dition of the mucous membrane of the intestine, which acts on its secretive power and induces a hypersecretion of mucus and thus produces the alternations of diarrhoea and constipation which Niemeyer has so well studied.

The cerebro-spinal system appears also to play an important part in the production of these symptoms. The remarkable sedative effects produced by the waters of Plombières confirm this view. A hypochondriacal tendency and all the various symptoms described under the name of neurasthenia are frequent concomitants of this affection.

During twenty years of practice at Plombières I have treated no fewer than 4,500 patients affected with gastro-enteric troubles, whether of the nature of gastric dyspepsia, of enteritis, of intestinal atony, or chronic diarrhoea. Of this number of patients I find that no fewer than 460 were affected with glairy enteritis, an affection which, I have already said, should not be confounded with colitis or dysentery.

Women are more subject to this affection than men. I find 250 cases of women, 150 of men, and 60 of children. Almost all these patients presented signs of the arthritic or herpetic diathesis. I have often been able to trace the causation of the glairy secretions to the action of cold or damp.

It is important carefully to separate the cases which we are now studying from these which are usually designated as cases of entero-colitis. None of the patients included in my statistics presented the signs of inflammation of the intestine as revealed by palpation or percussion, but in all these cases the intestine secreted almost continually glairy mucus. They exhibited from time to time, and almost always under the influence of cold or damp, exacerbations of these symptoms. They all bore signs of the arthritic diathesis.

Like all other such patients, they were frequently affected by exaggerated secretion of the mucous membranes of a catarrhal nature. This is my principal reason for giving the name of "catarrhal enteritis" to this affection.

In point of age, the greater number of adult patients were between 20 and 50. In the case of children, between 4 and 15. In the 250 cases of women I have seen it coincide twenty-five times (10 per cent.) with pseudo-membranous metritis or dysmenorrhoea of like character.

The affection was often, but not always, preceded by a more or less long period of constipation. Once, however, declared, the gastro-intestinal symptoms generally increased.

I think that these cases ought to be divided into two groups:

1. The first group, which is the less numerous, is composed of those in which the affection is slight, and causes no considerable effects. We have seen many patients who were in the habit of expelling glairy mucus from the intestine, and yet retained all the appearance of good health; their strength was unimpaired, there was no loss of flesh, and the action of the bowels was regular. From time to time, especially when the weather was cold or damp, they suffered from severe colic, and expelled, but in small quantities, glairy mucus. They complained, however, much of the painful efforts of defæcation and of tenesmus; but they never complained of the passage of blood.

2. As already said, the second group is a more numerous one. They presented variable and very serious symptoms. In the case of children I found loss of flesh, loss of appetite, low spirits, a general want of development, with frequent colic. In the case of girls, the appearance of the menses was delayed; none of the girls I attended aged less than 15 had menstruated. As already stated, all these patients suffered from gastro-intestinal symptoms of a dyspeptic kind; often from constipation and diarrhoea, rarely from diarrhoea alone. I will not dilate on these symptoms, which are those often observed in chronic affections of the digestive tube.

The patients treated for this affection at Plombières had all previously undergone other treatment. All had at first been subjected to a treatment by purgatives. They invariably gave a certain amount of relief at first, but their continued use appeared to have a tendency to increase the intensity of the symptoms. Drastic purgatives should be avoided. Saline purgatives, such as the saline waters, give relief for a time: they never cure, but, on the contrary, aggravate the intestinal irritation. Purgatives are, however, necessary. Castor-oil and the milder laxatives are those which give the best results, and are least irritating to the mucous membrane of the intestine. External derivatives, blisters, painting with iodine, the

actual cautery by the *pointes de feu* are often useful. As to diet, I recommend the same as in gastro-intestinal dyspepsia. A milk diet does not appear to answer well.

The treatment of the affection at Plombières is the following: I generally recommend the tepid baths. Thanks to their calming and sedative action on the nervous phenomena which so many of these patients exhibit, they render great services. One cannot doubt of their action on the cerebro-spinal system, and consequently on the nerves of the intestine.

At the same time that the patients are taking the baths just described, we often administer on the abdominal region a douche, styled "Tivoli." It is a very mild douche, without any direct percussion, and acts as a derivative.

Internally, and according to circumstances, I prescribe the water of the *Source des Dames* or of the *Source Savonneuse*.

But a more important agent is the *douche ascendante*, and it is to this treatment that I attribute the good effects I have so often observed. This douche is a continued irrigation of the intestine by mineral water, avoiding too great pressure. The installation of these *douches ascendantes* at Plombières is very excellent. They can be given to patients without subjecting them to an uncomfortable position or exposing them to any fatigue. The most scrupulous care in all hygienic matters is observed. The waters generally used for this purpose are those of the *Source des Dames*, either alone or mixed with that of the *Source Savonneuse*. The prolonged contact of the mineral water with the mucus of the intestine is an internal bath, which produces excellent effects on the inflamed membrane. The pains decrease. The mucous secretions are modified, and expelled much sooner and with greater ease than they otherwise would be.

I need not say that Plombières is one of the oldest mineral stations in Europe. Since the time of the Romans it has been a favourite resort of sufferers from all kinds of rheumatic affections. The principal indications of these waters are rheumatic affections accompanied by nervous erethism and also the visceral manifestation of that diathesis. The installation of the baths, the douches, and the vapour baths are in all respects excellent. There is every facility for obtaining good massage. The exceptionally high temperature of the waters of Plombières (from 100° F. to 156° F.), and the presence of arseniate of soda in them, render them eminently useful to patients suffering from gout or rheumatism. As I have already stated in this paper, almost all the patients suffering from intestinal catarrh were of a rheumatic diathesis. I have therefore often combined with the treatment directly suited for the intestinal catarrh that which renders so great service to other arthritic patients, namely, the use of vapour baths and massage, and with the happiest results.

THE ORIGIN AND SEAT OF EPILEPTIC DISTURBANCE.

By CHARLES MERCIER, M.B.

IN Professor Horsley's address on this subject are certain statements and doctrines in which I am much interested, as I have always believed that in the study of epilepsy will be found to be the "way in" to a knowledge of the working of the nervous system. Perhaps I may say that I have studied the subject minutely for many years, and for months spent many hours every week in a ward containing some 150 epileptic patients, in which the lapse of five minutes without the occurrence of a fit in one or other of the patients was exceptional. This experience has taught me that the "phenomena which mark the attack" of idiopathic epilepsy are not always as Professor Horsley states them. (1) "Semi-involuntary movement," which he cites as the first occurrence in the fit, is very often absent. It is a species of aura—a "motor aura"—and may or may not be present. (2) "Change in respiration, inspiratory spasm with cry and commencing asphyxia," is the second phenomenon. Omitting the cry, which occurs in a minority of cases only, this agrees with my observations; but it should be added that simultaneous with the inspiratory spasm is a widespread spasm of other muscles. In fact, the statement should be "widespread or practically-universal spasm, of which fixation of the thorax is the most conspicuous feature." This applies to *grand mal* only. In

petit mal there is usually first pallor, and then lividity, not nearly so extreme as in the major attack. Probably the lividity in *petit mal* depends on absence of movement of the chest wall. At the onset of the attack the patient remains for some instants fixed in the position in which he happens to be, probably from a minor degree of the same universal spasm that obtains in *grand mal*. (3) "In the worst cases simultaneous with (2) loss of consciousness." In idiopathic or general epilepsy, as distinguished from Jacksonian epilepsy and hystero-epilepsy—forms which are excluded by Professor Horsley from this description—I have never known consciousness to be retained in any case, however mild or *petit*. The loss of consciousness is, as Professor Horsley says, instantaneous, and it is, I believe, invariable. It may return in a few moments, or after minutes, or hours, or not at all; but I have never seen a case in which it was not lost. (4) "Muscular spasm, tonic stage; (5) muscular spasms, clonic stage; (6) exhaustion." Here my experience is nearly in agreement with that of Professor Horsley. I should not, however, and perhaps he does not, relegate the commencement of the muscular spasm to a period subsequent to the loss of consciousness. The conspicuous spasm of the limbs, that is to say, the movement of the limbs, is indeed often subsequent to the fixation of the chest and the loss of consciousness; but there is always, I believe, spasm in the limbs from the outset of the fit in *grand mal*, and in *petit mal* the limbs partake in the general immobility, showing that even in this form there is spasm in the limbs from the outset.

Now as to the succession of tonic and clonic spasm. I find myself in entire accord with Professor Horsley as to the seat of the discharge from which they arise, but as I arrive at this conclusion from widely different reasons, it may be useful to set these reasons forth in order that a particularly strong corroboration may not be wanting to a doctrine which I have long held and have frequently published.

The question is, whether this character in the spasm of tonus breaking down into clonus is due to the manner in which the discharge is emitted from the originating centres, which all admit to be cortical; or whether the difference in the delivery of the discharge (first tonic and then clonic) is not due to some modification which the discharge receives in passing through the spinal cord or some other inferior nerve tract on its way from the cortex to the muscles. Professor Horsley concludes, from experimental evidence, that the discharge has its character of tonic or clonic *ab origine*, and does not owe that character to modification subsequent to its first emission. I have long held the same conclusions from observation of the changes in the spasm itself, which I described in *Brain* (No. xv) in 1881. The breaking down of the spasm from tonic to clonic does not occur suddenly; it is quite a gradual affair. The muscles, hitherto contracted into a rigid mass, are observed to quiver with a fine rapid succession of twitches. Gradually the quivering becomes coarser; it becomes more observable; between each two contractions the muscle relaxes more, and the twitches follow each other less and less rapidly. As the twitches follow one another more and more slowly, the muscle relaxes more and more completely in each interval; the relaxation becomes so complete that the limb in each interval is allowed to fall out of the fixed position that it assumed under the influence of the spasm; but each successive shock brings it back abruptly and instantly to its former attitude. Slower and slower the separate spasms follow one another, more and more completely the limbs relax in the interval, larger and more marked become their excursions when the shock again seizes them. The fact that I desire to emphasise is that *the magnitude of the muscular contractions varies inversely as the rapidity of their succession*. When the succession is of normal or supernormal rapidity, the spasm is tonic; that is to say, there is no perceptible relaxation of the muscles between the successive deliveries of discharge into them. As the several shocks of discharge are delivered at continuously increasing intervals, more time is given to the muscles to relax in those intervals, and the relaxations between the shocks become more and more complete; but this is not all. *As the interval between the shocks increases, each successive shock, when it does come, becomes more powerful*.

At the termination of a prolonged fit, when the breaking down has been slow, and the interval between the penulti-

mate shock and the last shock of all is prolonged, as it sometimes is prolonged, to some seconds, the last spasm is terrible in its intensity, and seems as if it must break the bones or tear the muscles asunder.

The significance of the words that I have italicised lies in this, that the phenomenon that they describe—the escape of successive excrements of force whose magnitude varies inversely as the intervals of time severally preceding them—is a common occurrence in the physical world, and is found in every case to be due to the continuous accumulation of a force opposed by a constant resistance. Hence we are enabled to arrive at a very important conclusion with regard to the emission of the nervous discharge, namely, that it also is governed by the same conditions; that it accumulates continuously behind a constant resistance. In this hypothesis we have evidently a very important basis for theories of nervous discharge and of inhibition, which I have elsewhere worked out at length. I submit that the experimental verification of the basis of this hypothesis some fifteen years after its first promulgation is a very important corroboration of its truth.

MEMORANDA: MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

A METHOD OF TREATING DISLOCATIONS AND FRACTURES OF THE CLAVICLE.

In view of the unsatisfactory results attained in the treatment of dislocations of the clavicle, the following method of subcutaneous suture is suggested.

To effect this it is necessary to carry the wire along with the drill. The instrument to be immediately described meets the requirements. Near the cutting extremity is a hole, and running from this downwards, on one side of the drill, is a long groove in which the wire can lie, and thus occupy no

Fig. 1.

Fig. 2.

extra space. The wire, being threaded through the hole, is bent back, and the end pressed into another much shorter groove on the other side. The diagram (Fig. 1) illustrates this. The circumference of the instrument thus includes also the wire, which now presents no obstacle to the boring.

The operation is now easy. Take a point immediately below the joint to be sutured—say, the acromio-clavicular—and place the drill in the groove just internal to the shoulder