circumstances had been wanting, I ask who could have formed (except possibly in the third), in any of these cases a judgment even approximating a correct diagnosis? In the physical evidence there was nothing distinctive; nothing but the *remedy* brought proof as to the nature of the disease. If antisyphilitic remedies had not been used, what would have become of these patients? There rests upon my mind the deepest conviction that all would have died. Let us reflect. Will it not be admitted by every practitioner in the country that syphilis ramifies under thousands of veiled and obscure forms into the great mass of society? Does it occur to any physician in treating disease, to inquire—"Have you ever suffered under constitutional syphilis?" (for primary syphilis I entirely exclude.) Think of the diseases of the eye which Mr. Jonathan Hutchinson has brought into notice in connection with this subject! When the history of the syphilitic poison is better known than it is at the present time, it is certain that Mr. Henry Lee will have to withdraw the remark "that the syphilitic poison in a very great majority of cases produces its principal effect upon the skin." The child who dies of constitutional syphilis does not die of the skin affection of which it is the subject, but of the operation of the virus upon the internal vital organs of the body. The time will assuredly come when many diseases, which are now supposed to be classifiable under the category of ordinary non-syphilitic diseases, will be referred to their right causes. In hundreds of cases of death which in this country occur every year under a syphilitic taint, it is my firm conviction that death takes place not from disease of the skin, but from a general contamination, poisoning of the body, in which the blood, nervous system, all the vital organs, every tissue in the body are affected, even though the skin may show no signs of disease. In me it would appear presumptuous to say anything on any of several important points in connection with this subject. I leave them to those zealous men more favourably situated than I am. But I will put questions which, as far as I know, have never been asked before, and which I hope will evoke an answer from some one of those experienced observers in connection with the large lock hospitals of the country, who are so much more able than myself to afford the information required.

1. Is it possible to prove by credible data that a person who has once become the subject of constitutional syphilis, throughout after life, in all diseases under which he may suffer, is benefited more by antisyphilitic or special remedies, than by those which apparently under the same morbid conditions suffice to effect a cure in persons who have never been the subject of syphilis?

2. Are there any one or more signs which may be received in the present state of our knowledge, as proofs that the system is still subject to or radically purified of the syphilitic taint, in a person who has once been the subject of constitutional syphilis?

If it were possible to determine these questions in relation to syphilis, the solution of similar questions in relation to other diseases would soon become practicable.

Are we in a position in the present state of knowledge to declare that every germ of constitutional syphilis, once planted in the system, is capable of being thoroughly, radically, and for ever, beyond all possibility of recurrence, extinguished? Numerous cases which have been brought under my notice during the last ten years compel me to answer—No: we are not in that position. One invasion of constitutional syphilis establishes a "diathesis," that is, a peculiar tendency to a special form of disease in any or every part or organ of the body, which may manifest itself in the system of the affected person for at least very many years afterwards. Under an apparent absence of all disease, the subtle taint exists, though veiled and concealed by the

deceptive garb of health, and may be communicated by the parent to the child. Now, here the question of diathesis (i.e., a latent vital power which is capable of imparting a special direction to all morbid processes which may occur in the body during the period of its prevalence), is brought in the clearest and most incontrovertible manner within the satisfactory bounds of direct demonstration. In the cure of constitutional syphilis, the chief indication should obviously be not alone to remove an outward disease or sign, but permanently to correct the diathesis. In those cases in which I know that secondary symptoms have happened, I strongly advise a *periodical recurrence* to the use of antisyphilitic remedies for years after the first outbreak of the disease. If a second vaccination can do anything, it must be that it intensifies the protective power of the first. A second, a third, or a fourth repetition of an antisyphilitic "course of medicine" will only augment the force of the guarantee afforded by the first. The system of the patient must necessarily be *more certainly* in a purified state after the second than after the first use of special remedies. Mercury does little constitutional harm, if administered endermically as recommended by Mr. Lee and Mr. Parker. Iodide of potassium is far more rapid than mercury in the cure of secondary syphilitic disease; but mercury is positively required to destroy and eradicate the syphilitic diathesis or taint. After the former, the disease will manifest itself again and again; by mercury, when properly administered, it is believed by many able men that it is curatively and permanently uprooted.

MEDICAL PSYCHOLOGY.

By ROBERT DUNN, F.R.C.S.E.

III. On the Psychological Phenomena or Symptoms of Disease.

[Continued from page 358.]

Cerebritis and Pressure. There is, however, a form of delirium and coma dependent upon other and very different pathological conditions, and which it is of the utmost importance in practice to recognise and detect. I mean the *delirium* which is manifested in inflammation of the superficies of the brain and its investing membranes, and the *coma* that is caused by compression of its substance, whether from the effusion of blood or of serum. Inflammation of the superficial cerebral substances, and of the meninges of the brain, is a fearful, but happily, in adult life, a most rare disease. In the traumatic form, it is occasionally met with; and sometimes, idiopathically, among children of a strumous habit. While I agree with Dr. Abercrombie that it is impossible to separate, either in diagnosis or treatment, inflammation of the arachnoid and pia mater, I am quite of Mr. Solly's opinion, that it is equally as impossible to diagnose inflammation of the membranes from that of the superficies of the brain. Nor need this be a matter of surprise, seeing that no part is more abundantly supplied with blood-vessels. "The pia mater, which lies in contact with the whole of the undulating surface of the convolutions, is a membrane of blood-vessels, from which innumerable minute vessels penetrate the vesicular matter. A piece of this grey matter of the convolutions, successfully injected, appears perfectly red, from the multitude and proximity of these blood vessels." Dr. Abercrombie, in my opinion, justly considers the *phrenitis* of former writers to be *meningitis* or inflammation of the membranes of the brain, and "as characterised by fever, watchfulness, acute headache, impatience of light, suffusion of the eyes, and maniacal delirium."

Out of a number of well-marked cases of inflammation

of the brain and its membranes among children, which have come under my own observation in general practice, as an illustrative instance, I shall give the particulars of one, and also of a case of coma from pressure, without delirium, and both of which to me, at the time, were alike interesting and instructive.

The first case was one of local tubercular deposit upon the surface of the hemispheres, occurring in a fine, intelligent, but strumous boy, of two years old, who died at the end of six weeks from the time I was called to him. I brought the case under the notice of the Royal Medical and Chirurgical Society, and it is published in vol. xxv of the Society's *Transactions*. My friends the late Dr. Todd and Mr. Bowman were present at the autopsy, and the following is Dr. Todd's account of the *post mortem* appearances.

"The scalp was pale and bloodless, like the rest of the body, which was much emaciated. The dura mater was healthy. The vessels on the superficies of the brain were tinged with dark blood, but there was no subarachnoidal effusion. The arachnoid cavity was natural. On the surface of the right hemisphere of the brain, both under the arachnoid and pia mater, there was a deposit of tubercular matter, in patches of irregular shape and size, but the whole occupying a surface of about two inches square. The deposit was most abundant upon the surface of the convolutions; it nevertheless descended into the sulci between them—a circumstance which proved its connexion with the deep surface of the pia mater. The cortical substance of the brain in contact with the tubercular matter was *reddened* and greatly softened, and, on microscopic examination, evinced a nearly total destruction of the tubules in it; a great enlargement of the proper globules of the grey matter, and of the pigment-granules which adhere to them. The softening extended a slight way into the subjacent white matter. On the edge of the left hemisphere, corresponding to the diseased patch on the right, a slight tubercular deposit had taken place in a similar manner, producing a red softening of the grey matter in contact, but not occupying more than half an inch square in surface. The ventricles contained more water than natural—about double—and did not collapse when laid open. The cerebral substance throughout, excepting at the diseased part, was firmer than usual at the patient's age. The firmness was, no doubt, owing to the compression of the fluid, which probably, at an earlier period of the disease, was more abundant."

In this case, the motor phenomena were peculiar and striking, and induced the belief of the existence of tubercle. When I was first called to the child, he had awoke as usual between six and seven o'clock in the morning, and his mother was alarmed by observing his left hand begin suddenly to twitch and jerk convulsively. The intellectual faculties were not then affected; the child was laughing and talking, and perfectly sensible. He had fallen down stairs fourteen days previously to the attack. On the third day from the first occurrence of the convulsive action of the arm, there was an imperfect paralysis of the hand and arm. On the fourth day, the convulsive jerkings were not confined to the arm, but involved the whole of the left side, with twitchings of the eye and angle of the mouth. As the fits increased in violence, he became excited and delirious, cried and screamed out violently. They were followed by profound sleep for several hours. Towards the close, he continued delirious; his head was hot; face flushed; pulse hurried; pupils dilated; eyes squinting, insensible to light; eyelids constantly open, and only able at times to recognise the persons about him. He sank comatose. Now, the motor phenomena in this case were most probably due, in the first instance, to a local irritation or disturbance in the integrity of that part of the medullary substance of the hemisphere situated immediately beneath the tubercular deposit, and which

had possibly been occasioned by the fall which the child had met with; for at first there was no constitutional derangement nor mental excitement. But with the accession of fever came irritability of mind and temper, delirious excitement and fits of screaming, and an extension of the convulsive movements to the whole of the left side of the body, indicating the spread of the membranous irritation, and the implication both of the grey matter and of the medullary substance in the inflammatory process.

There was a peculiarity—a psychological phenomenon—in this case, which is worthy of record. Both the parents of the child, for four or five months previous to his attack, had been particularly struck with a marked change in his disposition which had been gradually taking place. From being a happy, placid boy, he had become irritable, peevish, and petulant, impatient of control, very determined to have whatever he set his mind upon, and not to be driven from his purpose; in a word, to use their own language, he had become a most *self-willed and obstinate little boy*. So marked, indeed, was this change in his disposition, that it had become a subject of serious consideration with them whether it was to be attributed to some latent disease under which he might be labouring, or to mere infirmity of temper; but, as the child continued to eat, drink, and sleep well, and did not appear to be suffering from any bodily complaint which they could detect, they did not take any medical opinion, but contented themselves with endeavouring to correct, by moral discipline and management, what they were induced to consider rather as an infirmity of the mind than of the body.

Now, it is certainly a significant fact, and worthy of notice, that the tubercular deposit should be found to be situated on that part of each of the hemispheres where Gall and Spurzheim have located their organ of *firmness*; it extended a little, perhaps, beyond the boundary line, especially on the right side, and encroached upon the site of the organ of *self-esteem*. In such a case as this, it is but reasonable to infer that among the first of the morbid effects arising from the tubercular deposit would be an irritating excitement in the grey substance, which would lead to an abnormal development of its functional power; and, as obstinacy is an abuse of firmness, if we associate the change of disposition which had taken place in the child with the structural disturbance induced by the tubercular deposit, we cannot resist the phrenological inference as to the site of the organ of *firmness*. The attempt, indeed, to trace the connexion between structural diseases of particular portions of the substance of the brain, and deranged, impaired, or obliterated manifestations of the mind, however it may be beset with almost insuperable difficulties, is nevertheless one of vast interest and great importance; and, to this end, I cannot suppress my conviction that it is an incumbent duty upon the medical practitioner to make himself thoroughly acquainted with the principles and facts of phrenology, and with the respective sites or localities of the different organs in the cerebral convolutions; and to let no opportunity slip of bringing phrenological doctrines to the test of experience. If I am not greatly mistaken, it is to *post mortem* examinations of the brain, and to pathological investigations, more than to any other source, that we are to look, not for the discovery of normal functions, but for evidence in support or refutation of the dogmata of phrenology. In the case I have related, while the peculiarity of the motor phenomena at the beginning of the attack led to the belief of the existence of tubercle in the brain, the psychological phenomenon, or observed change in the disposition of the child, was the only indication of the local seat of the disease.

The case of coma from compression of the brain was that of a tradesman of middle age, living near to me. I was called to him on Monday, Nov. 12th, 1855; and he

died from coma, at the end of a fortnight. He was a man of a placid disposition and regular habits; but, during the last year of his life, he had, in consequence of filling some parochial offices, been subjected to a good deal of irritating excitement and annoyance. On the Wednesday of the week before I was called to attend him, he first began to complain of pain on the left side of his head. The night previous, he had attended one of those stormy parochial vestry meetings which are not unfrequent, and had been unusually excited. He got about his business, however, as usual, and on the Saturday night took a dose of aperient medicine. On the Sunday evening, he went to church with his wife; but such was the feeling of drowsiness, that his wife assured me he slept the greater part of the service, and very heavily throughout the night afterwards. In consequence of this excessive lethargy, I was sent for on the Monday evening. He then complained of the pain on the left side of the head, and great drowsiness. He was perfectly collected, nor was there any febrile disturbance. His pulse was quiet and regular, but he was heavy and depressed. Leeches were applied to the seat of the pain, and a brisk mercurial purgative was given. I found him the next day about in his business as usual, in better spirits, and not so lethargic; but the day following he became worse, and complained of sickness of stomach, great sleepiness, and depression of mind. He was cupped from behind the left ear to eight or ten ounces, and I began giving him a grain of calomel every four hours. The following morning, finding him in a semi-comatose state, hemiplegic on the right side, with marked rigidity of the muscles of the arm and leg, I had a consultation with Dr. Todd, and the advantage of his assistance in the future treatment of the case. It was a point of discussion between us, whether the symptoms were due to the pressure of a superficial apoplectic clot, or to a patch of inflamed brain on the left hemisphere. I had looked upon the symptoms from the first as indicative of pressure, but Dr. Todd had a leaning towards the latter condition. We agreed, however, to push the mercury to salivation, and to keep up counter-irritation by blisters. Under this treatment, for six or eight days, he appeared gradually to improve. He recovered his consciousness, although retaining a certain degree of somnolency; the paralysed limbs regained a greater degree of power; and the muscles became less rigid. We looked hopefully forward as to his ultimate recovery; and, as the gums had become affected, thought that the mercury was telling for good. But our hopes were short-lived. A sudden relapse into continued lethargy, with paralytic symptoms in a more severe form, ended in profound coma, under which he succumbed.

At the *post mortem* examination, we found a considerable apoplectic clot on the surface of the left hemisphere, causing a deep indentation on the convolutions, which did not disappear when the clot was removed, such was the degree of pressure on the cerebral substance. On cutting through the clot, it was seen to consist very distinctly of two portions, one brownish in colour, and looking old; the other consisting of dark currant jelly-like coagulum, which had only been recently effused. Thus it was evident that the original cause of the symptoms was a meningeal effusion of blood compressing the brain to a very great extent. The shock which the brain had received at the first effusion of blood having subsided, and the watery part of the coagulum having been absorbed, a restoration of consciousness and a general improvement in the other symptoms took place. These, however, gave way before the second hæmorrhage, which led to the fatal issue.

Dr. Burrows, in his valuable *Lumleian Lectures*, delivered at the College of Physicians in 1843, and which I had the pleasure of hearing, has proved to demonstration that the blood in the brain is a *varying quantity*;

and has shown that in certain diseases of the heart, even where there is no evidence of any deterioration in the quality of the blood, the disturbance of the balance in the cerebral circulation occasioned by the embarrassed action of the heart is a frequent cause of delirium. But, in cases of gout, the delirium is greatly aggravated by the circulation through the brain of an impure and impoverished blood with diminished force; for, as Dr. Todd has well observed, "the cerebral battery being excited by a thin watery blood, deficient in its colouring matter, and perhaps also in some other of its staminal principles, and which at the same time contains a poisonous element, it is easy to understand how it will exhibit more rapid and active chemical and physiological changes; and, consequently, will develop the nervous force with a rapidity and force which disturbs the mind, exciting repeated and irregular acts of thought, and refusing to be controlled by it. In gout, and especially in the more aggravated cases, as in asthenic gout, we have a deranged state of the blood—a poorness of blood, from deficient colouring matter; and a poisoned condition, by lithic acid, or whatever other material it may be which forms the *materies morbi* of this disease."

There can be as little doubt that an anæmic condition of the brain gives rise to delirium, as that a sudden stoppage of its circulation is followed by syncope and coma. There was a time, indeed, when delirium was considered an unerring sign of inflammation of the brain, and when pressure was thought to be the chief, if not the sole, cause of coma; but now every obstetric practitioner must give his adhesion to the doctrine of Dr. Marshall Hall, "that *loss of blood* is by far the most frequent and influential source of delirium and coma in the puerperal state". "If a woman", says he, "has a profuse hæmorrhage after delivery, she will probably have a distressing headache, with throbbing in the head, noises in the ears, a colourless complexion, and a quick, weak, often thrilling pulse, all which symptoms are greatly increased by any exertion." He adds: "I have seen blood taken away from the head, and it has afforded relief for a few hours; but then the headache, throbbing, noises, have returned worse than ever. The truth is, that this is the acute stage of what in a minor degree and in a more chronic form occurs in chlorosis, by which I mean pale-faced amenorrhœa, whether at puberty or in after life." There is abundance of evidence that delirium is but too often the consequence of an *excessive loss of blood*, and that an inadequate supply to the brain is as surely to be followed by coma.

To Dr. Marshall Hall and Dr. Gooch we are also indebted for pointing out the true nature of a comatose condition arising from *exhaustion*, with which every general practitioner is so familiar, but which had previously been thought to be occasioned by inflammation and effusion. It is chiefly met with in infant life, and has accordingly been designated by Dr. M. Hall "an *hydrecephaloid* affection of infants, arising from *exhaustion*"; but it is not confined to the period of infancy. He divides the affection into two stages—"the first, that of irritability; the second, that of torpor. In the former, there appears to be a feeble attempt at reaction; in the latter, the nervous powers appear to be more prostrate." If improperly treated, by leeching and purgatives, instead of nourishment and cordials, "the countenance becomes pale, and the cheeks cold; the eyelids are half-closed; the eyes are fixed, and unattracted by any object placed before them, the pupils unmoved on the approach of light; the breathing, from being quick, becomes irregular and affected by sighs; the voice becomes husky; and eventually the strength of the little patient has been subdued, and the vascular system exhausted, by the abstraction of blood."

Now we have seen in what a large class of diseases, and how in all cases involving a deterioration or poison-

ing of the blood, quite independently of that dire affection, inflammation of the brain and its membranes, the mental phenomena of delirium and coma are so frequently if not constantly developed, in varying degrees, but closely associated in the sequence of effects or consequences. Here a correct diagnosis is of paramount importance in respect to the treatment we ought to pursue. It makes all the difference whether the delirium is due to inflammation of the cerebral substance, or to mere functional excitement; for, I would ask, how can the delirium or coma of the pale-faced chlorotic, or where uterine hæmorrhage has been excessive, be benefited by any form of depletion? And, again, how can the morbid element in toxic delirium or coma be eliminated from the system by blood-letting, local or general? Mr. Solly has well observed, "that one of the most important laws of vital action, which pathology has unfolded to us in relation to the nervous system, is this—that the first effect of the first stage of inflammation of *neurine* is to excite and exalt to an unnatural degree exactly the same kind of power which we have reason to believe resides in it in a normal state. For instance, the first effects of inflammation of the surface of the brain is to excite the mental faculties, to produce great irritability of temper, and constant restlessness or desire for action. If the inflammation be arrested at this point, the patient recovers his reason; but if it pursues its ravages undisturbed, limiting its destructive effects to the spot where it commenced, without extending to that portion of the brain which is beneath it, it *annihilates the intellect*, but does not affect the muscular system; while, on the other hand, if the inflammation extend farther, reaching the instruments by which the will travels to the muscles, it produces *convulsive action* on those muscles, which afterwards become paralytic; in this case, the integrity of the *neurine*, through which volition traversed to call these muscles into action, is comprised, and its power, therefore, as an instrument for the production of voluntary motion, destroyed." (Solly on the Brain.)

I cordially agree with him in ascribing the mental disturbance, excitement, excessive pain, intolerance of light, delirium and insanity, which have been observed as the diagnostic marks of inflammation of the arachnoid and pia mater, not to a simple lesion of either a serous or vascular membrane, but to the *injury* which that portion of the brain that is in contact with these membranes has received from the inflammatory process; and still farther, that "the condition of the intellectual faculties has not hitherto been sufficiently attended to, as a part of our chain of evidence, when we attempt to diagnose affections of the brain."

[To be continued.]

SNAKE-BITES. Underwood, the discoverer of a supposed antidote for snake-bites, died near Melbourne (Victoria) on the 28th December. For some time past public opinion has been divided as to the efficacy of the discovery, and the death of Underwood from the effect of a snake-bite, after the application of his so-called antidote, has settled the question in favour of the non-believers in it. Underwood has for some time past been in the habit of exhibiting snakes in and around Melbourne, and tempting the reptiles to bite either himself or his little daughter, in order that he might apply the antidote, and publicly test its goodness, and it was at one of these disgraceful exhibitions, at the bar of a public-house, that Underwood met with his death. This is the second victim of the fallacy of these supposed discoveries, and the jury at the coroner's inquest, in returning their verdict, expressed an opinion "That persons ought not to be allowed to exhibit poisonous snakes, and allow themselves and others to be bitten." Underwood was 57 years of age, and was formerly a prisoner of the Crown. (*Melbourne Age*.)

Reviews and Notices.

THE PATHOLOGY AND TREATMENT OF PHEGMASIA DOLENS, AS DEDUCED FROM CLINICAL AND PHYSIOLOGICAL RESEARCHES; being the LETTSOMIAN LECTURES IN MIDWIFERY, delivered before the Medical Society of London during the Session 1861-62. By F. W. MACKENZIE, M.D., M.R.C.P.L.; Fellow and Member of the Council of University College, London; etc. Pp. 131. London: 1862.

DR. MACKENZIE, having been chosen last year to deliver one of the Lettsomian courses of lectures before the Medical Society of London, selected as his theme the Pathology and Treatment of Phlegmasia Dolens—a subject, to the elucidation of which he is well known to have for several years devoted much labour. His views regarding the disease referred to were first laid before the profession in a paper read before the Royal Medical and Chirurgical Society in 1853, and published in the thirty-sixth volume of the *Medico-Chirurgical Transactions*. Many of the facts formerly brought forward by the author are repeated in the present lectures; but here clinical observation, rather than physiological research, is put in the foreground, while the reverse was the case on the former occasion.

The first lecture is on the Pathological History of Phlegmasia Dolens. Here Dr. Mackenzie gives a summary of the views which have been held as to the nature of the disease, and describes its local characters, its etiology, symptomatology, and morbid anatomy. The theories which ascribe the phenomena of phlegmasia dolens to crural phlebitis, or to suppression of the lacteal or lochial secretions, or to injury, inflammation, or any peculiar state of the uterine system, are, in Dr. Mackenzie's opinion, untenable. Regarding phlebitis especially, he adopts the following conclusions:—

"1. Crural phlebitis, in a pure and uncomplicated form, cannot give rise to all the local and general phenomena of the disease, and therefore cannot be its proximate cause.

"2. Phlebitis itself is, for the most part, not a primary, but a secondary affection; and, in a great majority of cases, is a consequence of the circulation of impure or morbid blood in the veins.

"3. The proximate cause of the disease is, therefore, presumably, a morbid condition of the blood, which I have experimentally shown to be capable of producing, not only the lesions of the veins met with in the disease, but all its other phenomena." (P. 6.)

These three conclusions, in fact, contain the pith of Dr. Mackenzie's views on the pathology of phlegmasia dolens.

In speaking of the etiology of the disease, and of the conditions which may give rise to its production, Dr. Mackenzie shows that it is not of necessity dependent on the puerperal state; for its occurrence has been noticed in non-puerperal females. Among the cases of this kind which he has collected,

"In one series, the attack was found to follow upon, or to occur during, the course of some ordinary fever. In another series, it occurred in connection with local inflammation or disease of the pelvic organs. . . . In another series of cases, the attack followed upon exposure to cold. . . . In a fourth series, the attack oc-