her first husband, and eight years later her second husband developed signs of paresis, was brought into the clinic, and subsequently sent to the asylum. He was still alive on her admission. Permission was obtained for the performance of brain puncture of husband and wife, and the typical lesions were produced

in the eyes and testes of rabbits. In a recent study of about 75 children of paretics, I was astonished to find that but one child showed evidences of hereditary syphilis, and but two gave positive Wassermann reactions in the blood; spinal punctures were not made.

DR. W. F. LORENZ, Mendota, Wis.: We make it a practice to examine relatives of paretics in the Mendota and Northern Hospitals. A large number of children have been examined, and less than five per cent. have shown a positive Wassermann. As a rule, they appear normal and bright, and, in fact, most of them are healthy and good-looking.

DR. CHARLES R. BALL, St. Paul: I recently had under my care the daughter of a paretic, age 17. The Wassermann test was negative. On two occasions the luetin test has been positive. This young woman is extremely nervous and erotic and seems absolutely devoid of any moral sense or responsibility so that at the present time she has to be watched constantly. She is extremely immoral and does not hesitate to steal or forge checks, and when confronted with her misdeeds manifests no sense of shame or remorse. There is no doubt but her moral void is an effect of the syphilis of her father. She might be properly classified under the cerebral palsies. The difference is simply one of localization; in this case the moral zone was damaged instead of the motor.

DR. GEORGE H. MOODY, San Antonio, Tex.: For many years I have been observing children of paretics rather closely and have made Wassermanns on some of them. This observation leads me to believe that children of syphilitic parents whose syphilis has existed for a long time are much more likely to appear normal and not so prone to present degenerative signs of hereditary syphilis as are those children whose parents have recently contracted syphilis, indicating that if an individual has had syphilis perhaps the time elapsing since contraction of the disease is the most important element in modifying the severity of the infection.

DR. S. G. BURNETT, Kansas City: I have as patients four brothers, each having paresis, the ages being 26, 30, 36 and 40 years respectively. Each gave an individual history of having contracted syphilis. The son of the oldest, at the age of 17, contracted syphilis and five years later developed paresis, the five patients contracting syphilis from different sources and all having paresis. It is hardly likely that the one strain of infection would be contracted by all these individuals. So the question is whether we have a special strain producing the same condition in different individuals derived from different sources, or whether we have the infection attacking the tissue which is most liable to be involved in the process.

DR. ROBERT HENRY HASKELL, Ionia, Mich.: At the State Psychopathic Hospital, Ann Arbor, for several years we took the blood reaction of wives or husbands of paretics and likewise of the offspring, if any. While we found that about 40 per cent. of the conjugal mates of paretics had a positive Wassermann, the percentage of positive reactions in children was very small, less than 10 per cent. I believe. In fact, these children were, as a rule, good-looking and bright. As you go through the family history in these cases you find that the number of deaths of children in early life is excessive, so that while the census for the state of Michigan shows about three living children in each family, in the families of eighty-four paretics we found on an average less than one living child in the family after an average married life of eleven years. It seems to me that why most of the children of paretics fail to show a positive reaction is that the actually infected ones have died young. Hauptmann lays great emphasis on the differences between actual hereditary infection with the spirochete and syphilitic intoxication of the germ plasma, a distinction which I believe we must keep clearly before us.

DR. GEORGE A. MOLEEN, Denver: About seven or eight years ago a woman was taken with apoplectiform seizures, in which there was introduced a type of paresis of the dementia class with confusion and other symptoms of the condition, which progressed, and in about four and one-half to five years she died in an institution. At about the time of her death the husband began to show definite signs of a

paretic type with loss of reflexes and some incoordination, however, with the tremor and then with the apoplectiform seizures, of which he has had two, without suffering a dementia, and only since the apoplectiform seizures has he had some confusion. Neither case, in fact, showed optic disturbances in the form of atrophy, but both presented the pupillary phenomena. The child of this conjugal relationship was a definite, simple-minded imbecile of rather a higher grade type. He presented the evidences and the stigmata of degeneration. With a little assistance he would probably be able to make his way in the world and help himself, but I doubt very much whether he will make any progress alone.

With reference to the strains: Many theories have been advanced, from the neurotropic theory of the French, and the symbiotic view of the influence of other organisms on the spirochete, as well as a selective affinity on the part of some nervous systems for the neurotic influence. Yet, as has been said, it will take time and judgment before we can arrive at definite conclusions as to whether or not there are such strains, even in spite of what would seem to be very good evidence at the present time.

DR. HARRY H. DRYSDALE, Cleveland: The condition does not seem to be as uncommon as the literature on the subject would indicate. It is to be regretted that these cases have not been reported. In my experience also, in the examination of children of paretics not more than one in ten gives a positive Wassermann. It is surprising that in examining children of parents afflicted with some form of syphilis, the Wassermann test is so frequently negative. I am extremely glad that I have reported this case as it has brought forth, in discussion, some very interesting and valuable points.

A BACTERIOLOGIC STUDY OF THE CAUSES OF SOME STILLBIRTHS

PRELIMINARY REPORT

JOSEPH B. DE LEE, M.D.

CHICAGO

Thirteen years ago, in consultation, I saw a child of a healthy mother born with a temperature of 101, which within a few hours rose to 103. The child died of streptococcus septicemia, the mother showing no signs of infection. A year later, a physician's wife, after a mild pharyngitis, developed albuminuria and eclampsia. Artificial delivery was performed. Out of the child's nostrils pure pus exuded. The pneumococcus was found in it.

Several other cases have indicated to me that the child can become ill, independently of its mother, and may even die, the mother being only indirectly affected, or not diseased at all.

CASE 1.—Mrs. F. H., primipara, who had always been well, and who was pregnant eight months, had a slight pharyngitis. A few days later the motion of the child ceased. Anemia and mild asthenia were observed, but no fever. Four weeks later labor came on. A macerated fetus was delivered. The organs contained a pure culture of *Streptococcus viridans*. The mother had postpartum hemorrhage, requiring the use of a tampon. A fever of thirty-six hours' duration subsided without complications.

CASE 2.—Mrs. R. P., who had had septic history in previous labor, and was pregnant seven months, had been well, without fever, but had felt no motion for ten days. There was spontaneous delivery of a macerated fetus. The organs contained pure culture of an anaerobic nonhemolytic streptococcus. Convalescence was interrupted by cerebral symptoms resembling thrombosis.

CASE 3.—Mrs. E. T. W., primipara, had two attacks of gallbladder trouble during pregnancy. Labor began three weeks prematurely. There was no fever. The fetal heart tones disappeared after twelve hours of infrequent, weak uterine contractions. When delivered, the child had just