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CEREBRAL SYPHILIS.

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SEVENTH PAPER.

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WE shall first call your attention to-day to this colored boy, who is twenty years old. He presents a picturesque appearance, as well as a geometrical cast of countenance. The hieroglyphics of syphilis are stamped upon his brow. Before attempting to describe this form of syphiloderma, we will examine him for other evidences of syphilis. Dr. Arwine has removed his clothing and you notice on the prepuce, to the right of the median line, as good a representation of the chancre, known as Hunterian, as it is possible to behold. You notice also above Poupart's ligament, on either side, a typical bubo. The epitrochlear and posterior cervical glands are also enlarged and hard.

To return to his expressive countenance. You see fantastic shapes, circles, figures of eight, segments of circles made with almost geometrical precision. Perhaps this boy now looks like a blooded relative in darkest Africa, who marks his face with queer designs, thinking that it adds to the attractiveness of his appearance. Dr. Livingstone, in his interesting work, "Travels and Researches in South Africa," alludes to the custom.

You will find in your text-books this syphilide classified among the papular

forms. Dr. Joseph Zeisler, in Morrow's work on Dermatology and Syphilology, exhibits an admirable colored lithograph, from a photograph taken by Dr. Piffard, with the following remarks: "Still another eruptive form, known as the stellate syphilide, or the *syphilide en corymbe*, is produced by the circular grouping of small papules around a large papule as a center. These smaller 'satellite' papules, as they are termed, are disposed in a system with almost geometrical regularity. As a rule, they are discrete and separated by sound skin; they may, however, become confluent, forming a circular nappe of infiltration around the central lesion. A polycyclic configuration, designated as the *syphilide en cocarde*, may result from the development of one or more concentric rings encircled by a larger ring. The intricate and eccentric forms assumed by the papular syphilide from the intersection and interfusion of circular, semilunar and elliptical patches, give to the eruption a most bizarre appearance, which is admirably shown in the above mentioned picture." The patient before us is in the secondary stage of syphilis. Generally it is described as a late secondary form. We also call your attention to a picture

which adorns our walls. It is taken from one of Baretta's wax models, in the St. Louis Hospital, Paris. It is called a circinate papulo-squamous syphilide. It is exquisite and looks as if the artist might have given free rein to his imagination; but it is an exact representation of the patient from whom it was taken. We are very proud of our picture gallery. These life and life-like representations make our clinics what they ought to be, attractive and instructive.

We presented to you last week a man who was recovering from syphilitic hemiplegia, notwithstanding he had not carried out our treatment thoroughly. Cerebral syphilis is so important and so often not suspected, that we propose to continue the subject today. In many cases it is extremely difficult to obtain a history of syphilis. Very often to the sense of vision the patient is without a blemish and he denies ever having had the disease. The nocturnal headaches, however, are characteristic of syphilis and so is vertigo and other symptoms, which I hope to explain at some future time. Last week we described the pathological changes in brain syphilis and we will continue the subject today, by giving more illustrations of the morbid changes produced by this dreadful malady.

At the Edinburgh Medico-Chirurgical Society in May 2, 1894, Dr. A. Bruce read a paper on two cases of nodose periarteritis. The first case was that of a man aged 37, who had been ill for two years and in whom the tertiary symptoms appeared after eighteen months. In the end there was diplopia, paralysis, dilatation and fixation of the left pupil, convulsions and death in six hours. There was fluid in the subarachnoid space, no thickening of the pia mater; there were clumps on the basilar posterior communicating; and vertebral arteries in the form of fusiform swellings; the pons was softened here and there; there was marked periarteritis and foci of softening; there was little affection of the inner cord of the arteries and there was no meningitis.

The second case was that of a woman

who, on admission, was all but paralyzed in both upper and lower limbs; the tongue could only be protruded as far as the lips; there were a few spots on the legs; the temperature rose to 104.2° and the pulse was 142 and she died of paralysis the next week. She had been infected in the discharge of her duties in Soho Hospital. She was in St. Thomas's Hospital from December to October, with skin affections and paresis of the face. There was optic neuritis. Later, paralysis of the limbs set in and this lasted six weeks. Then she improved and ultimately was discharged. She came to Edinburgh and was very well till two days before admission to the Royal Infirmary. On post-mortem examination there was leptomeningitis, the basilar and cerebral arteries were in the same state as in the first case, there were several areas of congestion and softening in the pons, there were changes in the outer, but no changes in the inner, coat of the vessels, there was great thickening of the veins (a periphlebitis), the brain substance under the membranes was softened and nearly all the vessels contained a thrombus and some of these had begun to organize. Only some six or eight cases of this condition have been described. Probably the first description of syphilitic periarteritis was given by Dr. Batty Tuke in the *American Journal of the Medical Sciences* for 1874. True gummatus formation on the outer coat was the third stage of this periarteritis. In the more acute forms there was simply the cellular infiltrations. In the less acute forms there was a tendency to the formation of gummata. The conclusion one must come to, from a study of these two cases, Dr. Bruce held, was that there was a perfectly distinct syphilitic affection which attacked the outer coat of the arteries.

Syphilitic Hematoma.—Dr. Hahn has published the particulars of a case of this rare affection of the dura mater. The patient was a man aged thirty-six, who had syphilis about ten years before the onset of his nervous symptoms. These began with attacks of giddiness and severe headache, while his charac-

ter underwent a great change. He finally had an attack of giddiness with loss of consciousness, and on the following day it was noticed that there was slight left ptosis, deviation of the tongue to the left on protrusion, deficient movements of the palate, indistinct articulation, and exaggerated reflexes. A few days later the following symptoms were also observed, viz.: Weakness of the right hand, diminution in the reflexes (especially of the knee-jerk on the right side), slight sensory disturbance, and impairment of hearing. He died about two weeks later comatose, having had previously some irregularity of breathing. At the necropsy it was found that over the whole of the left hemisphere, between the dura mater and pia mater, there was a thick layer of blood-clot; while on the right the dura mater was smooth, the pia mater was thickened, and the convolutions flattened. At the base the pia mater was thickened, as well as in the Sylvian fissure, while the basilar and the carotid arteries were atheromatous. The left third nerve was flattened and apparently destroyed. (*Deutsche Medicinische Wochenschrift.*)

At a recent meeting of the Vienna Medical Club, Dr. Kahane described a case of malignant syphilis in which nervous disorders were observed in the secondary stage. The patient, who was a drunkard and had acquired syphilis some seven months previously, was suffering from paresis of the left arm and leg and of the face; due either to gummatous meningitis or to changes in the vessels. As gummatous meningitis would give rise to general symptoms and disease of the cortex of the brain would cause Jacksonian epilepsy, he supposed the patient's condition to be dependent on syphilitic endarteritis of the artery in the Sylvian fissure. A study of 100 consecutive cases of general paralysis published by Dr. R. M. Phelps in the July issue of the *American Journal of Insanity* leads the author to lay the cause, in all probability, in every instance to syphilis. It is not possible in every case, nor, indeed, in the majority of cases, to obtain a distinct history of infection. "In a multitude of

cases it can be suspected; in almost none can it, with great probability, be excluded." Every physician knows how difficult it is, even with a rational patient, to always obtain an admission of specific infection, even when it can be easily read in the symptoms and almost on the very face of the questioned one; then how much more difficult to get at the true history of an irrational being, getting a clear light upon events of this nature of many years past! Eighty per cent. of the cases of locomotor ataxia, according to the *Chicago Clinical Review*, are said to have a syphilitic causation; the same ratio, or even a greater one, undoubtedly maintains in the case of general paralysis.

Locomotor Ataxia. — Aitken, many years ago, gave a description of the pathological changes occurring in the spinal cord, in that group of symptoms known as locomotor ataxia. Syphilis as a cause was not suggested, and the treatment recommended would be injurious, instead of beneficial. He describes this condition as, "A peculiar form of apparent paralysis, characterized by unsteady and disorderly muscular movements, but with muscular power entire, and more or less progressive loss of the faculty of coördinating power (voluntary instinctive). There is sometimes temporary diplopia, with unequal contraction of the pupils. The course of the disease is slowly progressive, and the anatomical lesion is generally a degeneration of the posterior columns and horns of the spinal cord and posterior roots of the spinal nerves; sometimes with peripheral structure change in the cranial nerves, chiefly the second, third and sixth pairs, in cases where the sight is affected, and, exceptionally, in those of the extremities."

Scalfati reviews recent knowledge with regard to spinal syphilis. It is generally admitted now, he says, that syphilis may produce myelitis directly as well as indirectly; it may come on six months or less after infection, or after ten or even twenty years. Of the three chief clinical types (meningitis; meningo-myelitis and myelitis), the

rarest is meningitis ; it is most favorable as far as prognosis and treatment are concerned, and is frequently characterized by nocturnal rachialgia comparable to the nocturnal headache of syphilis. The meningo-myelitic variety present two distinct phases.

1. Prodromal or meningitic, often complicated with cerebral symptoms (headache, visual affection, paralysis of cranial nerves).

2. Spinal paralysis. This type of meningitis, commencing in the brain and traveling downward, is typical of syphilis. In a considerable number of cases, however, the meningitic symptoms are wanting or are very slight. Acute forms with complete sphincter paralysis, profound sensory disturbance, and marked trophic affections (for example, bed-sores), may occur and cause death in a month, being little influenced by treatment. Tachymeningitis, especially affecting the cervical regions, may give rise to pseudo-tabetic phenomena. The myelitis of syphilitics presents in several cases anatomical characters such as to enable one to affirm that there exists a legitimate syphilitic myelitis, which may sometimes be acute. Fournier's "neurasthenia syphilitica" is probably in some cases only the prodromal stage of syphilitic myelitis. In general one may say that spinal syphilis is a serious disease ; even when life is not threatened, the disease is rarely cured.

In 1881 the late Dr. Fordyce Barker, then President of the New York Academy of Medicine, referred to a case of ataxia due to syphilis, in which there was complete paraplegia, with paralysis of the bladder and rectum. To that patient he gave a drachm of the iodide of potassium three times daily, beginning with twenty grain doses, and an entire cure had been effected. Professor Erb of Heidelberg makes the following statement : " He who has not had syphilis is scarcely ever apt to have tabes." On the other hand, Leyden and Westphal and others contend that the connection between syphilis and tabes are by no means constant. Fournier's statistics exceed that of Erb, "ninety-one to

ninety-eight in every one hundred cases of tabes, gave a history of syphilis." " Rumpf gives eighty to eighty-five in one hundred." Althaus, "ninety in one hundred." Dr. B. Sachs (Morrow's Work on Dermatology and Syphilology) says : " In view of such statistics as these, one can not possibly escape the conclusion that fully nine-tenths of tabes are due to syphilis, and my own experience leads me to think that this percentage might well be placed higher. In private practice I do not see one case in fifteen of tabes which does not give the full history of syphilis."

Dr. Thomas Stretch Dowse of London says : " There can be no doubt, unless we have contrary proof of the most absolute and positive kind, that irregularity of movements and disturbances of volition, either in the engenderment of ideas or in the performance of coördinate muscular acts, are, in a very large majority of cases, due essentially to some syphilitic affection of the nervous centers. With this fact the clinical observer is becoming every day of his life more familiar and it is a misfortune of the most serious nature to the patient when these symptoms and signs of incoördination are treated as mere trifles and thought to be due merely to fatigue, or to stomach or liver derangement. I have no hesitation in making the statement that every case of locomotor ataxia is curable, provided it be treated sufficiently early and in the most energetic manner. Every case of locomotor ataxia (with very few exceptions) can be traced to a syphilitic origin if due care be taken to inquire carefully into the patient's history. . . . Of these various signs there is only one upon which I place the most absolute reliance from a diagnostic point of view and that is the fulgumating pains ; and patients will often describe them to me, as though a fine lancet, which had been made hot, had been driven into the skin for about an eighth of an inch. These pains are not limited to the lower limbs ; they may attack the head, the nose, the ears, the shoulders, the buttocks, and the scrotum, and even the penis, but as the disease advances and the ataxia be-

comes pronounced and decided, the legs alone are the seat of pain. I had a patient under my care a few months since, who spoke of these pains as resembling the sting of a horsefly. These pains succeed each other with the greatest rapidity; they occur for the most part singly and the patient has scarcely time to rub one part of the body before his attention is called to another part. Now these pains may be preceded and succeeded by intense itching over a limited and circumscribed area, and this state of itching will be as rapidly migratory as were the pains just described; and if we test the sensibility of the skin of the feet and lower limbs we shall find patches which are decidedly anesthetic; but this is more particularly marked over the plantar and dorsal surfaces of the feet and inner part of the legs."

Erb gives the following statistics, showing the time that had elapsed between the syphilitic infection and the beginning of tabes.

12.3 per cent. appeared within 1 to 5 years after infection.

37 per cent. appeared within 9 to 10 years after infection.

24.7 per cent. appeared within 11 to 15 years after infection.

14.2 per cent. appeared within 16 to 20 years after infection.

4.8 per cent. appeared within 21 to 25 years after infection.

1.9 per cent. appeared within 26 to 30 years after infection.

.7 per cent. appeared within 31 to 33 years after infection.

The majority of cases occurred after the first six years. I agree with Erb that locomotor ataxia is only to be feared by those who have had syphilis.

Treatment of syphilis by hypodermic injections of mercury.—A year or two after our civil war, while on a visit to New York City, Dr. F. J. Bumstead invited me to go with him to Charity Hospital. We took the boat at the landing near Bellevue Hospital and went to the Island. On the way he told me that he was going to try a new method of treating syphilis and that was by hypodermic injections of mercury. The injections were introduced into the arms of six patients subcutaneously. I do not know what form of mercury was

employed, but I remember that it caused the most atrocious pain and I prophesied that it would never become a popular method of treatment. Since then I have conversed with many enthusiasts on the subject, but as a rule, it was by those of a very limited experience in any form of disease. With an air of great wisdom, I have heard it asserted that syphilis would be throttled by this method of treatment. "You have him by the neck and can shake the little devils out of him." This is equal to our numerous patients who believe in hoodoism and just about as reasonable.

They say ten or fifteen injections will cause the disappearance of all symptoms dependent on syphilis. The mercurial vapor bath, or the inunction method, will do the same and are free from danger. What are the objections? I have spoken of the intense pain they sometimes produce and which may last for days, incapacitating the patient from doing any kind of work. Abscesses also frequently result. The dangers which may take place were admirably given in an editorial article in the *University Medical Magazine* several years ago. By injection into a large vein emboli have lodged in the lungs and have caused symptoms of great, though temporary, danger. Again, when the constitutional symptoms of the drug are manifested, it is impossible to prevent further absorption, since a considerable proportion of mercury remains at the seat of injection for days or even weeks and is slowly but continuously absorbed. Kaposi, Hollopeau and Runeberg have all reported cases of fatal mercury poisoning attributed by them to this continued absorption. Where soluble salts of mercury are used the pain is less, the absorption is more rapid; hence there is less danger of cumulative effects, but the doses must be more frequently repeated and recidivity is more frequent and earlier than where the insoluble preparations are used. The treatment of syphilis by hypodermic injections is destined to be the exceptional and not the routine method. Where rapid disappearance of the symptoms is absolutely essential, where medication by

the stomach or by inunctions is impossible, these mercurial hypodermics may be employed with advantage.

The injections should be made in the gluteal region, alternating on the two sides of the body, and the point of the needle should be thrust deep into the muscles. As a means of avoiding an intravenous injection, it is suggested that the perfectly clean needle, separated from the syringe, should be thrust into the tissues. If no blood escapes through the canal of the needle, it can be assumed that its point is not within the lumen of a blood-vessel. The syringe can then be attached and the medication forced into the tissues. If it is desired to secure the most permanent effects with the fewest injections, an insoluble preparation will be used. Of these, calomel and yellow oxide are most efficient. Either may be used in the strength of 1 to 30, suspended in water, mucilage, olive oil or vaseline. To diminish the pain, a solution of cocaine may be added. The injections may be repeated at intervals of about a week. Four to six are sufficient and each one should not contain upwards of a sixth of a grain of the mercuric preparation. Of the soluble preparations, Hebra chiefly commends the sublimate sodium chloride solution. This is made by adding to a 1 per cent. sublimate solution 6 per cent. of sodium chloride. Each injection should contain a sixth of a grain of mercuric salt. This preparation is cheap, readily prepared, almost painless, and clear. Twenty injections given in three weeks, alternating so that one gluteal region receives the medication every other day, are usually sufficient to accomplish the cure; occasionally more injections are required. Mercuric poisoning, where the drug is used in this way, is exceedingly rare. Absorption must be rather slow, since there is an albuminate of mercury formed before the salt can be taken into the system, and since Bockhart has found mercury in the urine thirteen weeks after the injections. Other soluble preparations are the albuminate and peptonate of mercury.

Leloir and Tavernier state that this

hypodermic treatment has its minimum action upon syphilides of the mucous surfaces; that it should not be employed in cerebral or spinal syphilis, in visceral manifestations of the disease, in pregnant women, or in young children. This method of intra-muscular injections of mercury is claimed to be more efficacious than by folding up a portion of the skin, and introducing the needle to the required depth, according to the ordinary method of hypodermic injection. The consensus of opinion of the most eminent syphilographers is adverse to the routine employment of this method of treatment. Dr. J. Wm. White has contributed a most valuable review in Morrow's work on Dermatology and Syphilology, on this method of treatment. All that can be said in favor or opposition is concisely stated. I will take the liberty of quoting the opinions of a few of the most renowned writers on syphilis, which he has obtained, and presented to the profession at large. Fournier, about five years ago, was asked his opinion by Dr. Morrow of New York. He answered: "My opinion is, it is not a good treatment. The injections are painful, they interfere with the patient's avocation, they necessitate frequently repeated visits. Above all, the method is not practicable. In private practice, patients will not tolerate it. In hospital practice it is possible, but note the result; patients leave the Du Midi and Lourcine, where this treatment is employed, and flock to the St. Louis, where they know they will not receive it."

"In England, Hutchinson, who is *facile princeps* the leader of British syphilographers (and who in my opinion is with the possible exception of Fournier the leading syphilographer of the world, says hypodermic injection has come but little into employment in English practice, nor does it appear to increase in favor with those Continental surgeons who at one time thought highest of it." In this country Taylor, so far as I know, voices the prevailing sentiment among specialists in this branch when he says: "The extent of the literature of hypodermic injections in syphilis contributed within the past ten

or twelve years is simply appalling, and there is really very little which is of practical value. It will be seen that almost every preparation of mercury has been experimented with in the hypodermic injection treatment, and that the chemist's art has been sorely taxed to produce new preparations. Each new preparation has been exploited as the ideal of perfection, and in most cases a hearty welcome has been accorded it, so that a witty German reviewer has made the following paraphrase of an old maxim applicable to the subject: "*De 'novis' nil nisi bonum.*" "As to the injection of insoluble preparations he says he has no leaning toward its employment, and that he is firmly convinced that it will never be used as a systematic treatment extending over a period of years." He adds: "It is a treatment which is generally irksome and repulsive to patients, always attended with more or less discomfort and pain, and often producing destructive subcutaneous lesions over the body, which cause mental and physical suffering, and which of necessity must impair the patient's health and strength. In some cases, we have seen, it has been known to imperil and to destroy life." "In a more recent communication to the writer (Dr. J. Wm. White) Dr. Taylor reiterates his preference for the bichloride as the best preparation for hypodermic use, and states his belief, in which I cordially agree, that it is a method of "utility, exigency, and emergency." In the presence of intercurrent disease, as of influenza, he has found it most valuable and has occasionally used it for long periods. He adds: "No importance should be attached to claims of speedy cure. They show that their sponsor knows little about the natural history of syphilis. The disease is chronic and far-reaching, and requires a corresponding treatment. Many men who have ransacked drug stores and importuned chemists for some ideal preparation of mercury, having got one to their notion, have used it for a short time and seeing the prompt disappearance of existing lesions (which condition could be induced by the bichloride bicianide, and salicy-

late of mercury, have rushed into print and claimed marvelous and rapid cures. A thoughtful and experienced student of syphilis will only claim cures when the patient has undergone careful, watchful treatment for two years and more, and when, from the course of the case, he is satisfied that the disease has been brought to an end."

Dr. F. R. Sturgis of New York says: "It is many years since I have used the hypodermic injection of mercury in the treatment of syphilis, and my reason for abandoning it was the great pain it caused, and the tendency which it had to produce abscesses in the cellular tissue. Indeed, the pain was so great that the charity patients at the hospital ran away rather than submit to the treatment. That it was in many cases efficacious I have no doubt, but I do not think that the advantages outweighed the pain, nor was its action any more certain and lasting than when mercury was given by other methods. I am very doubtful, indeed, if it cures syphilis in a much shorter period than when given by the mouth, or inunction, or fumigation, although in some cases it caused the symptoms to disappear a little more rapidly perhaps than they would have done under other circumstances. The preparations used were the bichloride, which was excessively irritating; then afterward calomel, which was less so; and, lastly, the albuminate; which seemed to be the best borne of any; but as I say, I have not used it for many years, and think its use, certainly in private practice, is restricted."

Dr. E. L. Keys of New York says: "I do not think the hypodermic use of mercury suitable for routine use in syphilis. I believe it impossible to 'cure' syphilis by a 'short course' in this or any other method." Dr. Walter L. Pyle of this city, in the *Medical News*, February, 1895, published an interesting monograph on the "Intravenous injection of mercuric chloride in the treatment of syphilis." It was originally suggested by Professor Guido Baccelli (*Gazette medica di Roma*, 1893.) "His investigations met with the most brilliant results and since then thorough investigation into the

merits and value of the method has been made by Baccelli, Jamma, Colombini, Nieddu, Campana and many others, throughout Italy.' Sufficient time has

not elapsed to give an opinion either in favor or in opposition to this new method, but testimony seems to be against it.

