

in less than ten minutes. The arteries were then secured, the incised edges were brought together, and retained in apposition by eight sutures, at the distance of an inch from each other. Straps of adhesive plaster were then applied, and some lint, smeared with simple ointment, laid over it; the knees were tied together; the parts were kept constantly wet with cold water; the bowels were attended to, and kept free by small doses of sulphate of magnesia; she was ordered a low regimen, under which treatment the parts cicatrized, and were perfectly healed in ten days, leaving the poor woman in a comfortable condition, to which she had been a stranger for eleven years. She was able to walk out of the hospital on the 12th day after the operation.

The most tedious and troublesome part of the operation was in securing some vessels about the clitoris; nor did the oozing of arterial blood cease until a ligature was passed round the part, and slight pressure made. This, of course, was owing to the blood coming from the cells of that body. It appeared that the operation could have been much expedited by removing, with one stroke of an amputating knife, the whole mass at one side, after the division of the integuments, instead of repeated cutting with a scalpel.

On examining the diseased state of the tumour, the integuments were found approaching to a semicartilaginous state. The whole substance was dense, and appeared to have been deposited in cells, having a fatty-like appearance; the arteries taken up did not exceed more than five on each side, and were remarkably small.

The preparation was brought to England, and deposited, by Staff-Surgeon Dease, in the Museum of the Medical Staff at Chatham.

Explanation of the Plate.

Fig. 1. Is a posterior view of the tumour.

Fig. 2. An anterior view.

Fig. 3. A view of the wound after the removal of the tumour.

Fig. 4. A view of the parts after the wound was cicatrized.

VI.

Case of Rotatio or Chorea, treated Successfully by Rubbing Tartar Emetic Ointment into the Scalp, and along the course of the Vertebral Column; with Observations on the Pathology and

general Treatment of Diseases of the Muscular Movement. By ROBERT HUNTER, Surgeon, and Lecturer on Anatomy and Surgery, Glasgow.

ON the 12th of April last, I was requested to visit Jean Brown. When I arrived at her lodgings, I found her in bed lying upon her back, and her head rolling from side to side upon the pillow, with a quick, regular, and uninterrupted movement. She was perfectly sensible, and could reply to any question that was proposed to her. I had not continued long in the apartment when the motions of the head became obviously accelerated; and one of the relatives hinted that a *fit* was about to appear. The words were scarcely uttered, when, with a strong convulsive movement, the patient sprung from her back, and sat up in bed. The rotatory motions of the head now became furious and alarming. They were executed with such immense rapidity, that it was difficult even for the eye to follow them. She appeared absolutely to be looking backwards and forwards, and in every direction at the same instant. The movements, while in the sitting posture, were not confined to the head, for the whole trunk likewise partook of the rotatory motions, the breech being the pivot upon which the whole turned. These convulsive motions continued about a minute, when they took a new but equally strange direction. The flexor and extensor muscles of the head and trunk were alternately called into action; and without the breech of the patient moving from its first position, her head was rapidly carried forwards to her knees, and backwards to the pillow, for about half a minute, when the paroxysm ceased, and left the patient greatly exhausted.

Such is a short description of a *paroxysm* with which the patient was affected when I first saw her; and I was informed that she had been subjected to above fifty that day, of a similar description. For the last three months the disease had been fast gaining ground; and so anxious and affected was the patient about the result, that in the most plaintive accent she said she would submit to any operation however painful;—that she would even allow herself to be opened alive, to get quit of so distressing a malady.

On relating the case to my friend Mr Stirling, one of the district surgeons of this city, he proposed to place her upon his poor-roll, and proffered his assistance in the treatment of the case. I of course eagerly embraced his proposal.

On the 19th of April we visited the patient, and took the history of her case. She is about 23 years of age, unmarried,

and of a leucophlegmatic habit. Has been unwell for the last seven years, during which period she had been three times in the Glasgow Royal Infirmary, and likewise under the care of several eminent practitioners in town, from all of whom she received only partial benefit. The disease, she says, commenced in the lower part of the belly, in the uterine region, where she still complains of pain upon pressure, the pain being slightly increased at every menstrual period. No enlargement or hardness of the uterus, however, could be detected by any species of examination. After the uterine region had been affected for some time, an eruptive disease appeared on the external generative organs, the exact nature of which we could not learn, except that the eruptions were numerous, and resembled pimples. A few months afterwards, a pain commenced in the region of the liver, which has never been altogether removed, although it has frequently been relieved by the application of blisters. A seton, which still remains, was some months ago inserted in the hepatic region, and when it discharges copiously, is of considerable benefit. No perceptible enlargement of the liver exists.

The disease in the uterine and hepatic regions having continued about a year, a shaking commenced in the right arm, which, in the course of two months, likewise affected the left, and in three months more extended to the head, and gradually spread over the trunk and lower extremities. After the tremulous movements had thus extended to all the muscles of the body, convulsive paroxysms (such as I have described at the commencement of this paper) soon supervened. The paroxysms at first were short, and appeared after long and stated intervals. The intervals, however, gradually shortened till the time when I first visited the patient, when the paroxysms were so numerous, that she was scarcely ever free of them.

Whilst lying on her back, as she usually did when no paroxysm was present, the tremulous movements were generally confined to the head, which kept it rolling from side to side upon the pillow from morning to evening, and sometimes from evening to morning, with a regularity which forcibly remind me of the vibrations of a pendulum. When she lay upon her right side, her left side became affected with a violent tremor; and when she lay upon her left side, the right exhibited similar phenomena. As soon, however, as she turned upon her back, the movements were again confined to her head. Sometimes the motions of the head ceased, when one or more of the extremities became instantly affected with a similar kind of tremor; and when the tremors of the extremities ceased, or were arrested by force, the movements instantly recommenced in the head.

After these tremulous movements had continued for some time, a convulsive paroxysm generally arose without any apparent cause; it could, however, be easily induced at pleasure. So easily, indeed, could it be induced, that any attempt to interrupt the motions of the head, such as by the application of the finger to the hair, or head-dress of the patient, brought it on with tremendous violence; and if the paroxysm itself was interfered with, even in the slightest degree, its violence and duration were always increased. The very idea of being touched during a convulsive paroxysm, was contemplated by the patient with terror.

She frequently complained of dimness of sight,—of hardness of hearing, and of a considerable bluntness or torpidity of all the external senses. Her pulse was natural with regard to frequency, but weak and sometimes intermitting. Her tongue clean, but her bowels tending to costiveness.

As the nervous system appeared to be considerably disordered, I proposed that the patient's head should be shaved, and tartar emetic ointment rubbed on the scalp, and along the course of the vertebral column. As this treatment was calculated to affect at once the brain and spinal cord, the root of the nervous system, one ounce of the ointment was accordingly ordered to be rubbed, at first, into the scalp only. Owing to some mistake, a smaller quantity of the ointment than prescribed was rubbed in, on the evenings of the 19th and 20th. Little effect was accordingly produced on the scalp, and none on the disease. On the evening of the 21st one ounce more of the ointment was used, which, on the 22d, produced a large crop of pustules, with a decided effect upon the disease. The rolling of the head upon the pillow was now comparatively trifling, and she mentioned, with great exultation, that she had been affected with three paroxysms only during that day. One ounce of the ointment was again ordered to be rubbed into the scalp. On the 23d the patient was obviously fast improving; the motions of the head were scarcely perceptible, and the convulsive paroxysms reduced to two daily. One ounce of the ointment was ordered to be rubbed in *daily* till the scalp was completely covered with eruption.

This treatment was continued from the 23d till the 28th, during which period the patient remained without a paroxysm. On the 28th the tremor of the left superior extremity was very considerable, and often alternating with tremor of the head. She felt her general health worse, and complained of nausea and uneasy sensations about the head, which she believed were

the precursors of a convulsive paroxysm. The experiment of interrupting the motions of the head was unluckily made, which induced a violent fit; but we were of opinion that it did not equal the former paroxysms, either in intensity or duration.

As the scalp was completely covered with eruption, the treatment was now extended to the region of the spinal cord, and one ounce of tartar emetic ointment ordered to be rubbed daily into the skin, from the occiput to the sacrum, till great irritation was produced.

From the 28th till the 30th, the quantity of ointment above specified was rubbed into the back every evening, without producing much effect upon the skin, or any farther change upon the disease. On the 1st of May, however, the patient complained of great pain from the ointment. Her back was covered with pustules, and the shaking now confined to the left fore-arm and hand. When the hand was kept from moving by force, a slight degree of motion was still induced in the head; but when the muscles which are inserted into the occiput were likewise compressed, the motions of the head ceased also. This was the first time, for the last nine months, that all irregular motions of the body, by any contrivance whatever, could be made to disappear.

From the apparent good effect of momentary compression, a bandage was tightly applied from the fingers to the shoulder, for the purpose of trying the effects of a more equable and permanent compression than could be made with the hand. On the 2d of May, the tremor was still confined to the left fore-arm and hand, but not perceptibly diminished in violence. As the bandage was of no benefit, it was removed. The patient, however, was in much better general health, and higher spirits, than we had ever seen her. At our request, she rose from her bed and walked with a steady step across the room. Either from agitation or the effects of muscular exertion, she had scarcely sat down again when a violent shaking commenced in both superior extremities. When she crossed her arms, and pressed them firmly to her breast, the shaking passed from the upper to the lower extremities; and when her feet, by external force, were prevented from moving, the shaking returned to her arms. No tremor of the head took place. These tremulous movements continued only while she sat out of bed; for when she laid herself upon her couch, the motions were confined, as before, to the left fore-arm and hand. As the patient laboured under considerable debility, probably the united effects of confinement and disease, at the suggestion of Mr Stirling, tonic

medicines were had recourse to, and half a drachm of the carbonate of iron three times a day was prescribed. Notwithstanding the pain which she felt from the state of her back, half an ounce of the ointment was daily rubbed in upon the back till the 7th of May, when her general health was found improving, and her strength so far increased that she could sit, and even walk in the open air for some time. The tremor, in a very slight degree, still existed in the left fore-arm and hand; and she complained, occasionally, of pain in the right hypochondriac and uterine regions.

The eruption on the scalp being now nearly healed, one ounce of tartar emetic ointment was ordered to be rubbed into the upper and inner part of the thigh, for the double purpose of removing the uterine irritation, and preventing a relapse from the drying up of the head.

On the 11th of May, the tremor left the arm and every part of the body. The patient was so well that she could sit up in bed, knit stockings, sew, or engage in any similar domestic employment. She complained, however, of considerable general debility, as well as pain in the right hypochondriac and uterine regions, although she conceived, that the pain in the uterine region, since the application of the ointment to the thigh, was neither so violent nor so constant. One ounce of tartar emetic ointment was ordered to be rubbed into the other thigh, and the carbonate of iron to be continued.

On the 20th of May, when the patient was next visited, she was found nearly well. She could sit out of bed, and even walk about the house for hours together. She thought she was as free of "the nerves" as ever she was in her life. To prevent a recurrence of the disease, she was recommended to have her head shaved a second time, and an ounce of tartar emetic ointment to be rubbed into the scalp, and along the course of the spine; to continue the carbonate of iron; and as medical advice was no longer regularly required, she was urged to go into the country to improve her general health. *

The successful termination of this long continued and extraordinary case is attributable, I conceive, to the tartar emetic ointment alone. Every *tonic* of note, and almost every ingredient in the *Pharmacopœia*, had been tried for the last seven

* Mr Hunter, in a letter of 29th November 1824, says, that he is now fully justified in considering the cure to be complete; as, during the intervening six months, the patient has not had the slightest tendency to relapse, and is now strong and healthy.

years, under the ablest management, and tried in vain. As soon, however, as the eruption appeared on the scalp from the use of the ointment, the disease was obviously checked; and as the same treatment was continued and extended over the course of the vertebral column, the disease gradually diminished in violence, and at last disappeared.

I have presumed to call the disease *Rotatio*, as being expressive of the particular kind of movement which constitutes the principal symptom of the disease. It is undoubtedly a form or modification of *Chorea*, but so different from the common form as to be easily mistaken for a different affection. "Chorea" is a term so vague and undefined as to be applicable to almost any kind of convulsive movement; and accordingly, we find it applied to diseases of the most opposite descriptions—to diseases of the mind as well as those of the body. "Chorea Sancti Viti" was at first introduced into medical nomenclature, according to Horstius, in consequence of a cure said to be performed on women of disordered mind, who repaired to the chapel of St Vitus, near Ulm.

Every practitioner must have observed the common form of chorea, so admirably described by Dr Hamilton.* But there are certain forms and modifications of the disease, so uncommon, that many in the profession, I am persuaded, have scarcely heard of them. They are at the same time so curious that they deserve some consideration.

Frequently do we find chorea complicated with various disorders—at one time with some strange mental aberration, as in the case related by Thermier, the patient being of a deep melancholic temperament, and the limbs kept in a state of continual snatching and trepidation †—at another time, with the hysterical diathesis, and receiving some strange modification from that disease. Dr White of York has given us a very striking example of this mixed affection, as it appeared in a lady about 42 years of age. She complained of violent pain in the right side of the face, and of universal erratic aches and soreness. There was a scorching heat all over the skin, except from the feet up to the ankles, which were as cold as marble. Had frequently a violent pain in loins, which often shifted from hip to hip, the leg of the aching side having been so much affected with numbness, that she dragged it after her in walking. She faltered at times in speech, but

* On the Utility of Purgative Medicines, cap. iii.

† Consil. lib. ii. cap. xi.

this was generally of short duration. All the muscles of the body evinced in succession convulsive motions. Thus her face was first affected; then her nose, eyelids, and head, which was thrown forcibly backwards, and often twitched from one side to the other with exquisite pain. From this quarter the convulsive action removed, first into one arm and then into the other; after which, both legs immediately became convulsed. In this manner all the parts of the body were affected by turns. She was at all times perfectly sensible, and knew what limb was going to be attacked next, by a sensation of something running into it from the part already convulsed, which she could not describe in words. "No words," says Dr White, "can convey an adequate idea of her odd appearance; and I do not in the least wonder, that, in the times of ignorance and superstition, such diseases were ascribed to supernatural causes and the agency of demons."*

In his excellent work *De Sedibus, &c.* Morgagni relates a singular species of the disease. It is known by some authors under the name of *Malleatio*, the convulsive paroxysm principally consisting of a striking of the knees with one or both hands, as with a hammer. In Morgagni's case, the convulsive movement passed on to the sound hand, if the finger of the affected one was extended, and when the motions were attempted to be arrested by force, the convulsions became both more violent and general.

A still more singular form of the disease is said to occur in some parts of the north of Scotland, and is described in the following terms. "Those affected first complain of pain in the head or lower part of the back, to which succeed convulsive fits, or fits of dancing at certain periods. During the paroxysm, they have all the appearance of madness, distorting their bodies in various ways, and leaping and springing in a surprising manner, whence the disease has derived its vulgar name, '*Leaping Ague*.' Sometimes they run with astonishing velocity, and often over dangerous passes, to some place out of doors, which they have fixed on in their own minds, and then drop down quite exhausted. At other times, especially when confined to the house, they climb in the most singular manner. In cottages, for example, they leap from the floor to what are called the baulks, or those beams by which the rafters are joined together, springing from one to another with the agility of a cat,

* Edinb. Med. Comment, vol. iv. p. 326,

or whirling round one of them with a motion resembling the fly of a jack."*

A still more singular case is related by Dr Watt.† It is probably the most extraordinary of the kind on record. He calls it Periodical Jactitation. The patient was a lively girl of about 10 years of age. The disease commenced with an intolerable pain in the head, and constant inclination to keep her body in the erect posture. About a month after the commencement of the disease, she was seized with a propensity to turn round upon her feet like a top, and felt pleased and gratified when her relations attempted to increase the velocity of her movements. After a month's continuance, these motions ceased, when the headach returned with increased violence. Two months after this, a new kind of convulsive motion arose. It consisted in the patient lying across the bed, and turning round like a roller, moving in this manner rapidly from one end of the bed to the other. These motions were not confined to the patient whilst in bed. On the floor of the house, in the open air, and even in the shallow part of a river, where they tried the experiment, the motions still continued with uninterrupted regularity. After continuing in this state for about a month, the convulsive motions assumed an entirely new appearance. The patient now lay upon her back, and, by drawing her head and heels together, bent herself up like a bow, then allowing her head and feet to separate, her buttocks fell with considerable force on her bed. She repeated the same movements twelve or fourteen times in the minute, sometimes for fourteen hours together. These motions continued for about five weeks, and and were succeeded by others of a still more whimsical description. She was now seized with a propensity to stand upon her head, with her feet perpendicularly upwards! As soon as her feet gained the perpendicular, all muscular exertion was withdrawn, and the body fell down as if dead, her knees first striking the bed, and her buttocks striking her heels. This was no sooner done, than she instantly mounted up as before, and continued to exercise herself in this manner, sometimes for fifteen hours a day, at the rate of from twelve to fifteen times in the minute.

The principle which ought to guide us in the treatment of chorea, has, I think, never been sufficiently explained. The profession is certainly much indebted to Dr Hamilton for calling their attention to the state of the intestinal canal in this, as well as in many other disorders; but it must be admitted, that

* Edinb. Med. and Surg. Jour. Vol. 5.

† Medico. Chirurg. Trans. Vol. 5,

a deranged state of the intestinal canal is only an occasional exciting cause; and, even when this cause has for some time operated, how often do we find the removal of the cause producing no apparent effect upon the disease? Our patient was tried for a long period, we understand, with purgatives, without receiving the smallest benefit.

Tonic and alterative medicines are as frequently useful in this disease as purgatives; and the reason probably is, that debility of an organ, or of a system of organs, is often an exciting cause, and, by raising the energy of a part, or of the whole system, the exciting cause is removed, and the parts restored to their natural and healthy function. At the same time, how frequently do we find the most powerful tonics, such as the preparations of iron, of zinc, of copper, of silver, and of arsenic, of no avail? And when they do succeed, it is most frequently by effecting, after long and protracted courses, what I consider can be done in a few days by external applications.

Another plan of treatment is founded on the principle of allaying the irregular muscular movement by the use of antispasmodics and sedatives, such as musk, belladonna, foxglove, and opium; but the disrepute into which this practice has fallen, is a manifest proof that it never has been of great or essential efficacy. The utmost, I believe, that can be said in its favour, is, that it may produce a palliative, but rarely a radical effect.

The treatment of chorea, by rubbing tartar emetic ointment into the scalp, and along the course of the vertebral column, is, so far as I know, new, and promises; did we dare to generalize from one case, to be remarkably successful. The treatment is founded on what I consider to be sound and incontrovertible general principles, and, what is also of very great moment, the same treatment, I presume, will be found applicable to every variety of morbid muscular movement.

From the brain and spinal cord, the nervous fluid or influence, on which muscular motion is in a great measure dependant, is incontestably derived. The nerves are merely the conductors of this fluid. It is perfectly clear that they themselves are incapable of imparting it; for, insulate a nerve from the brain or spinal cord, and the muscles upon which that nerve is ramified, are instantly and permanently paralyzed. Admitting, then, the brain and spinal cord to be the fountain from which all nervous influence springs, we can find no difficulty in conceiving, how a structural or functional derangement of these parts should give rise to irregular movements of the muscular fibre. If this fluid were not duly secreted, or were prevented from arriving at the muscles, paralysis would be the consequence:

if it came forth too sparingly, or in an irregular manner, weakness and tremulous movements would be induced: or were it sent out too copiously, convulsions would be the result. In all *idiopathic* diseases of the muscular movement, we must consider the brain and spinal cord as the seat of the affection; and the only rational method, surely, of counteracting and curing such diseases, is to recal the brain and spinal cord to their natural and healthy function.

It must be admitted, however, that the great majority of diseases of the muscular movement are *symptomatic* only, or dependent merely on some local ailment. The irritation of teething, of worms in the intestinal canal, or of a scratch or puncture on the hands or feet, will give rise both to partial and universal convulsions. In such cases, the convulsions are not dependant at first on any derangement of the brain and spinal cord, but probably on some local derangement of the conductors of the nervous influence, that is to say, of the nerves of the part. The irritation which acts upon the nerves of the part, probably modifies the quantity, or may even vitiate the quality of the nervous power; and this morbid action, whatever it may be, once commenced, is apt to spread like almost every other morbid action, till it affect the root of the nervous system itself. It is only on such supposition, I presume, that we can account for the fact, that with the removal of the local existing cause of any convulsive disease, the convulsive movements do not always cease.

I do not wish to be understood as inculcating, that the removal of the exciting cause in the treatment of symptomatic convulsive diseases is of no avail. I consider the removal of the exciting cause as of the first importance; but after the cause has been removed, and the convulsive movements still continue, I could wish it enforced that our attention should immediately be directed to the root of the nervous system itself. There is one grand reason which I think should induce us to attend to the state of the brain and spinal cord, even in symptomatic convulsive diseases, I mean the tendency which any irritating cause has to act upon the extreme points of any nervous chain to which it may be applied. In inflammation of the liver, the pain is felt principally in the shoulder, at the most remote point of the phrenic nerve from the seat of the disease. In calculus of the bladder, one of the most constant symptoms is an itching in the *glans penis*. Worms in the intestinal canal create, it is well known, an irritation in the lining membrane of the nostrils. The sudden application of cold water to the surface of the body, will excite the bladder to contract and expel its contained fluid. These and other facts that might be mentioned, are all expli-

cable on the general principle, that any irritating cause which acts upon a chain of organs connected together by nervous sympathy, the pain and danger are seated uniformly at one of the extremities of the chain, and one of the extremities cannot long be affected without the disease extending to the other also. In marasmus, for example, we find the disease commencing sometimes in the digestive, and sometimes in the assimilative organs; * but in whatever extremity of the chain the disease commences, it is generally not long ere the other extremity of the chain is also affected.

In these convulsive diseases in which the irritation is confined at first to one organ, let us suppose the stomach or uterus. These organs, then, may be considered the extreme points of a set of nerves, whose other extremities arise from the brain or spinal cord. When the irritating cause has operated for a certain period on any of these organs, the irritation is imparted by sympathy to the other extremity of the chain, that is, to the point of the brain or spinal cord from which such nerves originate; and the irritation, when thus begun, will extend, if not counteracted, from that point over the whole root of the nervous system. This fact, I think, is beautifully exemplified by what takes place in tetanus. A man receives a scratch or puncture on the great toe. In a few hours he is affected with a spastic action of the muscles of the lower jaw. Here the irritating cause tells first upon the extremity of a long and complicated chain of nervous fibres, which, however, can be easily traced. The irritation travels first either along the course of the great sacro-sciatic, or anterior crural nerve, till it reaches the pelvis. In the pelvis numerous branches of the great sympathetic unite with these nerves. The irritation passing on then to the great sympathetic, finds its course along a continuous line of nervous matter from the pelvis to the cranium. It is well known, that the great sympathetic has a direct communication with the 5th pair; so much so, that it is usually said to take one of its origins from that pair. The irritation, then, would pass from the great sympathetic to the 5th pair; and according to the general law which we have already noticed, would tell more particularly upon the remote branches of that nerve; that is to say, upon the branches which ramify upon the temporal muscle, and which afterwards pass to the crown of the head.

This, it must be admitted, will only account for the spasmodic action of the temporal muscles: How, then, do we account for the spasmodic action, in tetanus, passing on to the other muscles of the body? After the irritation, then, has continued

* Good's study of Medicine.

for some time at the extreme ramifications of the 5th pair, the same morbid irritability has a tendency to pass to its other extremity, that is, to the origin of the nerve in the brain. The brain at that point becomes affected, and the diseased action extends over the brain and spinal cord, when all the muscles of voluntary motion become influenced by the same convulsive movement. If this view of the pathology of tetanus be correct, our curative means should be principally directed, *1st*, to that part of the body where the original irritating cause acted; *2dly*, to the muscles of the lower jaw; and, *3dly*, to the brain and spinal marrow: and the grand curative indication, I conceive, should be, to excite a new action in the immediate neighbourhood of all these parts.

The indication of exciting a new action in the vicinity of the brain and spinal marrow, is not applicable to tetanus only, but to all diseases which consist of an irregular action of the muscular system. Let us suppose, that all such diseases may be arranged into three classes.

1st, When the muscular action is weak and tremulous.

2dly, When that action is strong and rigid. And,

3dly, When it consists of a mixture of both; at one time weak and tremulous, and at another strong and rigid.

Some physiologists have believed, that the flow of the nervous power, in the healthy state, is in an undulatory course, with short and irregular pauses between each undulation; while others have maintained, that it is sent forth in a continuous stream. It is unnecessary at present to inquire which of these opinions is correct, or whether either of them is well founded. It is enough for our present purpose to suppose, that when the nervous power is sent forth in smaller quantities than natural, the tonic power of the muscles cannot be permanently supported, and a tremor or oscillation takes place, just as a shaking of the hand occurs after powerful and long-continued exertion, when the nervous supply is not adequate to the demand. On this principle alone, I think, all diseases of the first class may be accounted for.

When the nervous influence is sent forth too copiously, a high and long-continued action of a muscle, or set of muscles, is induced, giving rise to diseases of the 2d class.

In the great majority of cases, there is a mixture of the tremulous and convulsive movements, which forms our 3d class of diseases. And this fact, more than any other, has tended to convince me, that all irregular movements of the muscular system are principally dependant upon an irregular supply of nervous power to the muscular fibre. After the nervous power

has been sent forth for some time too scantily to maintain a tonic action in the muscular fibre, and thus produced a tremor of a part, or of the whole system: From the former retardation, probably, it rushes forth afterwards, at intervals, in copious profusion, and thus occasions in the muscles, which were formerly tremulous, rapid and strong convulsive movements.

If there is any truth in these observations, the state of the brain and spinal cord, in all diseases of the muscular movement, above all other circumstances, should be attended to; and the only rational method of breaking up the morbid action which obtains in these parts, is to excite a new action, either in the diseased parts themselves, or in their immediate neighbourhood.

Morbid muscular movement may be occasioned by a diseased state of the brain, or its prolongation; by a diseased state of the tunics which surround these; or by a diseased state of their bony encasement. At a future time, I shall prove the truth of these observations, by references to a number of important cases and dissections.

The grand indication, then, being to excite a new action in the vicinity of the brain and spinal marrow, different plans of treatment will suggest themselves to different practitioners. I have indeed a great partiality for the use of tartar emetic ointment; but I do not however suppose that it possesses any specific virtue over such diseases. Blisters—the moxa—the actual or potential cauteries, will produce, in all probability, the same effects; and in some diseases which run their courses with uncontrollable fury, as tetanus or hydrophobia, the potential or actual cautery may be found preferable to all external applications. But for the majority of diseases of the muscular movement, the tartar-emetic ointment will be found to possess superior claims to our consideration. It is less formidable in the eyes of the patient even than a blister, and infinitely less so than the actual cautery. It is easily managed and surer, and can be made more speedy in its operation than a blister, not to speak of the friction by which it is applied, and to which, probably, some little efficacy may occasionally be attributed.

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VII.

On Chorea, with two Cases to Illustrate the Nature and Treatment of that Disease. By THOMAS JEFFREYS, M. D., Liverpool. ✓

THE following paper was hastily drawn up, and read to a few of my medical brethren in the month of March 1823,