to guide a needle-headed stylet armed with a ligature. In order to avoid injuring the nerves and veins which accompany the artery, the instrument conducting the thread should always (M. DUPUYTREN observed) be introduced between these parts and the artery. The operator now drew the ligature gently, and the pulsations of the tumour immediately ceased: they returned on the ligature being relaxed. Being now certain that the injured vessel was comprised in the ligature, it was drawn tight and fastened with two simple knots; the wound was then cleaned and its edges were brought together by a bandage. M. DUPUYTREN advised not to dress the wound definitively, until it was certain that the small artery would not furnish any hemorrhage. During the whole period of the operation the patient never uttered a single cry, a circumstance showing that the nerves were not included in the ligature. Although a ligature was applied in the present instance with much facility, we could not prevent ourselves from feeling a little uneasiness for the patient: the caliber of the artery was very small, and it was possible that two brachial arteries existed, as we had once occasion to remark, and communications might thus exist between the superior and inferior ends of the vessel. The vein was very large and tense: and as this appearance did not depend on any compression, it was to be feared that a small narrow opening between the artery and vein, too small to produce a bruissement, existed. No symptom, however, of such a communication appeared during the operation. For ten days compression was employed by means of a pyramidal compress, after which the dressings were removed to examine the tumour; it had diminished a little, and did not pulsate in the least. Five days later the wound was nearly united, with the exception of the point through which the thread was to be discharged; in short, everything announces that the operation will be followed by success.

(To be continued.)

NEWS FROM AMERICA.—ANOTHER SERPENT.—A paragraph has been going the round of the English papers stating, that a serpent several feet in length had lately been enticed out of the stomach of a man in America, by a physician of that country. The seduction of this serpent from its deep abode is not very wonderful. Lies are easily manufactured for the greedy lover of the marvellous.

CONTRIBUTIONS TO PATHOLOGY.

No. V.

By JOHN ALEXANDER, M.D., Manchester.

THE CEREBRAL PATHOLOGY OF CHILDREN.

(Continued from page 930, last Volume.)

ALTHOUGH acute hydrocephalus, from the very constitution of the human race, must have existed at all periods of time, in the early records of medicine there are few observations to be found which indicate anything approaching to a familiarity with that important disease. A circumstance so singular must probably be referred to the difficulty which has ever attended the diagnosis of infantile cerebral disorders; and the few post-mortem examinations which the first cultivators of medical science are known to have enjoyed.

In later days the attention of Morgagni, Reush, Schenck, Haller, Blackmoor, and Petit, was successively awakened to the malady; but as to its intrinsic nature, causes, and treatment, little was distinctly known previous to the researches and writings of Paisley, Whytt, and Cheyne. To these last-mentioned cultivators of pathology we are undoubtedly indebted for the first distinct views of this interesting disorder. Nor in the grateful enumeration of those who have contributed to our knowledge of acute hydrocephalus, should Dr. Golis of Vienna be forgotten. His splendid monograph on the complaint, translated by the late lamented Dr. Gooch, will, I feel convinced, be regarded by posterity as one of the most valuable contributions ever offered to practical medicine. But to proceed.

Infantile encephalitis, or acute hydrocephalus, is essentially a disease of early life. In a paper, written by Dr. Mills, a short time ago, the details of twenty cases, terminating fatally, are published; and, from that paper, it appears (in reference to the ages of the several children) that twelve of the twenty died before attaining the sixth year; seven between the third, sixth, and eighth years, and one at the age of twelve. The truth is, hydrocephalus is observed both at the early and late periods of childhood. Indeed, the sudden deaths occurring to very young children are more referable to this disorder than is generally imagined; and, on the other hand, examples of acute hydrocephalus are occasionally observed, even after the fifteenth and twentieth year. In the very young the disorder sometimes runs its course, or rather, I should say, proves terminal of

existence, in as many hours as it generally continues days in those of a more mature age. It is of all infantile complaints the most common and the most fatal. According to Dr. Coindet, twenty thousand children annually die from its ravages in France; whilst on reference to the annals of the Universal Dispensary in London (published by Dr. Davis) it appears, that of every forty-five cases, terminating unfortunately, no fewer than eight are distinctly referable to this source of mortality.

Acute hydrocephalus I shall venture to define as, a specific inflammation of the brain, leading to serous or lymphatic effusion. This malady presents three stages, a *congestive*, an *inflammatory*, and an *effusive* state. Some writers, Dr. Golis, for example, add a fourth, or stage of *palsy*, which, I apprehend, is better omitted, as it frequently happens that the child dies before any paralysis is observed; and, moreover, when present, the phenomenon is a mere effect unconnected with the causation of the disorder, and, therefore, only to be regarded as a morbid symptom consequent upon the disease. The three stages mentioned are those most frequently observed, and those through which, in the majority of cases, the child passes; but it is occasionally noticed that distinct inflammatory symptoms constitute the first evidence of the child being ill, as it does, sometimes, doubtless, happen, that an effusive state has supervened without a preceding inflammatory or even congestive one. We see an example of the former in metastasis of various affections, which, suddenly leaving their original site, fall upon the brain; and, as to the latter, in young infants, observation has convinced me that effusion does occasionally take place without the occurrence of the usual preceding morbid affections. Dr. Golis has called this latter, or suddenly effusive form of hydrocephalus, by the expressive name of the "water stroke." "To it," remarks that writer, "belong all those depositions on the brain which arise from small-pox, measles, erysipelas, and other febrile eruptions; and also those convulsions which follow the sudden cessation of chronic or habitual discharges, the repulsion of chronic eruptions, as crusta lactea, tinea, discharges from the ears and the like, or from diarrhoea, dysentery, general perspiration when the same has been suddenly stopped, without previous perceptible turgescence or inflammation. In all these cases of sudden death, there is found, on examining the bodies, an effusion of fluid in the head, for the most part in the ventricles of the brain itself." Whilst, however, irregularities in the

course of the complaint should be acknowledged, lest the student of medicine be misled, for practical purposes it will be most useful to consider the disorder under its three generally observed forms.

The congestive symptoms constituting the premonitory stage of infantile encephalitis are as follows. The indisposed child seems languid, listless, sometimes surly and irritable; and is observed to take occasional deeply drawn sighs. Its pulse is *slow* and unequal. The countenance is various, sometimes hectically flushed, at other times unusually pallid. The child's sleep takes place at unusual hours, affords little refreshment, and is accompanied by an unequal respiration, and slight disposition to delirium. The skin feels hot; the tongue is observed to be coated with a thin white film; the fauces are dry; there is considerable thirst and little appetite. The breath is peculiarly offensive. The child's alvine evacuations are few and irregular, both as to time and appearance. Considerable exacerbation of the febrile symptoms is generally observed in an evening; and in this stage, children of six and seven years of age I have known to particularly complain of the weight of their heads, of giddiness when in the erect posture, and of pains in the various parts of the body; whilst younger children may be observed to rock about their little heads (the anterior or fontanelle of which is not unfrequently prominently tumid), and to become suddenly silent in the midst of loud cries. These last-mentioned symptoms (first particularly adverted to by, I think, Dr. Thomson) are very characteristic of impending mischief.

Should the disorder progress, more unequivocal phenomena mark the next stage or presence of cerebral inflammation. The child complains of pain, chiefly referred to the forehead; upon examination the head feels unusually hot, particularly at the fore and back parts of it. The countenance is, in some cases, flushed, with slight conjunctival suffusion, but more frequently pallid, anxious, and shrunk. The child's hearing is acute; the eye is turned upwards under the lid, which appears as if it were dropped. The pupil expands frequently during the occasional convulsions. There is more or less moaning, interrupted occasionally by those shrilly screams so characteristic of hydrocephalus. Grinding of the teeth is not unusual; the tongue is coated and dry; the skin is hot; the pulse is unequal in strength, quick, intermitting, and, on disturbance of the child, hurried to double its usual rapidity. (On this last pathognomonic feature of the disorder,

Dr. Cheyne remarks, "the pulse beats, perhaps, ten or twelve strokes, at the rate of 60, and the next six or eight at the rate of 100. The same kind of pulse has been observed after poison has been swallowed. At a first visit, when I have found the child asleep, I have several times detected the disease by this state of the pulse.") There is the greatest disposition to sickness on the slightest motion. The child's digestion is markedly impaired, food passing almost unchanged, and accompanied by a remarkable fœtor. The abdomen is shrunken, frequently referred to as the seat of pain; and the bowels are constipated. The urine is scanty, high-coloured, and very often, on standing, throws down a copious sediment. When the little sufferer awakes from its short and unrefreshing slumbers, it is never satisfied with its position, one moment wishing to be on its mother's knee, the next desiring its crib; vainly thinking by variation of posture to remove its uneasy sensations. The symptoms indicative of the effusive stage are still more marked; the countenance is changed; the eyes' pupil is dilated and insensible to light, or, as is occasionally observed, irregularly contractile. The body is extremely emaciated, bathed in cold perspirations, and very often ecchymosed in various parts. The lips are dry; tongue coated with a brown fur; and deglutition almost impossible. The child turns the palm of the hand outwards, and passes it to the cheek when it is forcing the offered medicine or drink from its mouth. The pulse rapid, feeble, and intermitting; the natural evacuations are involuntary; the stools dark green, and glairy. Lastly, more or less subsultus, spinal spasms, and general convulsions, are observed to be present in this closing scene of the hapless child's sufferings. The animal heat lessens; the heart falters; the bronchial râle is heard; the previously distorted countenance becomes placid, and the distressing scene is closed!

From the date of the first symptom of indisposition, Dr. Whytt calculated the general duration of the malady to be five weeks—Dr. Fothergill estimated it at three. The fact is, the disorder's duration, as well as its degree of intensity, varies in almost every two successive cases.

Medical writers generally state that a child attacked with acute hydrocephalus will pass through the stages just described, and that on their post-mortem examination certain appearances will probably present themselves. For example—that the dura mater will be found more adherent, and the pia mater more turgid, than usual; that lymph will be found between the membranes; a larger or smaller quan-

tity of fluid (uncoagulable by heat) in the ventricles; each choroid plexus blanched and flabby; that the cranial bones are frequently separated; that tumours of various kinds are discovered in the brain, cerebellum, or attached to the membranes; and that where the cerebral substance has been inflamed, and a large effusion has not taken place, the brain itself, on cutting, presents a great number of minute bloody points; and, if the complaint has been protracted, certain portions of it are softened. Now all these appearances, in numberless cases, have doubtless been observed. To most of them, from personal experience, I can individually testify. But (as before stated) it not unfrequently happens that children die in the *first stage* of this malady; and it has occurred to the writer more than once to see young children, labouring under the premonitory symptoms, seized with a fatal convulsion; and upon being opened presenting no tumours, no effusion—in a word, little observable unnatural condition of the brain, further than perhaps a slight apparent disposition to a congestive state of the cerebral mass. Again, many children die in the *second stage* of the malady, and the sole morbid condition, on autopsy, is found to be a state of cerebral inflammation. Further, should the child's decease take place in the effusive or *third stage*, the post-mortem inspection presents the characteristic morbid appearances more developed. Hence, it obviously results, that the appearances after death must, in speculating on the nature of the disease, be regarded not merely *per se*, in any given case, but in relation to the time the child has lived; and not merely are they subject to the *duration* of the disorder, but to the constitution of the sufferer. Acute hydrocephalus, in a previously healthy child, presents one character; in a delicate strumous child, quite another; and in both the disorder differs from the encephalitis of the adult. If this were not the case, active depletory measures employed early would be as successful in the child as they are found to be in the man. Yet they are otherwise. Cerebral congestion and inflammation, in early life, are assuredly not as tractable as at later periods of man's existence. The post-mortem evidence goes far to show, that the cerebral condition or status in the child labouring under hydrocephalus, and the adult under encephalitis, are not strictly analogous, as shown by the effect produced. In the child the effused fluid is scarcely ever flaky, or the substance of the brain softened, whilst, in the head of the adult, these appearances are every day observed. Whence is this difference, and

is it one that invalidates the presumed inflammatory character of the disease? The answer involves reflections of interest.

A belief that hydrocephalus is essentially an *inflammatory* disorder, is founded—1st. On the character of the symptoms during life; 2ndly. On the observed efficacy of antiphlogistic medicines. 3rdly. On the beneficial operation of counter-irritants and evacuants; and, 4thly. On the general character of the appearances after death. Instances may, and do, occur, of those symptoms being indifferently marked—of antiphlogistic remedies, vigorously employed, failing—and of few indications of preceding inflammation being observed on the opening of the head. A *subacute* form of the complaint, however, answers the first of these objections—viz. the indistinct character of the symptoms. As to the second, anti-inflammatory remedies failing, do they not do so frequently in tubercular degeneration of the lungs (an admittedly inflammatory affection)—do they not do so in glandular diseases of the young—and is it to be wondered at that they should do so in cerebral disease, occurring at a period of life when the constitution and particular structure are both (as shown in the preceding contribution) opposed to them? I apprehend not. And, lastly, as to little evidence of previous inflammation being traceable on autopsy, when a child dies in the second stage, that evidence *is* found; and if it survive through the usual course of the malady, one of its undoubted effects, *effusion*, is almost invariably present; and the mere absence of an apparently inflammatory state, on autopsy, is no conclusive argument against either its previous existence, or the essentially inflammatory nature of the morbid affection. The usual duration of hydrocephalus is from a fortnight to three weeks, and in that time it is obvious that the cerebral mass may have undergone considerable congestion and inflammation, although, on afterwards inspecting the head, we perceive neither the one nor the other. Dr. Monro, of Edinburgh, lately attempted to revive the old doctrine of hydrocephalus being the effect of debility, as formerly thought by Drs. Whytt and Darwin, and not the result of inflammation. His ingenious arguments in support of (I had hoped) an exploded doctrine, met, from the pen of Dr. Mackintosh, a most complete and masterly refutation, as can easily be seen by referring to two papers published in this Journal. Debility, indeed! Well may we exclaim with a late writer, “The bugbear debility, the Circe of fevers, which has been more hurtful to suffering humanity than earthquakes to the physical world.”

Dr. Rush has written to prove, that the disease in its first stage is the effect of causes which produce a less degree of that inflammation which constitutes phrenitis; and that its second stage is the effect of a less degree of that effusion which constitutes serous apoplexy in adults. The first morbid status he has termed phrenicula; that existing in the latter stage, chronic apoplexy. Commenting on this view of Dr. Rush, Dr. Cheyne remarks as follows:—“It ought to be recollected, that hydrocephalus scarcely ever affects the adult, and frenzy as seldom occurs in childhood. They are diseases of different conditions of the brain, the nascent and adult state of the organ. Frenzy is an endemic disease. Hydrocephalus I should suppose to be a very general disease; at least it prevails in very different climates, both in the new and in the old world. Hydrocephalus I have oftener seen in children with dark eyes and complexion; phrenitis is the disease of the sanguine and the choleric. All this should imply something different in the essence of the two diseases. Lastly, it should be recollected, that in hydrocephalus the centre of the brain is the part chiefly affected; at least in most cases we find the effusion on the surface of the brain bearing no proportion to that of the ventricles, and the cortical part of the brain sound, while the central parts are broken and dissolved; whereas the effects of phrenitis are more superficial, being sometimes apparently confined to the membranes. The assertion of Dr. Rush, that the second stage of hydrocephalus is the effect of a less degree of that effusion which produces serous apoplexy, is gratuitous; and the violation of nosological propriety, in giving a distinct name—chronic apoplexy—to this stage, is unnecessary; for it is not effusion which produces apoplexy, neither are the symptoms of the second stage of hydrocephalus the effect of effusion; nor is the effusion less in degree in hydrocephalus than in apoplexy.”

Granting due weight to these arguments, I cannot but think with Dr. Rush, that hydrocephalus is truly an inflammatory affection of the brain. But, whilst so judging, must it be inferred that the disorder is strictly analogous, in the opinion of the present writer, with adult encephalitis? Certainly not; I believe, as the preceding contribution will show, the structure of the child's head to be in a status different from that of the adult, and its functions and disorders to be materially modified by its imperfect condition. But, admitting thus much, I feel anxious to advocate the inflammatory nature of the disease, knowing, as I do, that professional

opinion is somewhat divided on the subject; feeling, as I do, that treatment based on a different view will prove inefficacious; and believing, as I do, that if the inflammatory symptoms are indistinct during life, or the appearances inconclusive after death, they are so, not from the doubtful nature of the disease, but from the peculiar organization of the young child's head. Moreover, Sprengel has satisfactorily demonstrated, and even Dr. Monro admitted, that a strumous diathesis is the great predisponent to hydrocephalus. Now granting this fact, and recollecting the character of strumous inflammation in other parts of the human economy, is not much of the obscurity attending the pathology of the disease on this simple inflammation, accounted for? I really think it is. Infantile encephalitis, though, as before stated, a disease of great frequency, is not uncommonly confounded with others. For example, with vermination, with typhus, with infantile remittent fever, and occasionally with chronic hydrocephalus. The appearance of the evacuations, the condition of the abdomen, the state of the pupil, and the character of the pulse, enable the attentive practitioner to distinguish the complaint from the first of these. In hydrocephalus the evacuations are few, in vermination frequent and slimy. In vermination the abdomen is tumid, in hydrocephalus generally otherwise. In the latter the pupil is always greatly affected, in vermination only occasionally so; and, lastly, the pulse in vermination is but little disturbed, whilst in impending hydrocephalus it is generally disturbed, not merely as regards its frequency, but as presenting an intermittent character. The first stage of the complaint is closely simulated by phenomena arising from repletion, or improper food, causing, directly, disorder of the stomach, and, indirectly, cerebral congestion.

Of all diseases, however, the morbid phenomena consequent upon worms (as shown in a preceding paper), most nearly approach the premonitory symptoms of hydrocephalus, for which they doubtless not unfrequently pave the way. As to the diagnosis between the subject of this contribution and typhus, I shall content myself with quoting the simple, but practically valuable remark of Dr. G. Gregory. "The only manner," observes that useful writer, "of distinguishing between the diseases, is by bearing steadily in mind, that idiopathic fever is not common in young subjects, and that hydrocephalus is. Unless, therefore, the evidence be very unequivocal (as where the disease can be distinctly traced to contagion), the symptoms should always be attributed to hydroce-

phalus and not to typhus." Minuter diagnostics might, it is true, readily be laid down; but reflection on the two diseases, and, still more, a little observation of the two maladies, will readily suggest them. And equally applying the observation to the infantile remittent and chronic hydrocephalus, let us proceed, without further delay, to some practical considerations.

The question as to acute hydrocephalus being curable, is one very frequently asked by men of great experience. Conversant with this fell enemy of the young, they observe how impossible a thing it is, in many instances of recovery, to determine satisfactorily whether the *essential* constituent of the disease has, or has not, been present; they know, from reiterated observations, how difficult a thing it is to check even the undeveloped diseases, and they are painfully sensible how almost invariably, when effusion has ensued, it baffles every measure which anxiety can suggest or remedial art supply. On the other hand, we daily read recorded cases of acute hydrocephalus cured, and, doing so, can scarcely fail to be surprised at the apparently simple means by which a task, considered by the bulk of the profession so difficult, has been achieved. Whence is the discrepancy? Whence is it that what is so insuperable to one practitioner, should be so easy of performance to another? Whence is it that instances of the malady treated with everything that could promise good, should prove fatal; whilst, in other examples, it appears to have yielded to remedies generally considered as all but inert? The answer to this question, I apprehend, is to be found in the vague state of medical phraseology, or, rather, medical logic. If a child have laboured under the premonitory or congestive stage of the disease, on its return to health the little patient is said to have been cured of acute hydrocephalus. If the inflammatory stage or active aggression of the complaint, in another instance, has been promptly met and got under, it is equally asserted that a wonderful cure has been effected. But unless a qualified explanation of these supposititious cases accompany their relation, how delusive are they to the student, how prejudicial to the science of medicine! Fischer, Percival, Whytte, Cheyne, Mosley, and Quin, have severally recorded successful cases. But their records are what medical records should be, not unqualified assertions, but the dispassionate reflections of thinking and impartial men. "If this disease," writes Fischer, "fatal in most cases, is now and then subdued by art, it is only when it is detected in the first moments

of its origin." A sentiment echoed by Quin. Dr. Whytt declares that he did not save more than one in twenty cases. Cheyne observes, "when the disease is discovered early, it is a dangerous, not an incurable malady;" by implication saying, that when developed it is mortal.

Formey relates that, in the effusive stage, he has seen *one* child recover. Thomson, Golis, and many other eminent authorities, assert that acute hydrocephalus, when fully formed—that is, when effusion has ensued, "yields to no remedy." My own humble opinion is, that the disease is, occasionally, remediable, although it may have developed even its third or effusive stage. That this is the case probably once in fifty examples, I feel, from extensive observation, satisfied; as I am convinced that in the forty-nine, a very great majority, the stage just alluded to is but the harbinger of death. A child, particularly if not of strumous diathesis, should never be condemned and left to its own unaided powers, even in the apparently eleventh hour of its existence. Although convinced of effusion, the medical attendant cannot estimate its extent, cannot appreciate the power of nature's efforts, or, by possibility, know what the cerebral mass, in the way of absorption, is equal to, particularly if the latter be aided by well-directed remedial means. Hence, whilst considering all cases presenting the developed disease, as most unpromising, I would anxiously advocate their not being regarded as hopeless.

It is stated by Martinet (when speaking of the anatomical character of this disease), that "sometimes no fluid is found in the ventricles, though dilated, which arises from the fluid being absorbed immediately before death had occurred." Provided this inference, drawn by one of the most esteemed pathologists of our day, be correct—is cerebral absorption so imaginary as some nosological writers would have us to believe?

"If by hydrocephalus," remarks a late author, "be meant water in the brain, I hesitate not to assert that it never was, and never can be cured, since admitting the existence of absorbents in that organ, which I am not disposed to deny, although they never have been demonstrated, it is physically impossible that, under such a state of the system, they can remove the deposition, and restore the inflamed parts to their integrity." Let us dwell a moment upon the sweeping declaration of Dr. Pearson Dawson—that children, thus situated, have been cured, it is obviously impossible to prove; but with Dr. G. Gregory I may say, that "I am satisfied that many

cases have been recovered by judicious treatment," which, from their very recovery, may have been presumed never to have passed through the effusive stage of the disorder; nor, although I differed in opinion, should I venture such an unqualified assertion as Dr. Dawson's, when running counter to the recorded testimony of the most experienced in the profession. Again, the brain, it may be, has few *absorbents*, strictly so called, to be "demonstrated;" but it is most amply endowed with *veins*, and perhaps Dr. Dawson can "demonstrate" that those vessels in the head are deficient in a faculty pretty generally granted to them in other parts of the body. The same author, in continuation of the subject, observes, "Nothing is more injurious to the art of medicine than for practitioners to be smitten with the love of accomplishing great cures, since those who are on the alert for them will seldom be disappointed." The remark, *per se*, is extremely just, and worded, as all Dr. Dawson's sentences are, extremely well; but once admit it as universally applicable, and as influencing our conduct, and the injury to poor humanity, as well as to medical science, would be incalculable. A lawyer pleading for his client, when ordinary means fail, has recourse to those extraordinary measures which the law, or his own ingenuity, can afford. Similar I apprehend should be the conduct of the medical practitioner, whose anxious efforts for recovery should only expire with his patient.

But, to the *particular* treatment of hydrocephalus.

(To be continued.)

ABSCESS IN THE POSTERIOR MEDIASTINUM.

To the Editor of THE LANCET.

SIR,—I send for insertion in your excellent weekly record of the medical sciences, the brief notes of what I deem rather an interesting case. The details of the dissection are from the note-book of Mr. W. Hebb, who kindly made the post-mortem examination at my request.

I remain yours truly,

DAVID CORBET, M.D.

Worcester, May 31, 1834.

G. G., æt. four and a half years, residing at Henwick, in the neighbourhood of this city, complains of pain in the back, especially between the scapulae, which is greatly increased by the least motion;