part of the interlocutor the subject's mental calm remains undisturbed.

Muscular Tremors and Inco-ordination.—In a large proportion of cases comprised in this category tremor is a very notable feature, and is usually limited to the tongue, lips, and muscles of the lower facial group; occasionally, but much less frequently, do we find a fine tremor of the hands when the arms are extended horizontally. The tremor of the oral musculature, especially elicited during voluntary movements as of speech or ingestion of food, or during emotional states, would appear to be due to implication of the cortical mechanism of speech, like the corresponding alcoholic tremor of the hands after a night's debauch. We must distinctly sever it from the further symptom of ataxia, which also in certain of these subjects involves the muscles of the same regions, as indicated by the contortions and grimace presented by them in efforts of protruding the tongue, or of whistling, etc. As I shall indicate later, the ataxia thus elicited upon voluntary stimulation of the speech centre is almost certainly due to the implication of the muscular sense fibres of the muscles of articulation, which probably find their termini in this cortical region. Occasionally the ataxia alone presents itself; at times it is associated with much tremor.

It may be noted here that reference to the tables accompanying this article indicates tremor and twitching of the brow muscles in six cases. I have emphasised this fact in my work on *Mental Diseases*, and have long been accustomed to regard the uneasy frowning and twitching movements of the muscles of the brow as specially characteristic of chronic alcoholism, and as indicating when seen the alcoholic factor in general paralysis also.²⁴

Tabetic Cases.—Upon examining these exceptional cases we observe as a notable fact that in each case where the ataxic jerking is recorded we have a tabetic sign as an accompaniment. Thus in one there is the Romberg sign of unsteadiness and swaying upon closing the eyes with feet approximated, and in four others the knee-jerk was absent in all. If we now summarise the features characterising this group we find that they embrace:

Paralytic mydriasis with the Argyll-Robertson sign—exalted deep reflexes, or, in a few exceptional cases, abolished reflexes (much tremor of lower oral group of muscles and tongue in the former; ataxic jerkings in the latter exceptional forms) profound speech troubles, and we may add as mental features much optimism and profound dementia. We shall find it convenient to sever into two distinct groups the spastic and tabetic paraplegic subjects now described.

Associative Iridoplegia.—The above by no means complete our category, for we find a certain small proportion of subjects in which the mydriasis, still paralytic in nature, indicates a different distribution of lesion in the oculo-motor region; the pupil is moderately dilated, fails to react to light either direct or consensual, and also fails to contract upon convergence.

In 6 cases the mydriasis measured as follows in millimetres:

$$\frac{4.5}{5.0} : \frac{6}{3.5} : \frac{3}{3.5} : \frac{-}{4.5} : \frac{-}{5} : \frac{3}{3.5}$$

It is distinctly to be understood that so far as the oculo-motor signs are concerned the Argyll-Robertson sign by no means necessarily terminates in abolished contraction upon convergence. My own experience would indicate that the former sign remains persistent throughout the disease up to its fatal termination; and that where failure of the associated movement (contraction on convergence or accommodation) exists it is met with from the first, and would therefore indicate a topographical significance. In all these cases alike a failure of the usual dilatation upon shading is observed, and this extremely sluggish or fixed state of pupil is only to be explained, according to Mr. Hutchinson, upon two hypotheses:

(a) That neither sympathetic nor retinal incident can produce active dilatation or contraction in the absence of its antagonist.

(b) That the lesion has resulted in paralysing both the fibres of the sympathetic and motor oculi supply.

We have, however, seen reason for doubt as to the implication

of the vasomotor in such cases; as above stated, we should not expect dilatation upon shading, even were the sympathetic intact. Mr. Hutchinson appears to adopt the theory of dual implication (b), and refers the site of lesion to the ciliary ganglion as a crossway for all these fibres; here, he suggests, occurs the degenerative process resulting in this associative iridoplegia. In perfect conformity with this opinion is the fact that such cases (and I can affirm this for general paralysis as for ordinary tabes dorsalis), which fail to respond both to light and convergence, usually run on to an abolition of accommodation also, the ciliary muscle being paralysed. Thus, in two such cases, such cycloplegia presents itself in association with failure of response on convergence and to light stimulus, the pupils being of large size, namely:

$$\frac{6.5}{5.0} : \frac{4.5}{5.0} \text{ mm.}$$

This condition may be described as cycloplegic iridoplegia, or may be termed, after Mr. Hutchinson, ophthalmoplegia interna.

With reference to this point, Mr. Hutchinson remarks: "My suggestion is that when the triad of symptoms is present—inability to use the ciliary muscle, paralysis of the dilating fibres of the iris, and paralysis of the contracting fibres of the iris—without any other form of orbital paralysis, the seat of the disease can be in no other structure than the ganglion itself."²⁵ And further on, in a note, he adds: "My only hesitation on this point is as to whether in some cases the same symptoms may be due to disease near the nucleus of the third nerve. It is not easy, however, in such cases to see why the vasomotor should be affected. I have, however, seen the pupil motionless and accommodation lost in some cases in which the disease was believed to be in this position; always, however, there were other complications."²⁶

It is, of course, possible that such symptoms may result either from this peripheral or from a central lesion; and in the cases quoted by Mr. Hutchinson, it is just as probable that the lenticular ganglion was the site of implication, as it is that in the forms of ophthalmoplegia interna prevailing in general paralysis the lesion is a nuclear one in the extensive segmentations of the third nerve. Nor does it appear to me improbable that so extensively segmented a tract as that presented by the motor oculi nucleus should have very close, though as yet undetermined, connection with the vasomotor tract. Given this latter, and we have a full explanation of cycloplegic iridoplegia in general paralysis (which, moreover, is usually double) from degeneration of the third nerve nuclei in the upper quadrigeminal region. We shall see reasons for accepting both positions in our consideration of these cases which comprise our second group.

(To be continued.)

THE HUNTERIAN LECTURES

ON

INFANTILE SYPHILIS.

Delivered at the Royal College of Surgeons of England.

By J. A. COUTTS, M.B.CANTAB., M.R.C.P.LOND.,

Professor at the College, and Physician to the East London Hospital for Children, Shadwell.

[ABSTRACT.]

AFTER some introductory remarks, in which he referred to the conflicting opinions which had been held as to the nature, and even as to the occurrence of inherited syphilis, Hunter having denied it, Dr. Coutts proceeded to discuss the influence of either parent, both as to the transmission of the disease and as to its severity.

THE INFLUENCE OF THE FATHER.

After quoting published statistics as to the apparent immunity in most cases of the mothers of syphilitic infants, he said: "I have collected notes from my out-patient

²⁵ On Paralysis of the Internal Muscles of the Eye (Ophthalmoplegia Interna), *Medico-Chir. Trans.*, vol. lxi., p. 216.

²⁶ *Loc. cit.*

²⁴ *Op. cit.*, p. 326.

practice at Shadwell of 100 families where the mother presented no signs of syphilis and the disease in the infant was presumably derived from the father alone, and a similar number where the mother was unmistakably syphilitic. They are, of course, subject to the disadvantages attaching to notes gathered from patients actually brought for inherited syphilis, and that they refer to infants born at widely differing periods from the times of primary infection. Subject as they are to these sources of vitiation, they are still not without interest. In the first set, where the mother was apparently free from syphilis, there had been 563 pregnancies, resulting in 187 abortions, 193 children who died early, and 183 children still living. This gives the high mortality of 56.6 per cent., but poverty and other factors are probably as much responsible for it as syphilis when dealing with East-end babies. But the mortality amongst affected infants by no means adequately gauges the evils of syphilis on the offspring. Its responsibility for death of the foetus *in utero* and the harm wrought by it in infants who survive must also be taken into account in this respect. Fournier, reckoning up the number of abortions and the number of infants attacked by inherited syphilis, and comparing their sum with the total number of pregnancies, has deduced what he terms 'indices of harmfulness' (*nocivité*) for parental syphilis. This 'index of harmfulness' when the father alone is syphilitic he places at 37 per cent."

As an instance of the long persistence of the father's influence he quoted a case in which the fourteenth pregnancy, sixteen years after the incurrance of syphilis, resulted in a tainted infant.

THE INFLUENCE OF THE MOTHER.

After stating that Fournier's estimate of the "index of harmfulness" where the mother alone was infected, which he had put at 84 per cent., was probably too high, Dr. Coutts turned to consider the case of both father and mother being syphilitic, and after quoting published statistics he said:

"From my notes of 100 families where the mother was syphilitic, and in the vast majority the father syphilitic also, I gather the following statistics. In these 100 families 539 pregnancies resulted in 189 abortions, 203 infants who died early, and 147 living children. This gives a mortality of exactly 58 per cent., a result not differing greatly from that obtaining in my cases where the father alone was affected. Fournier's index of harmfulness rises to 92 for the mixed type of inheritance. The statistics as a whole," he continued, "showed indubitably that maternal syphilis is more deleterious as regards the offspring than a paternal one, and that the mixed type is the most serious of the three. The extra severity of the one type over the other, however, is, I believe, entirely exercised upon the foetus *in utero*, and has no influence after birth. The greater severity upon the foetus of a maternal syphilis over a paternal one is due, probably, to the reason unusually assigned for it, the deleterious influence of the vitiated maternal fluids upon the foetus *in utero*; and the slight increase in the mixed parental type over the maternal one is possibly owing to a greater certainty and frequency of transmission."

Practically, however, when an infant was brought for treatment, the source of the syphilis, whether paternal or maternal, did not affect the prognosis. The fact that of twins one might present evidence of inherited syphilis and the other not proved that there was no imperative necessity that the foetus should become infected by its mother's blood, and cases in which the foetus was infected by syphilis acquired by the mother during that pregnancy were rare.

SYPHILIS BY CONCEPTION.

"Syphilis by conception," he defined as the syphilis supposed to be acquired by a healthy mother by means of the tainted blood, returned to her through the placenta, from a syphilitic foetus infected by the sperm of the father—a "syphilis by return shock," as Diday calls it. The term implied an escape of direct infection of the mother by the father, and that her syphilis was solely and entirely due to the fact of her conceiving. The theory rested upon the immunity to syphilis displayed by mothers bearing affected infants. Such immunity did not necessarily imply that the mother had passed through an attack of the disease. Accepting the

view that syphilis was a germ disease, recovery might be assumed to be due to the production of a chemical immunising substance. The foetus infected at fertilisation would produce this antitoxin, which would be absorbed by the mother, who would thus gain immunity. He suggested further that "in the case of a first conception the absorption of the 'antitoxin' by the mother, and its consequent diffusion through the two circulations, may be detrimental to the foetus, and to some extent explanatory of the more untoward results of first syphilitic pregnancies; but in succeeding pregnancies the mother's 'antitoxin' would act upon the foetus from the start, and with much more marked effect. With each pregnancy the amount of antitoxin in the mother would be increased, and it may be that its accumulation would be sufficient to cure the disease in later conceptions, although all the time the father transmit in full. Such a theory would seem to me fairly explanatory of the extra severity of the complaint in the first infant in a family, the lessening severity in each successive infant, and the final disappearance of the complaint in the latest one. It would also account for the greater severity *in utero* of a mixed parental or maternal syphilis over a paternal one."

CONGENITAL MARASMUS.

Turning next to the symptoms of inherited syphilis, he dwelt especially upon the power of the disease to produce a condition of atrophy which might be the earliest symptom, or might appear as late as the third or fourth month. In these infants there might be no other evidence of syphilis, either because no other symptoms had been produced, or because the snuffles and rash had been too slight to attract attention. In such case there was atrophy of the secretive and absorptive surface of the intestinal tract, and fatty liver, so that food was not assimilated. It was probably for this reason that mercury was of little use in syphilitic infantile marasmus.

INITIAL SYMPTOMS.

There was a general agreement that in the majority of cases symptoms appeared in the second month of life, and that their primary manifestation was exceptional after the third month had expired. The common expression of a relapse in the later months was the appearance of mucous tubercles. Initial symptoms might, however, appear as late as twelve months after birth. After referring to the symptoms and causes of "snuffles," and pointing out the necessity for distinguishing between the syphilitic disorder and the acute coryza of infants which had been described by Henoch, Dr. Coutts discussed the various forms of lesions of the skin, following in the main the classification and descriptions of Dr. Radcliffe Crocker, laying special stress, however, on the diagnostic importance of "syphilitic furuncle" described by Dr. Barlow, an indolent cutaneous swelling with a purplish colour which contained a scanty secretion of ill-formed pus.

VISCERAL DISEASE.

In 100 cases of inherited syphilis Dr. Coutts had found enlargement of the spleen in 63, while in 19 others it was probably above the normal in size. This was a larger proportion than that given by Dr. Gee (45 per cent.). The enlargement dated usually from birth. There was nothing specific in the enlargement, which was due to a simple hyperplasia, and seldom attained a large size. Enlargement of the liver—less easily recognised—also dated from birth. It was due to an interstitial hepatitis, accompanied by some atrophy of the cells, destruction of blood vessels, and thickening of the capsule. Ascites was rarely produced, but jaundice was much more common, and was generally fatal. Marked enlargement of the liver and spleen was an unfavourable element in prognosis.

BONE LESIONS.

After discussing the conflicting opinions as to the occurrence of epiphysitis, he said that it only called for clinical consideration in exceptional instances. In its milder forms it could sometimes be diagnosed by the pain elicited by pressure over the epiphyses of the long bones, more especially the lower ones of the humeri and bones of the forearms. But pain was no necessary accompaniment of syphilitic epiphysitis; and there might be considerable swelling of the epiphyses of several bones with no obvious sensory dis-

turbance. This swelling of the epiphyses, with or without pain, as the lesion giving rise to it was a congenital one, might appear in infants of any age. When the enlargement of the epiphyses was of any considerable size, however, it usually occurred in infants of from three to six months old, but was rare after the latter age. Suppuration of epiphyseal disease of the long bones was rare in infants under a year old. "In older children," he continued, "suppuration over the ends of the long bones is, perhaps, commoner than in young infants, owing possibly to walking and other uses of the limbs proving prejudicial to a previous epiphysitis not entirely cleared up. A symmetrical suppurative epiphysitis in children between 1 and 3 years old is to me sufficient to warrant a strong suspicion of syphilis for its causation. In contradistinction to the case of the long bones, suppuration arising from epiphysitis of the phalanges, 'syphilitic dactylitis,' is not very rare."

ACQUIRED SYPHILIS.

After quoting the differences between inherited and acquired syphilis in the child, as enumerated by Kassowitz, Dr. Coutts said: "As far as my experience goes the commonest eruption in acquired syphilis in infants, as in adults, is the well-known roseola and its usual distribution, the same at all ages, namely, the front of the chest, the abdomen, and to a less degree the flexor aspects of the limbs. This syphilitic roseola, admittedly rare in inherited cases, was the form of eruption in seven out of my eight cases. In the remaining one, an infant that had acquired a chancre on the back of the neck from kissing by a syphilitic aunt, and that had in its turn given its mother a chancre on her breast, a universal small pustular eruption broke out all over the body. Along with the rash, too, in most of my cases I found a condition of throat identical with that occurring in adult syphilis; this is in marked contrast with what happens in the inherited form, where the throat remains, as a rule, unaffected. The chief peculiarities of the symptoms, however, in acquired syphilis in infancy are the scantiness and evanescent nature of the eruption, which may be easily missed, and the subsequent early and luxuriant growth of condylomata." He insisted upon the importance of recognising that in acquired syphilis in infants a chancre must occur. In connection with charges of the conveyance of syphilis by vaccination this was a most necessary point to bear in mind.

INFECTION IN INHERITED SYPHILIS: COLLES'S LAW.

After referring to the opinion strongly expressed by Colles, and by Diday and other French observers, to the effect that inherited syphilis was eminently infectious, Dr. Coutts quoted the experience of the Shadwell Hospital for Children, covering many thousands of cases drawn from a class in which syphilitic babies were often indiscriminately suckled by other women than the mother and kissed and fondled by many other persons. Only five examples of the incurrence of syphilis could be discovered, and of these four would fall into the category of exceptions to Colles's law that a mother was not infected by her own syphilitic infant. "That inherited syphilis," he continued, "is occasionally contagious is certain, but it is equally certain, I would contend, that the virulence of such contagion has been grossly and vastly overestimated. It is impossible to reconcile the experience of certain French writers in this respect with our experience in this country, even when the greater frequency of wet nursing in France is fully admitted. There are certain reasons, or suggestions rather, by which I think the infrequency of the contraction of syphilis from infants suffering from the inherited complaint can be partially explained. The syphilis in such infants, it must be remembered, dates from conception and not from birth, and at the age at which symptoms appear such a syphilis is generally of about a year's standing, and may have lost some of its pristine virulence during both uterine and extrauterine existence. In marked contrast to the rarity of infection from inherited syphilis is its frequency from the acquired form in infants. Only one instance is within my personal knowledge where a syphilis acquired by an infant was not communicated to one or more persons brought into contact with the child. Numerous instances are on record, from the time of Ambroise

Paré onwards, where infantile acquired syphilis has been the cause of severe outbreaks amongst relatives and friends. Recently I learnt of one in the East of London where acquired syphilis in a child spread to five others in the same family besides strangers. Colles's law," he continued, "in reality consists of two separate parts, the one that the mother of an infant with inherited syphilis cannot contract the disease from her own child, and the other that such an infant would almost infallibly contaminate a healthy wet nurse. The fact of the inclusion of this second proposition is generally forgotten by writers contending for the absolute validity of the law. In dealing with the contagiousness of inherited syphilis, I endeavoured to show that this part of the so-called law is far from true. It may well be, then, that the main safety of the mother lies in the little liability of the infant to transmit the disease rather than in some protective quality residing in herself, due to the fact of her having borne a syphilitic infant. For my part, I think both such factors possibly conduce to the safety of the mother. Is the first part of Colles's law absolute? Has an infant with inherited syphilis never contaminated the mother? In Colles's own practice, and in those of others since his day, cases have from time to time occurred which were apparently exceptions to the law. Some of these cases are so imperfectly recorded that discussion of them is hardly called for. Others, on the contrary, Dr. George Ogilvie writes, 'are as conclusive as any recorded clinical facts can be.' Fournier, somewhat grudgingly it would seem to me, admits the validity of some such cases, and he would appear to regard the subject of exceptions to Colles's law as of little practical importance on account of their extremely exceptional character. Mr. Hutchinson has lately stated that he not only admits the possibility but the probability of these exceptions. I am the more pleased at this admission in that it places him in accord with Fournier and other authorities in the matter, and that it is also in some sense a further justification for the belief in myself and others that we have actually met with exceptions to Colles's law. Mr. Hutchinson's sole contention is, I believe, that as yet no exceptions have been recorded worthy of trust. I am unwilling to differ from him, but I must state my conviction that Dr. George Ogilvie's admirable paper at the Royal Medical and Chirurgical Society is conclusive on the point. Granted the possibility of exceptions to Colles's law, ought such eminently infrequent occurrences to largely modify our practice in allowing apparently healthy mothers to suckle tainted infants? Personally, I should say decidedly not. If ever legislation for the many to the detriment of a limited few is justifiable, the case in question calls for it. Following in the same path as Hænoch, the only limitations I would place on suckling by mother or wet nurse would be the presence of excoriations on her nipples and that of ulcerations or fissures about the mouth of the infected infant.

CIRRHOSIS OF THE LIVER AND ICTERUS OF FOUR YEARS' DURATION.

WITH REMARKS ON BILIARY CIRRHOSIS.

By F. PARKES WEBER, M.D.,
Physician to the German Hospital.

THE case may be shortly given as follows:

Mrs. M. L., aged 55, suffered from jaundice for about the last four years of her life. There seems to be no doubt that the jaundice had really lasted all this time, though the history regarding the symptoms at the commencement is defective. Apparently there had been no definite biliary colic, but pain in the left side. She had never had jaundice previously. She had had no children and no miscarriages. There was no history of syphilis or alcoholism (?). A friend connected the onset with mental troubles following her husband's death. I first saw her in November, 1894, at which time she had already been jaundiced for about three years; she was admitted from the out-patients at the German Hospital by Dr. J. P. Zum Busch, then senior resident medical officer, who having watched the case for two years, considered it to be one of hypertrophic cirrhosis, due to some obstruction in the bile ducts. At that time the jaundice was deep, and she had xanthelasma palpebrarum, and a diffuse xanthoma of the skin over large areas at both sides of the neck; the affected skin in the neck was not raised above the general level, whereas the affected portion of the eyelids was, as usual, somewhat raised above the skin around. The liver appeared to be hard, and uniformly much enlarged, the dullness extending from the fifth rib to the umbilical level. The spleen was not felt distinctly. There was no ascites, but some oedema about the ankles was noticed. The patient had no pain