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from the Author

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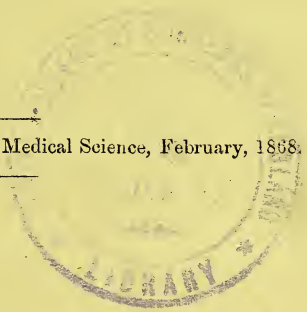
ON CHOREA.

BY

LAWSON TAIT,

MEMBER OF THE SURGICAL SOCIETY OF IRELAND; MEMBER OF THE DUBLIN OBSTETRICAL
SOCIETY; HON. MEM. HUNTERIAN MEDICAL SOCIETY; ETC.

Reprinted from the Dublin Quarterly Journal of Medical Science, February, 1868.



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JOHN FALCONER, 53, UPPER SACKVILLE-STREET,

PRINTER TO HER MAJESTY'S STATIONERY OFFICE.

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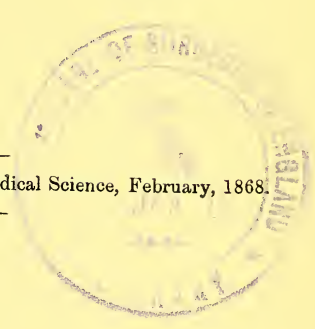
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ON CHOREA.

[Read before the Dublin Obstetrical Society, 14th December, 1867.]

After a somewhat lengthened examination of the literary history of this disease, I have come to the conclusion that to our great English physician Sydenham is due the credit of having first accurately described it, and separated it from the many other affections with which it was confounded; and that the name by which it is generally referred to by continental writers of last century—*Chorea Sancti Viti Sydenhamiana*—is deserved. “If a glass of liquor be put into the hand to drink, before the patient can get it to his mouth he uses a thousand odd gestures; for not being able to carry it in a strait line thereto, because his hand is drawn different ways by the convulsion; as soon as it has happily reached his lips, he throws it suddenly into his mouth, and drinks it very hastily, as if he only meant to divert the spectators.”^a He limits the usual period of its occurrence to the interval between the tenth and fourteenth years. He thus describes a condition before unmentioned, and describes it as only a master could from direct observation. It is to be regretted, however, that he headed his paragraph on the affection with the title of “St. Vitus’ Dance,” as he has thus given rise to great confusion and no little contradiction among later writers, who confused his disease with the extraordinary state of matters then known on the continent by the various names of *Danse de St. Guy*, *Krubel-Krankheit*,^b &c. That this morbid state was not that so graphically alluded to by Sydenham any one may satisfy himself by referring to the description of it in the *Anatomy of Melancholy*, which seems to have been taken from Horstius,^c who, I think, has got it from some one else. Most writers on the subject, many of recent date, quote the description of the antics of the mad women at the chapel near Ulm and draw no distinction between them and the *Chorea Sydenhamiana*. Such convulsions were, I believe, nothing more than the exaggerated and epidemic hysteria which recurs now and again at intervals of several decades, in connexion with religious movements. We have had instances in this country within times not very remote in the celebrated Kilsyth and

^a *Schedula Monitoria*, p. 504, Swan’s edit. Bouillaud, probably from similar exhibitions, has given the affection the apt name of *folie musculaire*.

^b Sennertus, *Institutiones Medicinæ*, Wittenberg, 1611.

^c Horstius, *Op. Medicin.* Tom. ii., lib. viii., p. 105.

Cambuslang revivals, and in the epidemic of *Leaping-ague*, described in Sir John Sinclair's Statistical Account, and by the late Mr. Crichton of Dundee. In 1751 we have one of the ministers who fanned the flame of the disease, lamenting that of the thirty thousand who had obtained grace by a convulsion but very few had remained steadfast to their sudden conviction. In 1796 an epidemic of this kind in Anglesea, which had affected *twenty-five* women and one boy, was put an end to by the enforcement of the advice of Dr. Haygarth, of Bath, that the convulsed should be separated from all such as were at all likely to become so. Such a condition seems to have existed in small communities, more especially when shut off from more healthy excitement; and it has almost invariably been confined to the female sex. Professor Whytt has mentioned the frequent occurrence of such epidemics in the Shetland Isles, and Pennant has given interesting details of one in the island of Unst. It began by a woman being seized with convulsions in church, and spread so rapidly, and continued so long, that for years public religious services could not be conducted without interruption from this affection. Pennant naively states that it was considered by most *men* to be hysterical. In 1793, fifty years after its outbreak, it had become almost extinct, and its cure was attributed, by a clerical observer, "to a rough fellow of a kirk-officer who tossed a woman in that state, with whom he had been frequently troubled, into a ditch of water. She never was known to have the disease afterwards, and others dreaded the like treatment."^a The more modern camp-meetings in America, and even, it is said, in some parts of Cornwall and Wales, sometimes present similar characteristics.

The *Malleatio* of Morgagni does not seem to me to describe any of the peculiarities of chorea, although many writers of authority have thought so. The patients which he and others^b describe as constantly *hammering* with one hand on the other, or on the knee of the same side, do not seem to have been affected with Chorea Sydenhamiana. These would appear to be rather cases of brains diseased in some special manner to do special abnormal acts,^c just as Brown-Séquard's rabbits twisted about under the operating needle; or, as Reil says, referring to eccentric movements:—"Should we not arrange those cases as slighter degrees of the same state, in which absurd ideas involuntarily occur to healthy people, incessantly incite them, and are accompanied by an irresistible propensity to action."^d

^a Rev. W. Jack, of Northmaven, Old Stat. Ac. Similar treatment stopped the fits in the venereal wards in Paris, when the women were "recovering from their mercury."

^b In Crawford's article on chorea (Forbes and Conolly's Encyclopædia), a case of malleatio similar to Morgagni's is mentioned.

^c The celebrated case at Oldham, published by Mr. Kinder Wood, was of this nature—it certainly was not Chorea Sydenhamiana, neither were the extraordinary cases described by Dr. Watt of Glasgow.

^d Fieberlehre, Vol. iv., p. 626.

We are all familiar with the story of the poor man who was shot in a duel because he could not resist the inclination to finger the nose of another which was particularly sharp.

The *Scelotyrbe* of Galen has been generally supposed to refer to chorea, and is used evidently by Sauvages with that significance. But the original description in the Galenic writings seems to me to point to an observation of progressive spinal paralysis (*ataxie locomotrice*) much rather than of chorea; and the definition of it as a disease, “*quâ erectus ambulare homo non potest*,” makes this almost certain. Had it been the chorea of Sydenham to which Galen referred, its frequency among children and the extreme rarity of the affection among adult males, would not have escaped his observation; besides, choraic patients have rarely any difficulty in walking or in walking erect, except in very severe cases, nor have they inability to guide themselves to the right or left, as in “*scelotyrbe*.” The term *scelotyrbe* seems to have been used by early writers with the most indefinite meaning. Sauvages,^a quoting Pliny,^b seems to refer under this term to the affection of the legs we see in cases of purpura. He says in another chapter, “*Nullus est autem morbus hodie cognitus, qui ad scelotyrbem referri queat quam chorea viti Sydenhamiana*.”

Etiology.—Sydenham has remarked—“This disorder is a kind of convulsion which chiefly attacks children of both sexes from ten to fourteen years of age.” This statement, which every author on the subject has most fully borne out, is one which does not apply to *malleatio*, *scelotyrbe*, or *danse de St. Guy* in the description of any author who mentions them. The following table shows the influence of age and sex in 501 cases.^c

	Age.		Males.	Females.	Total.
From	1	to 4	4	2	6
„	4	„ 6	2	4	6
„	6	„ 10	46	103	149
„	10	„ 15	58	193	251
„	15	„ 20	7	65	72
„	20	„ 30	—	12	12
„	30	„ 40	—	—	—
„	40	„ 50	—	1	1
„	50	„ 60	—	3	3
		d72	1	—	1
			118	383	501

^a Nosologia Methodica, Vol. ii., p. 563.

^b Libr. xxv., cap. 3.

^c The greater number of cases are taken from the following authorities:—Dr. Hughes, in Guy's Hospital Reports, Vol. iv.; Easleman's Statistics; Rufz on Choreia, Archives Generale de Medecine (cases in the Children's Hospital); and many scattered cases are taken from various books and papers.

^d Case of a medical man recorded by Graves in the Medical Gazette, October, 1838.

It is shown here that Sydenham was as nearly right as he could be without the statistical examination of a mass of cases. During the period he gives for its most common occurrence, 251 cases of the 501 are to be found.

Some authors have pointed out that different climates and seasons have different effects in the production of chorea. Dr. Bond, of Southampton, states^a that it occurs more frequently in winter than in summer, and in northern than in tropical countries; and quotes Wicke and Hasse in support as giving 13 cases which occurred in spring, 12 in winter, 9 in autumn, and only 1 in summer.^b He also states that the patients are generally young and females. Heberden and Elliotson agree in giving the ratio of 1 boy to 4 girls of children affected by chorea. In the table given above more than 3 girls were attacked for one boy from 10 to 15 years of age, and this proportion is very nearly the same in the mass of the cases. After 15 years of age there are 81 females to 8 males—a proportion of more than 10 to 1. Trousseau says that after 15 it is almost entirely confined to females. Some general statistics give the following results:—

	Males.	Females.	Total.
Hampshire Hospital,	6	12	18
^c Norwich Hospital,	27	57	84
Dr. Manson, of Nottingham,	19	53	72
	<hr/> 52	<hr/> 122	<hr/> 174

The connexion between chorea and rheumatism is mentioned by authors of a much earlier date than is generally supposed. Hoffman^d accurately describes chorea; and in one paragraph, somewhat obscure, seems to notice a statement of some other author, that there was some connexion between this disease and "*arthritis sic dicta vaga scorbutica.*" Morgagni^e relates what must have been a fatal case of chorea in a young woman, aged twenty-six, while labouring under an acute disease which, I think, probably was acute rheumatism. Elsewhere^f he records a somewhat anomalous case, strongly resembling chorea, however, in the description, occurring in a young nobleman, whose father he specially draws attention to as having suffered much from articular pains. He records an opinion expressed on this case, that there existed a spasmodic rheumatism or a convulsion from saline particles falling upon the

^a Brit. and For. Med. Chir. Review, 1860.

^b Rufz, on the other hand, has observed it to be more common in the hot than in the cold months.

^c Edin. Med. and Surg. Journal, Vol. viii. Dr. Reeves.

^d Fred. Hoffman, Opera Omnia, Genevæ, 1740, Tom. iii., Cap de motibus spasmodicis vagis.

^e De sedibus et causis morborum, Venet. 1761, Epist. art. 5.

^f Epist. xxv., art. 6.

muscles of the thorax and limbs, and these stimulating the nerves. The case terminated in death, and on *post mortem* examination spiculæ were found in the falx, which Valsalva, who had seen the case, accounted for by saying that the matter which goes to form gout being diverted by the improper use of mud baths, to which the patient had been subjected, had gone to form the spiculæ which caused the convulsions—an opinion which the present state of our knowledge on the subject will scarcely allow us to dispute. Sydenham's somewhat similar idea of the pathology of the disease—"This disorder appears to me to proceed from some humours thrown upon the nerves, which, by their irritation, excite preternatural motions," is about as far as we have got, now nearly two hundred years since he wrote it.

Sauvages^a mentions a boy, aged twelve, labouring under chorea (*scelotyrbæ*), and says, "arthritide rheumatismali recens sanatus incidit sensim in instabilitatem totius corporis." He also mentions the case of an old woman who suffered from a variety which he names *scelotyrbæ festinans*, and who "laborat enim rheumatismo sicco."

Stoll^b and Hamilton^c both mention cases of chorea commencing with rheumatic symptoms.

The first distinct mention, however, which I have been able to find of the intimate relation of chorea and rheumatism as a well-ascertained condition, is in a *Syllabus of Lectures on Practice of Medicine*, published for the use of the students at Guy's Hospital in 1802. Unfortunately, it does not give the author's name; and although I have made many inquiries on the point (in which I have been kindly assisted by my friend Mr. Bryant), I have failed to ascertain it. In a later edition the same syllabus mentions the fact that the two affections sometimes alternate, a statement which has since been amply verified.

Trousseau has observed a connexion between scarlet fever and chorea, and the fact that acute rheumatism is one of the less frequent sequelæ of scarlet fever is well known.

Dr. Copland, in his article on chorea (*Dict. Prac. Med.*), claims to have been the first to show the connexion between chorea and rheumatism, having published a fatal case in the *London Medical Repository* for 1821, p. 23. Dr. Bright^d first drew attention to its occurrence along with pericardial and pleuritic inflammations, and considered these the causes of the motions by the irritation from them upon the general system through the medium of the phrenic nerve—a doctrine belonging to the mechanical school of pathology, to advance which Marshall Hall attempted so much. The discovery of the connexion between the two affections is strangely attributed to Addison,

^a *Nosologia Methodica*, Francois Boissier de Sauvage. Amstel, 1768, Tom. i., p. 592.

^b *Ratio medendi.* ^c On purgative medicines.

^d *Med. Chir. Trans.*, 1838.

as having been made by him so late as 1841, and this by no less an authority than Dr. Babington. It was not till 1847 that physicians were led by Dr. Begbie^a back to the safer, if not more satisfactory, doctrine of humoralism; that the two affections had really no relation as cause and effect, but that they really both depended on a blood-poisoning—probably the same poison acting differently under different circumstances.

The statistics of the cases of chorea as associated with rheumatism—at least those to be depended on—are of no great extent. Dr. Hughes gives the only list of any consequence, and there barely 14 per cent. are mentioned as having been directly connected with rheumatism. Other lists of less extent raise the per centage to nearly 30. My own experience is that I have not seen a case which has not been more or less intimately related to rheumatism.^b M. Rufz is the only author who has not observed any relation between chorea and other affections, and he does not believe in its spread by imitation.

Dr. Anthony Todd Thomson, in a lecture on Chorea,^c says—"If death occur from what may be termed *idiopathic chorea*, it is almost always the result of that form of the disease which sometimes accompanies rheumatic fever;" and this statement would certainly appear to be borne out by facts; for of twenty-six cases of chorea with a fatal termination, in which the history is satisfactorily given, I find that twenty-one—18 females and 3 males—have a distinct history of rheumatism, generally severe; and that only five—3 females and 2 males—have no mention of rheumatism in their history. Sex again seems to bear heavily on the disease, for Dr. Webster^d states that chorea is not only much more common in girls than in boys, but that it is much more fatal in the former; and the report of the Registrar-General for the same year gives 20 females and 4 males as dying of chorea.

The *post mortem* examination of the brains in a large number of fatal cases has led to no satisfactory conclusions. In the majority of instances the appearances are nil; and in the cases where abnormal conditions are found these are so contradictory as to lead to no positive result. I have examined the records of nearly a hundred cases, and have found the results so various that it would answer no purpose to tabulate them. In nearly sixty cases no abnormality was found. Dr. Addison speaks of having had repeated opportunities of examining the bodies of patients who have died of chorea, and of never having detected any lesion of the cerebro-spinal mass, except in one case where there was chronic

^a Edin. Med. Jour., 1847, and Begbie's Contributions to Practical Medicine, p. 68.

^b In the investigation of this point physicians should not forget the well-known hereditary tendency of rheumatic affection. Such a tendency in chorea has been noticed by Bright, See, Hasse, and Begbie.

^c London Medical Gazette, Nov., 1831.

^d Lancet, December, 1840.

thickening of the *dura mater* in the course of the middle meningeal artery. He had seen many cases of meningeal inflammation going on even to pus, yet never in one did he observe choraic movements. Sir Benjamin Brodie records a case where he found a tumour about the size of a hazel nut in connexion with the pineal gland. Prichard and Bright record instances where the choroid plexus and velum interpositum were much congested, and this I have also found. Effusion into all the serous cavities, more or less abundant, has been several times found. Tumours in various parts of the cerebrum and cerebellum have been noticed. In two cases there was softening of the fornix; and in one, softening of the cerebellum. Rostan (*Médecine Clinique*, 1830) mentions a fatal case in a woman aged fifty, who from childhood had been affected by chorea of the whole left side of her body, with atrophy of the limbs; yet, contrary to his expectation, a *post mortem* examination showed nothing.

The conclusion to which we are forced by these embarrassing conditions is that the muscular affection does not depend on any local affection of the cerebro-spinal axis further than by a toxemia—"the humours thrown on the nerves"—and that whatever organic lesion there may be of nerve substance it is generally secondary to the original cause, or quite independent of the affection altogether, and but rarely is the direct cause. Mead, in his *Precepta Medica*, thus briefly dismisses the affection:—"This disease, alike ridiculous by appearance and reason, I believe to be a paralytic affection, and by frequent cold bathing and chalybeates advise to be dispelled." In his *Imperium solis ac Lunae in Corpora Humana* he expresses his belief in the influence of the luminaries in this disease. "For the most part," he says, "the disease is mild, and attacks weak ones and such as are of a tender habit of body; girls more frequently than boys, and very rarely adults."

Having found that the female sex is much more predisposed to attacks of chorea than the male, and that the period of the greatest frequency of attack is just about the time of the commencement of their specific physiological function—menstruation; it becomes a point of great importance to inquire how far the disturbance of this function influences the attack or termination of the disease. Dr. Hughes says that females are rarely affected by chorea after puberty unless they are troubled with some irregularity of the periodical functions of the uterus, or unless the disease be directly dependent on rheumatism or disease of the brain and spinal marrow. In one of his three fatal cases the disease occurred simultaneously with suppression of the menses. Davis^a mentions a fatal case in connexion with deficient and irregular menstruation. Another fatal case occurs in the *Edin. Med. and Surg. Journal*, Vol. i., where suppressed menstruation is given as the cause. Dr. Bright, in his Reports,

^a Obstetric Medicine.

attributes the disease in a fatal case to uterine disease. Dr. Harrison^a gives a case where it was associated with precocious menstruation at eight years of age, and in which the attacks were evidently governed by the menstrual flow.

Dr. Hawkins^b relates a case which occurred in the Middlesex Hospital of a girl who had violent chorea seven weeks after acute rheumatism. The catamenia had been suppressed for four months. No treatment was of any avail, and she died on the sixth day of treatment. Dr. Sunderland^c details the case of a girl who was attacked by chorea in the beginning of January and rapidly became so bad that she had to be secured in bed. On the 6th of February the catamenia appeared and the convulsions ceased, but recurred with equal violence on the 8th, when the flow ceased, and she died on the 12th.

Bidingfield mentions, in his *Compendium*, difficult or suppressed menstruation as a special cause of chorea. Dr. Chourn^d records the case of a girl, aged seventeen, in whom the chorea was so bad that it continued during sleep, and was so violent that the patient was wakened by the blows she gave herself. In this case menstruation had never taken place; and it is the only instance that I have found of the movements occurring during sleep. Lisfranc has recorded cases where he found the uterus engorged and menstruation irregular, and in which local depletion and iodide of potassium quite relieved the affection. Similar cases are mentioned by most writers on the disease.

The interruption of the menstrual flow by impregnation seems to exert a very special influence as an immediate cause of chorea in those already disposed to it. Dr. Prichard mentions the case of a girl of loose life, aged nineteen, who had violent chorea in connexion with pregnancy. She aborted and died. The *post mortem* examination revealed nothing but general congestion of the cerebral mass, and more especially of the choroid plexus. Dr. Peacock mentions a case in connexion with pregnancy at the sixth month. Dr. Bond mentions chorea in connexion with pregnancy, and explains it by reflex action from the fetus (an explanation which only renders the obscurity of the condition more opaque). Dr. T. King Chambers (*Clinical Lectures*, 4th edit., p. 370) gives the following interesting case:—

Sarah C., aged twenty-three, married, and full six months pregnant for the first time, was attacked with acute rheumatism and chorea at the same time. She had a cardiac complication, which subsided along with the rheumatic symptoms, but the chorea continued until the child was born at the full time, and then was cured. “Had this young woman,”

^a Lancet, 1828.

^b Lond. Med. and Phys. Journal, 1826.

^c Med. Chir. Review, May, 1829.

^d Lancet, Aug., 1839.

he says, "been in any danger it would have been worth while to have induced premature labour; I have no doubt it would have stopped the chorea, but the remedy would have been worse than the disease." Dr. Tanner has kindly favoured me with a proof-sheet of a coming edition of his work, which contained the following interesting cases:—

A Jewess had suffered from chorea as a girl, and had been successfully treated; fifteen years afterwards she married and became pregnant, when an attack of chorea set in more violent than Frank had ever witnessed in a practice of fifty years. The spasmodic movements continued day and night; and although there was perfect consciousness, yet the behaviour was most violent. The integuments were covered with boils and gangrenous spots. None of the remedies used had any effect; but a miscarriage took place at the fifth month, and health was restored at the same time.^a Dr. Ingleby^b narrates five cases of chorea in connexion with pregnancy, all of which were fatal; in one which the convulsions did not come on until very near the end of gestation, and did not cease after delivery. The patient died, apparently from extreme exhaustion, little more than twenty-four hours after delivery. Dr. Lever^c narrates the case of a primipara who suffered severely from chorea after the third month of gestation until labour set in, when during uterine contraction the movements abated and recurred with their usual violence in the intervals. The disease had become so bad as to affect her intellect seriously. At the end of a month after delivery all traces of the affection had disappeared. It is also worthy of notice that the child of this patient had an attack of chorea at the age of twelve, the removal of which was simultaneous with the appearance of the catamenia, which afterwards occurred regularly. Dr. Lee^d records a case of severe chorea where nature expelled the contents of the uterus forty-seven hours before death. The patient was in the sixth month of her second pregnancy, and had a rheumatic history. *Post mortem* examination showed nothing of consequence. Dr. Lee seems to have entertained the idea of inducing premature labour in this case. Dr. J. M. Duncan gives two mild cases in the *Edinburgh Medical Journal* for 1854, both of which recovered before confinement.

The following sentences are the notes of a case which fell under my care a short time since, and are I think of sufficient interest to be placed on record:—

Sarah T., a thin, anemic-looking blonde, aged twenty-seven, seen for the first time June 19, 1867, with well-marked, almost violent chorea.

^a Josephus Franks, *Præceps medicæ universæ precepta*. Tom. i., p. 348. Lepsizæ, 1841.

^b *Lancet*, February, 1840.

^c *Guy's Hospital Reports*, second series, Vol. v., p. 4.

^d *Clinical Midwifery*, second edition, p. 112.

Her former history is, that when scarcely fifteen she had a severe attack of rheumatic fever, from which she recovered with choraic movements, that slowly left her in a few weeks. Ever since she has suffered from rheumatic pains. Her mother is very rheumatic, and her father slightly so. Three years ago last seventh of May she had her first child. About twelve weeks after the last appearance of the catamenia, choraic movements began, and continued with increasing severity until labour set in; never, however, so bad as to prevent her attending to her household duties. The moment the child was born, she says, the movements left her. The child of this labour, a girl, is now markedly choraic. Rather more than a year after her first child was born she became again pregnant. The movements began about the same time as in the first pregnancy, but throughout they were decidedly more severe. They likewise ceased when labour was over. A few weeks after their cessation she suffered from a severe attack of typhus fever, during which the movements were distinctly manifest. About seventeen weeks ago she states that she was aware she was pregnant, because she had not been unwell for seven weeks, and had been suffering from the movements for nearly a fortnight. They were becoming very severe, when she had an abortion, which she attributed to lifting a weight. They ceased immediately the birth was removed. She must have become pregnant again almost immediately, because she never was aware of a menstrual period after the miscarriage. She has been suffering from the movements for nearly twelve weeks, and the uterus is now the size attained between the third and fourth months. Within the last few days the movements have become much aggravated, worse, she says, than ever they were. Her appearance and motions are very characteristic of severe chorea; her tongue is much bitten, and her limbs are much bruised. She has not slept for four nights. The heart sounds are quite normal; consciousness and memory are unaffected, and so is speech, save that it is *snappy*, as is usual in chorea. She throws articles from her, but handles her child with care. The urine contains no albumen, is deficient in chlorides, and contains a very considerable amount of sugar; sp. gr. 1,031. Ordered fifteen grains of the bromide of potassium every hour.

20th.—No better; increased the bromide to a drachm every hour, but with no effect, save that the quantity of urine was increased.

21st.—Applied ice-bags to the spine and gave opium freely without effect.

22nd.—Asked my friend Dr. Atkinson to see the case in consultation. Antim. tart. gr. ii., tr. opii. ℥i., aq. ℥viii., an ounce every two hours. Persevered in till the 25th without any benefit. The pupils are quite pin-point size, while the movements have become so violent and the sleeplessness so persistent, that my proposal to empty the uterus is resolved upon with the consent of Drs. Atkinson and Holdsworth. On the forenoon

of the 26th I introduced a gum elastic catheter into the uterus, and allowed it to remain until 8 p.m., when I introduced a sponge-tent, and put the patient under chloroform. A succession of sponge-tents allowed me to turn the child, and extract it by the feet, at 6 a.m., on the morning of the 27th. No blood was lost, although I had some difficulty in removing the placenta. She was kept under chloroform until 9 a.m., when she awoke, free from the movements, and had some food. They came on again, however, about 7 p.m., and at 9 were so bad as to necessitate the re-administration of chloroform, which was kept up for nearly twenty-four hours. Being by that time utterly worn out by the case and press of other work, and lacking other means for the proper attention to the case and the administration of the anesthetic, its use had to be given up. During the night of the 28th she was so violent as to require five people constantly to hold her. About 10 a.m., on the 29th, she became comatose, and died in twelve hours. *Post mortem* examination revealed nothing, save very marked congestion of the vessels of the brain, more especially the choroid plexus, a recent clot from the rupture of a small vessel in the velum interpositum, and the dura mater rather adherent to the brain surface. The uterus was well contracted, and showed no evidence of injury from the induction of labour.

There are two points in this case on which I must express regret; first, that, with such evident indications before me, I did not induce labour at a much earlier date; and second, that the patient was allowed to become fatally comatose for want of chloroform. Should I ever meet with a similar condition again, I shall keep the patient under its influence six months rather than have a like result. The first mention which I have found of the use of chloroform in subduing the movements of severe chorea, is recorded by Mr. Harris^a in a case where he kept up its influence for a fortnight, with a successful result. Dr. Barclay, Medical Registrar of St. George's Hospital, details a case^b of severe chorea depending on amenorrhœa, when the patient was kept anesthetic for nearly two days with a successful result. Sir James Simpson^c recommends its employment in such cases. Dr. Gery^d says that at the Sick Children's Hospital at Paris the use of chloroform in chorea produced the most beneficial results. Dr. Murray, of Newcastle, relates a fatal case occurring in a young lady, twenty-one, at the menstrual period. She was kept under chloroform for more than fourteen hours, with the result of arresting the movements completely; but she died forty hours after the cessation of the anesthesia, apparently from exhaustion.

^a Lancet, June, 1848.

^b Medical Times and Gazette, May, 1853.

^c Obstetrical Memoirs.

^d Bulletin Generale de Therapeutique, 1855. In the same journal a very severe case is recorded where anesthesia was kept up for four days, with a good effect.

Dr. Tanner recommends it to be used.

In regard to the further history of the treatment in the case of my poor patient, I may only say that during her many attacks she had had a multitude of counsel—that all suitable remedies had been tried, from quinine and iron down to sulphate of aniline, and all with the same effect—none. The only remedy I have ever seen of any permanent benefit in this disease is *arsenic*.

The occurrence of sugar to some extent in the urine of this patient is of interest. It has been noticed before frequently, but the observations on the point are rather desultory. Whilst one author says it almost always occurs, another will say (as Dr. Chambers tells me) that he has not been able to find it. A very general condition of the urine found in this disease, specially noticed by Walshe and Todd, is an abundant deposit of lithates. Dr. Bence Jones noticed in severe chorea that the phosphates were diminished in quantity, and that the sulphates were in great excess; and that the specific gravity might be as high as 1,036.

Since the above was written I have met with the following cases which illustrate the connexion between rheumatism and chorea, and the hereditary tendency of both; indeed I believe if the family history of every case is examined carefully it will be found that there is strong reason to believe that the two affections are really the same, under different aspects. They will also show the efficacy of a new method of treatment. The first was the case of an interesting little girl, the daughter of a medical friend. B. S —, aged thirteen, had slight choraic movements in the beginning of January last, and got gradually worse until March, when, for three weeks, she could neither speak nor swallow for the movements of the tongue. She could be fed during that time only when flat on her back, with her head fixed, the food being placed on the back of the tongue. Almost every remedy tried had no effect, save the bromide of potass, and that only slight. The application of the ether spray down the spine had the invariable effect of sending her to sleep for an hour or two, and of mitigating the motions. To it her father attributes the cure which was accomplished in June. The family history is an interesting one. Mrs. S. had, when a child of twelve or thirteen years of age, a severe attack of chorea, which lasted many months, and this year, the forty-third of her age, she has suffered from a very severe attack of acute rheumatism. Mrs. S.'s mother had acute rheumatism in her fortieth year, and has been a martyr to the chronic affection. An elder daughter of Mrs. S., now in good health, also suffered from chorea at about the same age as B. S.

E. K., a delicate blonde, exhibited slight motions early in May, which in a few weeks became very severe, affecting speech. The menstruation had always been scanty and painful. The ether-jet had the same effect as in the case of Miss B. S. She was quite well in August.

A. F., a delicate lad, aged twelve, employed in a telegraph office, was attacked seven days ago with severe chorea. His maternal grandfather had acute rheumatism in middle life, and his mother's youngest sister had severe chorea when a child. The ether spray was applied every other day, with the effect that the morning after the third application he went to his work, and in a few days was quite well. The application was followed by the same somnolence as in the other cases.

In conclusion I may, perhaps, be allowed to draw attention to a case,^a perhaps unique in the history of the disease, where the movements existed from birth, and probably even during fetal life. A woman when in the fourth month of pregnancy had a very loathsome object thrown at her and was ill of a low, nervous fever for two months after it, but recovered her health and went to the full time. She remarked that the child was more than usually lively in her womb, so much so as to disturb her considerably. At birth the child, a female, displayed marked chorea, which continued till the patient was thirty. The mind is hardly removed from complete idiotcy, and the patient looks little more than an elderly child. The motions are constant, save in sleep.

^a Recorded in the Medical Gazette for May 23, 1835.

