residence, appear to offer an almost perfect winter asylum. Mr. Vivian's tables teach us that Torquay has the highest winter temperature in England, and, excepting Penzance, the greatest equability. Though situated in a somewhat rainy county, Torquay has a small average rainfall and a moderate number of rainy days. The Dartmoor range attracts much of the rainfall, which would naturally come to the share of Torquay—a fact realised, to their cost, by our valiant autumn campaigners when they encamped on the moors of that wild district!

The scenery of Torquay is very exquisite, combining the mingled attractions of mountain, sea, and woodland beauty, and its mild climate has made it the resort not only of consumptives from England and the Continent, but also of numerous aged persons, many of them of our own profession, to whom the avoidance of extremes, especially of severe cold, means length of days.

The mean winter temperature is 44 deg. Fahr., its range being 29 deg. The rainfall in winter (three months) is 6.82 inches, distributed over thirty-five days.

Bournemouth is more open to the sea than Torquay, and far less sheltered to the north and east; its protection being chiefly derived from distant hills, and from the fine grove of fir trees which surround the villas on every side, imparting fragrance to the air without increasing the damp of the atmosphere. Here the mean winter temperature is 42.38 deg. Fahr. The annual rainfall is 28.9 inches.

Ventnor is built on a series of steps facing the sea, and open to the south, south-east, and south-west winds, though sheltered from all other winds by the lofty downs, which rise 500 to 700 feet immediately behind the town. The mean winter temperature is 41.81 deg. Fahr., the range being 29 deg. The winter rainfall is 4.65 inches, divided among thirty-nine days.

Hastings and St. Leonards may be described as the most "blowy" of these four places; the two towns are backed by an efficient screen of cliffs which protect from the north and north-east; the old town of Hastings nestles among the hills, while St. Leonard's is extended along a narrow strip hemmed in against the sea by the more or less precipitous ridges. This town, as well as part of Hastings, is exposed to a certain amount of east wind. The mean winter temperature is 39 deg. Fahr., with a range of 33 deg. Fahr. Rain falls on thirty-nine days in winter to the amount of 7.59 inches.

It would be superfluous for me to describe further those places which are known to most of you, and about which so much has been published; recently they have been described, especially in their health aspects, in an admirable series of articles in the *Sanitary Record*.

Comparing the health of the patients during their stay at these four watering places, I find that at Torquay a larger proportion lost appetite, and from bilious or other derangements of the digestive system were unable to persevere in the use of that most important drug—cod-liver oil. I also find that diarrhoea was more prevalent here.

At Hastings, on the contrary, as a rule, the appetite improved; cod-liver oil was taken regularly, and diarrhoea was a less frequent symptom.

Before closing, a word should be said about the other stations, which have not furnished sufficient numbers to yield percentages for comparison. The six patients who passed eleven winters at Brighton yielded as general results four "improved", one "stationary", and one "worse", and locally a decrease of disease in two, a stationary condition in one, and a worse one in three. Of the six Channel Islands patients, only one became worse generally, and two worse locally. The three Cornwall ones who spent eleven winters there, all improved generally, and had no worse locally. The thirteen South Devon patients, other than those at Torquay, did fairly well, having only three locally and two generally worse at the end of the time. The single cases at Queens-town and Ilfracombe hardly call for any remark; nor do the three patients who spent four winters at Worthing and Bognor.

Do not the facts, on which we have been dwelling, permit us to infer that in the treatment of consumption a bracing though gusty climate avails more than a mild, still, and somewhat relaxing one? and that, instead of seeking for a sedative atmosphere to allay the cough and reduce irritability, we should in most cases select a stimulating one to increase the appetite and to invigorate the systems of our patients? And what is it that renders the western end of the British Channel less beneficial in climate to consumptive patients than the eastern end? We may infer that it is the stronger influence of the Atlantic warm current and its accompanying winds on the shores of Devonshire and Cornwall, which, though it raises their winter temperature many degrees, clothing their hillsides with verdure, and causing what would otherwise be waste places to bloom with rare exotics, deprives them of the stimulating and bracing influence which is possessed by the less beautiful shores of Sussex, with its breezy downs and colder winter climate.

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, F.R.C.S., Surgeon to the Royal Infirmary, Manchester.

AT our annual meeting held in 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"; and he described in detail a very simple and ingenious method of so dividing 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: the operation was had recourse to to correct angular ankylosis of the limb when held in an 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, it was reported: "The range of motion in the new joint was not diminished, and her command over the limb had increased. She 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 vertebrae, 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, therefore, placed 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 was 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 being in bed several weeks, that he had lost all power of bending the thighs upon the trunk, or, in other words, they were per-

* Read before the Surgical Section at the Annual Meeting of the British Medical Association in Edinburgh, August 1875.

manently fixed in a straight line with the body. He went to Buxton for many weeks, and then he 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 very great force which we employed, we could not get any movement at all in either of the joints, neither that of flexion to the slightest degree, nor abduction or 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's 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's 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 done under the 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, 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. He 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's suggestion—made 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 in the day, and I consider 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 on each other; and it seemed to stimulate an increase of the muscular power.

On May 28th—just eighty-four days, or twelve weeks, from 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 it occupied sixteen minutes 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 antiseptic dressings were used in 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 4lbs. 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 quite support the weight of the body upon the right leg singly; but this he can do 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's operation, are that, in the after-treatment of the case, 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 he should 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 the gluteal muscles at the back of the joint are antagonised in their action. This, it is well known, is the opinion of no less an authority 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 the 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 will 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 an example of what modern surgery can do towards rectifying deformities in the neighbourhood of joints, whether we begin with the more grave operations and resections of joints where subsequently another form of ankylosis is obtained, as in the results of resection 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 conscious that such advances in operative surgery could hardly be undertaken, or, at any rate, brought to a successful issue, unless con-

ducted upon those grand principles of antiseptic surgery by which local irritation and constitutional disturbance are reduced to a minimum or entirely avoided.

ON SOME INTERESTING CASES OF CHEST-DISEASE: WITH COMMENTS.

By R. DOUGLAS POWELL, M.D., F.R.C.P.,

Physician to the Brompton Hospital for Consumption and Diseases of the Chest;
Senior Assistant-Physician to the Charing Cross Hospital, etc.

CASE I.—H. D., aged 55, an emaciated man, with a pale, slightly livid, and puffy face, and an anxious suffering look, was found sitting bent forwards in an arm-chair, which he had occupied for many days and nights, being unable, from dyspnoea, to remain in bed. He complained most of inability to take food, except in the form of thin liquids, and in very small quantity. Nor could he sleep, save in fitful doses, with the aid of sedatives. The pulses were small and of irregular force, but equal on the two sides. There was no inequality in the pupils. On closely observing the patient, a certain rhythmic throbbing vibration of the body might be noticed, notwithstanding the feebleness of the pulse at the wrist. On examining the chest, some prominence was perceived over the area shaded in the diagram, and a quick faint, throbbing impulse was conveyed to the hand applied to this part; the systolic pulsation being most marked at two discoloured, bruised-looking, softer, and almost fluctuating spots, marked A and B, around the latter of which there was also some redness. The heart's apex could not be felt. Over the shaded area, there was dullness, with a certain tubular quality on percussion. The cardiac sounds were only feebly heard, and no murmurs were now to be detected. At the left back, over a small area beside the spine and below the level of the angle of the scapula, an impulse was perceptible to the ear; and at this point, the obstruction to the passage of fluid down the œsophagus, as judged by auscultation, appeared to be greatest.

Such were the chief facts included in my last note, taken December 16th, 1874, of the case of a man the history of whose illness is briefly

as follows. He had been a sailor, but was lately a pipe-maker. His habits had always been temperate, and he had never suffered from gout, acute rheumatism, or syphilis. He dated the onset of his malady six years back, when, on one occasion, he felt his chest much oppressed

Over shaded area, dullness, with slight tubular quality, ?communicated from bronchus; diffused systolic impulse. At A, a small elastic pulsating swelling. At B, the most prominent point, a bruise-like appearance; systolic pulsation here most marked. C, position of apex ascertained at earlier examination; confirmed *post mortem*. No beat now (December) perceptible.

whilst carrying a heavy iron pan weighing three hundredweight. He did not at the time, however, have any more definite symptoms, but had suffered more or less since from pain in the chest and dyspnoea, for which he had been under medical treatment, without relief, for five years. He first came under my notice in April 1874, and had then been for some time obliged to sleep reclining on one side, or propped up by pillows. He had, however, no cough; the pulse was slow, without special character, save that the vessels were obviously degenerated. The mediastinal dullness at this time extended from the third to the fifth cartilage mid-sternum; and, opposite to the third and fourth cartilages, there were a slight *bruit* with systolic impulse, and a *prolonged diastolic bruit*, having the usual characters of an aortic regurgitant murmur. The apex of the heart was found beating lower than natural, and to the left of the nipple-line.

In July, whilst the patient was in the Brompton Hospital, cough became troublesome, and sibilant *râles* were heard over the chest, but the cough had no peculiar characters; and although the dyspnoea had steadily increased, dysphagia was not yet complained of. The patient soon afterwards left the hospital, and I saw nothing more of him until December. He gradually sank from exhaustion, and died January 13th, 1875.

At the *necropsy*, a very large globular dilatation of the aorta was found, extending from 1 inch beyond the valves to 1 inch beyond the origin of the subclavian, measuring $4\frac{3}{4}$ inches across, 5 inches antero-posteriorly, and $4\frac{3}{4}$ inches vertically. And from the front of this dilatation, communicating with it by an opening of the size of a halfpenny, a sacculated aneurism proceeded. This sac was entirely filled with coagulum; it was flattened against the eroded sternum, but spread out equally in other directions to a diameter of three inches and a half. The intrusion of this sac between the sternum and the base of the heart displaced that organ backwards. Spots of softening coagulum corresponded with the fluctuating points referred to during life. The œsophagus was greatly pressed upon, but the bronchi were not involved. Both pneumogastric nerves were adherent to the aneurism, and the left recurrent could only be dissected out with trouble. Although the aorta was so enormously dilated to within an inch of its commencement, and even the descending thoracic portion had a circumference of six inches, yet its orifice was of natural dimensions, and the valves did not permit regurgitation of water.

REMARKS.—One or two points in the diagnosis of aneurism are well illustrated in this case. The first diagnosis was that this was a case of dilated aorta secondary to regurgitant valve-disease, arising from injury to the aortic valves. But it soon became apparent that the area of dullness and impulse (*vide* diagram) was too low and too central for this, and the case was regarded as one of sacculated aneurism near the base, with aortic regurgitation.* Later still, in December, the case again became puzzling. For the low position of the tumour, its great size, and the displacement backwards of the heart, so that the apex could not reach the ribs, together with the absence of murmurs

* I have elsewhere endeavoured to point out the etiological relationship between aortic regurgitation and aneurism (*Trans. of the Clin. Soc.*, vol. vii).