repeated; but sometimes, as already stated, such repetition is unnecessary. When there is pain at the epigastrium, and other signs of gastric irritation, I would recommend the application of leeches to the part, taking care to encourage the bleeding by warm fomentations and light poultices. Next to bleeding I would rank severe counter-irritation. Colchicum, digitalis, and antimonials, I have repeatedly employed with great advantage. The observation applies likewise to mercury.

When the disease recurs it generally has not the same intensity, and is, I think, more under the power of medicine; we should now abstain from employing the same active treatment as during the first attack, and should content ourselves with combating the inflammation by the moderate use of topical bleeding and counter-irritation.

ON SIMPLE ACUTE INFLAMMATION OF THE MEMBRANES OF THE BRAIN IN INFANTS.

By Dr. RILLIET, of Geneva.

(Translated for the Provincial Medical and Surgical Journal.)

(Continued from page 181.)

IV. GENERAL DESCRIPTION OF THE DISEASE.

Form, Duration, Termination.—Acute meningitis declares itself under two forms, to one of which we give the name of "convulsive," the other "phrenitic." We do not, however, wish it to be understood either that convulsions are never present excepting in the "convulsive" form, or that the "phrenitic" is the form exclusively characterized by perversions of the intelligence; we merely wish to notify by these terms the predominance of certain symptoms.

The *convulsive form* is most commonly seen in very young infants. It commences suddenly by an attack of convulsions, general or partial, with more or less febrile disturbance. There is neither vomiting nor constipation. When the convulsions, which are repeated at brief intervals, subside, the infant is left either in a state of agitation, or profoundly comatose, with squinting, and sometimes perfect hemiplegia. In certain cases there is an approach to sensibility between the fits, but the amendment is but momentary, and death rapidly approaches either by coma or during a subsequent paroxysm. The convulsive form of meningitis sometimes sets in more slowly, and the convulsions are not so closely approximated. The duration of this latter variety is longer, being from a week to a fortnight.

Phrenitic meningitis is commonly observed in early childhood, and in many respects resembles the acute meningitis of the adult. It commences with fever preceded by a rigor; violent headache ensues, with photophobia, vomiting, and sometimes constipation. The intellect suffers by the end of the first or second day, and the face assumes the peculiar wild look of the disease. Agitation and stupor alternate, and delirium is generally present. Subsequently there is grinding of the teeth, partial convulsions, rigidity of the limbs, a drawing of the head backwards, strabismus, and contraction followed by dilatation of the pupils.

About the seventh or eighth day some of these symptoms subside; the vomiting ceases; but the fever still continues; the pulse and respiration are irregular; the belly is retracted, and finally partial convulsions ensue, followed by coma and death.

Diagnosis.—The diseases which are apt to be confounded with acute meningitis, are, as may be imagined, numerous. Before we mention these diseases, we shall enumerate those symptoms of the convulsive and phrenitic forms which are most worthy of confidence in a diagnostic point of view.

In the convulsive form, we should attach great importance:—1. To the constant repetition of convulsions at short intervals. 2. To the acceleration of the respiration, which cannot be accounted for by any pulmonary lesion. 3. To the absence of all visceral inflammation, and of any indication of an exanthematic eruption. In the phrenitic form, the cardinal symptoms are,—intense headache, accompanied by frequent bilious vomiting and constipation, followed by delirium and agitation, alternating with stupor.

Differential Diagnosis of the Convulsive form.—Convulsions in early infancy are very frequently symptomatic; but in this case they are seldom violent or so frequently repeated. Moreover, in the interval, the little patient recovers his sensibility, the respiration is not permanently accelerated, and the pulse quickly regains its normal standard. It must, however, be admitted that in many cases the diagnosis can only be established by the progress of the disease.

The distinction between convulsive meningitis, and other cerebral affections is still more obscure, and indeed it is often impossible. The error is not, however, one of importance, as the treatment, and too often the termination of all is the same.

The first disease which we shall endeavour to distinguish is *hydrocephalus*, with infiltration of the *pia mater*, the *Wasserschlag* of Gölis.

In certain cases this condition complicates inflammatory meningitis, and the main features of each are then undistinguishable. In other cases the "hydro-meningitis" is the principal lesion, and we find only slight traces of purulent effusion. This disease, like the one from which we wish to distinguish it, also attacks very young infants; it sets in with fever, and a violent attack of convulsions, or with agitation and stupor, with transient and fallacious signs of amelioration. The analogy between the disease and the convulsive form of meningitis is therefore perfect.

In *hemorrhage into the arachnoid*, we observe repeated convulsions as the earliest symptoms, but they are in general less violent than in meningitis, and the coma does not ensue so rapidly. According to M. Legendre, children attacked with meningeal apoplexy, exhibit contraction of the fingers and toes,—a symptom which is not observed in meningitis; while, on the other hand, the excitement of the pulse and circulation which are witnessed in the latter disease, are not seen in meningeal apoplexy. *Hæmorrhage into the pia mater* also in some respects resembles convulsive meningitis, but it is a lesion of such rare occurrence that it need scarcely enter into our consideration.

These remarks conclude what we have to say respecting the diagnosis of convulsive meningitis from other organic lesions of the brain; but we must remember that the most important part of the diagnosis of the disease consists in its distinction from essential or symptomatic convulsions, since the treatment of the two forms of convulsion is obviously different.

What we have said in connection with "convulsive meningitis," applies equally to the phrenitic form. Cerebral hæmorrhage, encephalitis, &c., may be confounded with it without any great damage; but it is not so with regard to cerebral congestion, tubercular meningitis, and those sympathetic affections of the brain which arise during the course of the eruptive or typhoid fevers. The following paragraph deserves the earnest attention of our readers:—

Cerebral Congestion.—We have often propounded, to ourselves the following question:—Ought we to consider those violent cerebral attacks, which either quickly prove fatal, or as rapidly subside, and the symptoms of which are precisely those which indicate the onset of acute meningitis, as real instances of that disease? *Post-mortem* examination in these cases discovers neither pus nor false membranes, but only simple congestion. Is this congestion to be regarded as the initiative stage of inflammation? The question is difficult of solution; but we nevertheless consider that it should be answered in the negative, and for these reasons:—Inflammatory products of the brain form with such rapidity, that its whole surface may be covered with false membranes in a few hours, consequently the cases we have just mentioned ought to be distinguished from meningitis, both anatomically and by their symptoms. The diagnosis may, however, be here plainly established by the following comparative table:—

Cerebral Congestion.

Declares itself by sudden stupor or more complete insensibility, with dilatation of the pupils; of its first symptoms are acute delirium, with difficult respiration, quick small pulse, and slight convulsions. These symptoms appear almost instantaneously. Vomiting is for the most part absent.

Meningitis.

In the phrenitic form, the first symptom is partial or general headache. Delirium does not appear in general until the lapse of twenty-four or thirty-six hours. Vomiting is generally present.

Cerebral Hemorrhage.—In some cases cerebral hæmorrhage closely simulates acute meningitis. Headache, convulsions, delirium, vomiting, and constipation, mark the onset of both diseases, and it is, therefore, difficult to decide, with certainty, which disease is present. The best guide to a correct conclusion is the high febrile excitement which characterizes meningeal inflammation.

Tubercular Meningitis.—We now arrive at the most important portion of this essay, and shall endeavour to point out the main distinction between simple and tubercular meningitis. For clearness sake we would remind the reader of four circumstances:—1. That

diagnosis is to be drawn from the ensemble of symptoms, and not from the individual characters of a disease.

2. The main element in forming our diagnosis is the consideration of the point of time at which the disturbances of the intellect and mobility originate. 3. That the invasion of tubercular meningitis may take place under three different states of the system—1st, after a longer or shorter duration of precursory symptoms; 2nd, during the progress of tubercular disease in other organs; 3rd, in perfect health. 4. That the first and third species are readily distinguished from acute simple meningitis; the error is more likely to be made between the latter and the second form. These preliminaries established, we shall proceed to lay down a brief summary of the differential symptoms as below:—

Simple Meningitis.

1. The children attacked are in general vigorous and well-developed, and do not exhibit any signs of tubercle. Their relations too, are healthy.

2. The disease may appear as an epidemic.

3. *Prior condition.*—The attack takes place during robust health, or if it is secondary, it follows some palpable external cause, or arises in the course of a non-tubercular malady.

4. *Mode of attack.*—Violent convulsions, intense fever, quick respiration if the infant is very young; or headache, fever, bilious vomiting. After a lapse of twenty-four hours, excessive agitation, delirium, and prostration.

5. *Symptoms.*—Headache intense, vomiting incessant, fever high, delirium fierce, constipation moderate.

6. *Progress.*—Rapid; convulsions incessant.

7. *Duration.*—Death in 24 hours, in some cases; but generally at the end of the third day.

Tubercular Meningitis.

1. The subjects of tubercular meningitis are delicate, and often precocious children. They are subject to glandular enlargements, and chronic eruptions of the skin. Their blood-relatives generally bear the stamp of the strumous diathesis.

2. The disease is always sporadic.

3. *Prior condition.*—The infant is observed to pine away and lose its flesh and strength. The disposition is altered, the appetite fails, and the *prima vie* become deranged.

4. *Mode of attack.*—Convulsions never the first symptoms; the transition from the first to the second period of the disease insensible; the coming on of the second stage marked by headache, vomiting, and constipation; the intelligence sometimes unaffected. When the precursory symptoms are absent, the disease is ushered in by vomiting, moderate headache, and fever.

5. *Symptoms.*—Headache not intense, vomiting not so urgent, constipation obstinate, fever moderate.

6. *Progress.*—Slow.

7. *Duration.*—More prolonged — a fortnight to three weeks.

We have thus gone through the list of the cerebral affections with which simple meningitis may be confounded, we shall now notice the distinction between it and certain formidable cerebral symptoms, which declare themselves without any appreciable lesion of the brain,—as for instance, during the progress of fevers. And first of—

Small-pox.—This disease is sometimes at the onset mistaken for meningitis. The most important elements in the diagnosis, are the consideration of the reigning epidemic, the lumbar pains, and the time at which delirium appears, which in small pox, is seldom earlier than the third day.

Scarlatina.—In adynamic scarlatina, children frequently complain of headache, and are seized with vomiting. We must look for our guide to the state of the tongue and throat, and the great heat of the skin, taking likewise into consideration the fact of the prevalence of the disease at the time.

Typhoid Fever.—The same rules for forming a diagnosis are applicable in this disease as in small-pox, &c.; but in addition we are to remember, that in typhoid fever the headache is less intense than in meningitis, that the vomiting is less urgent. Some useful information may also be derived from the state of the lips and tongue, the pain in the body, the diarrhoea, and the state of the chest. Moreover, the symptoms which are analogous in the two diseases appear at different periods,—in meningitis at the commencement, in fever towards the termination.

(To be continued.)

CASE OF TRAUMATIC TETANUS: ADMINISTRATION OF ÆTHER.

TO THE EDITOR OF THE PROVINCIAL MEDICAL AND SURGICAL JOURNAL.

SIR,

I beg to forward you the following brief report of a case of traumatic tetanus in which æther was most successful in arresting the spasm.

On Saturday, March 20th, I was called at 6 a.m., to Charles Prescott, a miner, residing two miles from this place. I found the left arm completely shattered by a large stone falling on it; he had not lost much blood, his comrade had tied a piece of cord tight round his arm, which completely checked the bleeding. He had walked home, a distance of a mile from the shaft where the accident occurred. I immediately amputated below the elbow-joint; three arteries required ligatures. He went on exceedingly well for some days. On Wednesday, the 24th, he was most anxious to get up, and on the wound being dressed, union had taken place by the first intention. On Saturday, the 27th, I found him sitting up and dressed; he said he was quite tired of bed. In the evening he sent down, stating he had taken cold. He had some aperient medicine sent him.

On Sunday the symptoms of tetanus became marked; there was considerable rigidity of the muscles of the neck and jaw, and difficulty in swallowing. He had an enema with turpentine, calomel, and an active aperient, which soon operated. The symptoms

continuing, he had thirty minims of liquor opii sedativus, every hour, and belladonna to the neck and jaws. He was perfectly under the influence of opium, but without any remission of the symptoms of opisthotonos.

Monday evening. The spasms now most violent. Half a drachm of æther, added to each dose of opium, and calomel freely given through the night.

Tuesday morning. No better, but decidedly worse. We now determined to try æther. This was administered by means of Boott's apparatus. He was soon under its influence, and immediately all contraction and spasm ceased, and he got into a most comfortable sleep, which lasted full ten minutes. As soon as he became sensible the spasm and contraction returned, but scarcely so violent. He again inhaled the æther with the same result. He had it a third time; it again relieved him, and he was left asleep, and on visiting him I found he could open his mouth better. He was most anxious to have it again, but a violent spasm came on before I could get it to him, followed by another, and he immediately sank.

I am, Sir,

Yours truly,

H. H. BROUGHTON.

Dobcross, near Manchester,

Saturday, April 24, 1847.

Hospital Reports.

QUEEN'S HOSPITAL, BIRMINGHAM.

CLINICAL REPORTS OF SURGICAL CASES UNDER THE TREATMENT OF WILLIAM SANDS COX, ESQ.

By PETER HINCKES BIRD, one of the Resident Medical Officers.

(Continued from page 184.)

CASE XXVII.

EXTENSIVE INJURY OF THE HAND.

Eli Holloway, aged 15, admitted into the Queen's Hospital, on August 24th. He states that about half an hour previously his hand was severely wounded by a circular saw, which cut off the little finger of the right hand, and severely lacerated the two next; he lost but little blood at the time.

When admitted the little finger was found gone, and there was present a deep lacerated wound on the back of the hand, extending from just below the head of the metacarpal bone of the little finger to that of the middle finger; the metacarpal bones of the middle and ring fingers being shattered. He was rather pale; he did not complain of much pain in the parts; pulse 75, pretty strong.

It was determined that the middle and ring fingers should be removed. An incision was made on the back of the hand below the seat of injury; the metacarpal bones were sawn through, and a flap formed from the palm of the hand; there was not much hæmorrhage; the patient bore the operation remarkably well; the stump was dressed, and a roller lightly applied; he