Clinical and other Notes

this type of pyrexia associated with diarrhoea. This, however, needs confirmation.

Treatment.—One ounce of castor oil is given to start with. As soon as this has been effective, chlorodyne 1 dram in 1 ounce of brandy is given, with bismuth salicyl, fifteen grains three times daily. If the diarrhoea persists, twenty minims of the tinct. camph. co. is given with the bismuth.

As a rule, both diarrhoea and temperature rapidly subside, and there is no recurrence.

SHELL-SHOCK AND ITS TREATMENT BY CEREBROSPINAL GALVANISM.

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The term shell-shock is made use of to describe two distinct conditions, one a severe type of traumatic neurasthenia, and the other bearing no resemblance to a neurasthenic condition but characterized by hysterical manifestations.

It is for shell-shock of the neurasthenic type only that cerebrospinal galvanism is of service as a treatment, for its use being based on the assumption that neurasthenia is an organic disorder, there is no reason to expect any favourable results to follow its use in a condition of functional disorder.

In the neurasthenic type of shell-shock, most, if not all, of the following symptoms are found to be present: headache (always aggravated by the advent of thundery weather), insomnia, mental depression, loss of memory, nervousness, bad dreams, fatigue (without exertion), tremors, wasting and loss of appetite. Paralysis of limbs or groups of muscles and localized pains are also present in a number of cases. The resemblance between this condition and neurasthenia following severe illness is so striking that a similarity of origin is exceedingly probable.

Any one of the above symptoms appearing separately might be looked upon as a functional disorder, but the co-existence of all or nearly all of them in a series of cases, admits of only one explanation, if the simplest explanation is the most probable, and that is that they are the effect of a common cause, organic disorder of the central nervous system, and as there is no gross lesion, this is probably a disarrangement of metabolism. Furthermore, the character and personality of the patient are greatly changed by this condition, and it is inconceivable that this alteration, can take place independently of any structural damage or metabolic disturbance in the organism from which the character and personality take their origin and depend on entirely for their continued existence.
A possible explanation of the appearance and persistence of the symptoms is, that the violent concussion of the explosion produces a partial paralysis of the nervi nervorum. The interference with the nutrition of the whole nervous system would prevent the restoration of the nervi nervorum to their normal activity and thus the evil would be acting in a circle. This would account for the resemblance between these cases of shell-shock and cases of neurasthenia following severe illness, for a partial paralysis of the nervi nervorum might be produced by the action of toxins.

The cure of neurasthenia by suggestion in some cases is not an inexplicable contradiction, for it is conceivable that the paralysis of the nervi nervorum may be of just that extent that recovery is only prevented by the mental depression consequent on the condition maintaining a state of lowered vitality. In such cases relief from the mental depression would result in a cure.

Now if there is any probability that shell-shock of the neurasthenic type is due to a paralysis of the nerves regulating nutrition or a disorder of metabolism, then the use of galvanic current is a treatment from which one has every reason to expect good results, for the most powerful agent we have for stimulating the nerves to activity is electricity.

The best form of apparatus for giving this treatment is a battery of wet Leclanche cells connected to a switchboard on which are two resistances, each of 1,500 ohms, one in series and the other in parallel with patient and milliamperemeter. The treatment is then commenced with no resistance in parallel and full resistance in series. The parallel resistance is first increased to its full extent and then the series resistance diminished until the required amount of current is obtained. If this apparatus is not at hand, a battery of twelve dry cells with cell collector and galvanometer and a resistance of at least 1,500 ohms may be used. No current derived from the mains of any universal apparatus should ever be used for this treatment.

A pad composed of about sixteen layers of lint, soaked in a solution of salicylate of soda in distilled water is applied to the forehead, care being taken that the pad is evenly wetted and that its centre coincides with the middle line of the forehead. Over the centre of the pad is placed a metal plate and the whole firmly bandaged to the head. The metal plate is connected to the negative pole. A pad of the same thickness, about ten inches by six inches, is soaked in tap water, covered with a metal plate and firmly bandaged to the lumbar region. This is connected to the positive pole. The current is increased very slowly, taking about twenty minutes to attain the maximum of twenty milliamperes, at which point it is allowed to remain for twenty minutes and then is slowly reduced to zero. When increasing the current the cell collector is advanced before reducing the resistance, and when decreasing the current the resistance is used first.

For a first treatment I give only ten milliamperes for ten minutes.
and do not pass the full strength of current, twenty milliamperes, till the third or fourth treatment.

With patients who are nervous of electricity, I find it a good plan to give labile galvanism to the spine for two or three days before commencing cerebrospinal galvanism.

Having found this treatment successful in cases of neurasthenia shortly after joining the Service, I treated several cases of shell-shock by the same method. Unfortunately, I was unable to keep these patients under my care for a sufficient length of time to effect a cure, but in every case I was impressed with the rapid progress made towards recovery. I had no further opportunity of treating this condition until the end of last February.

My first patient had not suffered by a shell explosion at close quarters, but he had been exposed to shell fire in the trenches for a considerable time, and as he showed most of the symptoms of shell-shock, I think the case worth recording, although it was not of a severe type.

Pte S., age 34. Constantly exposed to shell fire during the latter half of last year. When first seen he was suffering from pain in the back and legs, tremors, headache, fatigue without exertion, nervousness, insomnia, mental depression, wasting and loss of appetite. Cerebrospinal galvanism was commenced on February 23, but after three treatments his regiment was moved to another district. He was transferred about a month later to a home service battalion and, being stationed in this district again, asked permission to continue his attendance at this hospital as he had derived so much benefit from his treatment here. The treatment was again given three times a week for five weeks. At the end of that time he had gained considerably in weight, the tremors had disappeared and he stated that he felt quite well except for the pain in his legs which had increased. I took an X-ray plate of his legs, which showed a syphilitic condition of the bones. Treatment for this condition was carried out by the medical officer of his regiment, and he now feels perfectly well.

Pte H., age 30, was knocked over and buried by a mine explosion on December 12, 1915. He was unconscious for some hours. He was in a V.A.D. hospital for a month after arriving in England and then returned to his regiment for light duty. He was still exceedingly nervous and was so distressed by being placed on guard on a railway that he reported sick. When first seen he was evidently in an extremely nervous condition, and very depressed mentally. He complained of bad dreams, want of sleep, loss of memory. He was also suffering from severe headaches, fatigue and loss of appetite. He was considerably wasted. Cerebrospinal galvanism was commenced on March 25. After four treatments he was sent out of hospital, owing to an error, as fit for duty. His medical officer was communicated with, and as the patient was very
much better he was allowed to remain on light duty and received treatment again on April 5 and 7.

On April 8 he received news of the death of one of his children and had no recollection of what happened afterwards until he found himself in Birmingham. About twelve days later he reported to the nearest police station that he was absent from his regiment without leave. He came to this hospital again on May 1 and was admitted. Treatment was recommenced, and by the end of May he had gained about 1¼ stone in weight and appeared to be in perfect health. Treatment has been continued up to this week as a precaution against a return of the condition.

Serp't. P., age 37, was blown up by a mine explosion on July 27, 1915. He was unconscious for fifteen hours. On recovering consciousness his left lower limb was found to be paralysed, and it remained so for five months. He was treated at a military hospital for four months, where he was given electric baths, and then removed to another military hospital where he remained for three and a half months, being treated daily by massage, faradism, radiant heat and ionization. He left there on March 25, at his own request, to return to light duty. He reported sick again on April 7. When first seen he was suffering from headache, insomnia, bad dreams, loss of memory, tremors, pain in the lumbar region, mental depression and fatigue without exertion. He stated that he had lost flesh early in his illness, but had regained his normal weight, and that his headache was less constant than at first, though undiminished in intensity. He has been treated three times a week by cerebrospinal galvanism since April 22. He has now perfectly recovered from loss of memory and mental depression and exhibits no tremor. There is very little nervousness. He still suffers from slight headache in the morning. He is sleeping fairly well and is not much troubled with dreams. He suffers from fatigue, but far less than when treatment was commenced. The pain in the lumbar region is not much improved, but in every other way he is making steady progress. While under treatment he has been doing clerical work continuously.

Sapper M., age 30, was blown up by a mine explosion in September, 1915. He was unconscious for ten hours. He had the usual symptoms of shell-shock, but tremor all over the body was particularly prominent. There was also drop wrist on the left side. After three months in a military hospital he returned to light duty. His condition gradually became worse again and he reported sick about the middle of April. When first seen tremor was very noticeable. He complained of headache and insomnia which had not diminished at all while under treatment. There was also loss of flesh, muscular weakness, loss of memory, mental depression and bad dreams. He reported sick on account of the tremor increasing and persistence of paralysis of his forearm. He has now had six treatments by cerebrospinal galvanism. He is sleeping well and has
only slight headaches occasionally. The tremor has disappeared, his memory is good and he is quite cheerful. Some voluntary movement returned to the extensors of the hand and wrist after treatment of the spine by labile galvanism, and the power of movement is increasing, although he has had no local treatment for these muscles.

The conclusion I have arrived at from the trials I have carried out of this treatment is that nearly all cases of the neurasthenic type of shell-shock would derive great benefit from it, and the majority of cases, excepting those of the most severe type, would be cured in under three months.

DEVICES FOR THE DISPOSAL OF WASTE WATER IN CAMPS.

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The sanitary requirements of camps of some months or perhaps years duration, which are, however, not constructed on a permanent basis, have, like many other military matters, become more manifest since the outbreak of war. For temporary field camps, and for permanent ones, a guide as to these requirements can be obtained from the existing handbooks on camp sanitation, but the large number of base camps in existence at the present time make their requirements more deserving of attention than has been the case in the past. I venture to believe that the sanitary structural work carried out at a large base camp will furnish some useful information on this subject. We have been under the necessity of finding by experience satisfactory methods of dealing with these problems, and the form of appliances that have eventually been adopted are of so successful a nature that I am induced to give some account of these in the hope that they may be of service to others. I am introducing no new principles, but rather what I consider to be the most satisfactory forms of apparatus that can be economically placed in field camps, which in all probability are destined to be occupied for the duration of the War, but are supplied with no drainage system. They are limited in space, and are under the necessity of getting rid of their refuse within their own area. The upper surface of the soil consists of about two feet of sand, under this is solid chalk, not readily absorbent.

The congestion of these camps renders it most necessary that the ground be kept in as clean a condition as possible. The carriage of waste liquids into underground spaces without fouling of the surface earth is a problem presenting difficulties which I do not think can be appreciated except by those that are familiar with the practice of dealing with such matters.