

Series of twelve bone and joint cases : illustrating recent improvement in the mechanical surgery of the lower limb / by Rushton Parker.

Contributors

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Marshall, John, 1818-1891
Royal College of Surgeons of England

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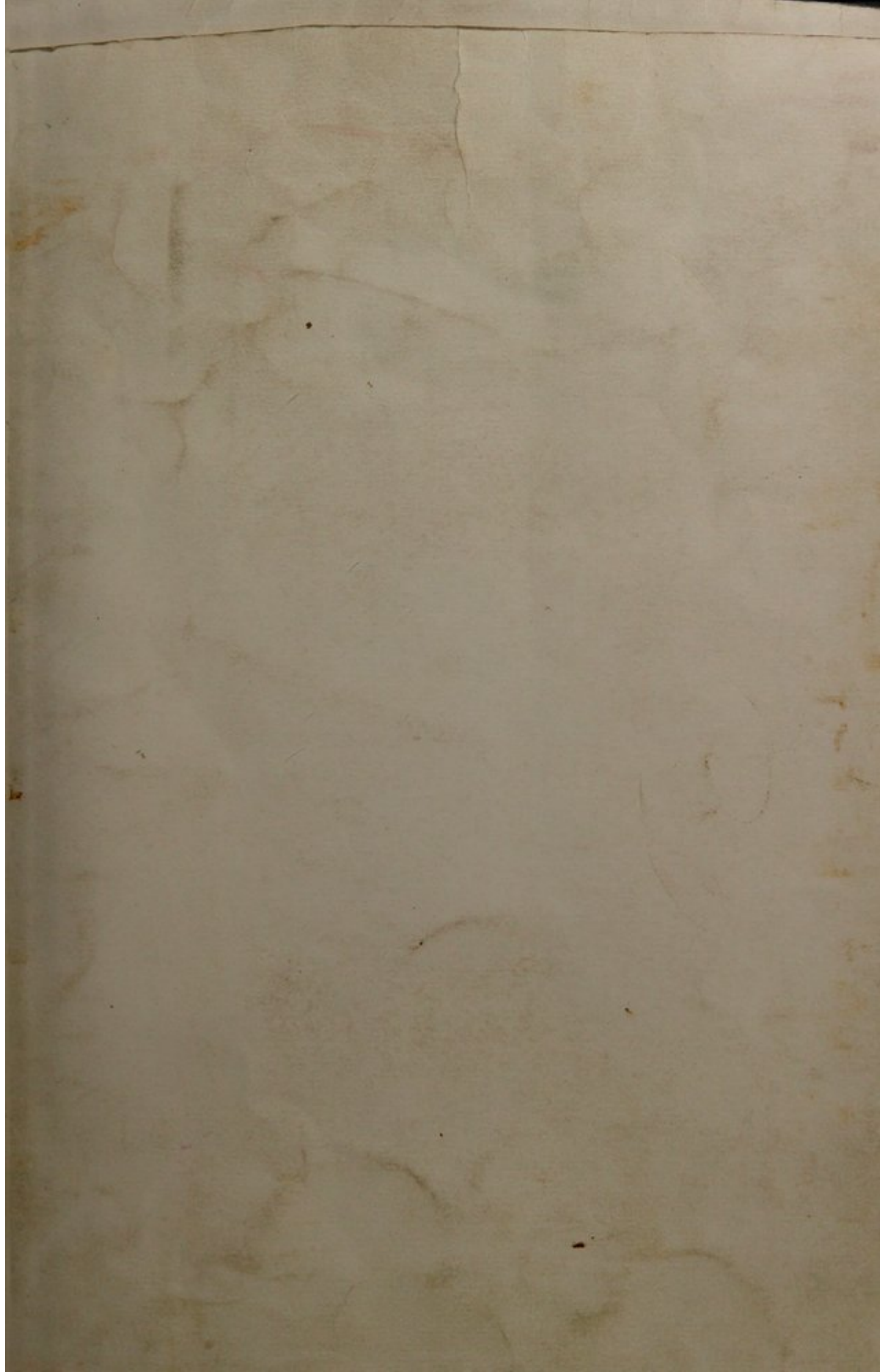
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With kind regards

21.

SERIES OF TWELVE
BONE AND JOINT CASES,

Illustrating recent Improvements

IN THE

MECHANICAL SURGERY OF THE LOWER LIMB.

BY

RUSHTON PARKER, B.S., F.R.C.S.,

PROFESSOR OF SURGERY IN UNIVERSITY COLLEGE, LIVERPOOL.

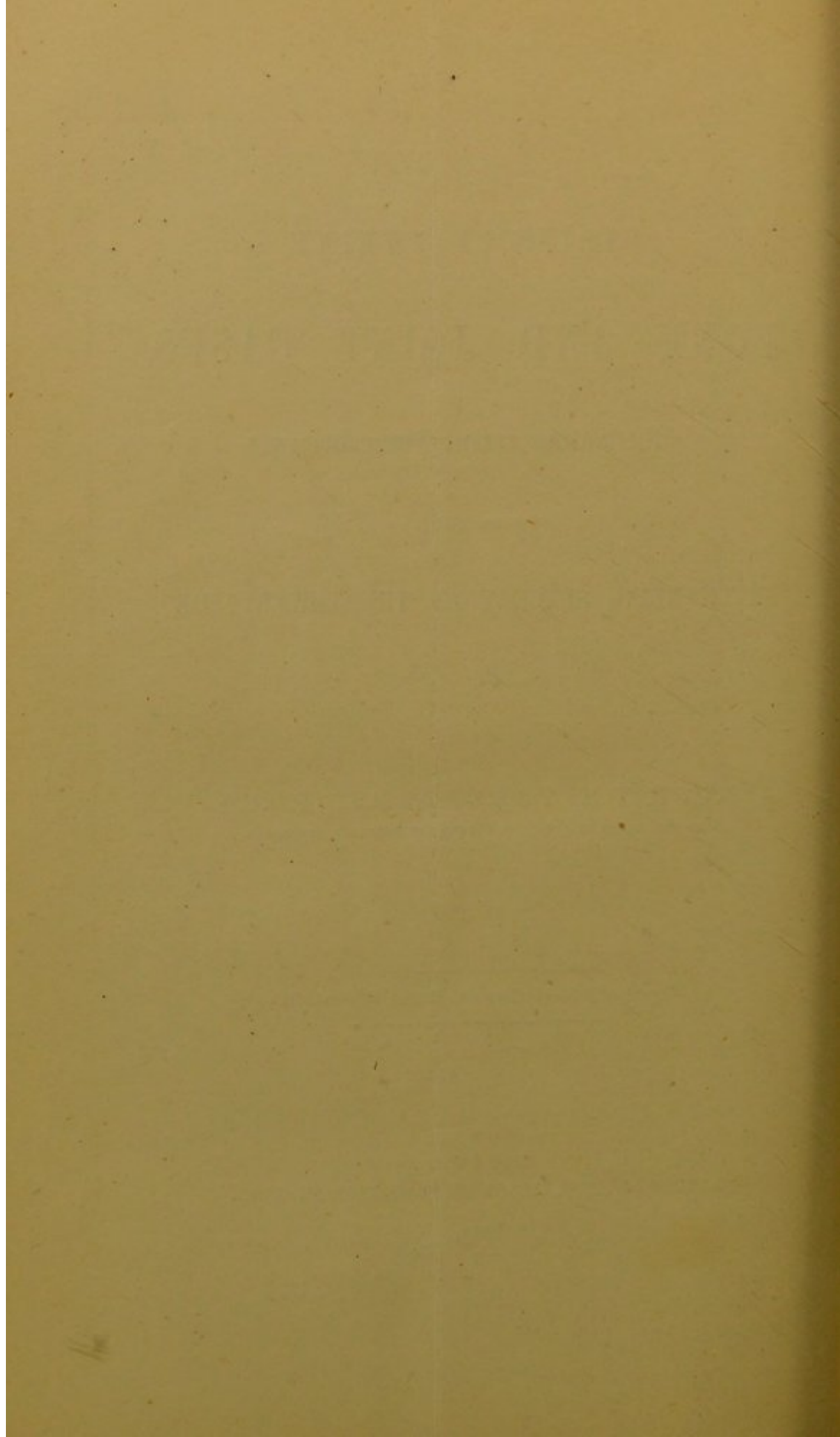
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[MEDICAL TIMES AND GAZETTE, June 30, 1882.]

SERIES OF BONE AND JOINT CASES.

(Under the care of Mr. RUSHTON PARKER.)

Case 1.—Caries of the Patella, suppurating and resembling Bursitis—Crucial Incision of Knee-joint—Entire Healing and Recovery of all Movements, but without Bony Patella—Caries and Curvature of Spine, supported by a Dorsal Splint.

ELIZA ANNE G., aged five, first attended at the Royal Infirmary on February 25, 1878. She had for three or four weeks previously been under Mr. Parker's care at the Stanley Hospital, as an out-patient, on account of a sub-cutaneous pre-patellar suppuration, of six months' duration, at the left knee, which had been promptly incised to its full length in the middle line, and a Thomas's knee-splint applied at the same time to keep the joint straight. A dorsal curve of the spine had existed two years, and for this she had been supplied, at the Children's Hospital, with Thomas's "back-saddle," the continuance of which was advised, and safe-guarded from time to time. But her parents very much neglected her back, and repeatedly removed the support, which is a most efficient dorsal splint of leather, strengthened by iron rods, and suitably padded. The result was that the curvature was allowed to very much increase before consolidation eventually occurred.

On February 25, at the Infirmary, the incision having healed except a small central aperture, Mr. Parker happened to probe the sinus, which now exuded a drop or two of pus, to judge how far a reopening might appear necessary. The probe passing evidently deep into the knee-joint, through the patella, a free crucial incision (under ether) was made into the articulation with a blunt-pointed knife, in order to see what mischief had already occurred, and to prevent its spread. The joint was found to be perfectly healthy, except at the margins of the original patellar aperture, which were covered with pale granulations. The incisions exposed the entire front of the articulation, and the angles of the four skin-flaps thus formed were tipped internally by a quarter of the cartilaginous patella, of which the

bony centre had disappeared. It was evident that one had had to do with caries resulting in suppression of the ossific centre of that bone. The position of the limb was unaffected by this procedure, being maintained immovably straight in the Thomas's splint. The knee and its wound were wrapped up in a rag dipped in plain water, and wrung out afresh from time to time by the mother, who nursed the patient at home throughout. For about three days the child was ill and very irritable, screaming when touched; but her mother said that at other times there was no evidence of much pain. Morphia was given four times daily (one thirty-second of a grain) for a little while until this irritability ceased. The edges of the incisions in the skin and capsule became covered with granulations, which spread over the other exposed articular surfaces, until, after two weeks, all were hidden except one of the fragments of patellar cartilage. At the end of two months the sore was greatly contracted, the joint having been painless almost throughout, and continuing so, while the child was evidently thriving. In the fourth month a little pus could be squeezed from a central point, which alone remained unhealed. This the mother was directed to keep open with a piece of tapered slate-pencil several times a day, pressing the pus carefully each time from the upper outer corner of the joint where it was found to lodge. In the beginning of the fifth month the cicatrix bulged a little at this quarter of the joint, so it was reopened, and in two days the pus stopped from both apertures. The sore was totally and soundly healed shortly before the expiration of six months, the joint itself having been closed in during the first month. A patten was now put upon the boot of the sound foot to make the limb equal in length to the splint that projected with its terminal patten beyond the pointed toe of the diseased member. By October, 1878, the child began to get about on foot, and the knee shrank, from disappearance of the puffiness that had remained during the reparative process. The splint was kept on, and rigid linear immobility enforced, until May, 1879, fifteen months after incision of the joint. In June, 1879, the knee could be flexed and extended at the will of the patient, who walked about on it supported by a few turns of flannel bandage. The shape of the joint only differed from that of the other in the crucial scar, and in the absence of all sign of bone at the patella, which now felt like a mere fibro-cartilaginous condensation of the extensor tendon. For all purposes the mechanical efficiency of the articulation has continued sound and equal

to that of the other ever since. But its capacity for resisting external pressure or violence has naturally not been tested beyond the movements made in acts of careful necessity, short of violence and rough vigour; for the child has been crippled by the spinal curvature on account of several remissions in the use of the dorsal support. In September, 1880, she had scarlatina mildly, a few weeks after which she was brought to Mr. Parker having puffy eyelids. A hot wet blanket pack was advised twice daily for this. After a few days her mother reported her to be dying, when she was told to call in her neighbour, Dr. Ryder, under whose care the child recovered, early in 1881. On June 27 of that year her mother called on Mr. Parker, and told him that the child had for two or three weeks lost the use of her lower limbs. Up to that time she had been walking about. A neighbour reported her as "well" in May, 1883, but what that exactly meant was not clear.

Remarks.—The device known as "passive movement" was not practised.

[MEDICAL TIMES AND GAZETTE, July 14, 1883.]

Case 2.—Synovitis of the Knee-joint—Aspiration of the Effused Fluid—Linear Fixation of the Limb without Confinement of the Patient—Cure in about a Month.

John M., aged thirty-nine, a dock labourer, applied on March 22, 1878, having had his right knee weakened and partly disabled during the previous two months, in consequence, it was supposed, of the strain of his work. The case was one of simple fluid effusion, with the associated encumbrances above alluded to, but without any acute features. Two ounces of yellow liquid were drawn off at once by aspiration through a needle about the size of a No. 2 catheter; the limb was put up perfectly straight, supported behind the knee by a sheet of perforated zinc plate reaching from the middle of the thigh to the middle of the leg in the form of a half-cylinder, fixed with strips of thick plaster, and surrounded with a bandage. The front of the joint was left uncovered for inspection, and the patient walked home, having instructions to call and show himself once or twice a week. No re-accumulation took place. The splint and plasters were removed at the end of a month, being replaced by a bandage alone, to limit the movements now resumed. Complete recovery of the joint followed shortly after.

[MEDICAL TIMES AND GAZETTE, July 14, 1883.]

Case 3.—Acute Sprain of the Knee joint—Aspiration of Effused Blood—Treatment partly in Bed and partly on Foot—Cure in about a Month.

Harris W., aged twenty-seven, a Polish Jew glazier, applied on August 9, 1879, having four days previously fallen in the street and severely hurt his right knee, which had shortly after swollen, and had been extremely painful in the interval. The joint was distended, very tender, and apparently constantly painful. Besides the unequivocal signs of disablement he exhibited the timidity and extreme sensitiveness that seem to be usual in his race. He was put to bed, and the limb was placed at once perfectly straight in a Thomas's knee-splint. Aspiration was then performed at the outer upper corner, and about two ounces of bloody fluid, that soon coagulated, were drawn off, with admitted comfort to the patient. Three days later the splint was removed, the joint was enveloped in many layers of plaster (pitch and resin spread upon brown paper) from the middle of the thigh to the middle of the leg—not tightly, but so as to maintain the straight position,—and the patient sent on foot to his home in the immediate neighbourhood, whence he returned twice a week for inspection. The plasters were removed each time, the joint examined, and fresh plasters put on, making a stiff case as clean and neat as a grocer's parcel, as firm as a starched bandage, at a cost to the hospital of about twopence, and to the surgeon of about two minutes on each occasion. A little re-accumulation of fluid was noticed during the convalescence, but this gradually disappeared under the fixed position of the joint, that still did not debar the patient from the painless support and moderate use of the limb in progression.

MEDICAL TIMES AND GAZETTE, July 14, 1883.]

Case 4.—Chronic Synovitis of the Knee-joint—Repeated Aspiration—Treatment in the Fixed Straight Position, without Confinement of the Patient—Cure in about Three Months.

Peter D., aged forty-three, a seafaring man, applied on March 15, 1878, having effusion of fluid in his right knee of two years' standing, supposed to be due to rheumatism. The joint was plainly distended, but there were no acute symptoms, the only inconvenience being weakness as compared with the opposite limb. Aspiration was done, and the limb fixed with plasters and bandage over a wooden back-splint. The joint filled again, and was again aspirated on the fourth, seventh, eleventh, fourteenth, and eighteenth days after his first application. It now became obvious that the movements of the joint were hardly, if at all, controlled, owing to the shortness, stoutness, and abruptly tapering shape of the patient's limb, to which a clumsy wooden splint is not easily made to cling. He was accordingly persuaded to get a Thomas's knee-splint of the calliper variety, fitted below into the heel of his boot. This he wore day and night, the limb being bandaged straight between the iron stems, and the knee-joint maintained immovable, while yet progression and the support of the body were permitted. The slight effusion that still returned after the last aspiration gradually disappeared, the joint resumed its normal size and shape, the patient gradually found by temporarily dispensing with the splint that he was recovering the efficient use of the member, and eventually went to sea again, quite recovered, at the end of three months.

[MEDICAL TIMES AND GAZETTE, July 14, 1883.]

Case 5.—Chronic Synovitis of Knee—Aspiration at Intervals during Four Years, with Apparent Cures and Subsequent Remissions—Periarticular Exudations, Free Incisions, and Eventual Complete Success.

Richard P., a sailor, aged thirty-two, was admitted in November, 1878, under the care of Mr. Bickersteth, on account of an extensive hydrarthrosis of the left knee. The affection had existed for four years, had never been acute, and the patient had done his best to work, but at last had to give in. Aspiration was performed once, and as the joint filled again the patient was shortly after discharged. From December, 1879, to February, 1880, he was under the care of Mr. H. O. Thomas, who aspirated the joint three times, and applied plasters to it in the intervals. Effusion having disappeared and the use of the limb been restored, he was discharged cured, or apparently cured as it turned out, for three months later a fresh accumulation had taken place, and with it the consequent weakness of the knee. He entered the Infirmary in June, 1880, under the care of Mr. Parker, who aspirated the joint on four consecutive days, ending July 1, the patient being in bed and having the limb previously fixed in a Thomas's knee-splint of the ordinary long pattern used for bed purposes.

On July 12, 1880, he was fitted with Thomas's calliper walking knee-splint, and, as Mr. Parker was going from home, placed himself again under the care of Mr. Thomas, who continued the observation of the case. Nothing more was heard of him till September, 1882, when he stated that the knee had remained painless since last note until a few months previously, when a subcutaneous swelling was found on the upper outer corner of the affected knee. This had increased in size, had, he said, been incised by Mr. Thomas, and was now a sinus from which sweet serous fluid escaped in small quantity daily. Another indurated spot was felt on the inner lower aspect of the front of the joint. There was a constant pain complained of by the patient, and some tenderness, but his health was good, and the joint entirely free from distension. His calliper splint was kept on, and the man allowed to walk about the hospital, the sinus being covered with boracic lint, and regularly squeezed by him.

On October 6, 1882, under ether, the sinus was enlarged, and found to extend upwards into the vastus externus, while downwards it was immediately outside the capsule of the knee-joint. The lining of lymph and granulations was scraped away with Volkmann's spoon, and the exposed fresh tissues carbolicised with one-in-twenty lotion. The indurated and partly liquefied spot at the inner lower corner of the joint was now cut into, found to consist of lymph and dark yellow serum, all of which was turned out, and the lining (in which no granulations had formed) scraped away. Careful examination showed this cavity to be subcutaneous, and entirely outside the capsule of the joint, the outer surface of which, however, was thus exposed. Both incisions were dressed with eucalyptus ointment inside a Listerian gauze dressing. The operation was done under the carbolic spray, and due precaution taken in case either incision might have been found to expose the interior of the joint. The calliper splint was worn throughout, during the operation as well, and after a week or so the patient was allowed to get up. Granulation took place and perfect healing, without inconvenience, and the pain previously complained of disappeared.

On December 20 he was well, and discharged for Christmas. During the healing of the skin-cuts he complained of swelling of the left testicle, and fancied he had squeezed it against the adjacent ring of the splint. This was kept under observation for many weeks, slung in a suspensory bandage, and treated by the administration of grey powder internally, but without good effect. There was no history of syphilis, and not a clear one of injury, but it became unmistakable that a hard nodule of some kind, probably cheesy, remained, and the patient was advised to have the organ removed. This he has not yet consented to.

Remarks.—The course followed in the case of this knee is peculiar. Such cases are generally easily cured by the treatment of fixation here employed, with or even without aspiration. It cannot be decided to what precise circumstance the periarticular collections are due, but the fact of repeated aspiration naturally suggests the bare possibility of some association between them as cause and effect. The affection of the testicle also, in which there is still an exudation, suggests, by its resemblance to tubercular formations, that this or an allied form of infection may have also complicated the inflammation at the knee.

[MEDICAL TIMES AND GAZETTE, Sept. 22, 1883.]

Case 6.—Fracture of Leg, Thigh, and Clavicle, Sprained Wrist, and Scalp Wound stripping the Bone.

GEORGE W., aged thirty-eight, a brewer's drayman, was admitted on June 10, 1881, shortly after having been run over. The left tibia and fibula were broken about the middle, and the shaft of the left femur in its lower third—all oblique fractures, between which the leg was much contused. The right clavicle was broken about the middle, and there was on the left side a scalp wound two or three inches long, flap-shaped, and partly stripping the bone. The fractured lower limb was put up in Thomas's long knee-splint, as used ordinarily in bed; and the scalp wound well carbolised, and treated from the bottom with boracic ointment and boracic lint, without sutures, eventually healing without complication.

After a day or two the leg fracture was separately fixed between two sheet-iron lateral splints, padded with boiler felt and boracic lint (next the skin), in addition to the splints of the same material enveloping the thigh. Around the leg a stout bandage was thus safely hitched without directly compressing the injured tissues, and extension made upon the thigh fracture as the whole limb lay in Thomas's splint, the counter-pressure being made upon the perineum by the padded ring of the splint. Previously side plasters had been fixed to the ankle and lower half of the leg, but had to give place to the above modification which worked much better.

Over the extensive ecchymosis a few bullæ formed, that were covered with boracic lint, into which some of their fluid escaped, with the effect of simple eventual healing under perfectly aseptic conditions. After the ecchymosis was gone a subcutaneous fluid collection remained about the front tibial edge, feeling and looking like a flaccid abscess. It was aspirated and found to be serous. The fractured clavicle was let alone, the patient lying on his back, and the arm of that side being confined to his side by a draw-sheet used as a binder, but the hand and forearm left free for his use.

The left wrist being found, at the first visit, to be quite disabled and painful, was kept straight and still in a splint composed of two daily newspapers folded together and applied closely as a trough, and bandaged to the hand and forearm. This injury was thus at once rendered painless, and continued so during the week or ten days required for its complete recovery. The fractured clavicle united well and speedily, though not without obvious deformity, which it was not convenient to take energetic precautions to prevent, owing to the very helpless situation that the entire confinement of that limb would have imposed.

Before July 31 sound union was found to exist in all the fractures, and the patient was now permitted to get up, wearing a Thomas's walking knee-splint, to which the weight of the body (that would otherwise have been borne on the recently fractured limb) was thus transferred during the hardening of the osseous union, for several subsequent months.

During the first week or two the patient was necessarily rather helpless, having only the right lower limb entirely free from injury. But the arms were partly available—the left above the elbow, and the right below that joint,—so that he was not entirely debarred from righting and assisting himself as he lay on his back. After the preliminary soreness and tenderness had passed off, he was able to be propped up in bed in the sitting posture—an attitude permitted by this method of treating fractured femur without interfering in the least with the proper position of the knee, and a great addition to the patient's liberty.

There was only about an inch of shortening on the recovery of the patient, who resumed his occupation as drayman. He was seen one day in the following year, busily engaged outside a public-house, delivering barrels of beer from his dray, and said he was none the worse for his injuries.

[MEDICAL TIMES AND GAZETTE, Sept. 22, 1883.]

*Case 7.—Fracture of Pelvis and Thigh (Upper Third)—Union
—Return to Work, and Second Fracture of same Thigh
(Middle Third) four months after previous Accident, etc.*

Anthony K., aged fifty-six, a bricklayer's labourer, was injured in some building operations on January 27, 1883, and was brought to hospital during the visit. He complained of his hip and thigh, chiefly, on the left side, where, on examination, there was found much tenderness, with moderate swelling, and complete disablement of the lower limb. Further manipulation of the pelvis revealed distinct mobility and crepitus at the back of the left ilium and in the ilio-pubic region in front. The thigh, moreover, did not seem all right, and was found (not without some little difficulty under the circumstances) to be also broken at or just below the great trochanter. The limb lay everted and a little shortened, but could be placed in the normal anatomical position, from which, however, it fell away when unsupported. There was also a scalp wound, which healed without need of further comment. The patient was put up in Thomas's hip-splint, and the pelvis was bound up in a draw-sheet firmly pinned. After a day or two, side plasters were put upon the thigh, and tied to the lower end of the hip-splint, after pulling the limb out to its fullest length. The shoulder-brace was removed to permit of the dead-weight extension thus promoted; for under most circumstances the absence of the shoulder-brace is followed by a gradual slipping of the hip-splint towards the foot. This tendency can thus be utilised in resisting shortening in fracture of the upper third of the femur, and even of the neck when unimpacted. It had at first been also intended to actively keep up, by additional means, such extension as might at first be necessary to counteract the shortening; but the intention was abandoned for fear of delaying the union in either pelvis or thigh, though the fear appeared afterwards to have been groundless.

So the shortening was accepted, and the case got well without complication. There was loss of movement, too, in

the anterior muscles of the leg, shown by persistent drop of the foot in the pointed-down extended position. This eventually, though very slowly, disappeared. By the beginning of March he was allowed to get up, still wearing the splint, bearing his weight on the uninjured leg, elongated by a simple wooden clog about two inches thick on his boot, and using a pair of crutches. The patient was kept as long as practicable in hospital and in the convalescent institution, eventually returning to work at the end of May, having a shortening of an inch and a half or less. On May 29 he fell off a scaffold, and was admitted into hospital with a fracture of the same thigh. This time the middle of the shaft was affected, and all found sound at the sites of the previous accident. He was at once put up in Thomas's knee-splint, with hollow sheet-iron splints padded with boiler-felt and covered with boracic lint (next the skin) well surrounding the thigh. An uninterrupted recovery took place, and by the end of June good union had resulted, without any shortening in the last fracture. He was then allowed up, wearing a knee-splint a little longer than the limb. This was discarded in August, in the last week of which he was again sent to the convalescent institution, still using crutches, but no splint.

Remarks.—It is impossible to exaggerate the comfort and convenience, combined with an extreme degree of liberty of motion, procured to patients treated in the manner above described. They can be rolled over in bed, can place themselves upon the bed-pan, and in the case of the knee-splint can even sit up in bed, while a fracture of the femoral shaft is still proceeding, without impairing the mechanical efficiency of the treatment.

(For further particulars and illustrations see the second volume of "Transactions of the International Medical Congress," 1881, or "Surgical Cases and Essays," by the same writer.)

[MEDICAL TIMES AND GAZETTE, Dec. 29, 1883.]

*Case 8.—Incurvation of Right Thigh, laming the Patient—
Fracture of the Femur, permitting the Hip, Knee, and
Ankle to be in the same Straight Line—Perfect Cure after
Union.*

SARAH A. E., aged fourteen and a half years, visited the Royal Infirmary in May, 1878, to show the completion of her cure, which was effected, however, in the Stanley Hospital, where she had been admitted early in October, 1877. She was fairly stout generally, being also well built and of moderate size as to her arms and trunk, but of short stature owing to the stunted length of the lower limbs. The tibiae were flattened laterally, and bent with the convexity forwards—the right rather more so than the left. The bones were quite strong, and the left limb altogether was quite useful, but the patient complained of weakness in the right knee. This complaint was at first but little heeded by Mr. Parker, as no obvious reason for it was recognised on examination in the standing posture at her earlier visits. After repeated and persistent complaint, and the assurance of her mother that the girl's disablement was authentic, her right limb was examined more closely as she lay down. On placing the upper part of the thigh in a position of normal symmetry, it was found that the leg lay across and in front of its fellow, instead of parallel with it. This was found to be due to a curve in the femur rather below the middle, the convexity being outwards, and to a rotation of the lower end of the bone, causing the back of the condyles to look obliquely inwards. The effect of this was that one of the three joints was always out of the line of the other two; and although the bones, joints, and muscles were all strong enough, the attempt to use the limb as a prop to the body could only be made at a strain upon the knee-joint (of which she most complained), that was now comprehensible enough. She was put up in a Thomas's knee-splint, the limb being fully extended with the aid of stirrup-strapping to the leg, and lateral bandaging being brought to bear, by pressure and counter-pressure, on the

knee and femur, in the hope that the bone might be induced to grow into the desired position. But it soon became evident that the time for any such process was now past in this case, and that the bones were far too short and too strong to be influenced in that way. After a month, therefore, further trial was abandoned, and fracture of the femur determined on if practicable. This was done under ether on November 16, 1877. The knee-joint was first fixed straight in a series of padded splints of sheet-iron, enveloping the upper half of the leg and the lower third of the thigh, and tightly bandaged on so that that part of the limb below the femoral curve became stiff enough to serve as a suitable lever. The thigh was laid on its outer side, the upper part being held forcibly down on the table, the convexity of the curve lying on the edge of the table, and the rest of the limb projecting beyond the edge, being held by the operator. It was then found not difficult with such powerful leverage to break the thigh at the spot desired. When the crack occurred, after a short effort, the limb was easily straightened until all the three joints were in the same straight line, without entirely separating the fragments on the previously convex side. The splints around the knee being removed, Thomas's knee-splint was then replaced, and four sheet-iron splints, padded with boiler-felt, surrounding the femur, put on in addition, for due fixation of the fracture, somewhat in the manner referred to in Cases 6 and 7 (September 22). One of these splints, a little longer than the others, supported the back of the thigh and knee-joint, swung between the bars of the Thomas's splint.

Three days later, the thigh was found free from pain and tenderness, the uppermost short splints having been lifted off for inspection and then replaced. A little fulness and elasticity also were perceived in the knee-joint from effusion of fluid. The patient was permitted to sit out on a chair.

After five days (November 21) the effusion into the joint, having increased, was drawn off by aspiration through a needle the size of a No. 2 catheter. The fluid was two ounces of bright liquid blood or bloody serum (see Case 3—July 14). At the end of a week she was up, and occasionally moving about the ward, the apparatus being a "walking splint," and permitting this. At the end of a fortnight she went home—wearing the splints, of course.

On December 19, five weeks after fracture, she called, and had the sheet-iron splints removed, the walking knee-splint, however, being retained.

On January 9, 1878, after eight weeks, she could bear a good part of her weight on the limb without the splint, which she then wore part of each day only for rest.

In the end of May, 1878, she called at the Infirmary to show herself. Having to come about three miles, she wore the splint for that occasion only, but she had discontinued its general use for some months previously. The limb was in every respect useful, and has continued so ever since, the three joints being suitably in line, though the bones are, as they have all along been, deformed by rickety curves. These last, however, are not a source of mechanical inconvenience, and therefore require no interference.

Remarks.—It may appear astonishing that this patient should have been allowed to get up a week after fracture of the femur. But the fracture was not a complete one, and therefore was particularly easy to manage after once being set. Added to that, but apart from it in relation to other cases, the apparatus used secures a degree of immobility hardly attainable by other means, and one that would permit safe transport in almost any case, if that should happen to be required; and, in the case of small children, allows their easy, safe, and therefore justifiable treatment as out-patients — a matter of great convenience, sometimes, to all concerned. The effusion into the knee-joint is not to be wondered at, considering that in making the fracture the articulation must have been submitted to a severe sprain, in spite of the protecting splints around it. Effusion into the knee-joint, or around it, or both, is, in cases of fractured shaft of the femur, a common attendant feature that seems to be hardly ever alluded to. The fact was first made known to the writer during a clinical lecture at the Charité Hospital in Paris, April, 1870, by M. Gosselin, who showed a femur, recently fractured, from a case otherwise speedily fatal, *à propos* of which he said that he had often found cases of fractured femur followed in a few days by effusion into the knee-joint of the same side. Mr. Parker can confirm entirely the observation of M. Gosselin, having found the effusion in almost every case of fracture of the shaft of the femur that he has subsequently seen, and also occasionally in fracture of the upper part of the leg.

[MEDICAL TIMES AND GAZETTE, Dec. 29, 1883.]

*Case 9.—Twist of Lower Limb, corrected by Fracture of Femur
and Rotation of Lower Fragment with the attached Leg.*

James V., aged ten, under treatment since January, 1878, for the correction of double knock-knee of an extreme kind. The left limb had already been straightened by gradual extension and lateral compression with bandages on a Thomas's knee-splint; the right was also straight; and both limbs were now in calliper knee-splints with boots attached, but the front of the right knee-joint was turned outwards, and the inner condyle looking forwards. Both tibiæ were compressed laterally and curved in a rickety fashion, but the right was flexible, while the left was rigid. It was thought that fracture of the femur would permit the knee-joint to be turned round to its proper attitude, while the softness of the tibia would permit this to be done without twisting the foot inwards or even breaking the tibia. The knee was accordingly fixed with sheet-iron padded splints, as in Case 8, and the patient put under the influence of ether on January 24, 1880. The femur was without difficulty broken, a little below its middle, across the edge of the operating-table, and the lower fragment forcibly twisted inwards rather more than was absolutely required, until the knee-joint occupied, without elastic recoil, its proper position, with the patella forwards. The foot was meanwhile easily maintained in its former proper position, owing to the flexibility and thinness of the lower third of the tibia. The limb was put up in Thomas's longer knee bed-splint, with side plasters, short splints of sheet-iron, etc., as in the preceding cases of fractured thigh.

An excellent union, without noticeable incident, had resulted by March 15 of the same year, when a calliper splint, made of full length so as to take a portion of the weight of the body, was replaced.

[MEDICAL TIMES AND GAZETTE, Dec. 29, 1883.]

Case 10.—Double Bandy-Leg, treated by Antiseptic Osteotomy of both Tibiæ; afterwards by Simple Fracture of one Femur.

Emma J., aged seven, was admitted in January, 1882, having rather conspicuous bandy-legs, owing to rickety curve of the tibiæ with the concavity inwards. Simple fracture of each leg under ether, February 1, 1882, was first attempted, with the hands pulling the patient's limb across the knee of the operator—a method that easily succeeds in some cases. But the bones were too short and too strong for this; so osteotomy with a narrow saw, introduced through a small incision, was at once performed under carbolic acid spray. After sawing through part of the thickness, the fracture of the tibia was completed by hand, a Lister gauze dressing put around the leg, and a couple of sheet-iron lateral splints outside, with a bandage over all. In each case a simple, uncomplicated healing resulted, with a decided diminution of the leg-curve. But when she recovered the strength of her limbs, it became evident that her condition of bandy-leg still remained. On laying her down and placing the upper halves of the thighs in a position of normal symmetry and parallelism, the cause of the bandy-leg deformity was discovered (as in Case 8) to be due to distortion of the femur on both sides. Here, however, the lower ends of those bones were rotated in, so that the inner condyles stood forwards and the outer condyles backwards nearly a quarter of a turn in the attitude in which she lay. The legs in this

attitude crossed each other—the ankles, knees, and hips not lying in the same straight line. Accordingly, in the month of June, 1882, under the influence of an anæsthetic, the right femur was broken across the edge of the operating-table, the knee-joint having been previously fixed, as in Cases 8 and 9. The lower fragment carrying the leg was rotated inwards, and the limb set in Thomas's bed-splint, as in the other cases.

The bone quickly united, and the patient was allowed to go home at the end of July, by which time she could stand upon the limb, the lightness of her weight and the strength of her bones permitting this without further precaution.

As the child had become rather anæmic during her stay in hospital, she was sent to get fresh air until after the vacation. The shape of the limb was now entirely satisfactory as regards general symmetry and the line of the joints, the only drawback being the slight tibial curve still remaining—a defect of no mechanical consequence, only visually recognisable, and not further remediable.

The other limb has not yet been put right, owing to a prolonged absence of the child in a distant part of the country. It is still, however, in contemplation. She was last seen several months after her discharge, the limb retaining all the essentials of strength and efficiency.

[MEDICAL TIMES AND GAZETTE, Dec. 29, 1883.]

Case 11.—Double Knock-Knee, due to Incurvation of both Femora, corrected by Simple Fracture of each Bone.

Fred W., aged eleven or twelve, half-brother to the preceding case, was admitted in April, 1883, to have his legs straightened by such means as might seem best suited to his state, and was examined several times. It gradually appeared that in his case the deformity was owing chiefly to incurvation with twist of the femora. On April 27 the right thigh was broken and reset, as in the other cases, the limb being, after sound union, placed in Thomas's calliper splint with boot attached. On June 22 the left limb was broken, and the lower fragment with the leg thoroughly twisted into position. A similar after-treatment was adopted, the patient being sent home at the end of July, walking with a calliper knee-splint on each limb. The result was perfect on the left side, where a much more thorough twist was adopted after fracturing the bone.

About September he was seen again, the left limb being perfectly efficient without splint. In the case of the right the benefit was much less, owing to the defective employment, it is believed, of the twist manœuvre. A refracture was advised, but the patient declined it. Under the circumstances, he was told to continue wearing the splint, keeping the knee-joint in line with leather bandages attached. He has not been seen since.

[MEDICAL TIMES AND GAZETTE, Dec. 29, 1883.]

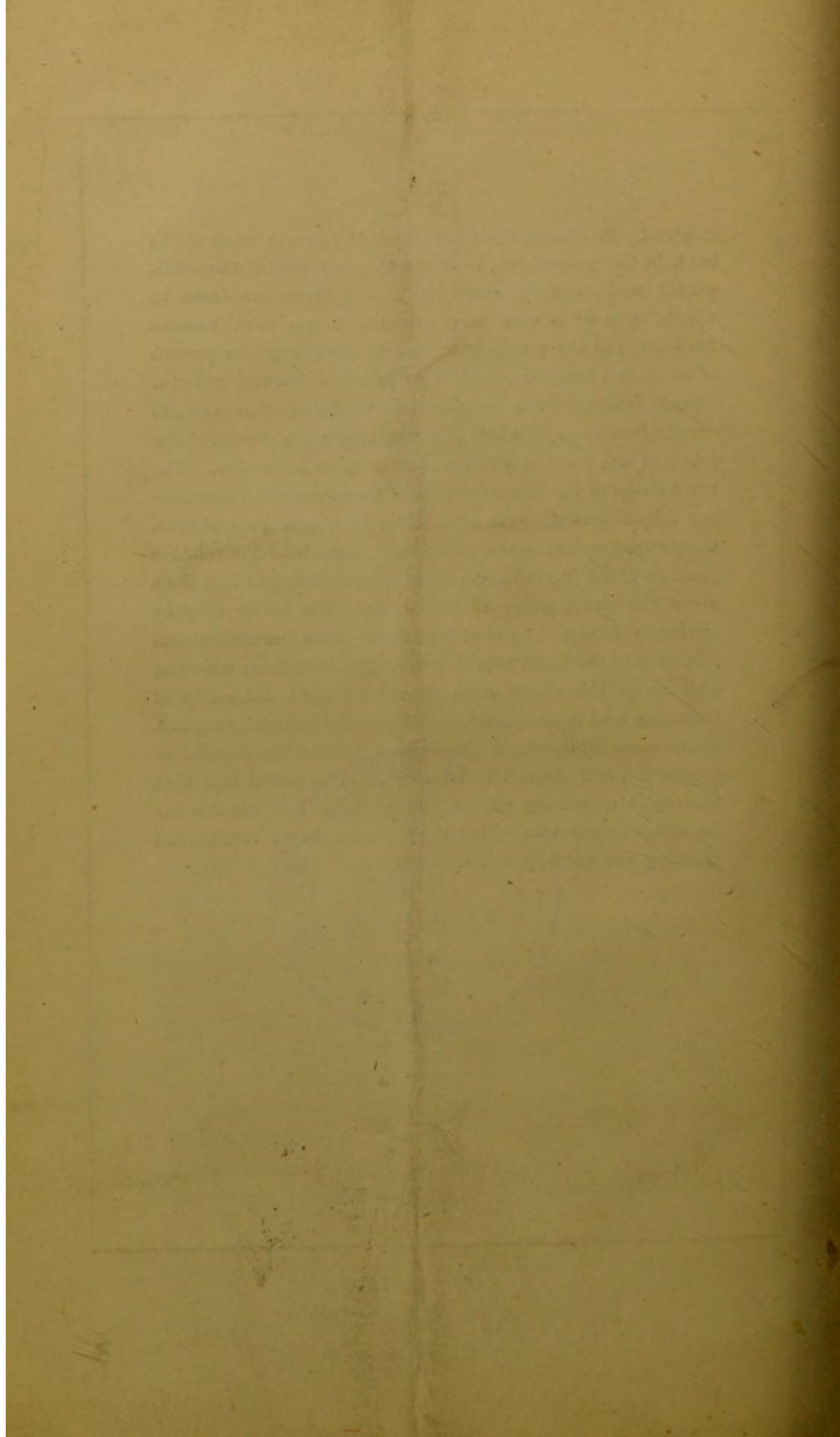
Case 12.—Fracture of Left Femur, with Twist of Lower Fragment, to correct Genu Valgum.

Herbert B., aged five, was similarly treated on July 27, 1883, the fracture being made at or slightly below the middle of the bone. A simple and (after the first day) painless recovery was made, with restoration of the proper line of the limb. He was discharged within a month of operation. The case was one of rickety bend of the tibiæ, the convexity forwards, with genu valgum, pronounced on the left side, but slight on the right. The tibial bends are not a source, apparently, of mechanical inconvenience.

When seen on December 14 he was very vigorous, active, and well able to walk and run. There was a very slight degree of double genu valgum, which it is believed he will grow out of with the use of boots having sloping heels, the inner sides being high. He is still under treatment with that object.

Remarks.—Among the various forms and degrees of knock-knee, bandy-leg, and other deformities of the lower limbs, there is some scope for selection in the method of treatment. In childhood much can be done with the aid of splint and bandages alone, without operative interference at all, to favour the resumption of proper line by natural growth, as has been well said by Mr. Edmund Owen in the *British Medical Journal* of February 21, 1880. The force that distorts young limbs is apparently not great when the bones are abnormally soft, or the ligaments weak or over-

strained. Similarly, the force required to train such limbs back to the proper line is frequently but slight when diligently and carefully employed. But there are cases in which, even at a very early age, the bones have become too hard, and the curves have become too abrupt, to permit of successful mechanical training in aid of natural growth. Simple fracture of a bone, whether tibia or femur, is, in certain instances, effectual in permitting replacement of the joints of the limb in suitable line one with another. The mere shape of the bones is often of no moment in determining the efficient strength of a limb; and, as a general rule, the present writer is now more particular about the relative position of the joints in one and the same straight line than about the exact shape of the bones. The latter may be obviously deformed without interfering with the mechanical efficiency of the limb, provided the joints be in line; whereas, as some of the above cases show but slight deformity of bone may lead to conspicuous weakness and deformity of limb. These cases illustrate a single item in the wide domain of treatment, and do not interfere with the useful fact that antiseptic osteotomy effects the correction of similar deformities in cases to which simple fracture or mechanical training are not applicable.



John Marshall Esq FRS
with Dr Powell's emphysema

22.

Phthisis with contracted Lung
by

R. Douglas Powell.



[Proc: Clinical Society. 1868]

