

at first daily, then every two, three, and four days; at length only weekly. The wound healed at once, so far as the deeper parts were concerned; and had it not been for a superficial sore, the result of the extreme force used on the first occasion, the dressings would have been very few. On the 14th of October the splints and weights were removed; and at the end of the next week he went home, using a crutch, within nine weeks of this somewhat formidable operation.

Those who are familiar with current surgical literature and practice will be aware that in the present day there are at least three different plans in common use by which deformed or badly-united bones may be reingrooved:—1. Subcutaneous osteotomy as proposed and practised by Mr Adams, in which a strong knife and a narrow saw are used to divide the neck of the femur in cases of osseous ankylosis of the hip-joint in bed position.

2. Osteotomy, also subcutaneous, by chisel and mallet, as advised by Mr Maunder, and practised by him, Mr Annandale of this city, and others.

3. Section of the bone and resection of the badly-united ends with antiseptic precautions, as advised and practised by Mr Lister.

The plan I adopted in this case seemed to me to unite the advantages of subcutaneous and antiseptic surgery. Being subcutaneous, I could almost ensure against entrance of air; being antiseptic, I could prevent putrefaction; by attention to escape of serum, tension was also avoided.

I thought of using chisel and mallet, but preferred the saw as being more manageable and less likely to risk injury of the femoral artery, which was so much in the way. The only really anxious part in the operation was in the breaking of the last bit of the bone, in case of injury of the vessel.

I need hardly say that the position of the fracture within less than five inches of the hip-joint made it very dangerous, had anything gone wrong in the wound, as a compound fracture of the upper third of the femur is well known to be a frequently fatal accident.

ARTICLE V.—*On Oil of Turpentine in Sciatica.* By W. ALLAN JAMIESON, M.B., M.R.C.P., Edin. ✓

A MEDICINE which has been employed in the treatment of sciatica from the days of Galen downwards would seem scarcely to need anything further said in its favour; the observations I am about to make are an attempt to define more accurately the cases in which oil of turpentine may be used with most advantage. While our methods of investigating into the nature and natural history of diseases are day by day becoming more precise, and, as a necessary consequence, our knowledge of morbid states of the system,

and of the finer shades of distinction between each, is continually growing more perfect, the exact treatment of the varying forms is built up more slowly, and to some extent less satisfactorily. Even in the wards of a large hospital, cases of the same disease presenting a moderate degree of parallelism are not of constant occurrence, so that the experimental method of research into the action of one particular remedy in one special variety of disease, has often to be carried on for years before an induction which is worth anything can be drawn. In private practice long intervals of time frequently elapse between instances of disease similar in kind, while it is more difficult to ensure that the mere surroundings of the patient may not injuriously affect the observations.

Sciatica, in our cold and damp climate, is common enough; it varies with the age, temperament, and diathesis of the person affected, while its treatment as yet is almost entirely empirical. Adopting Dr Anstie's classification, three main groups may be recognised. The first of these is that occasionally seen in young persons, most commonly females, though by no means unknown in men. While the constitution of these patients partakes more or less of the hysteric character, the exciting cause may be often found to exist in some peripheral irritation of branches of the sacral plexus, more especially of those distributed to some part of the sexual apparatus. It is not a common form of sciatica, and I cannot at present recall a very typical instance in my own practice. Perhaps the following case is the best illustration which has come under my notice:—

M. S., *æt.* 24. Domestic servant. Of a reddish-fair complexion. Has been for more than a year in the service of a family in Edinburgh, who took her with them to an elevated situation a few miles from Dunbar in the beginning of August. For three months before I saw her, on the 19th September 1876, she had experienced pain along the right sciatic nerve. A medical man who attended her soon after it began, gave her temporary relief by subcutaneous injections of morphia. For a time the pain was endurable, and she went on with her duties, but it gradually became worse, preventing sleep, and incapacitating her from work. She was sent in to a sister in town, at whose house I visited her on the date named above. She then complained of severe pain in sciatic notch at knee and outer ankle, but, contrary to what is usually observed, she seemed unable to keep the limb still in bed, and the pain on pressure behind the trochanter was elicited by slight contact. Her evening temperature was $98\cdot8^{\circ}$, and her state otherwise normal. I injected $\frac{1}{4}$ grain of acetate of morphia deep into the gluteal muscles, and ordered her—

℞. Olei terebinthinæ, \mathfrak{z} ij.
 Olei ricini, \mathfrak{z} iv.
 Mucilaginis, \mathfrak{z} iv.
 Aquam ad, \mathfrak{z} ii.

The draught to be taken early next morning.

When seen on the afternoon of the 20th September, the morphia had given little relief, while, though the medicine prescribed had acted freely on the bowels, the pain in the sciatic was as great as ever, and the restless movement of the limb even more so. As her sister was from circumstances unable to wait upon her, she was admitted the same day into the Royal Infirmary, under Dr Haldane's care, where her case proved a tedious one. There was here no history of rheumatism, nor of any such exciting cause as cold or damp, while the age of the patient and character of the pain raised at least a suspicion of an hysteric element, so that the failure of oil of turpentine to afford relief scarcely astonished me.

The features of the second form are well marked. It is especially that connected with the period of tissue degeneration. It is comparatively rare in my experience before fifty, though cases much resembling it are occasionally met with in persons between twenty and thirty. Ten examples, of which I have notes, since 1870, have been exactly divided between the sexes. General experience of all cases of sciatica prove it rather more frequent among men. Pain often commences first in the lumbar and sacral regions, and then after a variable time creeps downwards into the parts more immediately supplied by the great sciatic nerve. Points tender to touch also manifest themselves successively from above downwards. Thus, those which first appear correspond with the terminations in the skin of the posterior branches of the sacral nerves; then the coccygeal, and perhaps the vesical branches, are next affected, and nearly simultaneously with these a fibular point over or near the head of the fibula; and, lastly, an external malleolar. This last is very persistent, continuing even when those higher up in the chain of distribution have almost or altogether faded away,—so much so that I have frequently seen sinapisms and even blisters applied over the external ankle in the vain hope of thus mitigating the pain there. Sometimes a painful point is developed in the centre of the calf. Cutaneous anæsthesia is also a symptom, but is often masked in the early part of the disease by the tenderness of certain portions of the skin becoming a prominent feature during its decline. The motor branches of the nerve are often, indeed, usually affected, locomotion being impaired quite independently of the pain resulting from use of the limb, and consequent pressure on the nerve and its branches by muscular contraction.

The predisposing cause is in many cases long-continued pressure on the sciatic nerve—in females who sit much and take little exercise—in males whose occupation is sedentary, though not necessarily one within doors. I am inclined to think, too, that position in sitting may determine which nerve is affected. Nothing is more common than for an individual in a family to have his or her own seat, by one side or other of the fire it may be. In this way, one nerve is likely to suffer more from pressure than the other; and so, from local anæmia thus induced, or depression of functional

activity, to be easily influenced by such an exciting cause as damp cold. Exposure to this latter is usually the immediate precursor of an attack. In one of my cases the seizure was brought on by a long drive in an open gig on a raw cold evening, across a bleak Northumbrian moor, followed by a night spent in a draughty room with insufficient bedclothes. In another, a miller caught an attack by getting wet while assisting to drive a horse and cart out of the Whitadder, and subsequent carelessness in changing his clothes.

While no temperament or diathesis can be said to be free from liability to an attack, the class of persons most subject to this form of sciatica, and who derive most benefit from oil of turpentine, are those who present the following appearances:—

Usually middle-aged; they look older than they ought, and have hair, as Anstie so well phrases it, *prematurely and permanently gray*. The complexion may be pale or fresh, but it nearly always exhibits a peculiar *ashy gray or stone-coloured* aspect—a point to which I attach much importance. The proof of tissue degeneration may be more conclusively shown by rigid radial arteries, possibly by arcus senilis.

The following case, which was first seen by me on the 26th August 1870, illustrates many of the particulars stated remarkably well:—

Mrs W., æt. 56, a lady in comfortable circumstances, who had a family of six children, and up till then had not had any severe domestic trial or worry. She had, however, occasionally of late, attacks of the neurotic form of angina, and one of her daughters subsequently had neuralgia of a severe type in various groups of nerves. She was tall and stoutly made, rather pale, her complexion having the ashen hue which I have already mentioned. Her hair became gray early in life, and continued so. She never had gout or rheumatism. I afterwards observed that, when at home, Mrs W. always occupied a large arm-chair, so that her right side was next the fire. On the 11th August 1870 had a smart seizure of choleraic diarrhoea, which lasted all night and left her weak. She was then living on the banks of the Tweed in a rather damp and relaxing situation. On the 22d she began to have pain in the back, and along the course of the right sciatic nerve; three days after she was quite lame, so she returned to her home in Berwick, and I saw her on the 26th.

I found her with a clean tongue, but marked with many deep cross fissures; appetite fair; bowels, now perfectly regular. Pulse 60, equal, of good strength. There was severe pain along the course of the right sciatic nerve, paroxysmal in character, and when the attacks came on, there was also pain in the urethral branches; urine normal as regarded quantity and quality. A blister was applied behind the great trochanter, and rest in bed enjoined.

29th.—Pain very intense, felt chiefly in calf and outer ankle. One twenty-fifth of a grain of sulphate of atropia was injected

subcutaneously, which produced distinct physiological effect, and afforded temporary relief.

30th.—Repeated atropia.

31st.—Pain less; 15 grains of carbonate of iron twice a day.

3d September.—Pain still continues; 5 grains of iodide of potassium, with 8 minims of tincture of colchicum, were prescribed, to be taken three times a day; and as the nights were sleepless, half a drachm of chloral at bedtime. On the 6th there was some diarrhoea and tormina; the colchicum and chloral were omitted, but the iodide was continued till the 11th, when, as it appeared to be doing no good, it was given up, and the carbonate of iron resumed.

17th.—Passed a very bad night; did not sleep, and suffered much pain in coccygeal, vesical, and malleolar branches. Injected $\frac{1}{4}$ grain of acetate of morphia, which relieved, but gave rise to much nausea. 40 grains of chloral at bedtime.

18th.—Slept well, but pain undiminished. The chloral draught was repeated, and the following mixture directed to be taken early in the morning:—

R. Ol. terebinth., ʒij.
 Ol. ricini, ʒiv.
 Tinct. cardam., co., ʒi.
 Mucilag. et aq. ad ʒii.

19th.—The medicine acted freely; the pain is much abated—so much so, that Mrs W. can now lie on her side. The mixture was repeated on the 21st, and again on the 25th. Next day the pain was so nearly gone that she could sit comfortably. A slight degree of numbness persisted for some time; but recovery was uninterrupted and complete, no fresh attack having since occurred.

In this instance the effect of the oil of turpentine was so real, as compared with that of all the other means which had been tried, that my patient, when I visited her after the first dose had acted, accosted me with the exclamation, "Why did you not give me that medicine at first?" Its nauseousness had in fact deterred me, but I learned a lesson not to hesitate in ordering it on that account. Since then, I have employed it as the first remedy in eleven cases, all of them presenting in greater or less degree the characters of the class detailed above. In ten of these, relief from pain was immediate, not in any, entire or complete after a single dose, but such an amelioration as to render lying on the side affected, or even sitting up, quite possible. A second or third, in several even a fourth dose, was required to reduce what was previously intense suffering to a state of slight numbness. In one man it failed to cure, though his case seemed well suited for its employment.

T. S., æt. 61, was seen by me last March, after he had suffered from sciatica in the right leg for some weeks. He was a man of by no means temperate habits, and was employed in a large wood-

yard. He presented both the gray hair and ashy expression. Turpentine gave him temporary relief, but the pains recurred. Blisters, acupuncture, iodide of potash, iron, and strychnia were tried in succession, without effect, but the pain finally yielded to subcutaneous injections of morphia, at first daily, then every second day. I think in his case there was a rheumatic taint; certainly it was one of the most obstinate I have met with.

Oil of turpentine has been long recommended as useful in some forms of sciatica, but if we are to judge from what one of our latest writers on therapeutics, Dr Phillips, says, that in which it may be advantageously administered has, up to the present time, been obscure. Dr Phillips endorses the opinion of Nothnagel, that the indications for its use are quite uncertain. Sir Thomas Watson suggests that it may be most serviceable in cases where the irritation of the nerve is connected with a disordered state of the kidney, but there was no alteration in the urine in several patients under my care, where, nevertheless, turpentine cured. Dr King Chambers, who has in his Lectures, chiefly clinical, written more fully on the subject than any author with whose works I am acquainted, taking into consideration the proximity of the cæcum on one side and the rectum on the other to the trunk of the sciatic within the pelvis, thinks that while disorder of these viscera may lead to the production of sciatica in some cases, turpentine given either as an enema or by the mouth exerts a direct local action on the nerve. Dr Anstie, in his classic work on Neuralgia, does not once mention turpentine as an internal remedial agent, although in his previously published article in the *System of Medicine*, he briefly alludes to it as worth trying in the more obstinate cases of this disease, in ten minim doses thrice a day. I may remark that I have employed it in this way without any benefit in cases which were at one relieved by a purgative dose. And here I may also combat an objection which may be raised, viz., that the good results obtained from turpentine are due solely to its drastic action; a full dose of compound jalap powder has no effect in moderating an attack of sciatica, however completely it may evacuate the bowels. In this opinion I find myself to be at variance with that of a very distinguished clinical teacher and accurate observer, the late Dr Warburton Begbie. In an exhaustive paper on the Therapeutic Actions and Uses of Turpentine, published by him in the July number of the *Edinburgh Medical Journal* for 1871, for recalling my attention to which I am indebted to the kindness of Dr Muirhead, there occur the following remarks:—"The *modus operandi* of turpentine in neuralgia, and particularly in sciatica, is, I am disposed to think, not unfrequently connected with its action on the intestinal mucous surface, with some irritation of which the painful nerve-affection is not unfrequently connected. In illustration of this I may refer to an experience by no means uncommon, that after a brisk action of a cathartic—and for this purpose none is

more suitable than the combination of turpentine and castor-oil—a severe attack of sciatica has been entirely removed.”

Turpentine belongs to the narcotic stimulant class of remedies, and I agree with Dr Chambers in thinking it acts locally, just as its action is also probably local on the unstriped muscular fibres of the intestines when, administered in the later weeks of enteric fever, it so rapidly and effectually reduces the tympanitis so distressing and dangerous. Turpentine, then, to do good in the sciatica of the period of tissue-degeneration, must be given in doses of at least two drachms, combined with half an ounce of castor-oil, suspended in mucilage, and rendered more palatable by the addition of an ounce or so of cinnamon-water. The draught is best taken early in the morning. The dose generally acts powerfully two or three times, but its action is not followed by exhaustion at all commensurate with its effect on the bowels. Sometimes there is considerable difficulty in keeping the mixture down; usually, however, this is less urgent when cinnamon-water is employed as the vehicle. In the treatment of all forms of sciatica, absolute rest in bed must be maintained, not only while the pain continues, but for some time after it is gone. This is oftentimes difficult, as patients rebel against what they consider an unnecessary restriction. The following, among others, is an instance where I had reason to regret the neglect of this precaution.

J. B., aged 25, a masculine-looking female, an outworker on a farm in Berwickshire, began to suffer from sciatica in February 1875. I saw her on the 20th March, when the pain was so severe as to confine her per force to bed. I ordered her the turpentine draught, and on 24th March received a letter stating that this had at once relieved her, and she had gone to work. She sent for me on the 28th, and was found worse than ever. The turpentine was repeated on the 29th, and on the 1st and 2d April, and this time, warned by her previous experience, she rested longer, and got quite rid of her troublesome enemy.

Commonly the dose does not need to be repeated oftener than every third or fourth morning. I have never seen strangury produced by its use in sciatica, nor indeed any unpleasant consequences.

Lastly, there is a third group of sciaticas, in which the sheath of the nerve probably suffers from the action of a specific blood-poison, be that gouty, rheumatic, or syphilitic. Of the first and last forms I have seen no examples. The rheumatic has been fully treated of by Dr Fuller, who, however, names so many remedies as to lead to a doubt which is the right one. It is the form seen in persons long subject to rheumatic pains in various parts of the body. A collier, who supplemented his earnings more legitimately made, by lying behind dykes and under hedges, and having a shot at any chance hare or rabbit which might come his way, came under my care a few years ago with a severe attack of sciatica. I

have no notes of his case, but I remember that after every remedy I could think of—turpentine included—was tried ineffectually, he went into the workhouse, and came out crippled with his prolonged illness, but with his pain relieved by almost parboiling him in a hot bath. This group includes some of the very worst cases, which tax their attendants' patience and resources to the utmost. My object in this paper has been to point out the variety of sciatica which has appeared to me to be almost invariably benefited by oil of turpentine; and I now respectfully offer the results of my experience to the kind consideration of this Society.

ARTICLE VI.—*On the Influence of Modern Education on Health.*
By JOHN M. STRACHAN, M.D., Dollar.

(Read before the Annual Meeting of the Scottish Midland and Western Medical Association.)

I GLADLY take advantage of this opportunity to bring under the notice of this Association a subject of great and increasing importance to the public, and of special interest to the medical profession; but which is entirely ignored by the former, and viewed with strange apathy by the latter. I refer to the relation which exists between school education and certain forms of disease amongst young persons.

Every medical man must have had frequent occasion to remark how closely diligence and success at school are associated with delicacy of constitution and frequent attacks of headache, stomach derangement, and nervous diseases; and most of us have had melancholy experience of cases where these lesser ailments have terminated in serious and fatal diseases connected with the head.

In Dollar, in consequence of its flourishing Academy, there are a great many families and a still greater number of boarders, who come from all parts of the world for the sake of education. I have thus, in my practice, had more than the usual share of patients among children attending school.

Many years ago, I was surprised at the frequency of complaints, which I had then no hesitation in ascribing to worms. The symptoms were headache, more or less severe, increasing towards evening, lassitude, loss or variability of appetite, irritability of temper, and want of sleep. When these symptoms were neglected, they not unfrequently terminated in a tedious fever of a low type.

I have said that I had no hesitation in ascribing these symptoms to worms; and I generally prescribed the usual anthelmintic remedies, which in those days (I speak of thirty years ago) consisted of a course of drastic purgatives, calomel and scammony, gamboge, turpentine or other severe remedies, the action of which kept the children from school for at least a fortnight. This treatment was always successful.