the views which I have expressed regarding the danger of encamping on ground that has been vitiated by previous parties suffering from cholera. The left wing of the 104th, after the occurrence of five cases of cholera, removed on the 13th September to Chum Kunnie, and marched next day *en route* to Cheraat, and they only lost two more cases, which is a highly favourable result of removal. The remainder of the regiment continued to suffer daily from cholera till the 17th, when it also marched to the same ground at Chum Kunnie, and followed the same route. It had 3 cases on that day, 15 the next, and 27 the following day, and the disease continued amongst them for ten days longer. The only way to account for this different result is by the fact that the ground had been vitiated by the left wing before the passage of the right wing over it. Strong theoretical views blinded those who afterwards endeavoured to trace the cause of this disaster, and prevented their detecting the danger that lay in the infected ground. The necessity of prompt removal is deemed so urgent that it is strictly enforced by the orders of government. It is made imperative after the occurrence of more than two fatal cases in one barrack, and is independent of the opinion of the local military authorities or theoretical medical views. Recent experience has shown the soundness and necessity of these stringent orders, and the disastrous result of neglecting them.

So long as philosophical musings on theoretical questions are the relaxation of zealous students, those of M. Pettenkofer on the possible or probable changes of the cholera-germ in passing through the subsoil stage of its transition existence must give pleasure to all true investigators of disease. There is an important element in the human organisation, which has been omitted or overlooked by the professor and some other recent writers, which has unquestionably a decided influence on the propagation of this disease and its action on the human body. This influence was formerly called the *vis medicatrix naturæ*—a vital power by which inanimate substances are converted to the use of the body, which controls the natural processes of decay called fermentation and putrefaction, and without which both the food and the body itself would progress through these natural courses to decay. It may be said that this is speaking vaguely, but it leads us to consider how these processes are regulated, and by what means they are conducted in the healthy body, and how their absence or removal would influence the natural changes in food or poisonous bodies introduced into the system. It would be well to follow up the investigation by searching out by what means these agencies in the body are generated, and how they act in preventing the entrance of the cholera poison into the body, or in modifying its action when there, and expelling or removing it from the system. This forms one of the most important points under discussion, more important even than a knowledge of the history of the poison outside the body, to which attention has been chiefly directed by the professor.

The sanitary inquiries of recent times have been principally directed to the history of the dissemination of the disease. Such investigations are of great value, but they are merely preliminary to the main question of curing the disease when the poison has entered the system. In this branch of the inquiry the opinion of so profound a thinker as M. Pettenkofer would be of great value, and to this subject I trust he may turn his attention.

CLINICAL MEMORANDA.

ERYSIPELAS AFTER VACCINATION.

As some accidents will occur in vaccination, I think it would be well if all were recorded, so that public vaccinators and others might have some idea of the real statistics of such occurrences as vaccino-syphilis, erysipelas, etc. The case which I wish to bring under notice, unfortunately, ended fatally on the seventh day after vaccination.

D. A. L., a strong healthy-looking child, aged three months, was vaccinated on January 20th, 1873. Nothing unusual occurred till the evening of the 24th, when the mother noticed a slight blush round the spots where the arm had been scratched. This was but little noticed, the mother thinking it was but the natural result of the vaccination. The child passed a restless night; in the morning, the circle of inflammation had increased, and the arm began to swell. The inflammation soon spread over the entire arm. The parents became alarmed, and sent for me in the evening. On examining the child, it was evident the case was a severe one of erysipelas. The inflammation having spread over the entire chest and abdomen, I prescribed small frequent doses of the muriated tincture of iron and a small alterative powder. In spite of all our endeavours the inflammation spread, and on the 27th the child died exhausted.

W. T. BOLTON, Public Vaccinator for the Western District of the Lanchester Union, etc.

CLINICAL LECTURE ON CASES OF PARALYSIS AGITANS.

By C. HANDFIELD JONES, M.B. Cantab., F.R.S.,
Physician to St. Mary's Hospital.

GENTLEMEN,—A clinical lecturer ought not to give too much prominence in his discourses to the rarer and more peculiar cases that present themselves, but neither ought he to pass them by. We had some while ago in the wards two cases of paralysis agitans—one of them a very striking and interesting example. I propose to relate them to you, together with two other cases from my private practice; and then to offer some general remarks on this somewhat rare disorder.

CASE 1.—P., aged 47, a coachman, was seen March 6th, 1871. About nine months previously, he was knocked down by a blow at the back of his right shoulder; he was not at all stunned, and no bruise nor anything amiss could be detected at St. George's Hospital. He was out with his carriage the same day, but was unable to put his hand behind him, though he could on admission. He had never intermitted his occupation of driving. He was not at all a nervous man, and was of robust make. Directly after the accident, his right arm began to be affected with tremor, which increased very much, and extended to the right leg, which shook like the right arm—sometimes one, sometimes the other, sometimes both together. He had less tremor while he was engaged in doing anything, but had more when he was speaking to any one. He could stop the tremor by an exercise of volition, as when he grasped some object strongly. The tremor seemed to affect the forearm most; the arm much less; the shoulder and side of the trunk least. The tremor was sometimes very marked in the muscles between the thumb and index finger; at other times, it was not. It consisted of movements of abduction and adduction, much more than of flexion and extension; but the extensors at the back of the forearm trembled notably. The tremor was made worse by cold, or if he became chilled; but wine, or beer, or tea, or fatigue, had no effect at all upon it. Whiskey and water, however, he said, made the tremor worse. All the movements of the arm were perfect, but he could not shave himself with his right hand. He could grasp strongly with his right hand. There was no numbness whatever in the right hand or leg. He had not the least tenderness about the spine, or on pressing the head downwards. The tongue was put out straight. The interrupted current was felt much more in the left arm than in the right, but the muscles of the affected arm responded to it. He slept well and quietly, was perfectly temperate, and had good general health. His sight had failed the last two months; he could not see to read the newspaper, but with the aid of a convex lens he could read No. 2 of Snellen. His hair was not half so thick as it used to be; it had become quite thin within the last two months. His left eye was injured by a kick twenty-five years ago, but he had still some sight in it. His parents were very healthy; they died of old age. No brothers or sisters had suffered as he did. There was no blue line on the gums. The bowels were right; his appetite was good; pulse 64, soft. He was ordered to take fifteen grains of bromide of potassium three times a day.—March 13th. No effect from the medicine was observed. His hand shook so that I could not feel the pulse; his foot shook as he sat. He said now that “brandy and water at night stopped the working of the nerves”. He was ordered to have two grains of valerianate of zinc and a third of a grain of extract of belladonna three times a day.—March 30th. He was no better. He said that the pills brought on pain and tightness at the xiphoid region. The spine was curved, and convex to the right in all the dorsal region. The left shoulder was lowered. There was good breathing at the back on both sides. There was a patch of tenderness about the insertion of the right deltoid. I applied a continuous current to the spine and the arm and hand. After the application, while he was dressing, he declared that he felt better, and so he appeared the following day; but the good effect soon ceased to be produced, and the remedy was discontinued. Conium was next given, but in too small doses, and was too soon abandoned. He then had small doses of nitrate of silver, but without any decided benefit. Subcutaneous injection of morphia was performed a few times, and had a marked tranquillising influence; he was quite free from any tremor for twenty-four hours after the first injection, and was much more easy and comfortable for two days after the second and

third; but after April 23rd I lost sight of him, and I cannot report that any permanent improvement was obtained.

CASE II.—E. B., aged 17, a landress, was admitted September 11th, 1872. Nearly two weeks previously, while out walking, she noticed her left arm begin to move about, and she did not seem to have any control over it. Since then, she had grown gradually worse, and now both arms were constantly on the move as she lay in bed. The right arm sometimes became quiet; it was so while I was examining her; but when I took hold of her left hand and kept it still, which was not difficult, the right arm began to be agitated, and continued so as long as I was with her, even after I had let the left arm go. The movement in the left arm was a rapid pronation and supination; in the right it was similar, but partook also of flexion and extension. The movements were not extensive; they occurred at the rate of 180 per minute. The tremor ceased during sleep. She seemed able to control the right arm, but not the left. The catamenia were regular; the bowels were constipated. No rheumatism or scarlet fever had occurred, nor had she been frightened. She used to have worms when a child, but did not know whether she had any now. The heart's sounds were normal. The diet ordered was simple—milk and beef-tea. She was ordered two drachms of succus conii three times a day, and, after the 14th, four times a day.—September 16th. She was weak when she got up. Both hands were now almost perfectly quiet and steady as she held them out. The urine was normal.—September 19th. Diarrhoea came on in the night, and she had vomiting this morning. Pulse 75. She had pain now and then in the left side.—September 22nd. The diarrhoea had ceased. She was ordered twenty grains of saccharated carbonate of iron three times a day, and ordinary diet.—September 30th. The hands were steady, but her head had been aching all yesterday and to-day. Her eyelids "tittered" while she was asleep. She took food well. The bowels were costive. The carbonate of iron was continued, and she was ordered to have twenty grains of bromide of potassium in camphor mixture three times a day.—October 3rd. She was unsteady at times. The left hand was now affected with tremor as before; the right was steady. Her feet in walking moved in a disorderly way, and her gait was more or less running (*festinans*). She had pain extending up the left leg. The head was better. She said that on September 28th her speech became affected; she stuttered so that she could hardly articulate. Now "it was gone into her hands and feet, and she could speak better." The bromide of potassium was omitted, and she was ordered three drachms of succus conii four times a day.—October 7th. She was quite steady, and could walk quite well; but her speech was a little impaired.—October 10th. She was quite well, and went out.—December 9th. She had a little recurrence since she went out, but with conium and carbonate of iron has got right again.

CASE III.—T. S., aged 40, a tanner, was admitted September 3rd, 1872. The previous Christmas, having been quite well previously, he suddenly felt as if a brick had fallen on his head. He did not become unconscious, but had for fourteen days pain at the fore part of the head and in the left shoulder. After that time, his head began to shake, twitching round in rotation backwards and forwards from the median line. This disorder lasted three weeks, and then his hands became affected as they were on his admission, but less severely. Two months before admission, his feet and legs became affected; the right leg used to move as fast as his arm, especially when he was lying down. This affection of the lower limbs had ceased during the last three weeks. He had always been temperate. He never suffered any sudden shock. He never had a blow on the head. His head was large; the cheeks and lips red; the chest broad; the belly protuberant. On his admission, both forearms were in frequent movement from the elbow; there was a to-and-fro movement of small extent while the arms lay quietly folded on his chest; but when his arms were extended, as in shaking hands, the movements became very rapid and extensive, and were so forcible that they could scarcely be controlled by any power that I could exert. The rate of the movements while he was lying quiet was 240 per minute. If he raised even one hand, the agitation came on very violently. The hands began to be affected on March 2nd, and had continued to be agitated until his admission, except that his left arm had recovered now and then for two or three days. He could feed himself with his left hand by snatching morsels rapidly and carrying them instantly to his mouth. Any forcible attempt to stop the agitation aggravated it extremely. If he stretched out his arms as he lay in bed, and laid them by his side, they were agitated immediately much more than before, and I could not control the movement at all. He had gained two stone in weight since his illness commenced. The muscles of his arms did not appear large. The sounds of the heart were quick and weak; there was no *bruit*. The bowels were regular. He had been in Guy's Hospital twice, and in

St. Thomas's once. In Guy's, his left hand became quiet, but not his right. He was ordered three drachms of succus conii three times a day.—September 4th. Pulse 54. He was quieter; his hands hardly moved at all.—September 5th. The left hand was quite quiet; he could raise it and move it about in any way. The right was also better, but shook if he moved it about; and there was pain at the knuckles of the index and mid fingers. He had not been so well as he was now since he was first attacked. Pulse 72, quiet.—September 7th. He could move the right hand and arm without tremor; but, if he squeezed another person's hand, the tremor came on. He was allowed ordinary diet.—September 9th. His right and left hands were both steady now; he could move the right quite well, and grasp my hand without any tremor ensuing. There was still some soreness about the knuckles. The urine was quite aqueous, without sediment; specific gravity 1004.—September 14th. He had never been so free from tremor and pain as now, since he had been ill. He experienced great sense of rest from the cessation of the tremor; he used to feel as if a rope were round his shoulders. The only symptom which he had now was a sort of burning about the right elbow and down the arm. He said that his abdomen felt less distended than it did.—September 16th. The urine was yellow, of specific gravity 1031, not albuminous. He could hold out a kitchen-chair at arm's length with the left hand without tremor; but, when he did it with the right, it shook considerably.—September 19th. He was ordered two drachms of cod-liver oil daily.—September 23rd. The conium was omitted, and he was ordered a scruple of saccharated carbonate of iron three times a day.—He was made an out-patient on October 3rd.—October 17th. The disorder returned on the 12th. He could keep the right arm still, unless he exerted it. After some exertion, both hands went off into tremor. He had been unable to wash himself the last week. He had pain on each side of the neck and nose, as if some one were pulling at these parts; the pain extended down to the left side of the chest. He was ordered five drachms of succus conii three times a day, and galvanisation; but, by mistake, was faradised. October 24th. He was decidedly better; his arm shook for about six hours after faradisation, but was better afterwards. The left arm was quite steady; he could hold out his hand with a little tremor.—October 31st. The tremor now was very considerable, as he had just been faradised; but the tremor thus excited did not last so long now as it used. His abdomen used to swell much, but had not at all the last week. He was ordered to continue the mixture, with six drachms of succus conii three times a day; and to be galvanised.—November 15th. He was so much better that his neighbours could not believe he was the same man.—November 18th. He was now better than he was when he left the hospital. He could hold out a kitchen-chair at arm's length with both arms, but had some tremor in the right after holding it out a few seconds. He thought that he was steadier after galvanisation than after faradisation.—November 28th. He could work now seven hours a day. The mixture was continued twice a day.—December 2nd. He did not grasp very powerfully; the arm trembled a great deal when it was raised straight up.—December 9th. He could hold out the chair at arm's length notably longer than he could before his power failed and tremor came on. He continued at work.—December 23rd. He could hold out a chair now without any tremor. He was discharged.

CASE IV.—Mrs. H., aged 62, was seen on September 27th. She had been suffering slightly in the same way for nine years, and had been worse since she had an attack of diarrhoea five weeks previously. Lately she had had some difficulty in speech and some pain in the head. She had slept very badly the last two or three years. Both hands and forearms were in continual movement—a sort of tremor; the hands moving to and from the side, and the upper arm being apparently at rest. The movement was very rapid. On close examination, the movement seemed to be produced by alternate actions of the pectoralis major and deltoid muscles adducting and abducting the arm. If the forearm were held still, these movements were replaced by others of flexion and extension of the wrist. She could not keep her hands still for even a moment by voluntary effort. Her feet and legs moved in the same way; but, as she sat, I saw little more than the feet moving at the ankles. If she stood five minutes, she had pain in her back, and wanted to sit down. When she walked, she took short quick paces, leaning forward and tending to run. She could not go up and down stairs, nor walk more than a few yards. She had great want of control over the muscles of the thigh. Any excitement or mental agitation aggravated the tremor. The left arm and leg were first affected; the right two years afterwards. If she had a good night from chloral, she was much better the next day. She never had any fall to speak of. Her head was quite steady, but her lips at times twitched a good deal. Her general health was good. The heart and

lungs were sound. She had taken a great variety of tonics and sedatives, but had become worse. The patient was seen in consultation with Mr. White, who, at my request, gave a full trial to conium, but without any benefit ensuing. She took five drachms or more of the succus three times a day. Subsequently, she had a fortnight's trial of one of Pulvermacher's large chains; but this was equally inefficacious.

In Case I, the tremor could be arrested by an effort of volition; in Case IV, it could not; in Case III, it was aggravated. In Case II, it could be arrested in one arm, but not in the other. Some sensory disorder was present in Cases III and IV, but scarcely at all in the others. The affinity of the disorder with chorea was very evident in Case II; in fact, I have no doubt the condition was essentially identical with the chorea; but some slight modification of the state of the nerve-cells rendered the symptoms different. The circumstance that Case III gained two stone in weight during his illness is noteworthy. I suppose the exhaustion of nerve-force induced asthenic obesity, just as an acute illness may do during the period of convalescence. It is also remarkable that his abdomen lessened in size considerably as he improved—probably from the intestinal muscles regaining their tone and preventing the accumulation of flatus. The alternation of the limb-affection with impairment of speech (vocal) in Case II is good evidence of the purely neurotic character of the disorder.

[To be continued.]

RECURRENT SYPHILITIC KERATITIS.

By JAMES DIXON, F.R.C.S.,

Consulting Surgeon to the Royal London Ophthalmic Hospital.

WE are wholly indebted to Mr. Jonathan Hutchinson for our knowledge of the special keratitis resulting from inherited syphilis; and he it was who distinctly pointed out the peculiarities of complexion, features, and teeth, which are invariably associated with this form of corneal disease. Among his reports (*Clinical Memoir*, etc., 1863), I do not find an instance of this keratitis recurring in a severe form after an interval of several years, and I have observed only one such case in my own practice; it may, therefore, be worthy of record. I do not mean to assert that recurrence of this affection is in itself very uncommon. One often sees it return after a short interval, when the first attack has been a slight one, and the recovery of corneal transparency not quite complete. The severity of the two attacks, the perfect recovery from the first one, and the long interval of quietude, form the peculiarities of the following case.

H. C., aged 12, came to me January 1st, 1866. He had a pale complexion and very light hair. The teeth were characteristic of inherited syphilis, especially the middle upper incisors, which had what I have called the "screw-driver" shape. The right eye was healthy; the left cornea had a crescentic plexus of vessels along its lower edge, and was so hazy that the pupil could scarcely be traced; No. 20 Jäger being only noticed on black marks. Early in February the right eye began to be irritable, and in the course of three weeks the cornea was as opaque as the left had been. No. 20 type was now not read with either eye. The left eye steadily improved under treatment, and by the end of April could even read No. 1. During May the right eye improved also, and No. 4 could be read; in October, No. 2; and on the 14th December, both corneæ were clear, and No. 1 could be read with either eye.

For more than three years the patient remained well; but about the middle of 1870 he became subject to attacks of epilepsy, and was placed under the care of a physician. At this time sight was excellent, and the corneæ were brilliantly clear. They remained so till May 1872, when the left eye became irritable, the right soon suffered in the same way, and by the middle of June both corneæ were so opaque that all reading power was lost. Under treatment the corneæ slowly began to clear—the clearing commencing, as it always does, at the circumference, through which portion the pupil could be discovered, while the central opacity still remained dense. When I last saw the patient, in December, the corneæ were not yet clear, but he could read No. 12, and was steadily improving.

The treatment on which I rely in this disease is iron, given in those small doses in which alone I believe it is ever beneficial, with only a little mercury; a grain of calomel once in ten days or so, to prevent the iron from injuriously affecting the liver; the only local application, except occasional fomentation with warm water, being atropine. Good diet, and all other means to improve the patient's general condition, are essential in these cases; and I think that blistering, issues, and all so-called counterirritation, only do harm, by weakening the patient and interfering with rest.

ON COLLES' FRACTURE OF THE RADIUS, AND ITS TREATMENT.*

By J. ALEXANDER MACDONALD, M.D.

OF all the injuries which come under the care of the surgeon in ordinary practice, it has been observed by a modern writer on the subject, "few fractures have had so many ingenious splints devised for their treatment; yet, in spite of the utmost care, most cases of this fracture turn out unsatisfactorily, and many are the actions of damages that have been raised on its account."

When we consider the frequency of the lesion, it must appear strange that it was not until the year 1814 that an accurate description of its pathology was given by the eminent surgeon whose name it bears; while in Sir Astley Cooper's classical work on *Dislocations and Fractures*, edited by his nephew, which appeared in 1842, in describing the symptoms of this fracture, Sir Astley remarks: "I have seen this accident frequently, and at first did not exactly understand the nature of the injury; indeed, dissection alone taught me its real character."

Eight years previously, the celebrated Dupuytren, in his *Leçons Orales*, had expressed his belief that what had up to that period (1834) been described as dislocations of the wrist, were in reality fractures of the radius; and, still further, that, in the numerous dissections of wrists which he had made with a view to determine the question, he had never met with dislocation as the consequence of a fall on the palm of the hand, but solely as the result of disease, or to be otherwise explained. (*Vide* Sydenham Society's translation, by Mr. Le Gros Clark, p. 120.) In a foot-note at p. 138 of this volume appears the germ of Gordon's apparatus—viz., "convex splints, adapted with their convexity towards the centre of the arm."

In 1850 was published a *Treatise on Fractures in the Vicinity of Joints*, by Dr. R. W. Smith of Dublin, in which appear Colles' description of the accident, quoted at length from the *Edinburgh Medical and Surgical Journal*, and the author's opinion that Sir Astley Cooper had confounded the injury in question with luxation of the carpus; his words (p. 494) denoting an evident rupture of the radio-carpal ligaments—to wit, "an evident projection of the radius and ulna on the dorsal surface, and of the carpus on the palmar surface of the forearm."

According to the several authorities alluded to, the seat of the fracture is about an inch above the styloid process, and generally transverse; occasionally, however, presenting some degree of obliquity in its course, either downwards and inwards or downwards and outwards.

Referring to the bones of the forearm as they appear *in situ*, we observe the normal concavity of the radius anteriorly; the direction of its carpal extremity forwards and inwards; and the difference in length between its anterior and posterior surfaces, amounting, on an average of specimens, to nearly half an inch.

On the occurrence of the accident, we have the following results; viz., the natural concavity of the radius is lost; its distal extremity, with the carpus attached (in consequence of the unopposed action of the supinator and long extensors) is carried backwards, outwards, and upwards; while the length of the bone anteriorly is augmented in a ratio corresponding to the interval between the fragments, and the interosseous space diminished by the approximation of the upper fragment towards the ulna by the pronator quadratus.

Accepting the above as the pathological conditions presented to us, we have to consider by what means we may best obviate them in endeavouring, first, to restore the form of the radius; second, to bring back its carpal extremity to its proper aspect, *forwards and inwards*; and, thirdly (as a consequence of the preceding steps), to remove the obstacles to the reunion of the opposed surfaces, and, if possible, secure the normal length of the bone (radius) before and behind. How difficult of accomplishment this last point is, may be inferred from Dr. R. W. Smith's testimony that, out of twenty cases of fracture of the lower end of the radius, in none had the normal length been restored; in all, the anterior surface exceeded the posterior (p. 150). These several desiderata have been met by the apparatus known as Gordon's splint, in which the normal curve of the bone is taken as a guide, and the radius thereby forced to assume its proper form and relations; while the carpal surface is directed downwards, the hand being moderately adducted, and midway between pronation and supination finally. They are easy of application; and the feeling of comfort experienced from the support thereby afforded is marked, when contrasted with any other form of splint in ordinary use. To them the motto "*Cito, tuto, et jucunde*," seems especially applicable; and by their employment the

* Read before the South Midland Branch.