fluid, are requisite. Friction and elastic compression are also essential elements in the treatment of these diseases in certain stages. If the effused fluid have undergone degenerative metamorphosis, it should be evacuated by means of the aspirator, if possible. If, however, the contents cannot escape by the aspirator, then the joint should be freely incised under the antiseptic spray, and carefully washed out and dressed according to the principles so admirably described by Mr. Lister.

If the disease have progressed to caries or necrosis before it comes under observation, it is frequently accompanied with one or more tortuous sinuses which afford but an insufficient exit to the morbid materials, and hence it is possible, by means of a free incision in the right direction, to facilitate the exit of the discharges, and then by following out the general instructions above given, repair may take place with more or less deformity and partial or complete ankylosis. But in this latter condition of caries or necrosis, after having given the patient the benefit of the treatment just recommended, and the disease still goes on progressively, showing the extent of disease to be so great, or, that the constitution of the patient is so bad that he will probably succumb before the escape of the diseased bone could be effected by the slow process of exfoliation; then, excision and complete removal of the diseased parts is our only remedy. This, when done properly, and with proper after-treatment, will frequently yield the most satisfactory results. In the knee, we have a splendid limb with ankylosis; in the ankle, hip, elbow, and wrist, we frequently have fine results with but slight deformity and very nearly complete motion.

SHORT NOTES ON THE USE OF SAYRE'S SWING AND PLASTER JACKET IN SPINAL DISEASE.

By C. H. GOLDING-BIRD, F.R.C.S.Eng.,
Assistant-Surgeon to Guy's Hospital.

AFTER a somewhat extensive employment of Sayre's plan of treating spinal disease, the following points in connection with it, in addition to those recorded in my lecture upon the subject, published in this JOURNAL for September 21st, 1878, may be worth recording.

The plaster jacket must in all cases be made to reach one inch to one inch and a half below the anterior iliac spines, or the patient will be unable to wear it; a too short jacket is the commonest failure. The anterior iliac spine must be protected with a pad of cotton-wool; and one should be placed over every bony prominence, natural or acquired; the ensiform cartilage often has to be thus protected. All the permanent pads used—the dinner and breast pads are only temporary—are best placed *outside* the merino vest; they do not in this position become so readily hardened and clogged by the perspiration.

If the plaster bandage be put on in a spiral fashion, there is less chance of its "giving" in the loins—the weakest place in the jacket; if attention be paid to this, tin strips may be dispensed with. The strain on the jacket being less in a case of caries than of general curvature—in which the tendency to "telescope" is great the moment the patient is removed from the swing—more care must be given to the strength of the jacket and the setting of the plaster in the latter than in the former. A case of caries may walk away in an hour or two; but one of general curvature is best kept lying till the next day.

The bandages can scarcely be too thickly spread with plaster-of-Paris; the after smearing on of a layer of plaster outside all looks well at the time, but is useless in point of strength; it soon cracks, and is the cause of the "crumbs", by which an improperly put up "Sayre" can be tracked from room to room.

In employing the jury-mast, a thin jacket should be first put on, of two to three bandages, while the patient is in the swing; when it has set, the patient should stand, and the jury-mast can be fitted with more bandages, and the jacket brought to the required thickness.

In spinal caries, fixation of the jacket—physiological rest—is of primary importance; the extension is secondary. Yet the maximum amount of good to the patient will not be obtained without the employment of the latter. It not only opens the chest (retaining it in its most capacious form), but it each time helps to decrease deformity; and those who employ the jacket without extension treat the disease, but miss the full benefit of the treatment in regard to the distortion. A variable amount of straightening is obtained as ankylosis progresses; once in a favourable condition, Nature tends to bring back the body to the normal standard; but the great gain is each time the patient is swung for the jacket to be applied. Repeated extension is not advisable; it interferes with "physiological rest".

In lateral (general) curvature, extension is of primary importance; fixation is secondary. Mild cases may be cured by daily extension alone without the jacket. Great straightening and diminution of rotation are

obtained in the swing at the putting on of the jacket; but the same exercise—extension from the head, as described by Professor Sayre—must be continued twice daily; first, with the intention of keeping the spine straightened, and in very bad cases of opening up the chest more and more; and, secondly, to act as dumb-bells to the dorsal muscles which invariably waste from want of use under the jacket. In spinal caries, this is unimportant; for, ankylosis being completed before the jacket is discontinued, the spine is rigidly fixed and able to hold its own from the first; but in general curvature, there being no ankylosis, the muscles are called upon the moment the jacket comes off, so that if they are wasted the patient will be often utterly unable to keep himself erect on the removal of the jacket till his muscles are again in "working order".

General curvature or caries of the cervical spine must be treated with the jury-mast. In the former, the daily exercise must be employed in addition. In a case of caries, a girl aged 14, with fifteen months' history, and pharyngeal abscess, all her pain, inability to support the head, posterior cervical thickening, with much deformity, entirely disappeared after one year's wearing the jury-mast. No visible deformity remained; but deep pressure with the fingers at the back of the neck could detect an unnatural fullness. The same jacket was worn the whole time—an exceptional circumstance.

Upper dorsal caries ought to be treated with a jury-mast; yet the jacket alone, by fixing the ribs, as Sayre has described, will suffice to give physiological rest to a boss that itself lies above the level of the jacket.

Upper dorsal general curvature must have a jury-mast, if any apparatus at all, and the daily exercise. Below these points, both forms of disease are alike treated with the jacket; the general curvature requiring the exercise as well.

Where spinal caries is complicated with abscess, especially if already open, above the level of the iliac spines, the case is difficult to treat, even in the way that Sayre has indicated; but where the abscess exists, or is open below that level, treatment is easy. If already a sinus, it requires only some ordinary dressing; if still an unopened abscess, it should never be opened; but, by supporting the patient in a jacket and enabling him to walk about, the pus gravitates downwards, points more rapidly below the jacket, the abscess will open of its own accord, and discharge thoroughly, though gradually, without rise of temperature, or interference, as a rule, with the patient's getting about. It is a mistake to keep a case of psoas abscess lying down where by any means it can be got into the erect position; it is a still greater mistake to "aspirate" it; for, unless with the desire to make it point more rapidly, there is no one sound reason for touching it at all. Open an acute abscess, and the temperature falls; open a chronic one, and the temperature rises to fever point; let Nature open the latter at the right time, and there is scarcely any constitutional disturbance.

To say that "Sayre's treatment" is as sound in principle as it is effective in practice, is only now to utter a truism; but every fact, I believe, that he has advanced in connection with it my cases fully and repeatedly verify.

IRRITABLE SPINE AS AN IDIOPATHIC AFFECTION.*

By J. G. SINCLAIR COGHILL, M.D., F.R.C.P. Edin.,
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THE terms irritable spine, rhachalgia, spinal irritation, notalgia, neuralgia spinalis, etc., are used indifferently in the text-books, with reference apparently, for the most part, to a secondary affection of somewhat vague pathological identity, of which the characteristic symptom is tenderness on pressure over the spinous processes of one or more of the vertebrae. It is described as being met with more frequently in women than in men; associated with pains in the mammae and other parts of the thorax; or in the ovaries, uterus, and other abdominal viscera. By others, it is viewed as a combination of myalgia and hysteria dependent on general debility. It has even been described as seated entirely in the ligaments of the vertebral column. By all it is regarded as essentially dependent on reflex action, having its original source in some peripheral irritation.

I have, of course, in common with my professional brethren, from time to time been consulted by patients in whom certainly localised tenderness in the spinal region, especially its lower segments, was present as an incidental condition accompanying uterine disorder, and, in a milder form, symptomatic of gastric ulcer; but, at the same time, I have occasionally met with cases in which I am quite sure this associa-

* Read before the Southern Branch of the British Medical Association.

tion did not obtain, and which presented all the characters of an idiopathic affection well defined, both as regards etiology, symptoms, and amenability to a particular form of treatment, based upon this theory of their pathogeny.

Lately I have had under my care no fewer than four cases in which vertebral tenderness or hyperæsthesia was the principal essential feature, and in which I could not ascertain that the local phenomena resulted from any exciting cause at the periphery. A comparative study of these cases will, I think, help to place the pathological identity of one form at least of this affection upon a more satisfactory basis. I believe it will demonstrate that there occurs not infrequently a form of irritable spine which must be regarded as a primary disease, and not dependent upon any sympathetic, referred, or reflected irritation. The following details are necessarily brief, but I believe they include all the essential points. The cases are reported in order of occurrence.

CASE I.—Miss M. G., aged 24, of sanguineo-lymphatic temperament, auburn hair, blue eyes, and ruddy complexion, was perfectly well until a year previous to consulting me, when a shock to the nervous system from a fall in a ball-room, which caused a fractured collar-bone, produced the following train of symptoms: gradual loss of appetite, feeling of languor and debility, with some loss of flesh, and sleeplessness. As it was feared she was becoming consumptive, she was sent to Ventnor. I found, on examination, all the organs perfectly healthy, and the functions regular. There was no pyrexia. She complained, however, of great tenderness on pressure, aggravated by movement, or the upright posture, diminishing in intensity from the fifth dorsal vertebra to the lumbar region. Suspecting renal trouble, I examined the urine, and found it showing an excessive acid reaction; and, to my surprise, loaded with phosphates to the extent of one-fourth, on settling in the test-tube.

The patient had been taking the hypophosphites of lime and soda for some time—indeed, a large variety of tonics had been tried; so I placed her on a mixture containing liquor strychniæ, citrate of iron and quinine, with syrup of lemons in effervescence, three times a day. The general health improved steadily, and the quantity of the phosphates lessened gradually; but, as the local pain was only alleviated by the sedative liniments and embrocations ordered, I applied Corrigan's hammer or *bouton*, at the temperature of boiling water, briskly over the painful area, producing rapidly deep purple redness, but without vesication. The effect of this treatment was most satisfactory, both on the general and local conditions. I had to repeat the counterirritation with the *bouton* four times in all before the spinal hyperæsthesia had entirely disappeared. The phosphates disappeared from the urine entirely. The diet in this and the other cases was simple and non-stimulating; milk, farinaceous and egg puddings, fish or meat once a day. No stimulants, except a glass of port wine in a breakfast-cup of arrowroot at bedtime.

CASE II.—Miss S. E., aged 17, sanguineo-lymphatic temperament, tall, well-formed, with fair hair, large blue eyes, and high colour, enjoyed excellent health in every respect, until about six months previously to my being consulted, when hard study for the Oxford Local Examination gradually developed loss of appetite, sleeplessness, debility, and "pain in the back", from which no position gave relief. I found the organs and functions healthy and regular; but the action of the heart was extremely feeble, and the pulse 90, small, and compressible in character. There was also a feeling of chilliness in the morning, when the body-temperature registered on several occasions 97°, but never rose in the evening above 99°. There was also great intolerance of noise or mental application. In addition to a constant pain, there was extreme tenderness on the slightest pressure, the skin itself being excessively sensitive, from the seventh cervical to the last dorsal vertebra. The urine was copious, of low specific gravity, and loaded with phosphates.

I prescribed a pill containing pulveris opii gr. $\frac{1}{4}$; pulveris digitalis gr. ss; pulveris capsici gr. ss; and quinquæ gr. iijss; to be taken every four hours, and thirty grains of bromide of potassium each night at bedtime. When the temperature steadied, the chilliness disappeared, and the pulse filled, I substituted Kirby's pilula phosphori composita, three times a day with food. At the same time, after reducing the cutaneous hyperæsthesia by turpentine stupes, alternated with a liniment of aconite, belladonna, and chloroform, applied on spongio-piline, I used Corrigan's *bouton* at 212°, and repeated it three times at intervals of a week. The recovery of this patient was rapid and complete.

CASE III.—Miss C. J., aged 32, of dark sallow complexion, very tall, spare figure, with dark hair and eyes (a type of the olive-complexioned struma of Laycock), began to feel weakness, with pain and tenderness in the back, accompanied with loss of appetite and insomnia, about two years ago, when she had great mental exertion and anxiety in connection with a scholastic undertaking. She complained to me

only of a great feeling of languor, with extreme pain, aggravated on pressure, from the occiput almost to the last lumbar vertebra, but most intense between the shoulders. The health otherwise was good. The only relief had been obtained during sleep from narcotics, or while walking briskly, which, however, was always followed by aggravation of the pain. There was slight double curvature, only apparent in the erect position, for which a Sayre's jacket had been recommended; but I believed it resulted from an instinctive effort to relieve pressure by posture. I found in this case, also, a large quantity of phosphates in the urine, a weak quick pulse, but no pyrexia.

Taking the suggestion of the diathesis for the general treatment, I gave the patient syrup of the lactophosphates of lime and iron, with cod-liver oil. I twice applied, at intervals of four days, Corrigan's *bouton*, heated in the spirit-lamp flame to a blue heat, so as to slightly singe the skin on the second application. The patient was suddenly summoned home before I considered her sufficiently recovered; but I have heard that she is continuing to improve.

CASE IV.—Miss B., aged 17, of sanguineo-lymphatic temperament, very abundant fair hair, blue eyes, very deeply tinted cheeks, and stout, well formed and fully developed figure, enjoyed robust health until mid-summer of last year (1878), when she was sent, for the first time, from home to a fashionable boarding-school, where she was very much overworked, and very much underfed, the mental *cram* being in the inverse ratio of the physical. There followed a rapid deterioration of health, which culminated by the end of October in a sudden accession of pain from the occiput inclusive to the last dorsal vertebra, with paroxysmal exacerbations so intense as to resemble the effects of sunstroke—at least they were so described by her parents. I have not been able to ascertain the details of treatment, beyond that tonics and general and local sedatives were freely employed, so as to permit removal home, where considerable but far from complete improvement followed. A premature attempt to renew her studies at home brought back the symptoms in a less alarming, but still severe, form; and she was removed to her seaside home, where I first saw her on the 5th of May of this year. The headache was less intense than in the beginning of her attack, but there were almost daily paroxysms of increased severity, and the spinal tenderness was extreme, comparative relief being only obtained by lying on a hot water rubber-bag, or from an occasional sinapism. The slightest noise, strong light, or an attempt to read, greatly aggravated the suffering. The appearance of the patient was striking. Her conjunctivæ were injected, and two large defined circles of deep purple colour on her cheeks contrasted strongly with the pallor of the rest of her face. The hands and feet were quite cold, though the temperature of the room was high. The pulse was quite thready in character, and the apex-beat could hardly be felt. Otherwise, however, the general health was good, the tongue clean, appetite fair, and no pyrexia. A careful and repeated examination revealed nothing further than a phosphatic condition of the urine, but not to a greater extent than one-sixth on deposit.

The treatment consisted of a mixture of liquor strychniæ, tincture of digitalis, quinine, dilute phosphoric acid, with syrup of orange, and bromide of potassium at bedtime. After hesitating on account of the evident congestive conditions present, as to dry cupping to the nape, I applied the *bouton* at a blue heat to the seat of pain, and repeated it again twice at intervals of five and six days, a spongio-piline pad, soaked in belladonna liniment, being kept applied to the skin, previously well oiled, in the intervals. The improvement was very rapid. The change in the state of the vascular system was most interesting. The deep hue of the cheeks became diffused, the eyes clear, the pulse filled, while the surface and extremities resumed their normal warmth. The patient is now in perfect health.

What I would now especially draw attention to in connection with the cases just described is the remarkable identity exhibited: 1. In the predisposing temperamental or diathetic conditions; 2. In the exciting cause, pointing to exhaustion of nerve-force; 3. In the general symptoms, including the entire absence of all hysterical phenomena; 4. In the seat and character of the local morbid manifestations; 5. In the absence of febrile movement; 6. In the invariable phosphatic condition of the urinary secretion; 7. In the condition of the vascular system, indicating local plethora or passive venous congestion in the seat of pain; 8. In the absence of any evidence of peripheral irritation sufficient to set up a reflex pathological action or process in the spinal cord; 9. In the rapid and regular resolution of the morbid phenomena, under treatment based on the indications as above stated, and mainly directed in an active form to the central seat of their manifestation.

I venture to deduce from the observations thus formulated: (1) that we may have cases of so-called irritable spine (which term I prefer) present as a primary or idiopathic morbid condition entirely independent, so far as reflex nervous action is concerned, of peripheral excitation;

(2) that the sanguineo-lymphatic temperament is the usual predisposing diathetic cause; (3) that exhaustion of nerve-force, especially through the brain, is the common exciting cause; (4) that it is not inflammatory in nature, nor accompanied by pyrexia; (5) that the vascular system, probably through the vaso-motor nerves, is principally involved in the production of the objective phenomena; and (6) that the affection or disease itself consists essentially of a passive congestion of the venous plexuses within the vertebral canal, which induces pressure on the nervous structures to which they correspond, either directly from increase of calibre from dilatation, or indirectly from inducing a certain amount of local oedema in the spinal membranes. This theory of the pathological anatomy of one form at least of irritable spine is, of course, in the absence of any opportunity of *post mortem* examination, based entirely on a study of the symptomatology of the affection, and as such only it is brought forward on this occasion.

MOUNTAIN AIR IN THE TREATMENT OF PHTHISIS.

By ROBERT SINCLAIR, M.D.,

Physician to the Dundee Royal Infirmary.

It has occurred to me to send the following note as a small contribution to the discussion.

R. H., aged 21, consulted me for the first time on April 21st, 1879. He then complained of weakness, loss of flesh, irritating cough, and occasional night perspirations. His previous health had been exceptionally good, and his family history was satisfactory. His illness was attributed to overwork during the winter session at the University of Edinburgh. He admitted that he had been in the habit of reading, for hours on a stretch, in a very stooping position. Examination of the chest was satisfactory, except that the expansion was slightly impaired, and the respiratory murmur exaggerated at the left apex.

He was advised to live as much as possible in the open air; to give up study; to live well; to take cod-liver oil and the hypophosphite of lime; and to apply iodine to the upper part of the left chest.

A month later (May 19th), his general health was much worse, and his appearance extremely wretched. His weight was one hundred and fifty-two pounds, which indicated a loss of fourteen pounds in three months. He had become feverish towards the end of each day. His cough had become more troublesome; and the perspirations had occurred nightly and more copiously of late. The expectoration consisted of tenacious muco-pus. Expansion and elevation were deficient at the left apex, where the percussion-note was decidedly dull; the expiration prolonged and blowing; vesicular respiration and vocal fremitus had increased, with an occasional friction and moist *râle*. These signs extended more or less to the level of the nipple in front and the apex of the scapula behind. In the extreme right apex, the respiratory murmur was rough, with prolonged expiration. He was advised to go at once to Switzerland, staying at first at Engelberg, and in the beginning of July to go on to Camper, near St. Moritz; to live as much as possible an out-door life; to continue the cod-liver oil and hypophosphite of lime; and to take one-eighth of a grain of sulphate of atropia in pill every night.

About the end of July, I received the following report from Dr. Biermann, to whom I had sent an account of the patient's state when he left Dundee.

"The health of Mr. H. has improved very much since his stay in the Engadine. His appetite is good; also sleep. He has gained in nutrition. He has no fever or perspiration, much less cough. Percussion shows that the disease does not extend any further. The occasional friction and moist *râle* are much less. Vocal fremitus on the left side is not so pronounced."

A few days ago, I received a letter from Mr. H.; and I shall transcribe the portions that bear on the case. It is dated August 29th.

"The weather is still very fine, but the air is becoming colder; and many people are going away. We intend staying here till probably the 10th proximo; and then we go on to Italy. We are going to Monticello, a small village on a height about twenty miles from Milan. Dr. Biermann has advised me to do the whole journey in one day (twelve hours). In a little time, we shall go to Genoa, and then to San Remo for the winter. Was anything said at Cork about going down to lower heights? Some people here say that the descent from the Engadine should be very gradual. Others say it does not matter much. I have enjoyed the Engadine very much. I am much stronger than when I came here. My appetite is very good indeed. I sleep well, and do not perspire at night. My cough and expectoration are much less; but, unfortunately, they are still present. The worst of the Engadine is, I

think, that the temperature often changes, both greatly and suddenly. If the sun goes under a cloud, even on a very fine day, the air becomes at once very cold. Here I always carry a light shawl to put on on such occasions."

REMARKS.—This case, from the rapidity of the changes, was, to begin with, a very unpromising one. Between April 21st, when the physical signs were far from being decided, and May 19th, when they had made terrible progress for the worse, the patient was under the best hygienic conditions that could be procured at home. On the other hand, any one who knows the usual course of such cases in this part of the country must admit that the improvement already gained, in the Upper Engadine, is very considerable; and justifies a more hopeful outlook than could possibly have been entertained three months ago. I am well aware of the difficulty of estimating the value of any particular line of treatment in a single case, or even in a number of cases. But, it appears to me, the case which I have recorded does not belong to the category of hopeful cases; and in view of the fact that the patient was going rapidly downhill, at home, under the same treatment that was continued with success on a high mountain elevation, the change of climate must be credited with the chief share of the result. I should add that Mr. H. did not find his circulation embarrassed by the mountain air to the extent I feared and warned him of before he left home. Perhaps some one of the members who took part in the discussion at Cork, or who have had special opportunities of judging, will kindly answer the question my patient asks, concerning the best mode of leaving an elevated situation, in an early number of the JOURNAL. It will be observed that the temperature—this summer at all events—has not been so equable as Dr. Clifford Allbutt told us at the meeting we might expect. At least, I presume that he did not confine the application of his remarks on this subject to Davos.

A SIMPLE METHOD OF DELIVERY IN DIFFICULT BREECH CASES.

By DR. CHARLES E. UNDERHILL, Edinburgh.

OBSTETRICIANS not unfrequently meet with cases where the presenting breech is fixed either at the brim or low down in the pelvis, and where the natural forces are unable to finish the labour. Almost all writers on the subject recommend either to bring down one foot, or, failing that, to insert one or more fingers in the groin and employ traction. Should this not succeed, the use of the blunt hook, or of a handkerchief passed over the fold of the groin, or some such device, is resorted to before delivery can be effected. These manœuvres are generally difficult, and sometimes dangerous to the child.

In the following case, I adopted a method which is very simple, and proved easy of application and rapidly successful. It consisted essentially in making traction with the fingers fixed upon the child's pelvis *from behind*, instead of hooking them in the fold of the groin; additional purchase is obtained by placing the thumb and fourth finger in the groins.

On the 25th of February last, I was called by a friend to assist him in delivering a case in which the breech presented and had stuck at the outlet of the pelvis. He had tried with much perseverance, but without success, to pull down the breech by the use of his fingers in the groins, and pressure upon the uterus from above, etc. On reaching the house, I found the patient, a vigorous healthy woman, in labour with her second child; labour had made good progress until the breech reached the outlet of the pelvis, where it had remained without advance for three or four hours, in spite of the attempts to deliver spoken of above. Protruding from the vagina was the scrotum of the child, greatly swollen and nearly black. The vagina was large, and the pelvis apparently of full size. The child's sacrum was opposite to the right sacro-iliac synchondrosis of the mother, the child's legs being bent upon the belly opposite the mother's left groin. After chloroform had been given, I passed my left hand up behind the child's sacrum until I was able to hook the index and second fingers over the crests of the ilium from behind, one on each side of the lumbar vertebræ; this gave me a strong and firm hold, and enabled me to use a little steady traction, and to deliver in a few minutes. The child was alive and survived, the swelling of the scrotum subsiding in a few days. The mother made a good recovery.

I believe this method of delivery will be found applicable to many cases of impacted breech; and it has the advantages of being easy to execute, rapidly accomplished, and free from danger. I do not know whether this mode of delivery has been practised before; but it is certainly worth a trial in such cases as the foregoing, before recourse is had to instrumental or other more serious procedures.