

Case in which Adams's operation for subcutaneous division of the neck of the thigh-bone was performed on both sides, in the same patient, for straight ankylosis / by Edward Lund.

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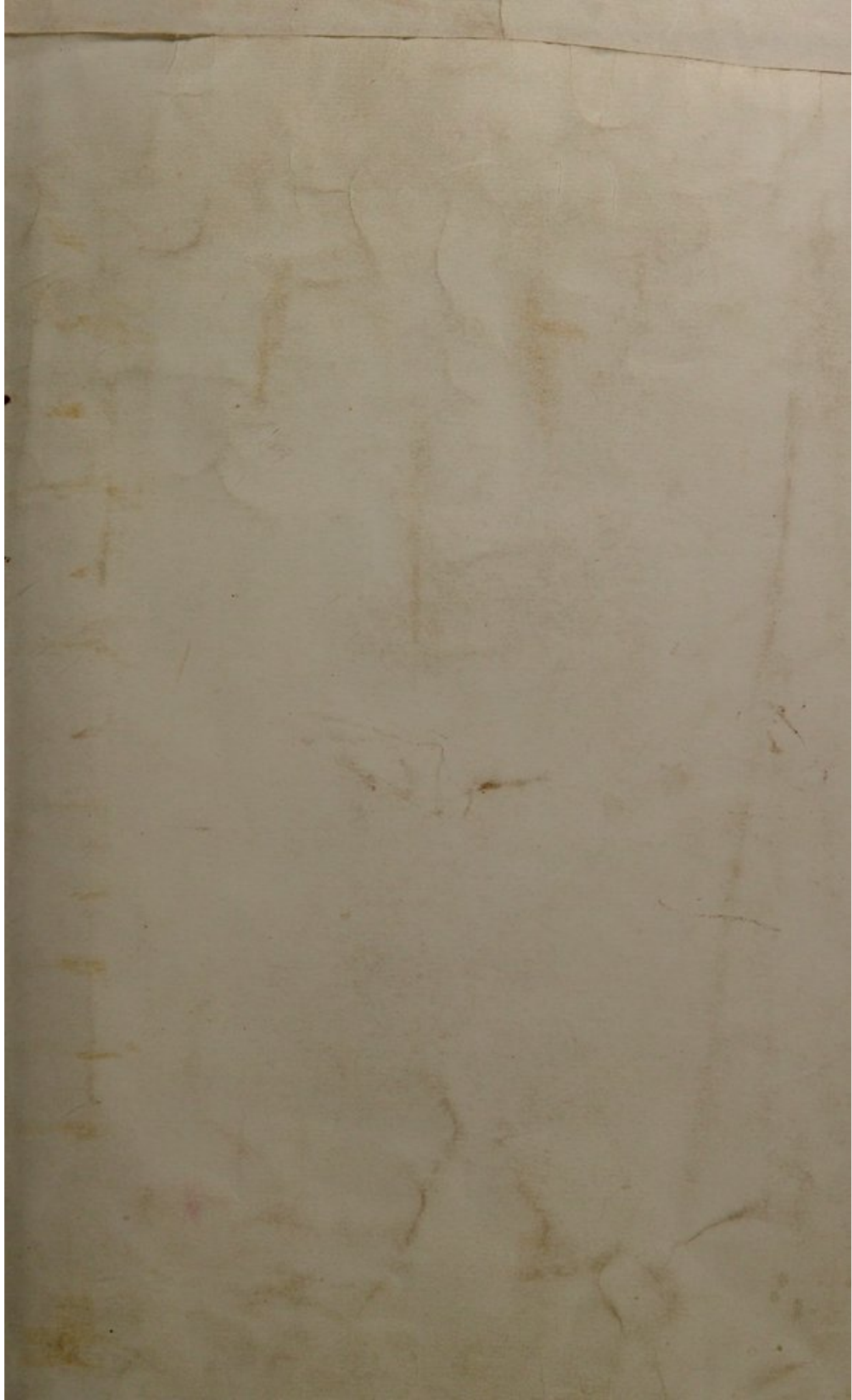
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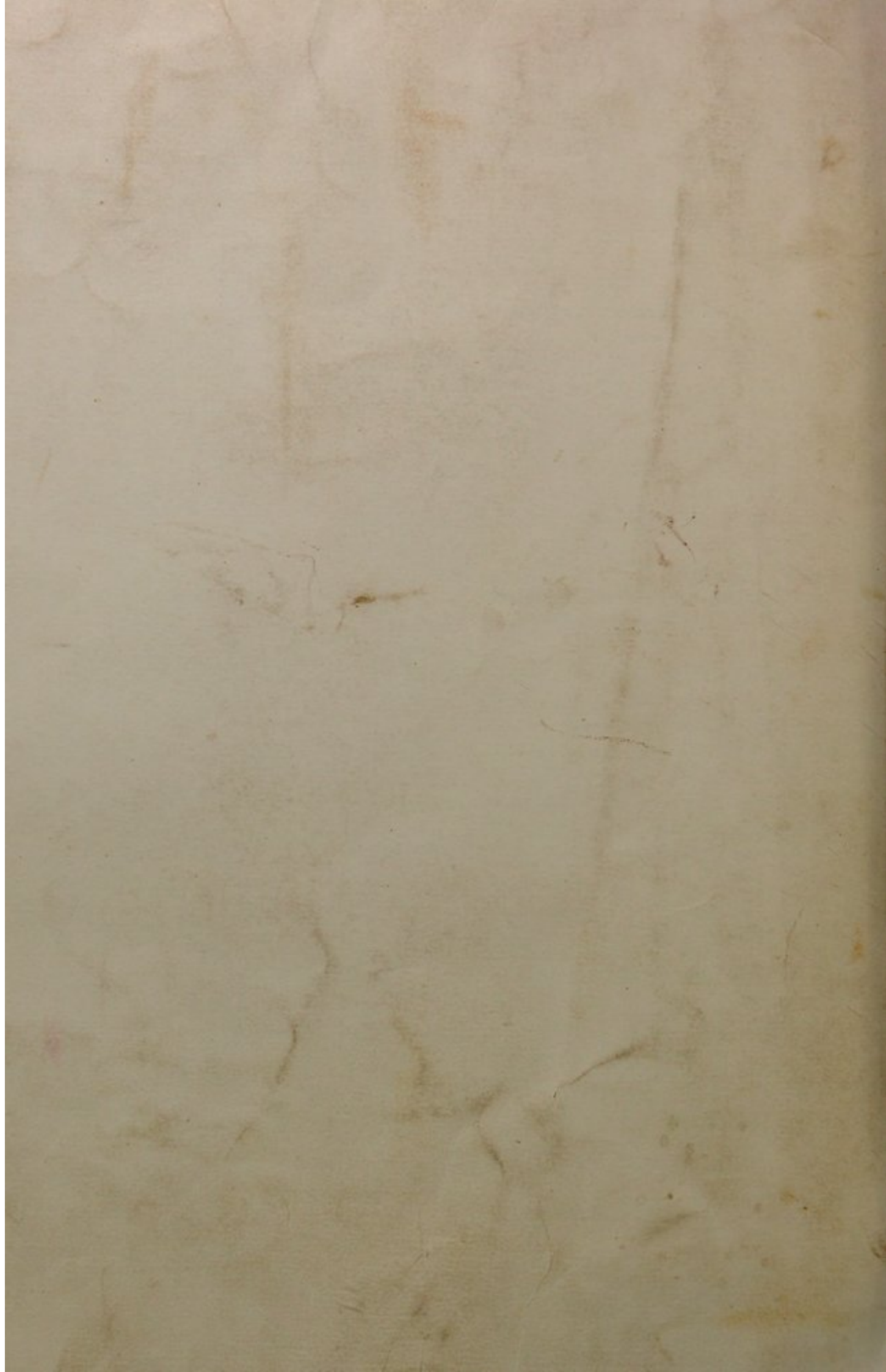
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24.

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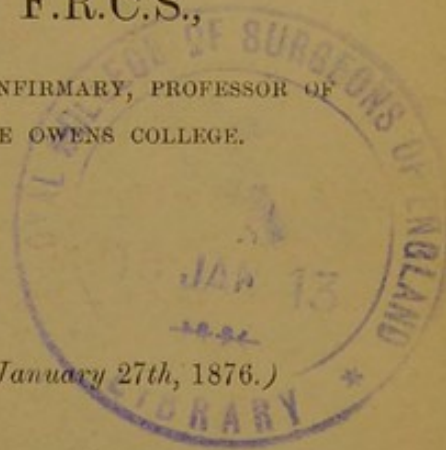
STRAIGHT ANKYLOSIS.

BY

EDWARD LUND, F.R.C.S.,

ONE OF THE SURGEONS TO THE MANCHESTER ROYAL INFIRMARY, PROFESSOR OF
SURGERY, AND MEMBER OF THE SENATE OF THE OWENS COLLEGE.

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LONDON:

1876.

THE HISTORY OF THE

ROYAL SOCIETY OF LONDON

FROM ITS INSTITUTION

TO THE PRESENT TIME

BY JOHN VAUGHAN

IN TWO VOLUMES

LONDON: PRINTED BY RICHARD CLAY AND COMPANY, LTD.

CASE OF ADAMS'S OPERATION.

AT our annual meeting held at Newcastle-upon-Tyne, August 1870, Mr. William Adams read a paper entitled "Remarks on Subcutaneous Division of the Neck of the Thigh-bone, as compared with other Operations for Rectifying Extreme Distortion of the Hip-joint in Bony Ankylosis", in which he observed that "cases of extreme deformity at the hip-joint, with the thigh flexed upon the pelvis, and generally adducted or drawn towards the opposite limb, sometimes even crossing over the opposite limb, are not uncommonly met with in surgical practice, as the result of various forms of hip-joint inflammation." He also described in detail a very simple and ingenious method of subdividing the neck of the femur in such cases as to remedy the deformity and greatly benefit the patient. But, in the cases so referred to, and in others subsequently published by Mr. Adams in the form of a pamphlet, two things are observable: recourse was had to the operation to correct angular ankylosis of the limb when held in a useless or distorted position; and, secondly, after the operation, in only one case was Mr. Adams able to record the attainment of motion in the false joint thus formed at the point of section of the bone, and this occurred in the practice of Mr. Jessop of Leeds. The operation had been performed on August 1st, 1870, and on November 11th in the same year, the report was that "The range of motion in the new joint was not diminished, and command over the limb had increased. The patient could now place the foot somewhat firmly on the ground, and could distinctly bear a little weight upon it. The attempt to use it in progression gave rise to some pain; but this did not prevent her from persevering." In the case which I here relate, the ankylosis was

complete ; it existed in both hip-joints ; the thighs were fixed exactly in a straight line with the axis of the trunk, and they were perfectly immovable, so that the patient could not by any means assume the sitting posture ; yet, since the operation, the patient has acquired excellent motion in each hip-joint ; he can support the weight of his body on either leg ; and he has greatly benefited by an operation in which we must all take great interest, as having been originated and first performed by one of the many distinguished surgeons who are members of the British Medical Association.

My case was that of William Shone, aged 20, who had been admitted into the medical wards of the Manchester Royal Infirmary for chronic rheumatism affecting both hip-joints, and also to some degree producing a stiffening of the vertebral joints in the lower dorsal and lumbar regions, with some general fixing of the cervical vertebræ, so as to cause him to hold the head and body generally in a very fixed and curious position. It was determined to transfer the case to the surgical wards, to see if some attempt could not be made to correct this confirmed ankylosis of the hip-joints. He was placed accordingly in my ward, and came under my observation early in last March.

As I have just said, the ilio-femoral articulation on each side was firmly ankylosed in a straight line. The history which the patient gave of himself was this. He had always enjoyed good health ; had been engaged from boyhood in attending to farm duties, especially driving cattle and sheep, often through damp marshes and meadows, and under all conditions of weather. He had on several occasions remained many hours in damp clothes, and at times had even laid down and slept on the damp grass. These circumstances combined appear to have caused a severe attack of rheumatism about three years ago, for which he was confined to his bed for many weeks. At first, the right hip-joint was the seat of the disease, and in a few weeks afterwards the left side became similarly affected. He had also worked as a smith, and so been exposed to great heat and cold, which had increased the tendency to rheumatic disease. After recovering from the first attack, he was able to work at the forge for a short time, but

then a return of the disease set in, and it was on this occasion that he discovered, after lying in bed a month or two, that he had lost all power of bending the thighs upon the trunk;—in other words, they were permanently fixed in a straight line with the body. He went to Buxton for several weeks, and then was under the care of various medical men, but all without benefit; and, after suffering in this way about eighteen months, dating from the second attack, and being kept entirely in the horizontal position, he was brought to the Infirmary. All the more acute symptoms of rheumatism had subsided; he did not suffer any pain, but the condition of the hip-joints remained unchanged. It was, therefore, determined, as a preliminary measure, to place him under the influence of chloroform, and to attempt to break down any adhesions which might be the cause of the ankylosis. This was done soon after he came into the surgical wards; but, in spite of the very great force which was employed, we could not get any movement in either of the joints, neither that of flexion to the slightest degree, abduction, nor adduction; in fact, it was quite easy, by merely raising one heel, to lift his entire body off the table, inclining it downwards towards the neck and head, without the least flexion at the hips. These attempts being unsuccessful, I decided to proceed with Mr. Adams' operation. On March 5th in the present year, I divided subcutaneously the neck of the femur on the left side, following very closely the instructions given in Mr. Adams' paper on this subject, and using the instruments there described: namely, the tenotomy-knife and the narrow saw designed by him. It took me just nine minutes to saw through the bone, and I was then rewarded by finding that the thigh could be bent upwards upon the trunk very nearly to a right angle, and at the same time a fair amount of rotatory motion could be effected in the limb. The operation was performed under carbolic spray, and with all the antiseptic precautions which the case required, the immediate after-dressing consisting of an injection into the long sinus left after the removal of the saw, of several syringefuls of a watery solution, containing one-twentieth of carbolic acid, and covering the orifice of the wound with several folds of cere-

cloth dipped in a mixture of nine parts of glycerine and one of carbolic acid.

On the second day after the operation, the dressings were changed, and now, with oil-silk protective and the cere-cloth, they were used and renewed each day afterwards till the tenth day.

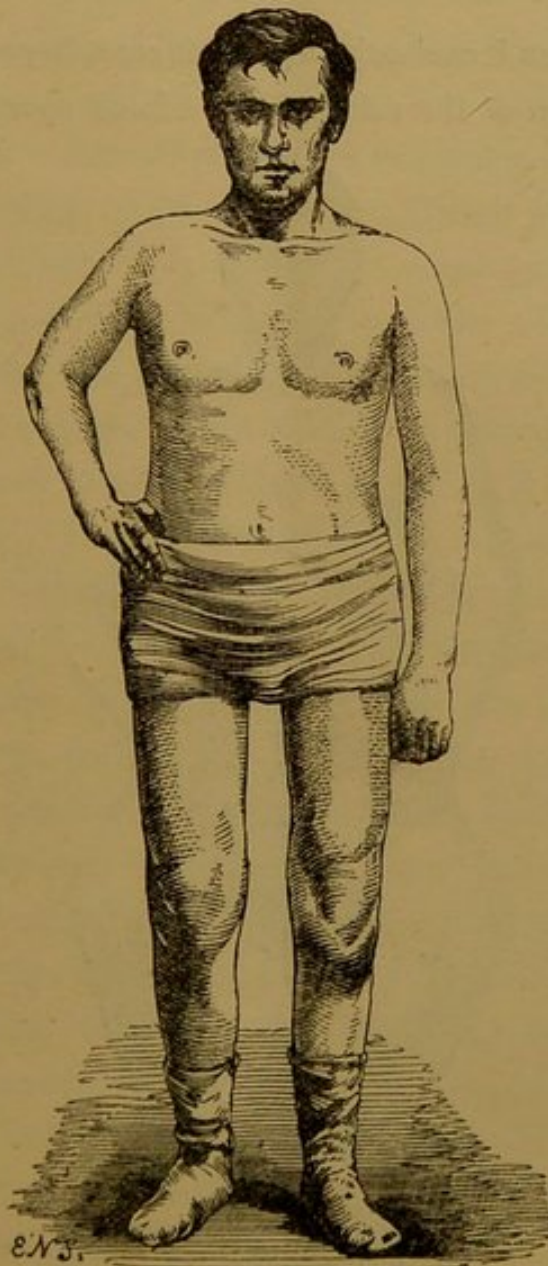
On March 21st—that is, sixteen days after the operation—I found the wound absolutely healed. The man could bear the knee to be raised six to eight inches off the bed without any pain.

On March 29th, I placed him under chloroform, and, when the muscles were completely relaxed, I moved the limb freely in every direction, and raised the knee thirteen inches from the surface of the bed on which he was lying. These manipulations were again performed under chloroform on April 6th, when all the movements were more easily repeated.

On May 7th, at Mr. Adams' suggestion—rendered in a conversation I had with him upon the case—I fixed to the ankle by a gaiter and rings a weight of 14 lbs., with cord and pulley at the end of the bed. This the patient was directed to move up and down in the flexions of the knee several times a day, and I consider that from that time the most marked improvement took place in the power of the limb. I soon found the weight of 14 lbs. was rather too much for him; but with 12 lbs. he could practise all the movements of the limb with the greatest ease. It seemed as if the use of the weight had a twofold effect; it drew the divided osseous surfaces slightly apart, facilitating their movements upon each other, and seemed to stimulate an increase of the muscular power.

On May 28th—just eighty-four days, or twelve weeks, after the first operation—having satisfied myself, by the way in which the man could move about with the help of crutches, and also rest the weight of the body on the left leg with the least possible support, that he had acquired sufficient power in the muscles of the left hip-joint, I determined to repeat the operation on the right side. I divided the neck of the thigh-bone by the same subcutaneous method, making the perforated incision just above and a little in front of the upper

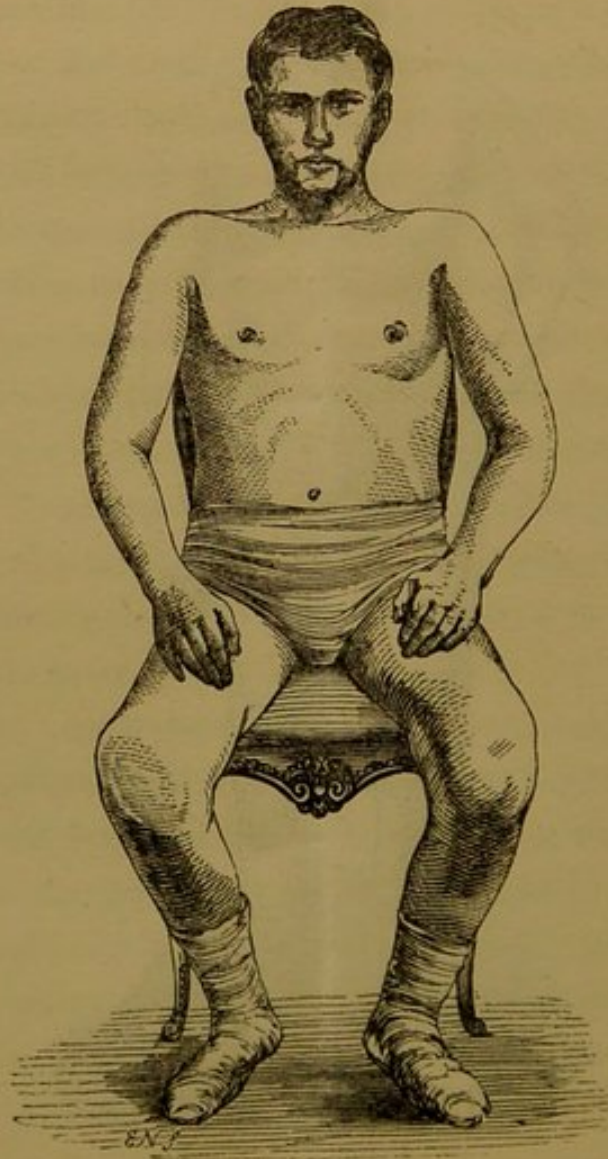
border of the great trochanter, and carrying it perpendicularly downwards, so that it would cross rather obliquely the axis of the neck of the bone. Having to use the saw with the left hand on this occasion, the operation was rendered rather more tedious, and sixteen minutes elapsed before I had entirely divided the bone. I could then flex the thigh and rotate it inwards and outwards very readily, even more so than I had done with the other thigh. The same kind of antiseptic dressings were used on this as on the former occasion, and on June 18th the wound was entirely healed, without the slightest indication of superficial or deep suppuration having occurred.



On June 25th, I placed him again under chloroform, and powerfully flexed and rotated the right limb. I then attached to the ankle a 4 lbs. weight, with a cord working over a pulley, and this weight has been increased from time to time until it has amounted to that on the opposite side.

On July 20th, I noted that he could sit up in a chair with the body very nearly perpendicular, and the thighs comfortably placed on the seat. He could not support the weight of the body upon the right leg singly; but he can do this upon the left one, which has been the longer in action. The photographs now shown were taken on July 23rd.

The only remarks I can make upon this case, beyond adducing it as a happy illustration of the value of Mr. Adams' operation, are that, in



the after treatment great benefit has accrued from the use of the weight while the active movements of the joint were attempted ; and that the other question to be considered is how far—assuming that the man shall retain the power he already possesses of sustaining to some degree the weight of the body in the erect position—this will be in harmony with the acknowledged physiological action of the hip-joint, inasmuch as by the operation which has been performed upon both sides of the body, the ilio-femoral ligament has been entirely destroyed ; and we have thus cut through that powerful structure by which it is asserted that the gluteal muscles at the back of the joint are antagonised in their action. This, it is well known, is the opinion of an authority no lower than Professor Humphry, who has stated that, in sustaining the erect attitude, the body is prevented from falling backwards by the resistance which the ilio-femoral ligament affords when drawn on tightly by these muscles. Thus it is that the pelvis is steadied upon the upper portion of the supporting columns of the thigh-bones, and prevented from rolling backwards. No doubt, in this particular case the psoas-iliac muscles on each side do much towards taking the place of the divided ligaments, yet the problem remains unexplained how the balance of the body can be so readily effected as it appears to be under the circumstances I have described. Under whatever aspect the result of this operation is regarded, it must be admitted that it is a conspicuous example of what modern surgery can do in rectifying deformities in the neighbourhood of joints. Whether we begin with resections of joints, where subsequently another form of ankylosis is obtained, as in excision of the knee-joint ; or where, by removal of the articular surfaces, perfect mobility is secured, as in resections of the elbow-joint ; or again, where, as in this instance, by the division of bone, a false joint is formed ;—we must feel convinced that such advances in operative surgery could hardly be undertaken, or, at any rate, be brought to a successful issue, unless conducted upon those grand principles of antiseptic surgery by which local irritation and constitutional disturbance are reduced to a minimum or entirely prevented.

