from direct observation and experimental inquiry, we have ascertained the exact nature of the action of an individual organ, that under a condition of health it gives rise to certain phenomena, of whose sequence, of the period of whose occurrence, and of the movements which accompany and cause them, we have precise and positive knowledge; if, starting with a knowledge of these facts of physiology, we meet with the organ in a pathological condition, and pronounce as to its state; and if in the vast majority of cases this opinion shall be found a correct one, what, I ask, is this but the most rigid induction from clearly ascertained facts? and if this is not the practice of a science, I venture to ask, what is?

Nor is it any reproach to medicine that we possess no means by which we can specifically cure the various diseases to which the central organ of the circulation is subject. We know that, although we have no remedy that will absolutely cure a pericarditis, we can by the use of certain therapeutic measures, in the large majority of cases, promote the function of the organ attacked, and guide our patient through the disease. We have reason also to believe that, in reference to one very serious affection of the substance of the heart, in which it undergoes a degeneration of its tissue, we can, by the use of therapeutic means, and especially by the administration of a particular remedy, check the progress of the malady and prolong the duration of life; and in regard to those valvular affections of the heart with which, unfortunately, we so constantly meet, although we know of no means by which the morbid deposits can be removed, we do know that, when the deposit is the result of a chronic action, we can, by regulating the habits of life, by maintaining the physiological action of the various excreting organs, prevent the occurrence of that condition which is most favourable to further deposit; and that thus we can retard, or even check, the progress of the disease. And when these deposits have permanently settled on the heart, is it to be a reproach to the physician that he is unable to remove them? Should it not rather be considered the highest praise, that, by a mere physical examination, he is able to recognise their existence and their exact situation?—that he is able to direct his patient in the course of life which he shall follow, so as to stay the progress of those pathological processes which will necessarily ensue, and that rapidly, unless precautions are taken? Is it nothing, by the simple application of the ear to the chest, to recognise, from the absence of certain physiological phenomena, the results of a past pathological process; to be able to predicate the steps which the disease will take; and to find, as time rolls on, that our prognosis is verified; that, in obedience to pathological laws—laws whose action we are acquainted with—the changes we anticipated ensue, the abnormal takes the place of the normal, pathology steps in where physiology existed, and death slowly succeeds to life.

[To be continued.]

HEALTH OF SAN FRANCISCO. The San Francisco Medical and Surgical Journal says: "If we estimate our present population at 100,000, our rate of mortality has been less than 1 in 49; showing a degree of salubrity which may be advantageously compared with that of any large city in the civilised world."

Lectures ON ORTHOPÆDIC SURGERY.

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LECTURE V. ON CURVATURES OF THE SPINE. (Continued.)

The Causes of Lateral Curvature of the Spine.

Obliquity of the Pelvis, as was stated in the last lecture, is a very common cause of scoliosis. It gives rise first to a lumbar curve, as is shown in Fig. 13. But, perhaps, the mode in which spinal

Fig. 13.

curves are formed will be more readily understood by means of the following diagram (Fig. 14). Suppose the lines A B C D to represent the pelvis and spinal column in their normal relations; namely, that the spinal column forms together with the pelvis a right angle. And let E F represent the pelvis rendered oblique, from whatever cause; and G B the inclined column still retaining a right angle together with its base. How is equilibrium to be maintained? It is manifest that the line G B, if continued, would render equilibrium impossible; and, therefore, a series of curves about the perpendicular line A B are formed for this purpose as is better shown in the following figure (Fig. 15).

It will be seen that the cervical curve corresponds to the line *α β*; and such must, more or less, be the

Fig. 14.

case until equilibrium is being restored through increase of distortion; when the cervical curve approaches the perpendicular line *α β*, as in Fig. 14.

Fig. 15.

A primary curve may be either lumbar, dorsal, or cervical, depending on the cause which gives rise to it. Thus, a lumbar curve will be produced through

hip-joint disease, and a cervical curve through torticollis; while through excessive use of an upper extremity, a dorsal curve will certainly be formed as the primary curve.

No curve can remain single; but it is necessary for equilibrium that, in every instance, secondary curves should be formed, compensatory of the first; and thus, a series of curves is formed—two, three, or more—according to the severity of the primary curve, and to the period during which it has existed.

A rachitic spine is not a very common affection. Rachitic disease of the long bones is very common, and of the pelvis it is not rare; but, perhaps, the spinal column is more rarely attacked by this disease than any other portion of the bony skeleton. When rachitic curvature is fully established, the changes which take place in the vertebræ themselves, and the excessive distortion which is produced, render it impossible to restore the column to its normal condition.

Increased or diminished capacity of either side of the thorax will occasion lateral curvature of the spine. As a result of inflammation, and after the removal of the effused fluid from the pleural cavity, the ribs sink to the compressed lung, the lung itself being bound down by adventitious membranes so that it cannot expand. The side becomes flattened, and the lung remains contracted. Compensation then follows, through amplification of the sound lung and enlargement of its containing cavity taking place. This form of lateral curvature is well shown in Fig. 16.

Fig. 16.

Again, deficient development and excess of development of the bodies of the vertebræ are among the rarer causes of spinal distortion. Examples of these are to be met with in many of our pathological museums. And caries of the bodies of the vertebræ occasions more frequently, and in a somewhat

similar manner, a like result—a curve forms above and another below the seat of disease. It need scarcely be said that solid bony union must have taken place before lateral curvature is possible.

The *Symptoms of Lateral Curvature of the Spine* are so marked that it would be thought by some, perhaps, impossible to overlook a distortion where the gait and figure of the person proclaim the affection. And yet this distortion is constantly overlooked; or the awkward appearance is attributed to any but the right cause. Such was the case with the patient from whom Fig. 7 was taken. This was an only and an orphan child, to whom her mother was entirely devoted. She was 16 years of age; and the curves must have existed during at least four years; yet curvature of the spine was never suspected until one week before advice was sought. Then, during a visit to a relative, the distortion was pointed out. It will scarcely be credited, however, that curvature should not have been discovered in the patient from whom the following drawing was made, and that it had to be pointed out to the mother when it had arrived at the stage at which it is depicted. (Fig. 17.)

Fig. 17.

And still more strange will it appear when it is stated that, in consequence of great general debility, her mother always assisted her to dress; yet it was never discovered that the spine was crooked. We might almost believe that some eyes which constantly rest on a deformity cease to see it; just as some ears cease to be affected by a din close to them.

The *external characters of scoliosis* differ as much as the periods of development of the affection itself differ; and, consequently, they are not the same when curvature is incipient and when it is confirmed.

Transactions of Branches.

EAST YORK AND NORTH LINCOLN BRANCH.

CASE OF FATAL OBSTRUCTION OF THE BOWELS.

By HUMPHRY SANDWICH, M.D., Hull.

[Read Sept. 23, 1863.]

OUR late lamented associate, the late Mr. Land of Patrington, was in the fifty-ninth year of his age. He was rather slightly organised and of the nervous temperament. He had latterly become thinner and paler in the face, which wore a somewhat cachectic aspect. His health was nevertheless tolerably good. His general habit was to have two loose evacuations daily. He called on me in Hull a few days before the actual seizure by his fatal malady, and during our interview on another subject, he incidentally mentioned his having been for a week or two tormented with a noisy rumbling in his bowels, so audible as greatly to annoy him when in the company of others. Assuming that this arose from a little indigestion, I simply advised him to take three grains of rhubarb with every meal. I saw him a few days afterwards, when, as he still complained of flatulent distension, I prescribed two grains of calomel at bedtime, and rhubarb with tartrate of potash the following morning.

On the following day he mentioned his case to Mr. Craven; this was on Wednesday morning, August 26th. There was now decided obstruction of the bowels. Mr. Craven prescribed five grains of calomel, to be followed by a pill containing one grain of calomel and three of extract of colocynth every fourth hour, to be assisted by soap and castor-oil injections. Late in the evening of the same day, myself and Mr. Craven were summoned to Patrington, which we reached at midnight. We found our patient very much worse. The obstruction continued; the abdomen was a good deal distended; the pulse was 100; and there was slight vomiting occasionally, but not stercoraceous. We learnt that he had lately eaten some veal, which might have led to the attack. As there was some tenderness on pressure in the right iliac region, but none elsewhere, we applied twelve leeches over the ilio-cæcal region, to be followed by a blister. He was also placed in a warm-bath; and afterwards, turpentine was freely applied to the surface of the abdomen, alternated with hot fomentations. We also prescribed one grain of the pure extract of aloes with two of extract of henbane every third hour, as also the continued use of injections.

On Thursday, August 27th, at our morning visit, the symptoms were unabated; but the pulse was at 90, which was the limit of its range ever afterwards. He had not slept, and the abdomen was more distended. Mr. Craven now carefully introduced O'Beirne's tube, which was pushed far beyond the sigmoid flexure. Some pain and resistance were incurred in the upper part of the rectum, and flatus passed from the tube. Two or three pints of warm water were injected; and five grains of calomel were placed on the tongue. The operation with O'Beirne's tube was repeated at our evening visit; but on both occasions the water returned, not even discoloured by an admixture of fæces. On one occasion afterwards, he voided a little mucus tinged with blood, which we saw the next morning.

On Friday morning, August 28th, we found our patient suffering from severe hiccup, which had harassed him during the greater part of the night. As was to be expected, he was much discouraged by this symptom. And here, I may remark, that from the time of his first interview with Mr. Craven, he had felt and expressed the presentiment of a fatal issue of his disorder. The abdo-