CASES
OF
DISORDERED MUSCULAR MOVEMENT
ILLUSTRATING
THE USES OF HEMLOCK.

BY
JOHN HARLEY, M.D. LOND., F.R.C.P.,
ASSISTANT PHYSICIAN AND LECTURER ON PHYSIOLOGY AT ST. THOMAS'S
HOSPITAL.

(Received Dec. 8th, 1873, and Jan. 13th, 1874—Read Dec. 9th, 1873, and Jan. 27th, 1874.)

THE four subjects of chronic muscular spasm whose medical histories are briefly given below having experienced no relief from prolonged and varied treatment, have been selected as fitting cases in which to employ hemlock and oppose its full power against the spasm, with the view of obtaining, and at the same time thoroughly testing, its remedial influence. The result, it will be seen, is encouraging.

I have availed myself of the opportunity of calling attention to the advantages which the surgeon may derive from the judicious use of a plant which relaxes muscular fibre without diminishing the common sensibility or disturbing the intellectual functions.¹

¹ The action of hemlock on three of the patients was demonstrated at the meeting.

Coneism,¹ or the proper action of hemlock, and the degree to which it may be induced, are also incidentally considered in this communication.

CASE 1.—Chronic intermittent spasm of the right pectoral muscles and the left sterno-mastoid, and mass of muscles on the side of the neck (splenius, complexus, &c.)—Spasmodic torticollis.

The patient, W. H—, æt. 44, of dark complexion, is a strong, and otherwise healthy, muscular man, calm, intelligent, temperate, and free from constitutional disease. He is the father of eight healthy children, the eldest being twenty-one years of age. Excepting a mild attack of rheumatic fever which he experienced six years ago, the patient has been free from illness. As a millwright he was, when the present affection came on, chiefly employed in making enlarged models in wood from drawings. For the two years preceding the appearance of the spasm he was greatly overworked, and twice in the year undertook night and day work for a period of six weeks. He assigns this as the cause of the affection, for he was happy and in comfortable circumstances when it attacked him. Spasm first appeared in the arm five years ago, involved the muscles of the neck two years ago, and began to extend, as well as rotate the head, four months afterwards.

The seat and character of the spasm had never altered, and it had gradually increased in severity, notwithstanding prolonged and judicious treatment in some of our large hospitals, until natural sleep became almost impossible and life a burden. He was admitted into St. Thomas's Hospital on the 27th October, 1873. At this time the face was drawn permanently upwards and to the right; the head was still further extended and rotated in the same direction by a con-

¹ Κώνευον, hemlock.

stant succession of jerks; and the right arm was drawn across the chest and plucked still further to the left side with every movement of the head.

The neck was full and hard. It was worn bare, for he could not tolerate the restraint of a collar or neck-tie. The patient estimates the spasmodic force of the cervical muscles at fifty pounds. A forced side-glance directed downwards from a half horizontal face gave the patient a remarkably supercilious and highly characteristic expression. He had not slept without the aid of morphia for three months, but the general health was not impaired.

Treatment.—I gave him $\mathfrak{Jj}$ of the succus conii in the prescribing-room, and increased the dose $\mathfrak{Jss}$ each day until the tenth day, when he was taking $\mathfrak{Jiij}$ twice a day, at 11 a.m. and at 9 p.m. This was continued until the nineteenth day, and from this date to the fifty-third day, with an intermission of two days preceding his appearance at the Society, he took a single dose of $\mathfrak{Jiij}$ every morning.

From the fifty-third to the fifty-seventh day he took $\mathfrak{Jiv}$ twice a day, with an interval of twelve hours between each dose. From the fifty-seventh to the seventieth day, with an intermission of one day, he took $\mathfrak{Jiiiss}$ of the succus every morning. For the last week he has not taken any medicine.

Effects of the hemlock.—To speak generally, the patient and everybody about him were conscious of a decided improvement, and when his attention was diverted from himself, by reading or other mental occupation, the head was quiet. As far as I could judge, the spasm was greatly weakened, and after the forty-eighth day it became subservient to the will. He usually offered the right hand readily, and for several weeks the spasm had left the sterno-mastoid, and the face was raised upwards and to the *left* when uncontrolled by the will; but the jerk was rarely seen, the movement of the head consisting of a slow rotation or twist.

The improvement was still more marked through the night. During his stay in the hospital he never had a single dose of hypnotic, and was nightly refreshed by sound sleep.

During the action of the medicine the movements were

not diminished, but towards its decline and for some hours afterwards there was decided and often great relief. When taking only a single dose daily, at 11 a.m., he found that the most restless period was from 7 a.m. until the time of taking the dose.

Effects of the hemlock.—A fluid ounce of the succus caused some giddiness and weakness of the knees, lasting for three quarters of an hour; short of two fluid ounces there was no marked effect on the spasm. Three and a half fluid ounces caused great muscular relaxation, and at the end of two or two hours and a half, when the action had attained its maximum force, there was inability to rise from the sitting posture or to walk without assistance, and as often as the knees were flexed to a right angle or a little less he fell, and was unable to rise without assistance. There were complete ptosis and relaxation of the orbicularis, moderate dilatation of the pupils, double or multiple vision, unless he carefully rested his gaze on a near object, until the optic axes converged, and the eyes were meanwhile adapted to discern it clearly. The lower jaw had a slight tendency to hang, and the force of the masseters and temporals was barely sufficient to divide a piece of bread placed between the incisors—as the patient said: he “could not chew nor turn the food in his mouth.” Deglutition was slow, painful, and imperfect, and the meal was laid aside until the end of the third or fourth hour. The effects came on a quarter of an hour after taking the medicine, and gradually increased in intensity until the end of the second or third hour, and then gradually declined and disappeared towards the end of the fifth hour. The effects were most severely felt on the left side, and remained longest in the muscles of the head. For a further account of this case see the Appendix to the paper.

CASE 2.—*Intermittent spasm of the left sterno-mastoid and mass of muscles on the right side and back of the neck (spasmodic torticollis).*

The affection in this case is identical with that of the

former, less the spasm of the arm ; and, like the former, the patient, John M—, æt. 40, is an industrious, temperate, and healthy man, muscularly strong, of dark complexion, and in the prime of life ; weight 11 stone. He has never had any illness, and his children are healthy and free from nervous disorder. His occupation is brass-plate engraving ; he works with chisel and mallet, and in order to maintain an oblique view of the plate at which he is working, the head is slightly raised and rotated to the right. He has had much domestic trouble during the last year, and has worked long hours.

He is conscious that the affection came on “with a feeling that the eyes were not quite parallel, and that he must needs twist his head farther round to the right in order to obtain an accurate view of the block.” This feeling gradually increased until the head was distinctly twitched to the right.

The spasm rapidly increased and incapacitated him from work. It had existed six weeks when he came to me, at St. Thomas’s Hospital, with the right hand upon the right side of the face, pushing the head round to the left. He said his arm was wearied with controlling the head, and yet he dared not withdraw it. He did so to satisfy me, and the face was immediately plucked round to the right shoulder, the head pulled backwards, and the chin forcibly tilted upwards as if he were going to fall backwards in a state of opisthotonos.

Treatment.—I at once gave him $\mathfrak{zj}$ of the succus conii. It produced moderate coneism for an hour, but did not affect the spasm. I then prescribed from $\mathfrak{3x}$ to $\mathfrak{3xij}$, according to the effect, twice a day ; increased the dose to $\mathfrak{3ij}$ on the seventh day ; to $\mathfrak{3iiss}$ on the tenth day ; to $\mathfrak{3iij}$ on the thirteenth. He continued to take this dose twice a day as before until the twenty-third day, when it was increased to $\mathfrak{3iiiss}$ twice a day and continued to the thirtieth day. After this, and up to the forty-sixth day, he took $\mathfrak{3iv}$ of the juice twice a day, at 7.30 a.m. and 7.30 p.m. On the morning of this day (Dec. 9th), thinking, perhaps, that it would enable him to present a better appearance at the Medical and Chirurgical Society,

he took rather more than ʒv of the succus. My directions were seven tablespoonfuls, measured with a graduated glass, but he had used a large tablespoon which held ʒv when only moderately full. He had taken eight spoonfuls on the occasion referred to. He measured the dose for me with his spoon, and I found that it was little short of ʒvj . Since this time up to the seventieth day he regularly took ʒiv of the succus twice a day, at 7 a.m. and 7 p.m.

Effects of the conium.—For the same dose they were exactly those which were experienced by the first patient, the strength and activity of the two patients being pretty equal. But the ptosis was not quite so marked in this second case, while the weakness of the lower jaw was rather more so. The tongue was slightly affected, and there was a slowness and difficulty of articulation with a little thickfess of speech. Speaking required a muscular effort, which was felt about the hyoid bone. ʒiv doses increased this difficulty, and on two or three occasions some seconds elapsed before he could exert sufficient muscular power to speak, and the voice at these times was very weak and gruff. The difficulty of deglutition was also increased, so that fluids tended to return by the nostrils. These effects on the tongue and gullet, which were associated with almost complete paralysis of the limbs, lasted for half an hour.

After the large dose taken at 7 a.m., on December 9th, the effects greatly alarmed his wife; he could neither speak nor move the legs for half an hour. The effects passed off as usual. He was able to walk to the hospital (a distance of a mile and a half) at 1 p.m. At 3 p.m. there was but feeble power in the lower jaw, and the orbicularis resisted but slightly. An hour afterwards the effects had wholly passed off. At 7 p.m. he walked three miles to the Medical and Chirurgical Society, and at 8.30 p.m. took ʒiij more, with a renewal of the effects in a more moderate degree.

Result.—On the seventh day he came into the prescribing-room with the head quiet and unsupported. The continuity of the spasm was broken, and he had long intervals of rest. Before he left the room he had one slight turn of the head,

and he said it came on a little when he was tired by walking, or if he was startled, and that there was a return to the former spasm in the morning before taking the hemlock.

The improvement continued without interruption. During the last six months he has remained well, with the exception of an occasional *tendency* to the old twist of the head when overtired. He has continued work, chiefly half time, during this period, and has passed through severe mental trials resulting from a tragic occurrence in a family who occupied part of his house. The hemlock was discontinued during the fourth month.

CASE 3.—Chronic spasm of the extensors—chiefly the deltoid and triceps—of the right arm, and of the right pectoralis major.

The patient, George L—, æt. 19, is a healthy young man, of regular and temperate habits. His occupation is that of a watchmaker, but he is unable to do ordinary fine work on account of the unsteadiness of the arm, which becomes strongly tremulous or jerky whenever he tries to keep it steady. It has been in this condition for five years. A year ago he was treated in one of the London hospitals during three months for “cramp in the arm.” Galvanism was the chief remedy employed, but no benefit resulted. He came under my care nine months ago.

Treatment.—I treated him the first six weeks with conium, ʒvj of the succus once every day, and applied a blister once for pain in the shoulder. For the next ten weeks he took $\frac{1}{4}$ gr. strychnia twice a day, with an astringent chalybeate and mineral acid, and wore belladonna plaster over the deltoid. During the following six weeks he took from 10 to 20 grains of bromide of potassium thrice a day. For the following three weeks he took the juice of *æthusa cynapium* and the tincture of its fruit. None of the medicines, however, made the least impression on the spasm, and I therefore determined to try the effect of large doses of

conium. I gave $\mathfrak{zj}$ at first, daily, and gradually increased the dose, so that at the end of five weeks he was taking $\mathfrak{zjss}$. After another week I gave him three ounces for a dose every day, and he has continued it up to the present time, a period of forty days.

The effects of the hemlock in this case agreed exactly with those resulting from the same doses in Cases 1 and 2. The ptosis was nearly complete, and the relaxation of the orbicularis so complete that the eyelids appeared swollen.

The results.—While he was taking the full doses he was satisfied that there was a little diminution of the spasm; but I was unable to continue the treatment for want of an efficient juice, and the arm is now as unsteady as ever.

CASE 4.—*Epilepsy and epileptic hemiplegia.*

Cordelia S—, an intelligent little girl, $4\frac{1}{2}$ years old, was strong and well at two years of age, dentition was completed, and she spoke and walked well; but at this time she struck the left temple in a fall, and lay insensible for two minutes. Seven weeks afterwards she had a succession of convulsions with unconsciousness, lasting three hours. For the following three days the right arm was continuously convulsed, and for six months she was speechless. The fits recurred after an interval of five months from the first attack, and she had one every other day for two months. During the next four months she was free from fits, and suffered only from the partial hemiplegia of the right side. After this interval, in May of the present year, the fits recurred and were stronger than they were before, and during the next three months she had from two to nine fits, each lasting about two minutes, every day. They were always attended with loss of consciousness, and the palsied limbs were always most convulsed. Towards the end of this period, in July, 1873, she came under my care, at St. Thomas's. The muscular parts of the right limbs measured from an inch to an inch and a half less in circumference

than those of the left. The right arm hung powerless by her side; the protruded tongue deviated much to the left side. She was unable to walk or stand alone; the sleep was disturbed. She is a bright, intelligent child, and presents a slight scar on the left temple, which is the site of the blow.

Treatment.—I prescribed $\mathfrak{z}\text{ij}$ of the succus conii twice a day, increased it a week after to $\mathfrak{z}\text{iiij}$, the following week to $\mathfrak{z}\text{iv}$ twice a day; on the fifteenth day to $\mathfrak{z}\text{v}$, which she took twice a day for the next seven weeks. During the following three weeks she took $\mathfrak{z}\text{vj}$, for the next two months $\mathfrak{z}\text{j}$ twice a day, and for another week $\mathfrak{z}\text{j}$ once a day, and then, for two weeks longer, $\mathfrak{z}\text{j}$ every other day.

Effects of the hemlock.—The small doses had a quieting effect, and the nocturnal restlessness disappeared. $\mathfrak{z}\text{v}$ doses caused complete muscular relaxation, and she lay motionless for two hours, apparently “sleeping soundly” during the greater part of this time. As long as the lids remained open “the eyes were fixed and she seemed unconscious.” As she grew stronger and recovered the use of the limbs, it was necessary to increase the dose rapidly, in order to produce inability to walk, and having become more active she was no longer observed to “sleep,” but she would try to move about for a portion of the time during the action of the medicine, which was accompanied by both ptosis and squinting.

Result.—The fits rapidly declined in number and severity, and finally ceased during the fifth week of treatment, when she began to walk alone. In the ninth week she could raise the arm to the mouth, and a fortnight later above the head. Henceforward to the present time there has been uninterrupted improvement, and but for a halt on the right leg she walks firmly and well, presents her right hand on taking leave, and is regaining the use of the arm rapidly. She sleeps soundly, and her general health and strength have greatly improved. She remains free from any tendency to convulsion.

Such is the history of these cases up to the time when they were last presented to the Society. A further account of them is given in the Appendix.

General remarks on the nature and cause of the spasm in Cases 1, 2, and 3.

There is no doubt, in two of these, that the disordered movements were due to overwork. The nerve vesicles presiding over the affected muscles have been kept too long intent upon identical impressions; they have been maintained in an excited condition when there was need of rest, and the sustained muscular efforts have become weakened by overwork until the exaggerated nervous irritability has at last overcome the enfeebled will. It is exactly what occurs in the intellectual centres, where the same impressions may be so often repeated as to exclude change of thought and proper rest, resulting at last in a disturbance of the just balance of reason. In the direction those muscles were first taught, and subsequently compelled to go, in that direction they now continue to go automatically and in spite of the will. The first case of the kind that arrested my attention was that of a schoolmistress, who employed much of her time in ruling her pupils' copybooks, and in doing so rotated the head rhythmically, and with emphasis, from left to right. In her declining years she lost control over this movement, and the face was twisted every second to the right shoulder, unless her attention was strongly engaged in some other matter.

In the third case there is no evidence of overwork, nor must this be regarded as a necessary condition in the production of involuntary movements such as I have described. In a number of persons the nervous irritability is strong, and the will proportionately weak; and in these an over-anxious attention to execute certain movements is often sufficient to diminish their success, or even to secure their

failure. Nervous irritability in many, if not in most, cases gains strength from every succeeding embarrassment, and ultimately supplants the will. The young watchmaker furnishes, I think, an illustration of this. He is highly nervous although he does not know it, and cannot, therefore, acknowledge it. Steadiness of hand is essential to him, and I fear something has led him to mistrust his voluntary control. In other cases (4, for example) we must relieve the intelligence of any share in the disorder; not, however, forgetting that epilepsy itself is sometimes the effect of example, or even a creature of the imagination, and as such is, in both cases, presumably within the control of the will on the first uprise of emotion.

To revert to facts I would now very briefly direct your attention to the *surgical uses of hemlock*. If you examine the patients at the end of this meeting you will find complete relaxation of the whole muscular system, and the muscles of the head and face are apparently affected to a greater degree than those of the rest of the body.

The orbicularis is incapable of resistance. The movements of the eyeball are very sluggish, and there is more or less complete ptosis. The muscles of mastication and deglutition are nearly paralysed. Speech is slow and effected with exertion; the voice is gruff, from relaxation of the laryngeal muscles. Withal, the heart and breathing are normal; sensation and intelligence are perfect, and the mind is calm. The surgeon will infer from these facts the value of conium in trismus, in spasm of the orbicularis and of the gullet, and in dislocations of joints where the action of powerful muscles resists our efforts to reduce them. To the ophthalmic surgeon conium is ready to become a valuable assistant. It at once relieves, as if by magic, that powerful spasm of the orbicularis in keratitis which is caused by photophobia; and it is savage to talk of division of this

muscle as a preliminary to incisions of the eyeball. There is one operation in which it will prove a great boon, that is, the removal of artificial substances from the gullet. Accidents are occasionally happening with false teeth. It is both merciless and dangerous to attempt the removal of such bodies from the stomach or œsophagus without first removing the spasm which their presence excites, and at the same time relaxing the tube to facilitate their extraction. I will not enlarge on this topic. From the condition of general muscular relaxation produced by hemlock you will readily make your own inferences. I will, however, ask you to bear in mind one important fact, namely, that hemlock is totally destitute of anæsthesial properties, and that patients under its influence are able to help you by their efforts, and to guide you by their sensations.

Those who are unfamiliar with the action of hemlock will probably think that there is danger in using it as I have done to-night. I can say positively that there is none. The effects of hemlock are remarkably uniform, and the dose required is proportionate to the motor activity of the individual. In order to be explicit it may be desirable that I should indicate

The extent to which coneism may be carried.—I believe that the limits of safety are usually reached when deglutition is impeded, for here we trench on an involuntary act; but it may be carried thus far with perfect safety. (See Cases 1 and 2, where this effect has been induced day after day and twice a day for more than two months.) When the gullet is affected the speech is usually slow and thick, and the voice gruff from partial paralysis of the glossal and laryngeal muscles. In such cases the respiration is not appreciably affected; but when the coneism has passed off sighing is often an after effect, and a feeling of aching or oppression around the margin of the ribs, indicating a temporary depression of the respiratory function and weariness of the diaphragm. When the gullet is weakened we shall find the muscles of mastication and expression relaxed, the eyelids drooped and swollen, and the limbs incapable of supporting

the weight of the body. In women and inactive weakly persons the voluntary muscles are usually paralysed before the gullet or tongue is affected, and so they may lie incapable of movement, when the speech is free and deglutition easy. If there be any special weakness of a set of voluntary muscles, hemlock will be sure to point it out, and so it happens that in some cases the speech is affected by a dose which in others produces equal effects upon the muscles of the trunk, and yet does not affect the tongue at all. In some cases, *cæteris paribus*, ptosis and dilatation of the pupil are less marked than in others. While hemlock may therefore be used as a measure of the power of different sets of muscles, it is otherwise perfectly uniform in its action.

As to the *duration of the coneism*.—In cases of muscular spasm I have endeavoured to keep up the coneism as long as possible. The patients themselves often plead for this on account of the return of the spasm seven or eight hours after the coneism has passed off. The duration of the coneism is, of course, in proportion to the dose; the effect of an ounce of good succus in a healthy man will usually last about an hour; that of two ounces, from two to three hours; that of three ounces, from four to five hours; and that of four ounces, from seven to nine hours. Cases 1 and 2 are frequently under the influence of hemlock fourteen, and sometimes nineteen, out of the twenty-four hours.

I have been careful elsewhere ('Old Veg. Neurotics,' p. 348, and 'The Practitioner,' vol. v, p. 342) to point out that there is great variation in the strength of the succus conii, a variation which may be expected until the requirements of pharmacy are provided for by a better organisation, and the purity of drugs is secured by proper legislation. The juice used in the treatment of the above cases was most carefully selected. The doses mentioned have reference to a succus prepared according to the Pharmacopœia, but of a strength above the average of that preparation. I employed it for about nine months in the treatment of a great number of nervous disorders. A fluid ounce was sufficient to produce decided coneism in a strong man, while half an ounce was an

equivalent dose for a woman or a weakly man. The latter part of the treatment was interrupted by the exhaustion of the hospital stock of this juice; and before I obtained a supply from Mr. Buckle, who has prepared this juice for me from plants in a more advanced stage of development than those commonly employed, I was obliged to reject several samples of hemlock juice. Some had evidently been prepared from young succulent plants, and a dose of five or six ounces was needed to produce only a moderate effect; and some were inert and fraudulent preparations, of which the ordinary extract formed the basis.

APPENDIX.

THE patient, W. H— (Case 1), remained under my care for some weeks after the preceding observations on his case were concluded. I continued the conium treatment, but owing to the difficulty and delay in procuring a succus of fair power, I was obliged to discharge him after a sojourn of nearly five months in the hospital. On leaving St. Thomas's he was admitted into Guy's Hospital, under the care of Dr. Frederick Taylor, who has kindly communicated to me the following observations. It will be seen that they agree with my own.

“W. H— was admitted on April 15th, and the following day he began the conium treatment, taking only a trial dose of two drachms. The dose was increased daily; no appreciable effect being obtained until the 20th, when two ounces produced very slight tingling of the legs, with slight relief of the spasm.

“On the 21st three ounces were given, and the eyelids drooped, and the legs became very weak; the spasm of the muscles was somewhat relieved.

"From 25th April to 2nd May he took five ounces at night (7 p.m.); this produced tingling and weakness of the feet and legs, weakness across the loins, drooping of the eyelids, inability to swallow, paralysis of the arms, with semiflexion of the fingers, and impaired vision, so that objects at a distance of ten or twelve feet looked misty, and at greater distances appeared double, treble, or even multiple.

"From May 2nd five and a half ounces; and from May 9th six ounces were ordered every night.

"From the 14th to the 23rd of May he took from four to five ounces of a fresh sample of the succus, morning and evening, with the same results. About the latter date, though acknowledging the great relief to the spasm, he complained much of general mental depression and a feeling of sinking about the stomach, which he attributed to the conium.

"The effect of the drug was decidedly favorable; the spasm was relaxed during the period immediately following the use of the medicine; quiet sleep was obtained; but as the time approached for taking another dose, the spasm again became troublesome. While he was taking the five-ounce doses the sterno-mastoid and the muscles acting on the right arm became almost entirely passive, so that he was enabled voluntarily to turn his face to the left, and to write letters with his right hand.

"After taking the juice in efficient doses for five weeks I discontinued it, to watch for the return of the spasm and to form an opinion as to ultimate cure. Before the expiration of a week the twitching movements were increasing, and as he was at that time unwilling to resume the conium on account of the peculiar mental depression which it caused, I ordered the continuous current to be applied daily. From this he obtained some relief, but he had at the same time a sleeping draught of hydrate of chloral. The conium was subsequently resumed in four-ounce doses nightly, the galvanism being continued at the same time. The first dose had a rapid and beneficial effect, giving him much more ease on the following morning.

"As a summary, I think one might say:—1. The effect

of a full dose in relieving the spasm and in procuring sleep and rest is very marked and beneficial. 2. That during the continuance of the treatment the slighter movements ceased, but others were only diminished. 3. That after five weeks' use of full doses, discontinuance was followed by increase of the contractions. 4. That the great mental depression produced in this patient by the frequent use of large doses will probably prevent their being used sufficiently long to enable one to form a reliable opinion on the curability of the affection by conium."

Dr. Taylor's conclusions from this case are exactly those which I should have deduced from my own observations, excepting that I would still regard it an open question whether we should not continue the treatment, with occasional intermissions, for a much longer time—for a period less disproportionate to the entire duration of the disease than one to twelve in such chronic cases.

The use of hemlock beyond the limits which I have prescribed would, I believe, be neither useful nor safe; and I have in this case, as well as some others, found it necessary occasionally to discontinue the use of the neurotic after the patient had been under its influence day after day, and week after week, for from twelve to eighteen hours out of the twenty-four. The sinking, powerless feeling referred to the epigastrium and hypochondria is due, I am satisfied, to depression of the phrenic centres, and to a weak, sluggish action of the diaphragm resulting therefrom. The mental depression is, I believe, but the consequence of this. Defective breathing necessarily depresses the vigour of the heart; and although this may not be outwardly manifest, it undoubtedly engenders in every case a feeling of mental depression.

July 25, 1874, Case 2.—The tendency to rotation of the head when tired, especially by walking, still continues, and the patient has gladly assented to my recommendation that he should have a complete rest from work and resume the

hemlock, with the view of removing this lingering trace of his distressing affection.

— Case 3.—This patient, having for some time continued other treatment, chiefly large doses of bromide of potassium, without the least improvement, is now about to resume hemlock.

— Case 4.—The conium was gradually discontinued, and the patient has had no medicine for the last four months. She has continued perfectly well and free from any tendency to convulsion; she has not much use of the hand, but the fingers are no longer contracted, and the muscles of the right limbs are nearly as plump as those of the left. The tongue still deviates strongly to the left.

The results of treatment in the foregoing cases are, therefore, most encouraging. Inveterate forms of spasm have been selected for two reasons :—1. To illustrate the general action and uses of conium; and 2, because, if it be proved that hemlock is curative or beneficial in the worst forms of these disorders, the inference is plain that the milder forms will more surely and readily yield to its power.

I would not, however, that any one should be misled by the supposition that *all* spasmodic affections—all cases of epilepsy, for example—are benefited by hemlock. There is much to be learnt in this direction; but, speaking generally, those spasmodic affections which may be expected to yield most readily to its influence have a cranial origin.