Delore of Lyons has had a large number of cases, to which he applied his method of *brisement forcé*. That is to say, that he, by sheer force, and without any tenotomy or other operation, broke off the lower femoral epiphysis and tore some of the ligamentous tissue on the outer side of the joint, and improved the deformity. I tried this method, now more than three years ago, when the Children's Hospital was at Ratcliff Cross, and partially succeeded, after using considerable force, in which I was aided by a colleague. The other day, I tried it again in a mild case of genu valgum; but I, and several other gentlemen, who used considerable force, failed to make any impression on the deformity. The proceeding seems to me to be rough and unsurgical, and I shall not repeat it.

Before concluding, I must tell you of another new operation which I have recently tried for the remedy of moderate cases of this deformity. I know it is dangerous to talk of anything being new, unless one is well up in surgical literature; but, after having looked up various old and new works and papers on the subject of genu valgum, I have not seen any mention of it. I divided the tendon of the biceps, the ilio-tibial band, and the external lateral ligament, and then at once forcibly straightened, or nearly straightened, the joint. The novelty of this method consists in the combination of the division of these three structures with immediate forcible straightening. Although I did not succeed in getting so completely rid of the deformity, as in the case in which I chiselled the condyle, still the improvement was manifest to the lookers-on, among whom were some American surgeons. This operation was done on a child the subject of double knock-knee, and I selected the side on which the deformity was less pronounced. I will publish the result of this and several other cases when they are complete; but I must enforce on you that at least a year, or even two or three, should be allowed to elapse before we can come to any accurate conclusion as to the permanence of the rectification, and as to the usefulness of the limbs. The immediate results are very good, and I have no doubt that the later ones will be equally satisfactory.

REMARKS

ON

SAYRE'S TREATMENT OF SPINAL DISEASE.

From a Clinical Lecture delivered at Guy's Hospital.

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WITH the manipulative part of Sayre's treatment of spinal cases you are all familiar, so frequently do you see it employed here; the principles involved in it, and the results that it yields, are rather our subjects of to-day. Given a crooked spine, the surgeon's endeavours have always been directed either to straightening it, or preventing the increase of the deviation from the normal. Till Sayre introduced his method of suspension and the plaster-jacket, these ends were but inadequately attempted by means of the ordinary "spinals"; and, though doubtless they were a support and comfort to the patient, they could do and did, from their very mode of action, little or nothing towards cure; for, in caries of the spine, where, first of all, absolute rest should be given to the diseased bones, and in general curvature, where straightening is the main object, these instruments completely fail; for, were they ever so perfect in construction and application, the mere fact of their being taken off every night would be fatal to their usefulness. The essential difference between Sayre's method and the hitherto adopted "orthopædic" plan lies in the substitution by the former of a "pull" for a "push," and in the introduction of "physiological rest" for the diseased spine.

If you treat a patient upon the "orthopædic" plan, you fit to him, or rather to his deformity, a leathern jacket strengthened with steel, and so constructed that, by certain screws, a boss here or a curve there in the spine may be pressed against with the idea of driving it in again; which means, of course, the elevation of as much of the trunk as lies above the boss or curve. A pair of steel crutches is added on each side of the apparatus, which can hoist the shoulders to the level of the ears, but which is intended to aid in the general support of the body-weight above the disease. I never yet saw the case that could bear this for long: the axillæ soon chafe. The inefficiency of this mode of treatment is sufficiently testified to by the number of cripples that one sees, who, from the first appearance of their disease, have been under "orthopædic" treatment; their apparatus has been altered

from time to time to accommodate the increasing deformity. To push up the superincumbent weight of the body from the boss or curve by pressure exerted upon either is impossible, and the weight above must be taken off before the spine can "spring" straight.

Consider the bent spine for the moment as a broken or all but broken bone, as in truth it becomes, and apply the same rules of treatment to it that you would to a fracture, and at once will you perceive the fallacy attaching to the orthopædic treatment that we have hitherto employed. In setting a fracture, you must do one of three things:—1. Obtain cessation by position of muscular action, and the fragments fall into place; apply splints to give absolute fixation and rest; 2. Overcome muscular action (or, in other words, that weight that would approximate too much the broken ends) by extension, and then apply splints; 3. If you are a mechanician, and neither a surgeon nor anatomist, you try to push the so-called "riding" fragment into place by pads and strapping, and you will not succeed. Of these three plans, the first has little material influence upon spinal distortion; the last is what we have hitherto been doing by orthopædic "spinals"; the second is the essence of Sayre's method. It is true that muscular contraction is at least secondary in producing spinal distortion, yet the principle remains the same, and the dead weight of the head, etc., upon the weakened vertebral column, which causes its bending, must be removed by extension applied at either extremity of the spine; the "pull" must be substituted for the "push". While thus extended, the splint (jacket) of plaster is applied, and the spine is fixed in its new position.

By extending the spinal column and applying the jacket, you gain much more than when a fracture is set by extension. In both, there is the local benefit; but in the former pain is at once eased; the chest is fixed in the inspiratory position, giving more play to the lungs and heart, and, as a natural consequence, the patient's general condition improves, and a clear healthy complexion soon succeeds to the dark and muddy one that so many spinal cases wear; the "pigeon-breast" is gradually unfolded, and, almost above all, there is an end to couches and reclining boards; for thus supported the patient may and should be out in the air as much as possible.

Is there no danger in suspending a case of spinal disease? Unhesitatingly no, if properly performed. In general curvature, there being no inflammatory action to rouse and no reparative material to damage, you can do no harm; straighten as much as you can. In caries, you may do harm if you disregard one important symptom—pain; sling your patient as long as he is comfortable; but, the moment he feels the strain in his back—if he should do so at all, but which many cases do not—cease to extend even if he have his toes still on the ground; put him up in that degree of extension; with the next jacket you will go further.

We employ here a slight modification in the mode of suspension and in the form of head-piece, as removing altogether what little risk there was about Sayre's original apparatus (*vide* woodcut).

The large iron bar is attached to the pulleys from the tripod; from the central small bar hangs the head-band, and from the two lateral pulleys the arm slings. By thus using a running cord the drag on the arms or head can be varied at pleasure. As represented in the figure, the angle made in the cord where the central pulley hangs is 120 deg., and the drag is equally distributed between the arms and head; but, by

altering the positions of the cleats, so can the angle be made more obtuse or acute; and the more acute it becomes the more is the drag from the head and the less from the arms: as much should be taken from the head as the patient can possibly bear. Sayre's method allows no variation, or very little, between the arms and head. The head-band is made of worsted webbing; its form and mode of wearing is shown; it cannot slip back on the trachea, and adapts itself to all shapes of heads. By wearing the sliders carrying the rings more forward or backward, the drag on the chin or occiput is altered. A wooden tripod taking into three lengths is more convenient for private work, than the heavy iron one first introduced.

When a case of general curvature is suspended, the immediate result is astonishing: down drops the elevated shoulder; the rotation of the spine untwists, and the curves, both primary and secondary, disappear. In early cases, all this may be witnessed; in more established deformity, the relief is only gradual. To whatever degree extended, the jacket of plaster there retains the spine, not by pressure on this point or on that, but, by its rigidity, preventing the trunk from telescoping to its previously deformed position.

It is not unusual to see a patient with general curvature more than an inch taller when the jacket has set; but do not be too sanguine; at the end of, say, two months, when removed, the patient will sink in height, but not to the same degree as before: a little—I have known three-fourths of an inch in that time—will be permanently gained, and so with each jacket you will more and more benefit your case.

Where the case is slight—what the public call "outgrowing shoulder"—though the jacket should, if allowed, be put on, yet with the swing alone night and morning you may cure your case in two or three months. When swinging a case to put on the jacket, you must use both head and arm-bands, though, if the patient can suspend himself by his head alone, all the better; I have never yet, however, found the case that could so do for the six minutes required for applying the plaster bandages. But, when a case of lateral curvature is exercising (which should be done whether wearing the jacket or not), only use the head-band on the small crossbar in the way Sayre figures in his book; the patient can elevate himself from the ground without risk if his hands do not get below his chin. This should be done up and down every morning and evening for five minutes. In caries, even some increase in height is usually at once observable; but I do not lay stress upon this; for, whatever permanent reduction of the deformity there eventually may be, it will be the result of gradual rather than of immediate straining.

I know of only two circumstances that would prevent my advising the use of the jacket: one where there are no symptoms whatever beyond the deformity, which has remained the same for long; the patient is already well—a cripple; the other where the patient is in the very last stage of the disease. Abscesses do not prevent the treatment; they benefit by it; for the pus now gravitates from the seat of disease, and so, if the abscess be already open, it tends the sooner to close; or, if not open, it will, in all probability, gradually disappear. One of my cases illustrates this last point very well indeed.

Sore backs and chafes from the jacket are the fault of the putting up; cotton-wool padding should quite obviate such unpleasantness. Very seldom, out of more than seventy jackets, have I seen the skin become really irritable. It is an awkward circumstance, and must be met by removal for a time of the jacket. Usually after the first day or two, the jacket becomes as unnoticed by the patient as any other article of dress; its porosity allows the perspiration to transude.

Where the disease is above the level of the armpits, and so beyond the immediate influence of the jacket—i.e., upper dorsal or cervical regions—what do you do? In the latter case, undoubtedly employ the jurymast, which you see this patient wearing; in the former, the jurymast is best employed, yet you do good by the jacket only. I had seen cases improve at once where the boss was just appearing above the jacket, and so beyond (apparently) its influence. This is why. In such cases, though you lose extension on the disease, you give it rest; for the ribs that descend from the seat of disease are raised in the swing and held firmly by the jacket, and thus keep the spine sufficiently fixed.

Upwards of forty cases have passed through my hands, and I am deeply impressed with the utility of this treatment by extension. If not cured, you may be sure your patient will not get worse; but, from what I have seen, I believe that even cases which no longer can get comfort from spinal supports may be actually improved by the extension and jacket. The benefit to, or cure of, the patient may now fairly, in point of time, be reckoned by as many months as it formerly took years to do what little good the orthopedic plan was capable of accomplishing.

When you have reached the limit of improvement in any case, espe-

cially of general curvature, you should give the patient a well fitting corset, to prevent a relapse: the last plaster jacket may be cut up and laced on again; or one of felt or leather, moulded like it, may be employed. It should be laced on while the patient is in the swing or lying on the ground, and should not be removed more than once in three days. But I warn you against thinking you can improve your patient from the first by using a felt or any other vest that will lace up, in lieu of the plaster jacket. It is the integrity of the latter that constitutes its perfection; and, once cut up, it becomes little better than the old spinal supports, able to prevent relapse, but not to cure.

Each fact I have now laid before you I can verify in the cases that have happened to come before me. I urge you to study while here this plan of treatment; it will be soon recognised as the only reliable one, and it should be to you—the profession generally—and not to special practitioners or instrument-makers, that the public should look for assistance. There is nothing "special" in it; but once allow it to become wrapped in the mysteries of specialism, add "improvements", dock it of its simplicity, and you will find lost to yourselves an immense field for doing good, and of giving relief, not only to the rich, but to the poor, who alone can appreciate the terrors of spinal disease.

SUMMER MOUNTAIN STATIONS IN SWITZERLAND: THE LAKE LUCERNE DISTRICT.

By J. HENRY BENNET, M.D.

II.

THE Lake of Lucerne is not by any means so large a sheet of water as the Lake of Geneva. It is 204 feet higher—1,434 feet, against 1,230; is surrounded by high snow and glacier-capped mountains on both sides, and is further north. In its southern portion (Uri), it has more the appearance of a wide river incased between high massive mountains, than of a lake. Consequently, the entire lake-region is said to have a cooler climate in spring than that of the Lake of Geneva, which I have found to be the case. Twenty-four hours' rain (July 3rd) covered the upper regions of Mount Pilate, of the Rhigi, and of all the other high mountains that surround the lake, with snow to a degree that I never saw exemplified during the last fortnight of June, in rainy weather, on the Lake of Geneva.

There are various mountain summer-stations on the lake and in its neighbourhood, the more important of which I visited, remaining at the comfortable—indeed luxurious—Schweitzerhoff Hotel at Lucerne as a centre. The snow which fell on the mountains on the 3rd melted on the 4th; and from that time to the 15th, when I left, the weather was cool and pleasant; night about 58 deg.; day about 70 deg. We had only one day's rain.

The health-stations I examined were Axenfels and Axenstein, Burgenstock, Sonnenberg, Engelberg, and the Rhigi hotels. Any one of them can be easily visited from Lucerne between a nine-o'clock breakfast and a seven-o'clock dinner. The plan is to take the ten-o'clock steamer to the foot of the road that leads to the sanitarium, there to hire a carriage and to lunch at the hotel, descending in time for the boat.

The Kurhaus Axenstein is a commodious elegant hotel, with extensive, well-timbered, shady grounds; the principal trees being the beech and spruce-fir. It is 2,300 feet high, about 1,000 feet above the lake near Brunnen, two hours from Lucerne by steamer. The view from the house and grounds is magnificent. It is sheltered from the north-east, and enveloped in sunshine all day. It is, no doubt, an admirable mountain resort for June, but probably too warm in July and August for those who want bracing. Axenfels is a large hotel one hundred feet lower down, in precisely the same position, but without the shady groves and grounds of Axenstein, and consequently rather less expensive. The season here begins as early as the 15th of May.

The Burgenstock Hotel is situated on a promontory, or a projection, of the Burgenstock Mountain (3,721), which advances into the lake on its south side opposite the Rhigi, and nearly in front of Lucerne. The hotel is 2,700 feet above the sea; 1,200 feet above the lake. The situation is admirable, on a saddle-back ridge which runs along the lake, with splendid views on all sides; that in front, overlooking the Rhigi and the lakes to the north-east of Lucerne, is entrancing. The hotel is an admirable one, kept like a first-class English house, not too large, not frequented by or prepared for passing travellers, and not assuming to be cheap. The beautiful walks are kept like the grounds of an English gentleman. Being several hundred feet higher