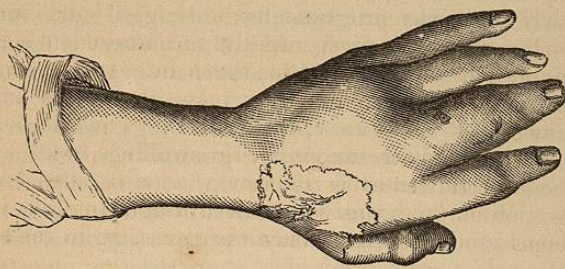


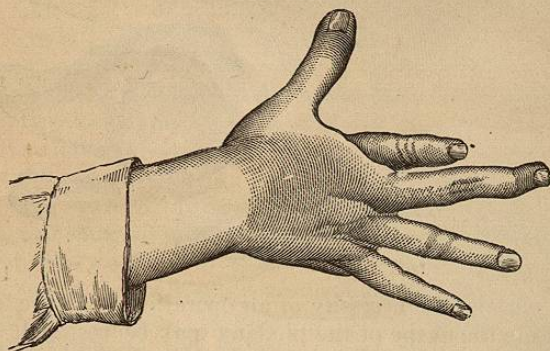
shortening of the thumb. The first phalanx of the middle finger was much swollen and obliquely perforated by a sinus, and the bone was completely divided by a newly-formed tissue. The two phalanges of

FIG. 135.



the thumb, and the first phalanx of the index finger, and the first phalanx of the right middle toe were swollen, but there was no sinus nor solution of continuity of the bone. The right hand (see Fig. 136)

FIG. 136.

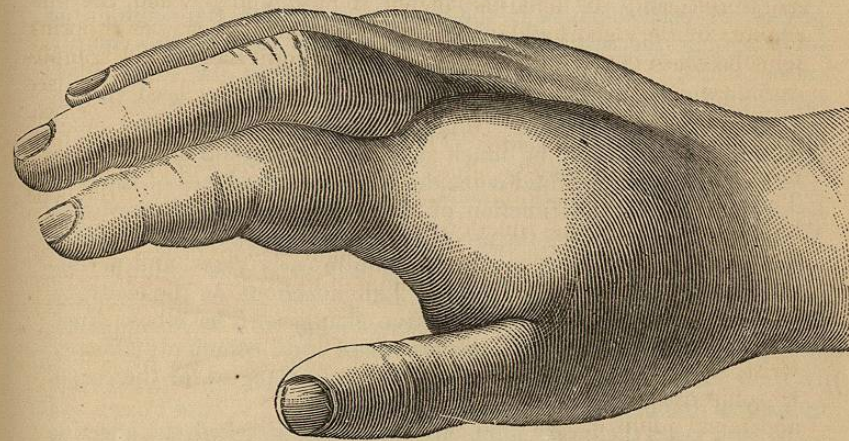


showed the progress of destructive changes in the bones. The first phalanx of the index finger was shortened, and seemed to be divided into two pieces, so that the patient had to wear a glove to counteract the mobility of the finger. The other two phalanges were normal. The middle finger was much attenuated; the second phalanx was in a position of superextension, while the first was slightly flexed. The bones, unchanged in form, were atrophied, and the integument, joints and tendons were normal. The early form of dactylitis is more purely inflammatory, while the later forms are due to gummatous infiltration, and resemble the bone-lesions of acquired syphilis in their course and results.

**SWELLINGS OF THE METACARPALS AND METATARSAL BONES.**—These lesions usually occur quite early in hereditary syphilis, and

may or may not coexist with dactylitic enlargements. They may appear even as late as the twentieth year. A single bone only is sometimes affected, but in one instance I have found all of the metacarpal and metatarsal bones involved. The accompanying figure (Fig. 137) shows the appearances presented in one of my cases, in which the first metacarpal bone of the right hand was swollen. These swellings usually form rapidly and attain considerable size. They may or may not be attended by pain. In the early years of hereditary syphilis they commonly involve the entire bone, in later years the swellings are often circumscribed. They do not occur as early or as frequently as the dactylitic swellings, nor have we observed the necrotic tendency sometimes seen in swellings of the phalanges. When the tumors reach a large size, the integument becomes tense, inflamed, and may ulcerate. Such cases are very protracted.

FIG. 137.



These lesions have different results in various cases, and according to the age of the patient. In very young children the bones may be left in a normal condition; sometimes they are a little thinned or shortened. In later stages of hereditary syphilis we find destruction of a segment of the bone, which is thus divided into two parts, joined firmly by a band of fibrous tissue.

The treatment of all bone swellings should combine mercury with iodide of potassium. We have used in many cases, with great benefit, the following:

R. Hydrarg. Biniodidi, gr. j . . . . .	06
Potass. Iodid., ꝑiv . . . . .	15
Syr. Sars. Co.,	
Aquæ, aa ꝑij . . . . .	60
M.	

Of this mixture, a child one month old may take five drops thrice daily, increasing the dose by a drop every five days. To a subject



over five years of age, one-half of a teaspoonful may be given, and the dose gradually increased to one or one and a half teaspoonfuls. Externally, a mild mercurial ointment may be used, or, better still, the following ointment may be kept in contact with the affected parts under pressure:

R. Ung. Hydrarg. Fort.,  
Ung. Zinci Oxid., aa ʒss . . . . . 15  
Bals. Peru., ʒj . . . . . 4  
M.

Ulcerations of the skin require appropriate treatment. The advantages of graduated pressure should not be forgotten.

#### AFFECTIONS OF THE JOINTS.

In some cases of diaphyso-epiphysial inflammation (osteochondritis) occurring in hereditary syphilis, particularly when the epiphyses are very short, as in the humerus and tibia, the neighboring joint becomes the seat of effusion. In the few cases of this complication which I have observed, the hydrarthrosis has taken place quite rapidly, decided evidences of effusion existing in a week or two. The symptoms are subacute. There is but little pain and not much heat, though there may be much swelling and tension of the parts. The absorption of the fluid coincides with the subsidence of the bone lesion, and finally the function of the joint may be fully restored. While the effusion exists the use of the joint is more or less impaired, but degenerative changes are uncommon in early years, and permanent disability of the joint is rare. Late affections, on the contrary, are sometimes attended by destructive changes. The elbow, knee, wrist, shoulder and ankle-joints are those most commonly affected. In some cases the metatarso- or metacarpo-phalangeal, or the carpal and tarsal joints are the seat of hydrarthrosis.

In later years the larger joints are sometimes attacked, the affection in some cases being secondary to bone lesions, in others beginning in the joint. In such instances we find most decided change in the synovial membrane, probably originating in the subsynovial connective tissue, and frequently thickening of the fibrous capsule of the joint. The affection is slow and subacute, but the swelling of the joint is often very great. Heat and redness of the integument are absent; pain is slight, although the joint may be sensitive to pressure and on motion. It differs from the so-called scrofulous affections in its freedom from degenerative changes. In the latter, moreover, the morbid process is chiefly intra-articular. These joint affections are amenable to treatment in their early stages; later, they are more rebellious. They undergo slow involution, leaving only slight disorganization of the joint. They are usually associated with some other manifestation of hereditary syphilis, usually a form of bone lesion, or some affection of the eye, teeth or skin. They may be unilateral or symmetrical, and may occur as early as the first year of life or as

late as the twentieth. The intra-articular infiltration sometimes breaks down and a sinus is formed, which discharges for a time, but finally closes under treatment. The treatment of syphilitic synovitis includes internal and local remedies. Externally, friction with mild mercurial ointment should be used, and the joint should be kept at rest by means of mercurial plaster or the plaster of Paris or starch bandage. The general treatment consists of a mercurial salt combined with iodide of potassium.

#### AFFECTIONS OF THE NERVOUS SYSTEM.

Until recently our knowledge of the affections of the nervous system caused by hereditary syphilis was very fragmentary and incomplete. Within the past ten years, however, much has been added by the observations of English physicians, and it is to Hughlings Jackson,<sup>1</sup> Jonathan Hutchinson, T. Barlow, and T. S. Dowse that we owe nearly all of the facts concerning this most important subject. It is due beyond doubt largely to the fact that nearly all affections of the brain in infants and young children have been for so long considered to be of tubercular origin that so little attention has been paid to the influence of hereditary syphilis in their causation, and though the pathological facts which have been learned concerning the effect of this diathesis are far from complete, their suggestions are so comprehensive that their importance is greatly increased. This statement is borne out by the fact that we now positively know that in hereditary syphilis there have been found the results of meningeal inflammation, such as thickening and adhesion of the membranes by the development of fibrous tissue and gummy material, and that the endoarteritis so frequently found in the acquired form has also been observed in hereditary syphilis. Gummata on the membranes have also been found. This knowledge is most important and far-reaching, since it suggests strongly the probability that there may occur during the course of hereditary syphilis the same numerous and complex affections as are known to occur in the acquired form. As our present knowledge of the clinical history and of the pathology of the several hereditary affections is not complete, we can only give a general sketch of them. The observations of Jackson and others have conclusively shown that hereditarily syphilitic infants and young children are liable to chorea. This may be of a mild and ephemeral form, or it may be severe. In several cases it has coexisted with hemiplegia, and in others there has been superadded epilepsy. In

<sup>1</sup> The most important articles are two by Jackson, the first entitled, Cases of Disease of the Nervous System in Patients the Subjects of Hereditary Syphilis, reprint, London, 1868; and second, Nervous Symptoms in Cases of Hereditary Syphilis, *Journal of Mental Science*, January, 1875. The views of Hutchinson are given throughout his papers published within ten years. The cases of Barlow are published in the Transactions of the Pathological Society of London, vol. xxviii, 1877; and the observations of Dowse are to be found in his recent work on the Brain and its Diseases, London, 1879.



such cases, Jackson thinks that the hemiplegia is caused by the plugging up of the middle cerebral artery, that the chorea is due to occlusion of its small distal branches, while the epilepsy is due either to thickening of the meninges or a gummous growth in or near the corpus striatum. The occurrence of epilepsy alone, without hemiplegia, is very frequently observed in hereditary syphilis, either within the years of infancy or later on in childhood. Indeed, its evolution has been observed as late as the twelfth or fifteenth year. So impressed is Jackson with the relation of hereditary syphilis to epilepsy that he says: "When a child is brought to us for an affection so painfully obscure as general epilepsy, it is well to examine the patient's brothers and sisters for signs of syphilis." We would add even more, that the child should be thoroughly examined to determine whether it is syphilitic. The eye must be examined superficially and deep. In such cases we often find evidences of antecedent keratitis, of choroiditis and retinitis; sometimes of optic neuritis. Then, again, we may find evidence in the notched state of the teeth, in certain small white linear scars at the angles of the mouth, in falling of the nose, and in a bow-shaped condition of the tibiae. All or some of these symptoms may be found also in cases of epileptic hemiplegia, or of hemiplegia alone. Though palsies of the cranial nerves do not occur as frequently in hereditary as in acquired syphilis, the observations of Barlow and Dowse have positively proved that several of them may be attacked by syphilis. One of the most suggestive cases published is that of Barlow, of an hereditary syphilitic child four months old, who presented well-marked lesions which were improved by mercury. Then she began to run down, had carpopedal contractions, was attacked by convulsions and died. At the autopsy the membranes were found to be slightly thickened, and at the base at the optic commissure was a small patch of greenish lymph, while the fissures of Sylvius were glued by old exudation. In many places on the vertex, and on the inferior surface of the temporo-sphenoidal lobes, there was thickening of the membrane from fibrous tissue, while on the upper surface of the left parietal lobe was a thin patch of calcification. The small vessels of the cortex were markedly altered; being at first natural, they became of a dirty-white color, without dilatation or narrowing, and looked like threads. There was no granulation of the pia mater as in tubercle. There were also a few patches of superficial softening. The choroid and retina were infiltrated in a circumscribed manner by corpuscles as large as those of pus. The most important point found by Barlow was in the thickened membranes, which contained an excess of fibrous tissue, with cells, not mere nuclei, but well-formed lymphoid cells, each containing a nucleus and sometimes a nucleolus. These seemed to have no arrangement around the vessels, and retained their individuality, with no massing into heaps and central degeneration, thus differing from tubercle. In the vessels there was a new growth of the inner coat, which narrowed and even occluded their calibre. This change

was intra-vascular also, differing from what occurs in tubercle. In its minute anatomy it presented the appearance described by Heubner (see page 697, chapter on Nervous Affections).

Barlow's second case is fully as important in its bearings. It was a boy fifteen months old, suffering from paresis of the facial muscles, general, but not equal in amount. Occasionally, there was a frown on the left half of the forehead, less on the right. The right eyelid was found to be shut sometimes while the other remained open. When the child cried its left cheek remained flat, but there was no distortion when at rest. There were frequent fine tremors of the facial muscles of the right side, at the corner of the mouth, and of the orbicularis palpebrarum, and decidedly less on the left side. The child had frequent laryngeal spasms, but no convulsions. It was thought that the reaction of the muscles of both sides to the constant current was increased, while that to the faradic current was diminished. During life the case was wrongly diagnosed as of tubercular origin. At the autopsy four stellate patches of thin cicatricial tissue were found on the liver, and a similar patch on the spleen. In the brain, the pia mater at the base was slightly opaque; both *third nerves were swollen out into small conical tumors*. There was also swelling of the fourth, fifth, sixth, seventh, and eighth pairs, causing a broadening there at their superficial origin. Microscopic examination showed atrophy of the nerve cylinders, and here and there in certain sections were found round bodies resembling corpora amylacea. There was also a most abundant infiltration of new cells, with very fine stroma. This latter was not abundant in the interfunicular spaces, though it was noted that in the substance of the funiculi themselves there was more at the periphery than at the centre. The appearances resembled somewhat those of the nerves in anæsthetic leprosy. In this case, also, changes were found in the arteries which were typically like those described by Heubner. Barlow calls attention to the important fact that the new growths were symmetrical. The second of the two cases of gummata of cranial nerves is reported by Dowse, who observed the fact at the autopsy of a girl twelve years old, who had suffered from serpiginous ulceration and destruction of the nasal bones. Two years before her death she had a fit, and thereafter suffered from dull aching pain in the head, continuous and paroxysmal. She then became thoroughly epileptic, and suffered from mental and visual derangements. Ophthalmoscopic examination showed advanced changes in the tissues. There was anæsthesia of the left side of the face, and hyperæsthesia of the right. The sixth and seventh nerves were paralyzed, and the extremities were very weak. "For days together she would lie in a state of partial stupor, apparently careless of all about her. At other times she was so giddy that she was unable to walk across the ward without reeling, and then again she would have a series of epileptic seizures," which were followed by screaming and violence. During the fits, which followed an aura beginning in the left arm and ending in the tongue, there was rigid muscular spasm, more of the right than of the left. She continued



to get worse, became aphasic, and partially hemiplegic, and died. In this case Heubner's endoarteritis was found, together with gummous pachymeningitis and gummata on the fifth and seventh nerves.

The affections of the nervous system of hereditary syphilis resemble in their evolution and course those of the acquired disease, in the complex and disorderly association of symptoms and in the frequent coexistence of eye affections, such as optic neuritis, and paralyzes of one or more cranial nerves. In the hereditary form the ocular lesions are, in general, more complex and numerous than in the acquired form.

Dowse remarks, with much pertinence, that: "Probably, before long, thanks to the investigations of Heubner, it will be found that many of the conditions which are now recognized as scrofulous are really due to albuminoid or protoplasmic nutritive changes, the result of arterio-capillary constriction which originated in syphilis. In due time evidence will be forthcoming to show that these changes also occur in the lymphatic system, and that they are coexistent with the primitive states of fetal life. If pathology is not leading us astray, our deductions at the present time are of the greatest value and importance."

#### TREATMENT.

The propriety of treating a pregnant woman for syphilis has been the subject of much discussion, and has, at times, been denied on the ground that mercury was a powerful cause of abortion, and that the death and expulsion of the fetus was more frequently due to the administration of this mineral than to syphilis itself. It would serve no useful purpose to enter into the arguments which have been advanced for and against this supposition; suffice it to say that modern surgeons, with but few exceptions, regard the fear referred to as chimerical, and believe that specific treatment of the mother is the surest means of prolonging gestation to its full term, and of affording security to the infant after birth. Ricord's views upon this subject are very explicit and decided. He says: "The period of gestation in women, far from contraindicating energetic treatment, demands increased attention and promptitude, within the bounds of prudence. I have seen very many more abortions among syphilitic women who had not been treated, than among those who, taken in time, had been subjected to methodical medication."

There is strong ground for believing that in those cases in which mercurials have appeared to favor abortion, they have done so only in consequence of their irritant effect upon the intestinal canal, and not from any abortive power inherent in the remedy itself. Thus, six cases reported by Colson<sup>1</sup> of abortion in pregnant women who were subjected to mercurial treatment, were analyzed by Bertin,<sup>2</sup> who showed that in four there was violent vomiting, and in a fifth convulsions, at the sixth month of pregnancy, while, in the remaining

<sup>1</sup> Arch. gén. de méd., 4e série, t. xviii, p. 24.

<sup>2</sup> Compte rendu des travaux de la Soc. de méd. de Brux., 1858, p. 82 (as quoted by Emile Vidal, op. cit., p. 84).

case, treatment had been commenced only a fortnight before, and sufficient time had not elapsed to obtain its full effect; hence, that in none was there reason to ascribe the death of the fetus to the judicious employment of mercury.

The sympathy existing between the intestinal canal and the uterus is well known, and in the treatment of pregnant women affected with syphilis, we should carefully guard against any irritant action upon the stomach or bowels. Fortunately, this end may be accomplished and at the same time the full action of the remedy be obtained by mercurial inunction, which is by far the best method of treatment in such cases. The same opinion was expressed a long time ago by Bell, who said: "During pregnancy, mercury ought in every instance to be used in the form of inunction, as we thereby with most certainty prevent it from acting upon the stomach and bowels, and thus avoid the hazard of abortion taking place as the effect of irritation upon these parts. Nothing, indeed, more readily excites abortion than purgatives when severe in their operation upon the bowels, or when they even only produce any considerable degree of tenesmus; and as the internal exhibition of mercury is frequently the cause of this, it cannot but with much hazard be given in any considerable quantity during pregnancy."<sup>1</sup>

When the father is known to have been the subject of syphilitic manifestations at the time of impregnation, or when previous abortions afford reason for supposing that the disease, although apparently latent in him, has still been active enough to infect the ovum, it is the part of prudence to subject the mother to treatment during pregnancy in the same manner as if she herself had presented syphilitic symptoms.

The same method of treatment above recommended for the mother, viz., mercurial inunction, is no less appropriate for an infant affected with congenital syphilis. The internal administration of mercury, as in one of the accompanying formulæ, will sometimes succeed, but too frequently irritates the bowels, and in my own experience, affords far less satisfactory results than the method by inunction.

R. Hydrarg. cum Cretâ, gr. ij-vj . . .	12—	36
Sacchari Albi, gr. xij . . . . .	75	
M. et div. in ch. No. xii. One three times a day.		
R. Hydrarg. Chloridi		
Corrosivi, gr. ss-j . . . . .	03—	06
Ammoniae Muriatis, gr. iij . . . . .	20	
Syrupi Papaveris, ℥ij . . . . .	65	
Aquæ, ℥iv . . . . .	120	
M. A teaspoonful three times a day.		

Van Swieten's solution and Plenck's gummy mercury<sup>2</sup> are often used by the French, who also employ baths containing from half

<sup>1</sup> A Treatise on Gonorrhœa Virulenta, etc., Edinb., 1793, vol. ii, p. 435.

<sup>2</sup> "Plenck's gummy mercury" contains mercury gr. xv., powdered gum Arabic gr. xiv., and syrup of diacode (an electuary containing a small quantity of extract of poppies) ℥j. Triturate in a porcelain mortar until the mercury disappears. Dose.—℥ss in an appropriate vehicle. (Diday.)



a drachm to a drachm of the bichloride of mercury. My own preferences are in favor of the gray powder for internal administration.

The advantages of mercurial inunction and the method of employing it are thus set forth by Sir Benjamin Brodie: "The mode in which I have treated these cases for some years past has been this: I have spread mercurial ointment, made in the proportion of a drachm to an ounce, over a flannel roller, and bound it round the child once a day. The child kicks about, and the cuticle being thin, the mercury is absorbed. It does not either gripe or purge, nor does it make the gums sore, but it cures the disease. I have adopted this practice in a great many cases with the most signal success. Very few children recover to whom mercury is given internally, but I have not seen a case where this method has failed."

Treatment should by no means be laid aside as soon as all syphilitic manifestations have disappeared, but should be continued as a prophylactic for several months afterwards.

Indirect treatment by means of remedies administered to the child's nurse is not to be depended upon in a disease which makes such rapid progress, and is so destructive in its tendency as congenital syphilis. MM. Lutz and Personne have carefully analyzed the milk of nurses who were subjected to mercurial treatment, pushed in some instances to salivation, without being able to discover the slightest trace of this mineral. Experiments upon animals, however, have shown that a very minute quantity of mercury may be detected in the milk of a goat that has been salivated by mercurial inunction, and cases have been reported in which infants have been cured of syphilis by being fed upon milk derived from such a source; but this method, for obvious reasons, could not be generally adopted, even if its efficacy were fully established.

In the treatment of osseous lesions, the use of mercury with iodide of potassium is much more efficacious than mercury alone. The combination on which we place most reliance is that of the iodide of potassium with the biniodide of mercury, commonly called the "mixed treatment." To children under six months of age it is well to give three times daily ten drops, well diluted, of the mixture, the formula of which is given on page 835. This may be increased by five drops each week, until a dose of nearly a teaspoonful is reached. Gastric disturbance is seldom caused by prolonged use of this remedy. In some cases, when the mixed treatment seems to have lost its power, I have used, with marked benefit, the iodide of potassium internally in connection with mercurial inunction.

The use of iodide of iron in the treatment of hereditary syphilis was advocated by Monti. I have used the remedy and found it of no value other than as a tonic. To place any dependence on it in severe cases is to waste valuable time and perhaps jeopardize the patient.

The local treatment of syphilitic lesions is the same in the child as in the adult, particular attention being given to cleanliness.

<sup>1</sup> Clinical Lectures on Surgery. Phil. ed., 1846, p. 230.

## CHAPTER XXVII.

## AFFECTIONS OF THE PLACENTA.

OUR knowledge of the effects of syphilis upon the placenta is still incomplete in many particulars. Previous to the publication of Virchow's lectures on tumors, the subject was little understood, and its literature consisted only of a number of papers by various authors, in none of which was there any approach to full and scientific investigation. In 1873, however, Ernst Fränkel<sup>1</sup> published an elaborate article, reviewing the cases which had already appeared, and giving the results of his own careful studies. An abstract of his paper will give a better idea of the subject than it is possible to offer in any other manner.

Fränkel believes that our want of knowledge of placental syphilis has been due in a measure to the attempt to include all cases under a single form, and that the portion of the placenta first affected must vary, according as the father is alone syphilitic, and according as the mother contracted syphilis before conception or shortly after;<sup>2</sup> and finally, that the fetus can be but little, if at all, affected if the mother contracts the disease late in pregnancy.

Virchow admits two forms of placental affection:

Endometritis decidualis.

Endometritis placentaris.

To these Fränkel adds a third:

Disease of the villous portion of the foetal placenta.

Fränkel founds his conclusions on the examination of over one hundred placentæ, including those of still-births, those of abortion, and those of mothers having recent or old syphilis. The histories of the father and mother were obtained whenever possible, and a record of the macroscopic and microscopic appearances was kept. The post-mortem examinations of the fetus were made by Prof. Waldeyer and his assistant.

He groups his cases into the following classes:

A. Disease of the villi of the foetal placenta.

B. Mixed form of placental disease, the disease of the villi encroaching upon the adjacent portions of the placenta materna.

C. Disease of the fetus only, without involvement of the placenta.

D. Primary disease of the placenta materna (endometritis placentaris gummosa).

<sup>1</sup> Ueber Placentar Syphilis; Arch. f. Gynæk., Berl., B. V., ss. 1-54, 1873.

<sup>2</sup> It will be seen that Fränkel believes in the transmission of syphilis from the mother to the fetus through the placental circulation, the possibility of which we have denied. We, however, leave Fränkel's views unchanged.