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William Ferguson Esq.
with the Author's sincere regards.

PRACTICAL OBSERVATIONS

ON THE

TREATMENT OF CLUBFOOT

WITH CASES

ILLUSTRATED BY EXPLANATORY PLATES

THE DRAWINGS AFTER NATURE.

THIRD EDITION.

BY

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EXPERIENTIA DOCET.

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M.DCCC.LV.

THE TREATMENT OF CLUBFOOT
WITH PLASTER

ILLUSTRATED BY EXPLANATORY PLATES
THE DRAWINGS AFTER NATHAN

PRINTED BY W. H. LIZARS, EDINBURGH.

P R E F A C E.

THE successful result of an operation, however beneficial and desirable, is of comparatively small value to the importance of the principles, which regulate its performance, in as much as the former is of a personal nature, the advantages received being confined to the party operated upon and the Surgeon who operates, while those of the latter are of universal application, and embrace the interest of all mankind. It is difficult to explain why a maxim, the truth of which is universally admitted, should be so imperfectly adhered to in practice, and that improvement should receive so many checks and obstructions from the influence of prejudice. On no other ground but that can I account for the slow progress which Time, the greatest but the tardiest of all innovators, has made in refuting the errors of opinion and in confirming the decisions of experience. In no department of Operative Surgery has such a cause been more strongly observed in counteracting operation, or have the true principles of art been longer neglected, than in the rules prescribed and the arrangement usually adopted for the Cure of CLUBFOOT.

Convinced from long and varied experience, that the only effectual mode to cure the different forms of natural deformity known under the name of Clubfoot, consists, along with the requisite preliminary Surgical operation, in the adaptation and persevering use of mechanical means, by regular bandaging and properly fitted spring instruments, I have been induced to reprint the Practical Observations on that subject contained in an Appendix published after the First Edition of my system of Practical Surgery, in the hope that the principle of treatment I have pursued, corroborated by an additional and unbroken series of satisfactory cures, may be the means of directing the attention of my professional brethren to a branch of the healing art, which to a great degree has been withdrawn from their charge, in consequence, as I apprehend, of its being but imperfectly understood. I am satisfied, that in every case of deformity, a perfect cure can be, by proper management, effected; and I only express what I feel in saying, that I never witness the sad spectacle of an adult, with confirmed pedal deformity, otherwise in good health, but deprived of the ordinary power of locomotion, without reflecting, that the unhappy individual has been made an object of pity through the negligence of his parents, or the unscientific skill of the surgeon who operated upon him.

NOTICE TO THE THIRD EDITION.

THE Author, in submitting this Third Edition of his Practical Observations on the Treatment of Clubfoot to the Profession, considers, that he cannot too strongly express his opinion, on the necessity of combining mechanical means along with operative procedure. The neglect of this combination has caused no small or unmerited obloquy and censure to be passed on the Orthopædic Surgery of the Clinical Department of this School of Surgery by the Orthopædist of London. Mr. Adams, one of the Surgeons of the Royal Orthopædic Hospital of London, has published a paper in the Medical Times and Gazette for 28th April 1855, under the title of "Mr. Syme's Clinical Errors," severely condemning Mr. Syme for neglecting mechanical means in the treatment of Clubfoot: and his prefatory remarks, in that communication, states, "that he would have made this request earlier (the insertion of his paper), but he knew that his able colleague, Mr. Lonsdale, had written on the subject to the Editor of the Lancet, who, he perceived, refused to publish his (Mr. Lonsdale's) letter.

The Author, in vindication of the state of Orthopædic Surgery in Edinburgh, considers it his duty, so far as his own professional practice is concerned, to append the communication which he sent to the "Medical Times and Gazette," to this, the Third Edition of his Treatise on Pedal Deformity, in order to exempt himself from the general charge preferred by Mr. Adams, of inadequate treatment of Clubfoot in the Northern Metropolis.

Edinburgh, 15, South Charlotte Street,
May, 1855.

PRACTICAL OBSERVATIONS
ON THE
TREATMENT OF CLUBFOOT. *

IN my PRACTICAL SURGERY, Second Edition, page 164, it is stated, that Clubfoot is a common malformation, and is either congenital, or takes place in delicate children during teething. It may occur at a later period of life, either from spasmodic contraction of the gastrocnemii — of the other posterior muscles of the leg — or of the muscles of the sole of the foot.

The foot is turned inwards, outwards, backwards, or upwards. When inwards, as delineated in Plate I. figs. 1 and 2, the foot rests on the outer or fibular side, and the toes point across to the other foot, which is too often similarly deformed. This variety is named *varus*, or *talipes varus*.

Where the foot is everted, as represented in Plate IV. fig. 1, the affection is termed *valgus*, or *talipes valgus*. When the direction is backwards, as shown in Plate I. fig. 3, the sole of the foot points posteriorly, and the individual walks on the toes; this is denominated *talipes equinus*.

In the fourth variety, which is rare indeed, the sole is turned upwards, towards the patella, and the patient walks on his heel, the extensors and anterior tibial muscle being contracted. This is named *talipes calcaneus*, and is represented in Plate IV. fig. 2.

Varieties occur between *talipes varus* and *equinus*; *talipes valgus* and *equinus*; and *talipes valgus* and *calcaneus*.

The deformities depend on the slow and progressive luxation of some of the tarsal bones, and the consecutive derangement of their ligaments and muscular tendons. In many cases, abnormal bursæ are formed at the part where the foot rests on the ground.

As the child advances, the foot becomes smaller, atrophy of the muscles of the leg ensues, which may be confined to the diameter or the length of the limb. The latter is the more serious affection.

Taken immediately after birth, either of these deformities may not only be rendered less hideous, but, by proper apparatus, com-

pletely removed. The apparatus for *talipes varus* is generally put on by the bandage maker, three months after birth, as the skin is too delicate and tender to bear it sooner. It closely resembles that represented in Plate III. figs. 2 and 3, being however much simpler. There are no straps marked *t, t*, extending from the toes *v* to the knee strap *s*, or strap *r* round the ankle. The inner lateral steel prop A, consists of two halves, with corresponding holes in each, to enable a screw nail to lengthen the prop A, as the child's leg grows in length. The heel plate *w* consists of steel only on the inner side, but extends to the toes *v*. The outer side of the heel-plate consists of stiff leather, and extends only round the heel, so as not to press on the outside of the child's foot. All is softly cushioned inside. At the top of the inner steel prop A, is fixed a broad conical-shaped piece of iron, well cushioned, to press upon the inside of the knee. The apex of the cone points upwards to the thigh. There is no conical-shaped piece of iron on the outside of the knee, or even an outer lateral steel prop. I may here remark, that success depends as much on the skill of the bandage maker as on the dexterity of the operator; and I consider, indeed, that the late Mr. Fortune of Edinburgh has been more instrumental in curing patients than the most scientific practitioners. The practice of some surgeons of considerable notoriety cannot be too severely censured; they divide the tendons, put the foot in a stiff leather boot, as represented in Plate V. fig. 2, or apply a fracture splint to the leg, and then dismiss the case. I have known not a few patients, treated in this manner, who were soon reduced to as bad a state as before the operation. They required to undergo a re-division of the tendons, and have been ultimately cured by the use of the proper apparatus, represented in Plate III. figs. 1, 2, 3, 4.

The objects to be kept in view, are to turn the foot slowly outwards or inwards in the *varus* and *valgus*, and to make such addition to the thickness of the sole of the shoe or boot as will bring the limb into play, so that the child may use the deformed as much as the sound foot.

The division of the tendo Achillis, and such other tendons or fasciæ as may seem requisite, is essential to the ultimate cure, provided the necessary apparatus has been either altogether neglected, or imperfectly applied, or persevered in. The important question is, at what age should this operation be performed? Some

contend, that the sooner it is performed the better. I have known it done at five months old ; but as might have been expected, the result was a failure, as such a practice is uncalled for, at that early age, especially if solely relied on as a means of cure. This result is indeed plainly unavoidable, as the child should be old enough to walk, seeing the due exercise of the muscles, ligaments, and articulations of the foot is indispensable for recovery. Without this, the operation must prove abortive. Two or three years of age is the earliest time at which the division should be attempted. I prefer three years, because the apparatus previous to that period, however carefully applied, often frets the skin, and the cure is retarded, from the unwillingness of the child to put its foot to the ground.

Again, the operation ought not to be had recourse to when the articular surfaces or facets of the bones of the tarsus have become so configured and hardened, that we cannot expect to remodel them ; the age at which this occurs is, generally speaking, about thirty-five, although some cases have succeeded where the patient was older. I have known it fail at forty years of age. Plate IV. fig. 3, represents the skeleton of a foot of an adult, affected with *varus*, wherein the tarsal bones are ankylosed, showing the fruitlessness of any operation. This is copied from Bougery and Jacob's splendid work.

Before operating, the surgeon should examine with great care what tendons and fasciæ are contracted, so that he may divide them all at one sitting. In *talipes varus*, the most common variety of Clubfoot, it is seldom necessary to divide more than the tendo Achillis, and the inner portion of the fascia plantaris ; sometimes, however, the abductor pollicis pedis ; and in rare cases, the tibialis posticus, the flexor brevis digitorum, the flexor longus pollicis pedis, the extensor proprius pollicis pedis, or the tibialis anticus, may be involved. The fascia plantaris has been involved in every case which has come under my sole care in a very numerous range, and even in those cases previously operated upon by other surgeons, had been evidently overlooked.

Plate I. figs. 1 and 2, represent a simple and common case of *talipes varus*, precisely similar to fig. 1 of Plate V., the representation of the young boy, James Brown, operated on three times unsuccessfully by Professor Syme. The division of the tendo Achillis, shown in Plate I. fig. 4, and Plate II. fig. 1, is done as

follows—The little patient being put under the influence of chloroform, may be laid on a table or sofa, or is placed on the knee of an assistant seated on a low chair, and who secures between his legs the limb not to be operated on, and otherwise keeps the child from moving; another assistant holds firmly the deformed limb, immediately below the knee joint, with its popliteal aspect pointing upwards; a third, the chief assistant, grasps the foot, as represented in Plate I. fig. 4, with his hands, *a*, *b*, prepared to stretch the tendo Achillis whenever the knife has been passed across it. The leg, *c*, rests on the knee of the operator, who is also sitting. Every thing being thus adjusted, the operator pinches up the skin with his thumb, *d*, and fingers, *e*, of his left hand, over the tendo Achillis, a little above the malleolus internus, *f*, while the tendon is relaxed; then, carefully avoiding the sheath of the tendon, as far as practicable, he inserts the small tenotomy knife, *g*, with its flat surface beneath the integuments, and carries it across the tendon. When satisfied that he has accomplished this, he removes his left hand, turns the cutting edge of the knife upon the tendon, as exemplified in Plate II. fig. 1, which is stretched by the chief assistant, and the least pressure or cutting motion of the knife completes the division. Only one puncture of the skin, it will be observed, has been made. The instant the knife is withdrawn, a pledget of lint is applied, and held firm by an assistant, for occasionally a vein is wounded, which, were it allowed to bleed, would produce troublesome ecchymosis, that might end in suppuration. The knife is entered on the tibial side of the tendo Achillis, in order to avoid wounding the saphena externa, and is barely allowed to extend beyond the outer or fibular margin of the tendo Achillis.—See *Lizars' Anatomical Plates*, No. XXVII. Some surgeons reverse this mode of dividing the tendo Achillis, by entering the knife between the tendon and the tibia and fibula, keeping close to the tendon, which is held tense, and dividing it from within outwards to the skin.

When the division of the tendo Achillis has been accomplished, the operator should next divide the plantar fascia, as illustrated in Plate II. fig. 2. An assistant grasps the toes with his hand, *a*, while the operator secures the heel, *i*, with his left hand, *e*; and while the fascia and integuments are relaxed, he inserts the knife, *g*, with its flat surface on the inner margin, carries it as far across the foot as he deems necessary, between the integuments and the

fascia ; he then turns the cutting edge towards the fascia, and with pressure or a cutting motion, during which the assistant stretches the membrane, he divides it. If he considers the abductor pollicis involved in the inversion of the toes, he has only to insert the knife at the same aperture, carry it towards the metatarsal bone of the great toe, under the skin, and divide the muscle in question. A pledget of lint is immediately applied to this wound, for the reasons assigned when treating of the division of the tendo Achillis. The division of the plantar fascia seems to be considered unnecessary, if we are entitled to infer this from the unsuccessful issue of cases, where this important part of the operation has been omitted, and the subsequent long continued use of appropriate bandaging and apparatus neglected.

The surgeon should again examine whether any other tendons require division, and proceed accordingly.

He ought now to apply a bandage from the instep to the toes, and upwards to the knee, as represented in Plate III. fig. 1 ; over this a pasteboard splint, marked *k, k, k*, across the sole of the foot, upwards midway between the ankle and knee joints, with one on each side of the leg, marked *m, m*, from the knee to the sole of the foot, and over all a bandage, *n*, to keep them secure. The patient should, lastly, be put to bed, having the leg on a pillow, and the foot raised. In general, he had better be kept in bed for the next three days at least, living on moderate diet, and having attention paid to his bowels. The surgeon should examine the state of the foot and toes the day after the operation, and every successive day, in case of the bandage being too tight, and inducing inflammation and gangrene.

On the fourth day, the pasteboard splints and the inner bandage should be removed, as also the pledgets of lint, if loose ; but if not, they may be allowed to remain for a day or two longer, as in phlebotomy. The leg and foot should now be rubbed or anointed with lard or butter, a calico roller applied as before, and the apparatus put on, as exhibited in Plate III. figs. 2 and 3. The chief object is to keep the heel down, resting on the sole of the shoe of the apparatus ; the straps, marked *o, o*, should therefore be first applied over the instep, and crossed ; next the belt, marked *r*, round the ankle joint, so as to keep the heel more securely down ; thirdly, that *p*, across the ball of the great toe, which is affixed to the steel spring *q* ; fourthly, the ring, *s*, with the straps and buckles, round the leg, close to the knee joint, having previously

everted the foot as much as possible; and, lastly, the straps *t, t*, which extend from the toes to the knee. These produce great pain, by the pressure necessarily exerted on the articulations in order to change their faulty position and relation, and in elongating the contracted ligaments; hence many days must elapse before they can be pulled up sufficiently to overcome the morbid condition of joints, ligaments, and tendons. In every case, these straps must be pulled up to their utmost within three weeks, in order to make the angle formed by the foot and leg to correspond with the sound leg, at as acute an angle as nature designed. The tendo Achillis must not be stretched to its final length at once, but slowly and regularly every successive day within the three weeks, in order that the secretion of new matter may exude from each extremity of the sheath in full breadth and thickness, and thus render the new portion of tendon as strong as the undivided portions. It has been observed, that when the tendo Achillis has been stretched at once, or too quickly, the new portion has been corded and slender.

A new mode has been proposed, viz.—to divide the tendo Achillis by sub-cutaneous incision, when, it is said, the heel is at once set free; but when the inversion is still obstinate, it is necessary, in the same way, to divide the tendon of the tibialis anticus; immediately upon which the foot admits of being straightened, and kept in this position by means of a simple splint. This will be allowed to remain for two days, when what remains requisite for complete recovery may be trusted to a leather boot, with firm soles and sides, laced in front. Any case treated in this way must necessarily fail. Does any surgeon believe that the application of the leather boot, Plate V. fig. 2, can overcome the morbid condition of the joints, ligaments, and tendons? If he does so, I beg leave to refer him to the case of James Brown, at page 16, on whom three unsuccessful attempts had previously been made by Professor Syme to effect a cure by this imperfect mode of treatment.

The apparatus delineated in Plate III. figs. 2 and 3, must be removed daily, the leg and foot softened with lard, and occasionally washed, the calico bandage and the apparatus carefully applied, and the straps *t, t*, tightened. In many, the straps *t, t*, must be slackened at bed-time, in order to alleviate the pain; and in some, even the straps *o, o*, across the instep.

On the sixth day, the patient should be coaxed to put his foot to the ground with the apparatus on, and induced to walk, putting the heel down first, which method, it is proper to mention, gives

much relief to the sufferer, and greatly facilitates the cure. He should walk a little several times every day, and the exercise should be increased as the improvement warrants.

At the end of three weeks, the boot, represented in Plate III. fig. 4, should be put on, and worn during the day, the patient walking as much as he can without fatiguing himself. At bedtime, the apparatus must be substituted, and the straps *t, t*, pulled up as far as he is able to bear them.

The apparatus must be worn for months during the night, and the boot during the day, and great attention paid, as there is a tendency in the foot to return to its abnormal condition, although the individual, after the second week, complains much when any attempt is made to put the foot into its original mal-position. The artificial bursa, and any thickening, are discussed by the application, morning and evening, of the tincture of iodine, or iodine ointment.

The apparatus, the application of which is illustrated in Plate III. figs. 2 and 3, consists of a foot-board of iron, covered with chamois leather, marked *u, u*; within which is a sole, also covered, and stuffed with hair, marked *v*; a firm iron heel plate, marked *w*, covered with leather, and cushioned inside. To this heel plate is affixed the steel spring, *q*, the different straps and belts, *o, p, r*, also a strap, *x*, to prevent that marked *p* slipping off the toes. Across the foot-board extends a narrow iron plate, marked *y*, which is bent at a right angle on each side of the heel plate, *w*, upwards, along which it runs for two or three inches, and is there simply jointed by a screw, *z*, with a long iron strap, *A*, covered with leather, that is joined to the ring, *s*, round the leg. By means of this apparatus, the individual can put his foot to the ground and walk about. It is of importance that he put his heel down in the first instance. There ought to be two stuffed soles, which should be used on alternate days, in order that their softness may be maintained, as the least pressure is liable to injure the foot. This apparatus was originally invented by Scarpa, before the division of tendons was thought of. It has been improved by Delpech of Montpelier, who, I believe, was the first surgeon who divided the tendo Achillis, unquestionably the greatest surgeon of his day, the first operator in the world, excelling even Sir Astley Cooper, John Bell, and Liston. The apparatus just described was improved by the late Messrs. Fortune, bandage makers in this city. No other apparatus, I feel convinced, can accomplish a cure equal to this.

In children, with the knee inverted, the outer steel strap, A, in fig. 3 of Plate III., has an extension up to hip joint, and even to the pelvis, with a simple iron joint, at hip and knee joints. At the pelvis there is an iron hoop of five or six inches, to which is attached leather straps and buckle, as in the rupture bandage, to fix the apparatus to the pelvis, or round the trunk. A few inches above the knee joint, is attached a half hoop of iron with a leather strap and buckle, which surrounds the thigh, in order to fix the apparatus to the limb; and an identical similar hoop and strap is affixed two inches or so below the knee joint, which surrounds the inner lateral steel prop. This iron outer steel prop, A, consists of two pieces, each having holes in it, to enable a screw nail to lengthen the prop A, as the child's leg grows in length. The inner lateral steel prop, A, in fig. 2 of Plate III., has a broad conical-shaped piece of iron, well cushioned, fixed at the top, to press upon the inside of the knee through means of the hoop and strap described above. The apex of the cone points upwards to the thigh.

The boot, Plate III. fig. 4, consists of a common lacing-up leather boot, with an iron rod on the inside of the leg, extending from the sole to the ring round the knee, but with the peculiar advantage of a powerful jointed spring, which gives a spring in walking, and propels the foot onwards. Without it, many would trip at each step; *a, a*, the leather boot; *b*, a broad leather strap coming from the outer side of the heel of the boot across the instep, then divided into two narrow straps, *c, c*, which run beneath the spring, *d*, and are buckled to the heel; *f*, an iron strap or plate extending from the ring, *g*, to the sole of the boot, across which it runs. The boot has a common screw joint at *h*, and a beautiful propelling spring, *d*, affixed at *i*, and playing in the socket or staple at *k*. A simpler spring is now used; instead of the steel propelling spring, *d*, there is a spiral spring extending from the outside of the boot about the metatarso-phalangeal joint of the little toe, to the inside of the strap, *g*, on the inside of the knee joint.

I have stated, that in rare instances the *tibialis posticus* may require division; this should be done in the sole of the foot, and not in the leg, as recommended by some, for the *flexor longus digitorum*, as it lies superficially to the *tibialis posticus*, may be unnecessarily cut across, and the posterior tibial artery wounded. — See *Lizars' Anatomical Plates*, Nos. XXVII. XXVIII. and L.

On stretching the foot, the tendon will be readily felt, as it passes along to its insertion into the os naviculare. — See *Anatomical Plates*, Nos. L. and LI. Here it can be easily divided. These directions apply to children upwards of three years of age, the proper period of time that the tendons ought to be divided in *talipes varus*, and not in infancy.

When the flexor brevis digitorum requires to be divided, it should be done at the same time, and by the same puncture, as the plantar fascia. — See *Anatomical Plates*, Nos. XXVII. and XXVIII.

Should the flexor longus pollicis pedis become the subject of operation, it ought to be divided near its insertion, as it runs along the first or proximal phalanx. — See *Anatomical Plates*, No. L.

The extensor proprius pollicis pedis is easily reached on the dorsum of the foot, as it runs along the metatarsal bone. The anterior tibial artery must be carefully avoided. — See *Anatomical Plates*, No. XXVI.

The tibialis anticus tendon should be divided as it passes along the os naviculare, and care must be taken not to wound the anterior tibial artery. — See *Anatomical Plates*, No. XXVI.

I shall now proceed to illustrate the preceding mode of treating Clubfoot by one or two well marked cases, some of which had been operated upon unsuccessfully. I may here remark, that the bandage maker justly observes, that the more frequently you operate, the more difficult and imperfect does the cure become, apparently in consequence of the tendo Achillis being mutilated.

Since the Appendix to my first Edition of *Practical Surgery* was published, in which I described the operation for the cure of Clubfoot with drawings, illustrating the mode of operating, and the mechanical apparatus used subsequently, I have performed the operation on a great many patients, from three years old to thirty-five, and in every instance with a satisfactory result. The greater number of these cases had been operated on by other surgeons, who had merely divided the tendons, and, I apprehend, too often the wrong tendons, put the foot in a stiff leather boot, or applied a splint to the leg, and dismissed the patient without any farther care.

It would be a work of supererogation to employ argument or accumulate cases, to prove that a cure can ever be accomplished by such ridiculous means as a stiff leather boot or a splint. The

two late Messrs. Fortune, both of whom enjoyed extensive opportunities to acquire practical information, and possessed scientific knowledge to invest their opinion with respect, never saw a cure performed by these boots or splints. It must indeed be apparent to every unprejudiced understanding, that to restore the muscles, the ligaments, and the articular surfaces or facets of the bones of the tarsus to their normal state, a slow and long-continued counteraction is absolutely required, by means of elastic springs and springy apparatus. It is very difficult to account for the strong prejudices which have resisted so long the adoption of these simple but effectual mechanical means of cure. In July, 1852, I had occasion to assist my talented friend, Dr. Mullar, in an operation on a child three years and eight months old, who had been operated on at four months old by one hospital surgeon, and at twelve months old by another hospital surgeon, both of whom put on the ineffectual leather boot. Both operations necessarily failed. Dr. Mullar, by employing proper apparatus, has made a satisfactory cure.

James Brown, a fine healthy but delicate looking boy, six years of age, was brought to me by his mother, who begged me to examine his right foot, which I found to be affected with *talipes varus*, as depicted in Plate V. fig. 1. It was much inverted or clubbed. He rested or walked on its outer or fibular side, where there was a large horny artificial bursa, marked *a*. His leg was shorter and much emaciated. His mother said that he was born with the deformity. After my examination, his mother asked, Is it possible to cure such a deformity at his age? She said the child had been operated on when he was only five months old, by Professor Syme. That is just the reason, replied I, that the operation failed; he was too young to bear the apparatus necessary to effect a cure, and too young to walk so as to assist in the cure.—Why, there never was any apparatus applied, said the mother; there was only a boot put on. (See Plate V. fig. 2.) This was another reason, I said, why the operation failed.—Are you sure you could cure him, and remove the deformity—for, she added, the operation had been repeated by the same Professor Syme, when the boy was eighteen months old, and a third time when he was four years and a half old?—And there he is, she continued, with his foot as clubbed, and even more so, than before the first operation! (See Plate V. fig. 1.) The late Mr. James

Fortune used to say, that the reason why the apparatus depicted in the Appendix to my first edition, and now embodied in the second edition of my *Practical Surgery*, had not been adopted, was, that—"Prejudice prevents many from adopting cures that other men begin." It is to Delpech that we are indebted for the improvements in this operation.

On the 21st April, 1852, Master James Brown being rendered unconscious by chloroform, I divided the tendo Achillis, the inner portion of the plantar fascia (untouched in the three previous operations), and the abductor pollicis, as represented in Plate I. fig. 4, and Plate II. figs. 1 and 2. I then applied compresses of lint to the wounds, and a bandage from the toes to the knee; then the pasteboard splints, with another bandage over all, as delineated in Plate III. fig. 1. The boy was then laid on a sofa, with the limb raised on a pillow.

Before proceeding further, I have strongly to impress on the operator the division of all the contracted portion of the plantar fascia, and every tendon that offers any resistance to the placing the foot in a normal position.—See *Practical Surgery*, second edition, pp. 166, 167.

Four days after the operation, the pasteboard splints and bandages were removed, the wounds dressed with lint and simple ointment, and a bandage rolled from the toes to the knee, and lastly, the limb put into the apparatus depicted in Plate III. figs. 2 and 3, on which depends the success of the cure; for, as stated in my *Practical Surgery*, "Mr. Fortune, bandage maker, has been more instrumental in curing patients than the most scientific practitioners." Without the apparatus to evert the foot, to prevent reunion of the tendo Achillis, except with an addition of new matter of an inch or so, so as to lengthen it to a normal length, the operation must fail. This apparatus was taken off every morning, the leg and foot washed with soap and water, the skin gently rubbed with lard, bandaged, and the apparatus re-applied. Every day the straps, *t, t*, were pulled up or shortened; also the strap across the instep marked *o*, pulled as tight as it could be borne; likewise the strap *p*, attached to the spring *q*, tightened. On the sixth day the little fellow was coaxed to put his foot to the ground, which gave him considerable relief.

At the end of three weeks, all the straps were as short as seemed necessary, as the foot appeared perfectly natural in shape. The

boot represented in Plate III. fig. 4, was therefore put on, and he was enabled to saunter out into the garden behind the house. He continued to wear the apparatus during the night, the leather boot during the day, for five months. He is now attending school, walking as straight as any of his brothers, and can romp and run with any of his companions, and the removal of the deformity enables him to use his foot in taking exercise on his pony. His foot has a natural or normal appearance, and no impediment exists when he walks. (See Plate V. fig. 3.)

On the 29th August, 1852, B—— S——, from Perthshire, a firm resolute boy, between eight and nine years of age, but rather slenderly made, consulted me, for *talipes varus* of the right side. The foot is much inverted, and remarkably square; it closely resembles the iron spoon-club, for striking a ball out of a *bunker* or sand hole. His mother gave the following history. When twenty-one months old, he was taken to Professor Syme, who operated on him, by dividing the tendo Achillis and the tibialis anticus. The leather boot was put on, and he was discharged as *cured* in about eight days. On examining the foot, there are the cicatrices where the above named tendons were divided; but no vestige of cicatrix was visible on the sole of the foot, indicative of the plantar fascia having been divided in part or in whole. On the 29th August, 1852, while the boy was under the influence of chloroform, I divided the tendo Achillis, and the one half of the plantar fascia, and then reversing the tenotomy knife, I divided the abductor pollicis. See Plate I. fig. 4, and Plate II. figs. 1 and 2. I next applied compresses to the two punctured wounds, and a bandage from the toes to the knee, pasteboard splints, and another bandage, as represented in Plate III. fig. 1.

On the third day after the division of the tendons, I put on the apparatus delineated in Plate III. figs. 2 and 3, having first anointed the leg with lard, and put on a calico bandage from the toes to the knee. Daily afterwards the leg and foot were washed with soap and water, next larded and bandaged, and the apparatus put on, gradually tightening the straps. He resolutely walked about his room with the apparatus on; and by the 13th September, his foot rested on the sole, without inversion or adduction, and hence the leather boot in Plate III. fig. 4, was put on, when he walked about the room almost naturally.

September 18. He had improved so much, walking out in the streets daily, that I allowed him to return home, cautioning his mother, a very intelligent woman, to put on the apparatus, Plate III. figs. 2 and 3, every day on his return from his walking abroad, until next forenoon, when the leather boot, Plate III. fig. 4, was to be resorted to, and its use continued in walking until his foot remained quite natural for twenty-four hours.

In the course of some weeks afterwards, I received a very satisfactory letter from his father, stating that his son could dispense with the apparatus, as his foot had assumed the natural state for days, the tendency to inversion having completely subsided.

I operated, on the 11th March, 1852, on a boy twelve years of age, affected with a complication of *talipes varus* and *equinus*, who was able to put on the leather boot, Plate III. fig. 4, at the end of the third week after the operation, and play at *hocky* or *shinty* with his young companions. And in a few months afterwards, he could dispense entirely with the apparatus.

On the 16th September, 1852, I operated on a boy, eight years of age, with *talipes varus*, wherein the inner portion of the plantar fascia was rigidly contracted, together with the abductor pollicis, giving his foot a clubbed and square shape.

On the 19th I put on the apparatus.

On the 27th the black leather boot, and he walked about.

On the 19th October, his father brought the boy to me, when it was impossible to tell which had been the clubfoot; and I was gratified, upon examination, to find no perceptible difference in the configuration of the feet could be detected.

I shall now describe the manner of dividing the tendons in *talipes valgus*, which is represented in Plate IV. fig. 6. In this variety the tendo Achillis and the peronei muscles require division, and generally the outer portion of the plantar fascia, and the abductor minimi digiti. The mode of dividing the tendo Achillis in this variety is the same with that for *talipes varus*. The peronei muscles should be divided immediately beyond or distad to the malleolus externus as they descend, the brevis to the base of the metatarsal bone of the little toe, and the longus before it passes into the groove of the os cuboides.—See *Anatomical Plates*, Nos. LIII. and LIV.

When the outer or fibular portion of the plantar fascia requires division, it should be done nearer the os calcis than the inner

portion, so as to guard against wounding the external plantar artery (see *Anatomical Plates*, No. XXVII); and the knife should be inserted from the fibular or outer margin, and carried across the fascia, as described under *talipes varus*. When the abductor minimi digiti is involved, the same puncture will suffice; but the knife must be reversed, the point must look towards the metatarsal bone of the little toe.—See *Anatomical Plates*, Nos. XXVII. and LI.

In *talipes equinus*, depicted in Plate IV. fig. 6, the tendo Achillis, the plantar fascia, and the extensor proprius pollicis pedis, and the tibialis anticus, may require to be divided.

In *talipes calcaneus*, delineated in Plate IV. fig. 2, the tibialis anticus, the extensor proprius pollicis, and the extensor longus digitorum, require division. The mode of dividing the two former has been already described. The extensor digitorum ought to be operated on immediately above the anterior annular ligament (see *Anatomical Plates*, No. XXVI.), and this should precede the division of the extensor proprius pollicis, that the latter may protect the anterior tibial artery.

In some cases, especially of the *talipes equinus*, there exists contraction of the hamstring muscles, as represented in Plate IV. fig. 6. In such instances the surgeon must consider which tendons and fasciæ are involved. In the instance presented, it is the fascia of the leg, *a*, the tendo Achillis, *b*, the inner and outer hamstring muscles. The patient should rest on a sofa, with his face downwards, and the poples upwards and relaxed, the operator standing on the inner or tibial aspect of the limb to be operated on, and the chief assistant grasping hold of the ankle. The fascia at *a* should be first divided, the knife being inserted with its flat surface at *a*, and while an assistant extends the knee joint, the operator turns the cutting edge towards the membrane, and with pressure, or a slight cutting motion, divides the fascia, being careful to avoid wounding the external saphena vein. The fascia is occasionally so extensively contracted on each side, that the knife must be carried right across between the skin and it, and the fascia completely divided. In other instances, the division of the fascia is best done after the cutting of the hamstring tendons; in which case, the same punctures answer for both operations. A pledget of lint is to be applied afterwards. The operator should next divide the tendo Achillis, as described in page 10.

The inner hamstring tendons, namely, the semi-tendinosus and gracilis, should now be divided; the sartorius is seldom involved, but if so, it is to be cut at the same time. The semi-membranosus muscle, in my opinion, should not be attempted to be cut; for it is too close to the popliteal vessels and the capsule of the knee joint. The knee joint being relaxed, the skin over these tendons sufficiently above or proximad of the capsule of the joint, is to be pinched up with the fingers of the left hand, as represented in the division of the tendo Achillis; then the knife, inserted with its flat surface from the inner or tibial aspect at *B*, across, so as to embrace these two tendons; the assistant then extends the limb, and the operator turns the cutting edge of the knife, and with pressure, or a slightly cutting motion, divides them, being careful not to press the knife too deep, in case of wounding the popliteal vessels. The saphenæ veins must also be carefully avoided. A pledget of lint is lastly to be applied.

The biceps tendon is next to be divided in a similar manner, inserting the knife on the outer or fibular aspect, and when cut across, a pledget of lint is to be applied. Above the pledgets of lint a calico roller is to be put on, the patient sent to bed, and kept quiet for three or four days. At the end of this time the bandage and lint are to be removed, both re-applied if necessary, and a longer splint than is used in diseased knee joint put on the popliteal region of the leg. The further treatment is similar to that described for *talipes equinus* or *varus*. In some instances of this operation, in consequence of the ecchymosis which followed, considerable suppuration supervened, and retarded the application of a splint, fomentations and poultices being required for two or three days. The splint must be worn for months, and if there be present any inversion of the knee, this can be overcome by a steel rod extending from the hip joint to the sole of the foot, or an apparatus similar to that recommended in page 14 for children with marked inversion of the knee joint, after undergoing the treatment for the cure of *talipes varus*. The division of the vasti muscles appears too formidable for this deformity.

Plate IV. figs. 4 and 5, represent the knives used in these operations. That marked 4 I have found best adapted for the division of the tendo Achillis, fascia plantaris, and hamstring muscles.

APPENDIX TO SECOND EDITION.

The following Letter was sent to the Editor of the Medical Times and Medical Gazette, of which the part which is marked with inverted commas appeared in that Journal on the 4th November, 1854.

To the Editor of the Medical Times and Medical Gazette.

EDINBURGH, 15, S. CHARLOTTE STREET,
27th October, 1854.

SIR—To Delpech of Montpellier, I believe, the honour is due of having originated Tenotomy, and of having invented, for the purpose of securing “the end and aim” of his surgical efforts, an ingeniously constructed apparatus, which he applied after the primary operation. His “Chirurgie Clinique,” which was published in 1823, contains the history of several cases of “Des Pieds-Bots” successfully treated by him, in which the *modus operandi* he introduced, is described and illustrated with plates of the apparatus he employed. I have followed the mode of treatment recommended by that great surgeon, and have invariably succeeded in effecting a cure in the different forms of the malformation, both in children and in adults. For the permanent removal of Clubfoot deformity, it is equally indispensable to call into requisition the skill of the bandage-maker, as the dexterity of the surgeon. Indeed, I am satisfied, that without the assistance of the former, all the remedial exertions of the latter will be utterly unavailing. The apparatus I use is somewhat different from, although made on similar principles to, but I consider it a great improvement upon the one employed by Delpech. It was constructed by the late Mr. James Fortune, bandage-maker in this city—a man possessed of great mechanical genius, with considerable anatomical knowledge—and is minutely described in my Practical Observations on the Treatment of Clubfoot in 1842, and shown in drawings, as applied to the cases operated on by me, in Second Edition, 1853, and also detailed in my Practical Surgery, edited in 1847.

Before operating, the contracted tendons and *fascia* should be carefully examined, in order that their division may be made at one sitting. When this is accomplished, the restoration of the muscles, the ligaments, and the articular surfaces of the *bones of the tarsus*, can only be effected by slow and persevering counter-action, applied many weeks, or even months, by means of elastic springs and springy apparatus. The failure attending the division of the tendons can be traced to its being too early resorted to. The operation should be delayed, when the disease is congenital, until the child is three years of age, and is able to assist in the cure by walking, as the due exercise of the muscles, tendons, and articulations of the foot, is indispensable for recovery. I have never seen a case in which the excision of any bone was required; and I am satisfied, that free division of the plantar fascia will set free the os cuboides, or any other bone of the tarsus abnormally situated, after the tendo Achillis has been divided, in order to liberate the foot.

“My attention has been drawn to this subject by the introduction of a new mode of curing Clubfoot, by excising the cuboid bone. The case is referred to by Mr. Solly of St. Thomas’s Hospital, in his introductory address, delivered at the opening of that school, on the 2nd October, 1854. Mr. Solly says—‘There are cases in which the deformity is so great, the bones as well as the tendons and muscles being at fault, that it has occurred to Dr. Little and myself, that the removal of one of these bones of the foot would expedite a cure. This operation, the removal of the cuboid bone, I performed with the advice, and in the presence of Dr. Little, and my colleague, Mr. William Adams, of the Orthopædic Hospital, during the course of the past summer. The result has been most satisfactory. The entire case shall be published; but I am glad to have the opportunity of putting the fact first on record within the walls of my alma mater.’

“Of such a curative means, I beg respectfully to urge my humble disapproval, both as an uncalled-for operation, opposed to the results of my own experience, and as one accompanied with no inconsiderable share of danger to the patient, by inducing inflammation of the tarsal joints, which may terminate in supuration or ankylosis. I object the more to the removal of the cuboid bone, if that operation is proposed to effect a cure, and to supersede two very important adjuncts for the successful termina-

tion of surgical assistance in the treatment of Clubfoot—I mean the division of the inner portion of the fascia plantaris, and the long-continued and necessary apparatus after efficient tenotomy. These most necessary measures are at least not enforced by Mr. Solly with the attention and earnestness which their great importance seems to me to demand. I shall conclude these few observations, which I shall feel obliged to you to bring under professional notice, through your widely circulated Journal, by two quotations from my *Practical Observations on Clubfoot*, expressive of my views on these points—‘The fascia plantaris has been involved in every case which has come under my sole care in a very numerous range, and even in those cases previously operated upon by other surgeons had been overlooked.’—‘The practice of some surgeons of considerable notoriety cannot be too severely censured; they divide the tendons, put the foot in a stiff leather boot, or apply a fracture-splint to the leg, and then dismiss the case.’

“While the claims of Stromeyer and Little are so prominently brought forward in Orthopædic Surgery, it appears to me a most unaccountable anomaly, that in the great search for surgical improvement, the invaluable contributions of Delpech should be so much overlooked.

I am, Sir, your very obedient Servant,

JOHN LIZARS,

Late Professor of Surgery to the Royal College of Surgeons, and
Senior Operating Surgeon to the Royal Infirmary of Edinburgh.”

[Mr. W. Adams has already written to say, that Mr. Solly’s operation was not performed by his *advice*.—ED.]

APPENDIX TO THIRD EDITION.

The following Observations, sent to the Editor of the *Medical Times and Gazette* for insertion in his widely-circulated Journal, were condensed as follows in the Number for 19th May 1855.

“MR. LIZARS — We have received a letter from Mr. Lizars, replying to some remarks contained in a communication from Mr. Adams, as to the state of Orthopædic Surgery in Edinburgh. Mr. Lizars informs us, that so far as he is concerned, he has always taught the importance of the after-treatment in Clubfoot, and the necessity of appropriate apparatus made by the bandage-maker. Mr. Lizars refers to his Treatise on Clubfoot in proof of his statement.”

Before publishing the observations sent for insertion in the *Medical Times and Gazette*, Professor Lizars takes the liberty of informing its editor, that “the state of Orthopædic Surgery requires to be as much examined into, throughout England and Scotland, as in Edinburgh.” He has received not a few letters from professional men in England, which show, that patients had been operated upon there, the children even of medical men, who, from want of the requisite apparatus, became eventually as deformed as before the operation was performed. He therefore considers himself called upon to publish his experience on so interesting a subject—a subject which to this hour remains an *opprobrium chirurgorum*. The following letter is considerably extended, and bears reference to the original text, so as to make it more instructive —

SIR — In your valuable record and exposition of medicine and surgery, the *Medical Times and Gazette* for 28th April, 1855, there is a communication by Mr. Adams, surgeon to the Royal Orthopædic Hospital, under the heading “Mr. Syme’s Clinical Errors,” the concluding paragraph of which runs thus — “One inference may be very fairly drawn from the preceding remarks, viz. — That general surgery in Edinburgh does not include a knowledge of Orthopædy. It would, I think, be impossible to find any published

clinical lecture (the lecture referred to is the one on Tenotomy, by Mr. Syme, published in the *Lancet*, for 17th March, 1855), containing so many important practical errors; and if the students of Edinburgh rely upon their Clinical Professor for information on the pathology and treatment of deformities, the advantage to the public will be in direct proportion to the limited number of cases submitted to their treatment."

In so far as Mr. Adams' remark applies to the Edinburgh practice in Orthopædic Surgery, I may be permitted to observe, that when I had the honour of conducting the lectures on surgery, as the Professor of Surgery to the Royal College of Surgeons of Edinburgh, and also when I delivered clinical lectures on surgery, along with the late Mr. Liston, in the Royal Infirmary of this city, I invariably taught, that the cure of Clubfoot depended as much, if not more, on the after-treatment, combined with suitable apparatus made by the bandage-maker, than on the operative procedure of the surgeon. The mode of practice followed by me has been fully explained in my Treatise on Clubfoot, which has undergone two editions, and been embodied in the second edition of my "Practical Surgery." In the second edition of my Treatise on Clubfoot, several cases of cure are narrated, and I distinctly state, in the preface, at page 4, that "I am satisfied, that in every case of deformity, a perfect cure can be, by proper management, effected; and I only express what I feel in saying, that I never witness the sad spectacle of an adult, with confirmed pedal deformity, otherwise in good health, but deprived of the ordinary power of locomotion, without reflecting, that the unhappy individual has been made an object of pity through the negligence of his parents, or the unscientific skill of the surgeon who operated upon him."

In order to shorten this Letter, which I have now converted into an Appendix, I shall prefix a running commentary, or index, referring to the text.

The causes of these deformities, or Clubfeet, are explained at page 7.

Treatment of *Talipes varus*, or Clubfoot, occurring immediately after birth, by apparatus. See page 8.

Treatment of *Talipes varus*, or Clubfoot, at three years of age, by division of the tendons and the plantar fascia, followed by apparatus, &c. See pages 8 and 9.

Age at which the tendons and plantar fascia ought to be divided, to ensure success. See page 9.

Steps of the operation of dividing the tendons and plantar fascia. See page 9, and Plate I. fig. 4, and Plate II. figs. 1 and 2.

Treatment by pasteboard splints and bandaging, for the first three or four days after division of the tendons and plantar fascia. See page 11, and Plate III. fig. 1.

Treatment by the apparatus, as represented in Plate III. figs. 2 and 3. See page 11.

Treatment by a simple splint and leather boot, represented in Plate V. fig. 2, after division of *only* the tendo Achillis and tibialis anticus, as practised by Professor Syme, and consequent failure. See pages 8, 12, and 16.

Treatment subsequent to division of tendo Achillis and plantar fascia. See page 12.

Description of apparatus delineated in Plate III. figs. 2 and 3. See page 13.

Description of boot to be worn alternately with the apparatus, three or four weeks after the operation of dividing the tendons and the plantar fascia. See page 13, and Plate III. fig. 4.

As the description of his mode of operating in *talipes varus*, which Mr. Syme has given in his paper published in the *Lancet* for 17th March 1855, is long and discursive, I append a case inserted by him, in the *Monthly Journal of Medical Science* for June 1852, which succinctly explains his views on this subject—

“ This child, seven months old, has been brought from the country — or rather a distant town — on account of congenital deformity of the right foot. You see that the toes are turned inward, while the heel is drawn up, so that the little patient, if able to stand or walk, would rest upon the outer edge of the metatarsus. I now divide the *tendo Achillis* by subcutaneous incision, and the heel is at once set free; but the inversion is still obstinate, and I therefore in the same way divide the tendon of the *tibialis anticus*. Immediately upon which the foot admits of being straightened, and kept in this position by means of a simple splint. This will be allowed to remain for two days, when what remains requisite for complete recovery may be trusted to a leather boot, with firm sole and sides, laced in front. Such is the simple process by which the worst forms of Clubfoot are now easily remedied ;

and there is no triumph of modern surgery more creditable to the advance of our art than the control thus acquired over one of the most unseemly, inconvenient, and previously unmanageable deformities to which the human body is subject. The author of a surgical work lately published in London (Mr. Bishop), and which, from the opinions of the medical press, seems to be much admired in that part of the world, has endeavoured to show, that the force transmitted through the *tendo Achillis* tends to cause eversion of the foot, or that form of Clubfoot named *valgus*, and, after a demonstration to this effect, proceeds to say — ‘Hence it is obvious, that if in talipes varus the *tendo Achillis* is cut, it must increase the mischief.’ Now, the case which you have just witnessed, will enable you to appreciate the incredible absurdity of this statement, so opposed to common sense and inconsistent with daily experience. Fortunately for you, Edinburgh does not possess any Orthopædic Institutions, or Fistula Infirmaries, or Cancer Hospitals, so that the whole field of surgical practice is placed under your observation, instead of being divided into sections, and committed to the charge of specialists, whose claims to confidence in their peculiar department seldom amount to more than their admitted obscurity in regard to the whole subject.”

The subject of this case was a mere infant, so many months old. I hold it, however, as an invariable rule, in order to effect a cure, that the child operated on should be of that age as to be enabled to assist the cure by walking, and old enough so as not to suffer from the irritation caused by the apparatus, the use of which it will be found necessary for a long period of time to continue. In reference to Mr. Syme’s case, it may be asked, How can division of the *tendo Achillis* and *tibialis anticus* remove the inversion of the foot, in which division of a portion, of the half, or, it may be, of the whole of the plantar fascia is indispensable? or how can division of these, along with that of all the tendons and plantar fascia, remove the abnormal changes of the tarsal joints? “A simple splint allowed to remain for two days,” and “a leather boot with firm soles and sides” (see Plate V. fig. 2), are, in Mr. Syme’s opinion, the means to be trusted “for complete recovery,” in addition, by means of sub-cutaneous incision, of division of “the *tendo Achillis*, and of the tendon of the *tibialis anticus*.”

I know not what the result of that operation may be, but I suspect the recovery will be found to be as incomplete as in the case

which I shall now adduce, and which the mother of the child informed me had been operated on three times unsuccessfully by Mr. Syme. See case of Master James Brown, narrated in pages 16, 17, and 18, and depicted in Plate V. fig. 1.

It would be difficult to decide who is the more reprehensible party; or, in the language of Mr. Syme, to whom the "painful struggle" is to be ascribed, until the unfortunate patient gives "up the contest in despair"—whether to the mere operating surgeon, who denounces as "baneful" the indispensable mechanical treatment, or to the specialist, who, refusing surgical assistance, trusts all to time and apparatus. On the whole, it appears to me, after perusing Dr. Little's, Mr. Adams', and Mr. Bishop's writings, that the "pure" surgeon who operates, and fails to effect a cure, really does more harm to the advancement of Orthopædic Surgery, than the simple Orthopædist, who leaves cases altogether unoperated upon. But it is certainly matter of deep regret, that the scientific combination of the necessary curative means should be subjected to so long neglect—a neglect which is not less discreditable to surgery, than injurious to the cause of suffering humanity.

DESCRIPTION OF PLATES.

 PLATE I.

Fig. 1. Represents *talipes varus*.

Fig. 2. Represents *talipes varus*.

Fig. 3. Represents *talipes equinus*.

Fig. 4. Mode of dividing the tendo Achillis. *a, b*, the hands of an assistant holding the foot. *c*, the leg. *d, e*, the left hand of the operator pinching up the skin. *g*, the knife passed across between the tendo Achillis and the skin. *f*, the malleolus internus.

PLATE II.

Fig. 1. Further steps of the operation of dividing the tendo Achillis.

a, b, the hands of an assistant holding the patient's foot. *c*, the leg. *g*, the knife dividing the tendo Achillis. *f*, the malleolus internus.

Fig. 2. Mode of dividing the plantar fascia. *a*, the hand of an assistant grasping the toes. *e*, the left hand of the operator grasping the heel, *i*. *i*, the heel of the patient. *h*, the right hand of the operator holding the knife, *g*. *g*, the knife passed across the foot between the skin and the plantar fascia.

PLATE III.

Fig. 1. Represents the foot, after the operation, encased in pasteboard splints, and bandaged. *k, k, k*, splint across the sole of the foot. *m, m*, lateral splints. *n*, a bandage, after encircling the leg, carried round the splints and the leg.

Fig. 2. The leg bandaged and placed in the apparatus. *A*, the inner lateral steel prop. *u, u*, the foot-board. *v*, the hair sole. *w*, the heel plate. *y*, the steel plate extending across the foot-board. *o*, straps across the instep. *p*, a strap across the toes. *r*, a strap round the ankle. *s*, a strap round the leg near the knee joint. *t, t*, straps extending from the toes, *v*, of the foot-board, to the knee-strap, *s*.

Fig. 3. The leg placed in the apparatus, as in fig. 2. A, the outer lateral steel prop. s, the strap round the leg near the knee joint. r, the strap round the ankle joint. o, the straps across the instep. p, the strap round the toes, and fixed to the spring, q. q, a strong spring to turn out the toes and foot. w, the heel plate. u, u, the foot-board. v, the hair sole.

Fig. 4. The foot encased in a leather boot having a steel spring. a, a, the boot. b, a strap across the instep, which divides into two, marked c, c, one of which is represented buckled. f, a steel rod. g, a strap round the leg near the knee joint. d, k, a propelling spring fixed at i, and playing in a socket or staple at k. h, a common screw joint.

PLATE IV.

Fig. 1. A representation of *talipes valgus*.

Fig. 2. A representation of *talipes calcaneus*.

Fig. 3. A representation of ankylosis of the bones of the foot in *talipes varus*.

Fig. 4. The knife to divide the tendo Achillis.

Fig. 5. The knife of Little of London.

Fig. 6. A representation of contraction of the tendons of the hamstring muscles, combined with *talipes equinus*. a, fascia of the leg. B, inner hamstring muscles contracted. b, contracted tendo Achillis.

PLATE V.

Fig. 1. Represents Master James Brown's foot, before being operated on. a, an artificial bursa, on the outer or fibular side of the foot, on which he walked

Fig. 2. Represents the boot which was put on his foot, after three successive failures of operative proceedings by Professor Syme.

Fig. 3. Represents his leg and foot after being operated upon a fourth time, by Professor Lizars, and the subsequent proper bandaging, apparatus, and boot employed, as represented in Plate III. figs. 1, 2, 3, and 4, and described in pages 16, 17, and 18.

WORKS

BY

JOHN LIZARS,

LATE PROFESSOR OF SURGERY TO THE ROYAL COLLEGE OF SURGEONS,
AND LATELY SENIOR OPERATING SURGEON TO THE
ROYAL INFIRMARY, EDINBURGH.

1. PRACTICAL OBSERVATIONS ON THE TREATMENT OF STRICTURE OF THE URETHRA AND FISTULA IN PERINEO, THIRD EDITION, Illustrated with additional Cases and new Drawings of these Affections; with a copious APPENDIX, containing the Opinions of the most eminent London Surgeons and others, on the Perineal Section, showing that the operation has proved fatal in Edinburgh and London; thus giving a full account of the whole controversy upon the PERINEAL SECTION. Price 5s.

Extract from Medical Times, 12th April, 1851.

"A greater share of interest than usual attaches to this work, from the prominent part taken by Professor Lizars in the controversy respecting the propriety of adopting Mr. Syme's practice of making a long section through the perineum in cases of Stricture of the Urethra. That such an operation is not free from danger is now proved; that it often affords permanent relief is somewhat questionable. There can be no doubt, to any reasonable mind, it never should be thought of, if a moderate-sized catheter can be introduced into the bladder. Posterity will have to thank him for arresting in its bud, a practice painful of execution, of uncertain result, irreparable when once performed, and fraught with peril to the patient. We say to all who profess themselves surgeons, read the report of cases operated upon by Mr. Syme, published in an Appendix to the work here reviewed."

Extract from Medical Times and Gazette of 7th January, 1854.

"The third edition of a work already well known to the Profession, in which the method of treatment by perineal section has been made the chief matter for discussion. . . . Mr. Lizars has brought forward several additional facts, which show that the operation in question has not been attended with such good results as Mr. Syme would lead us to suppose. No less than ten cases are related where the perineal section had been followed by more or less untoward results—had failed in preventing the return of the disease, or had induced complications which rendered the patients worse than they were before the operations were performed. Of the results of some of these cases, Mr. Lizars has given pictorial illustrations of a somewhat extraordinary and amusing character. . . . As we have before stated, Mr. Lizars has most strenuously opposed that modification of the proceeding termed "Syme's operation," and he appears to have devoted much attention in finding out facts which tell against it. According to Mr. Lizars, profuse hæmorrhage, return of the stricture, perineal fistulæ, and death, have been, in a considerable number of cases, the consequences of this operation. . . . Mr. Lizars has treated the

patients themselves after operation, and has actually given drawings of some of the worst cases. The statements of Mr. Lizars serve to corroborate the opinion which generally prevails, that the perineal section, in cases of *permeable* stricture, is an unsafe proceeding—one which does not promise to be effectual, and therefore unjustifiable. . . . We repeat what we stated before, in reviewing the first edition of his book, that Mr. Lizars has done good, by showing the unfavourable side of the perineal section, and preventing its rash adoption."

Extract from Association Medical Journal of 6th January, 1854.

" 'The ordinary situation of a permanent stricture,' says Sir B. Brodie, 'is at the anterior extremity of the membranous portion of the urethra, just behind the bulb of the *corpus spongiosum*.' 'An operation, therefore, involving this portion of the urethra' (the membranous) 'in cases where the surrounding parts have not been consolidated is, no doubt, liable to give rise to the '*deplorable*' and '*pitiable*' results mentioned, and vividly illustrated in Mr. Lizars' work.' 'These observations have their full application to Mr. Lizars' work before us, which gives a full account of the whole controversy upon this subject' (the perineal section), 'which has lately so much agitated the profession.'"

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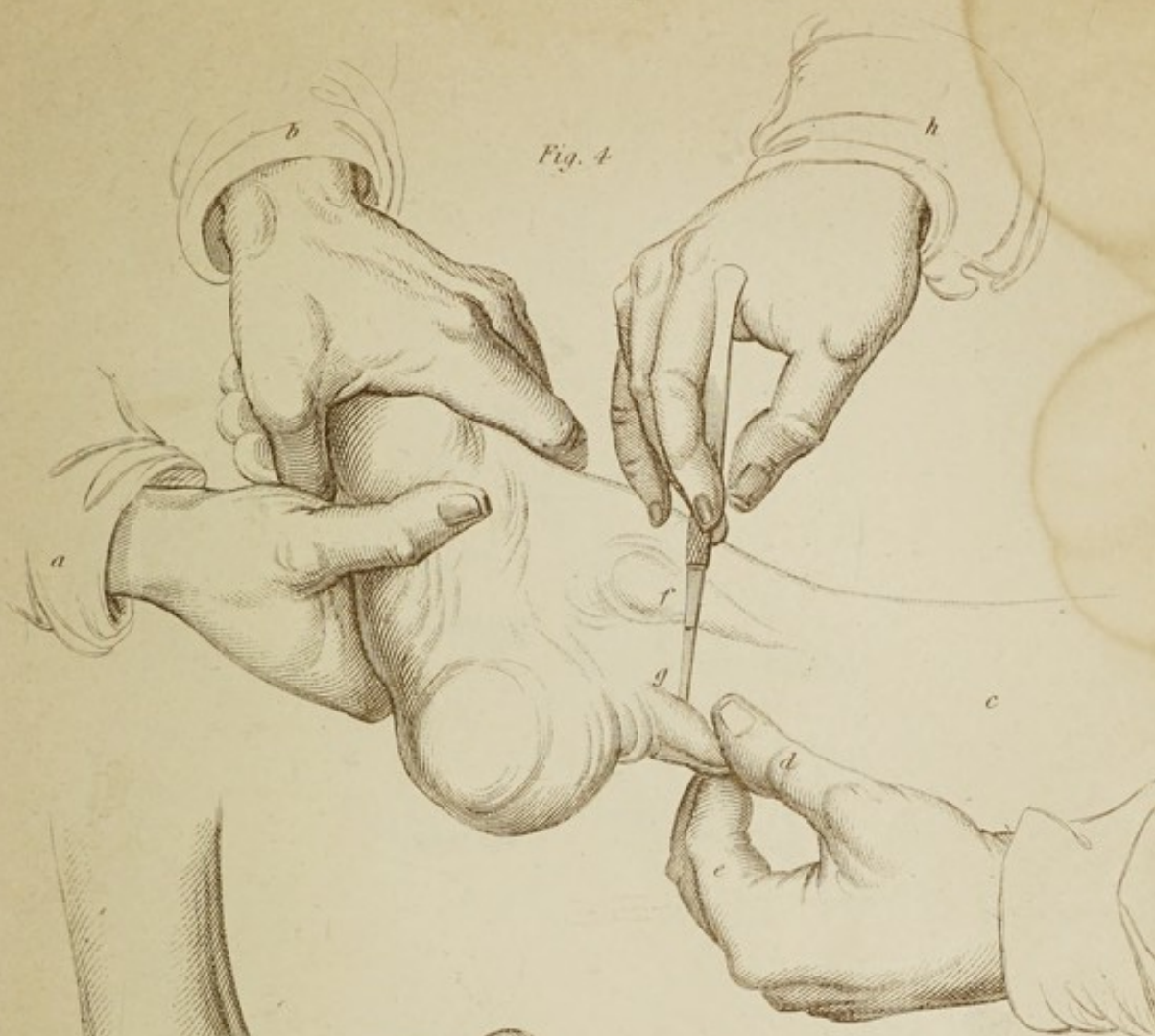


Fig. 1



Fig. 2

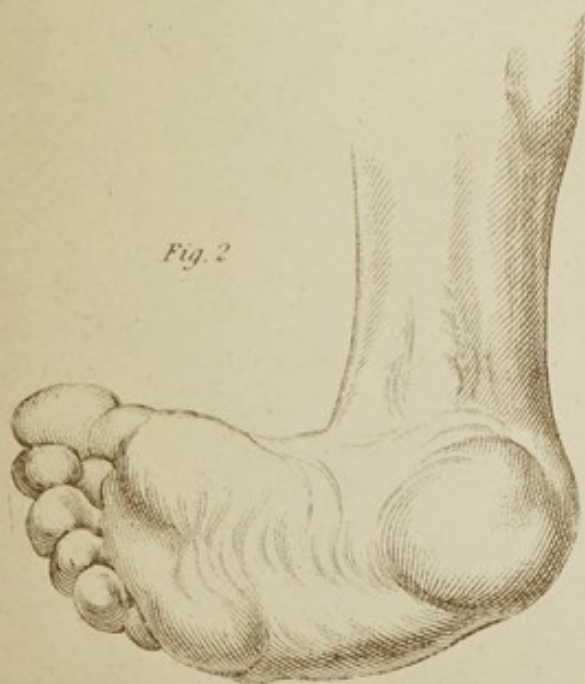


Fig. 3



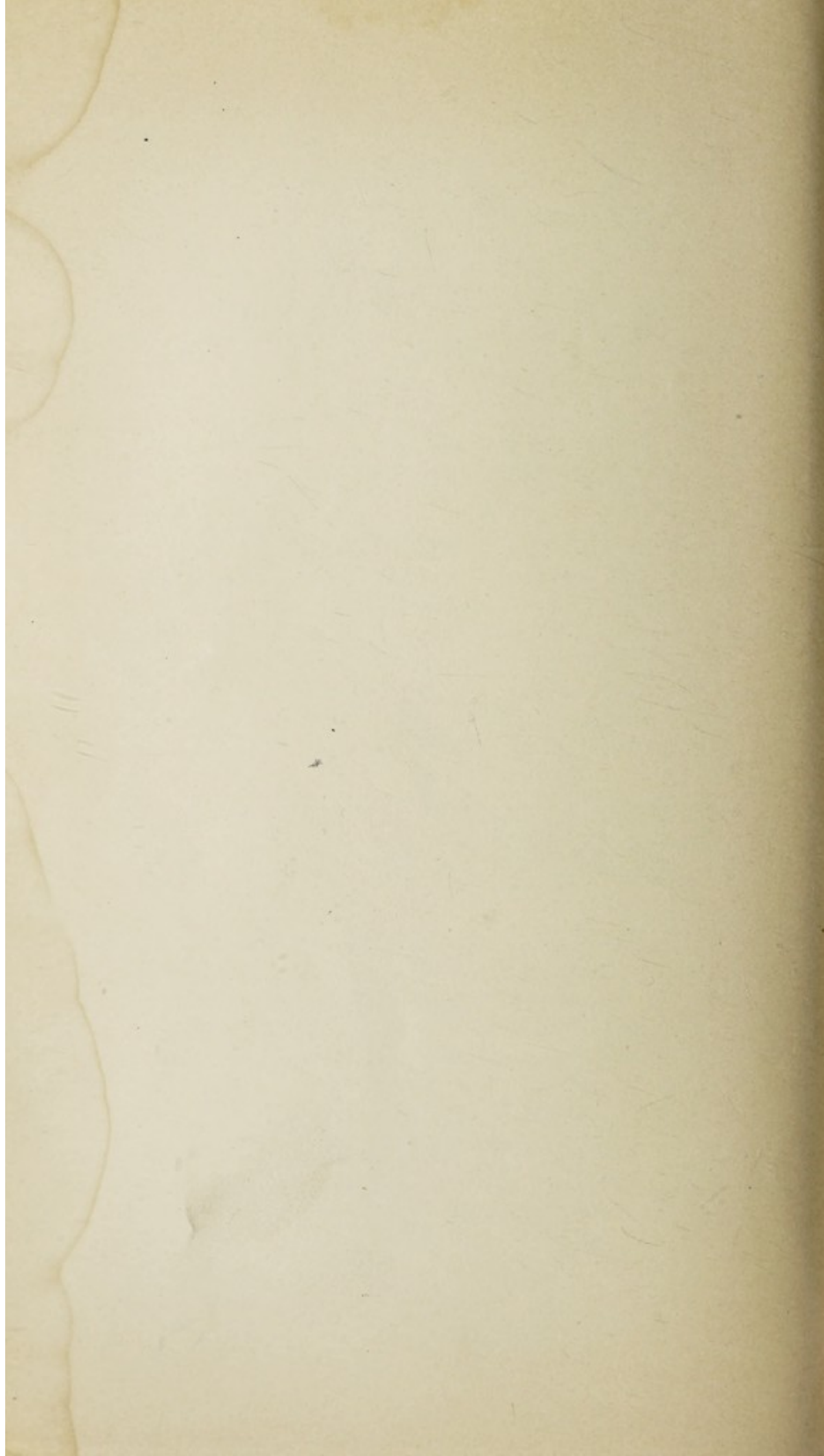
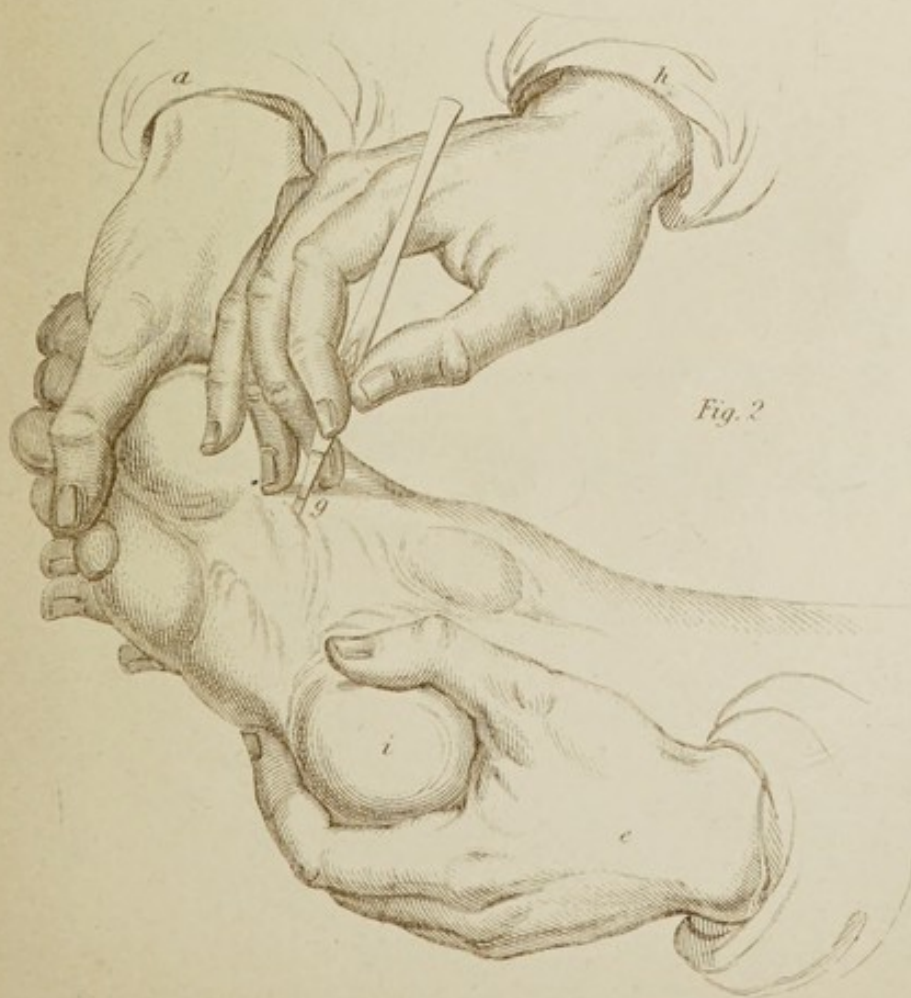
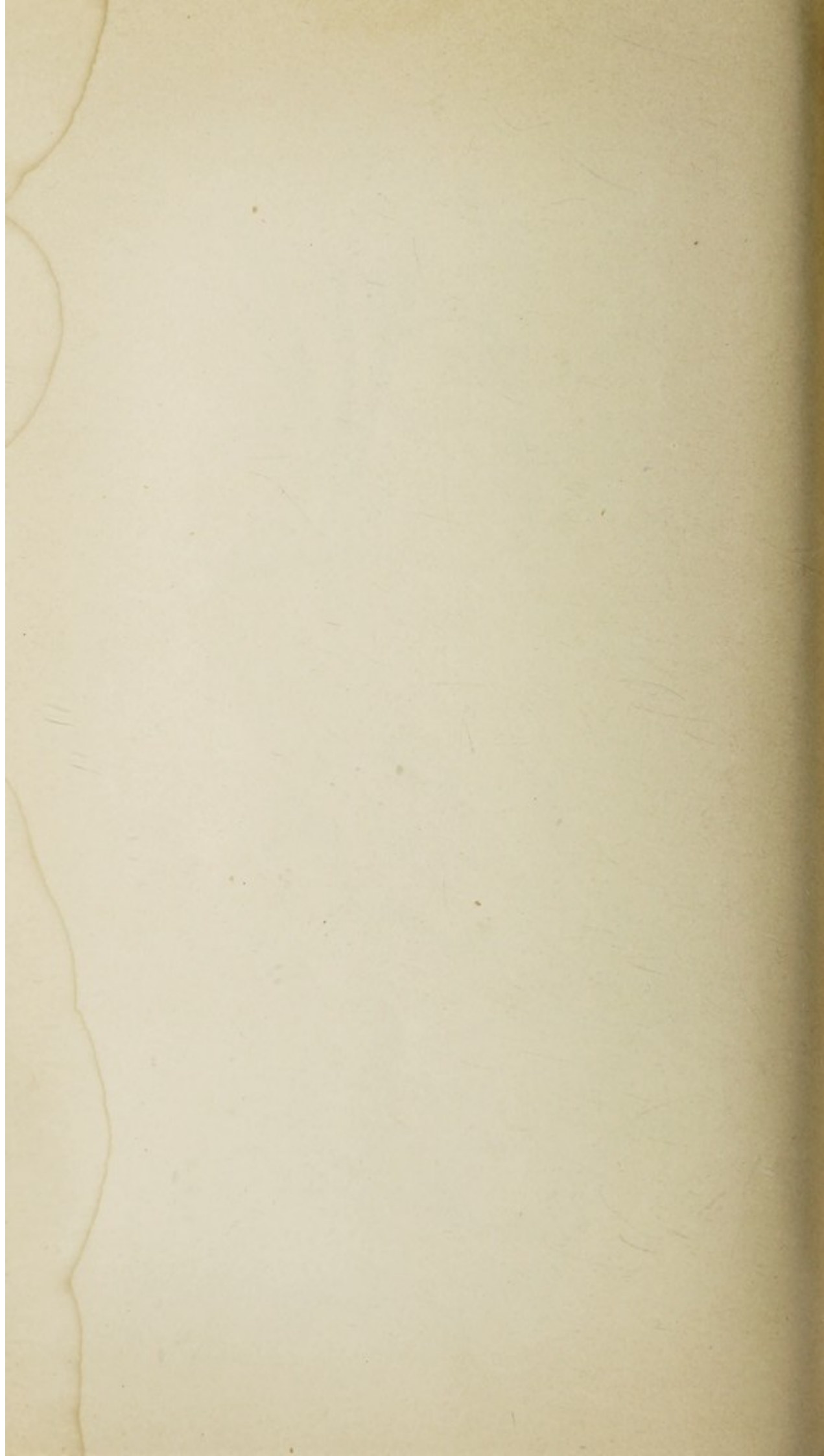


Fig. 1



Fig. 2





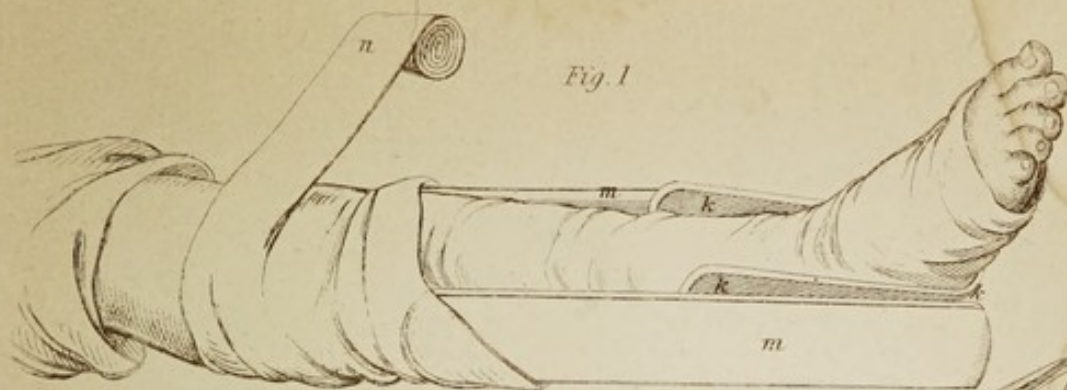


Fig. 1

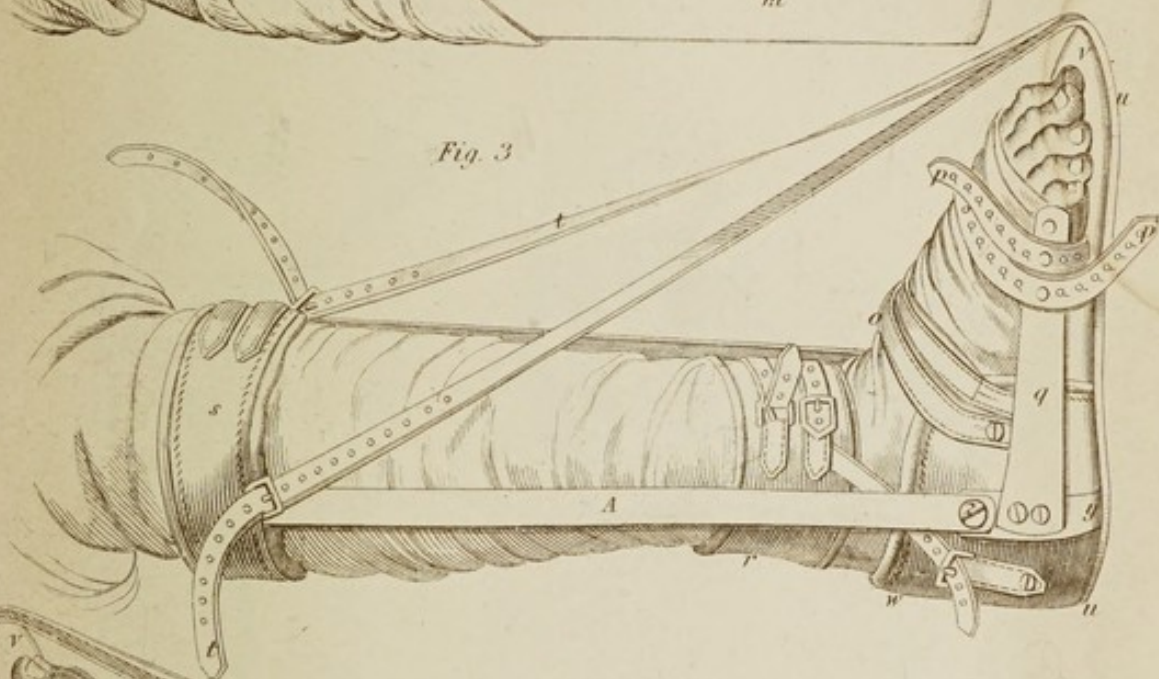


Fig. 3

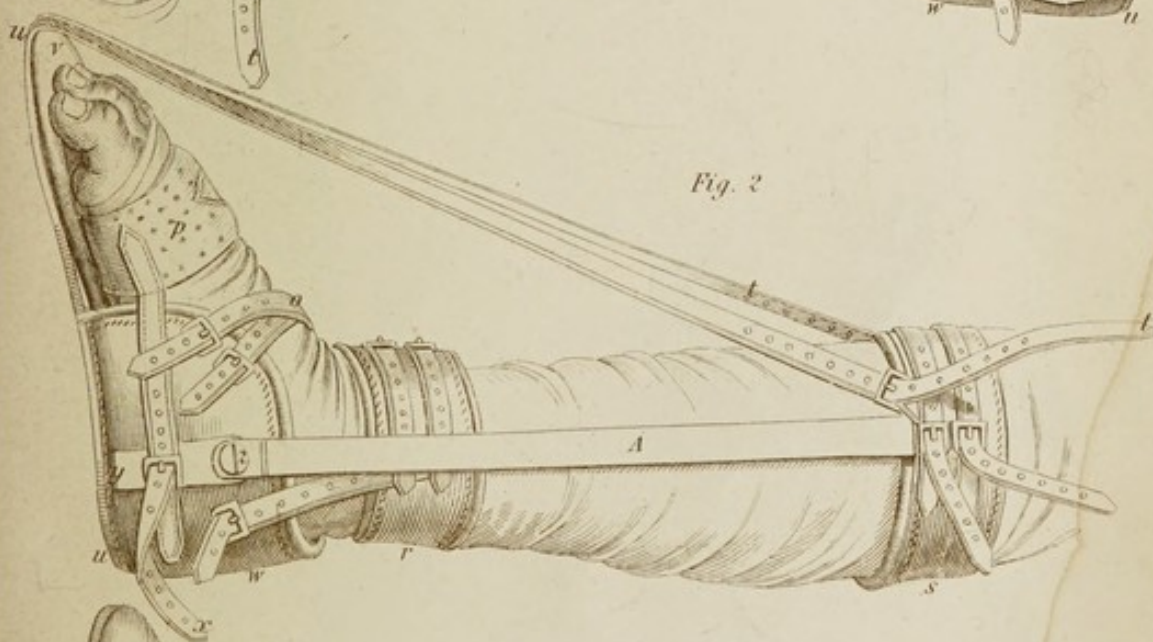


Fig. 2

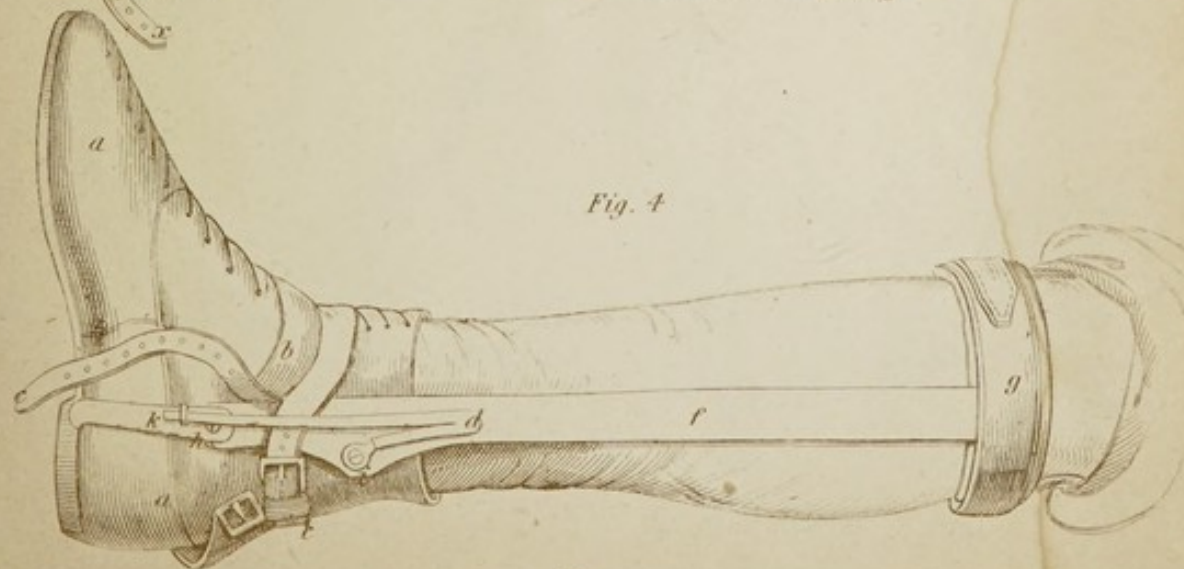


Fig. 4

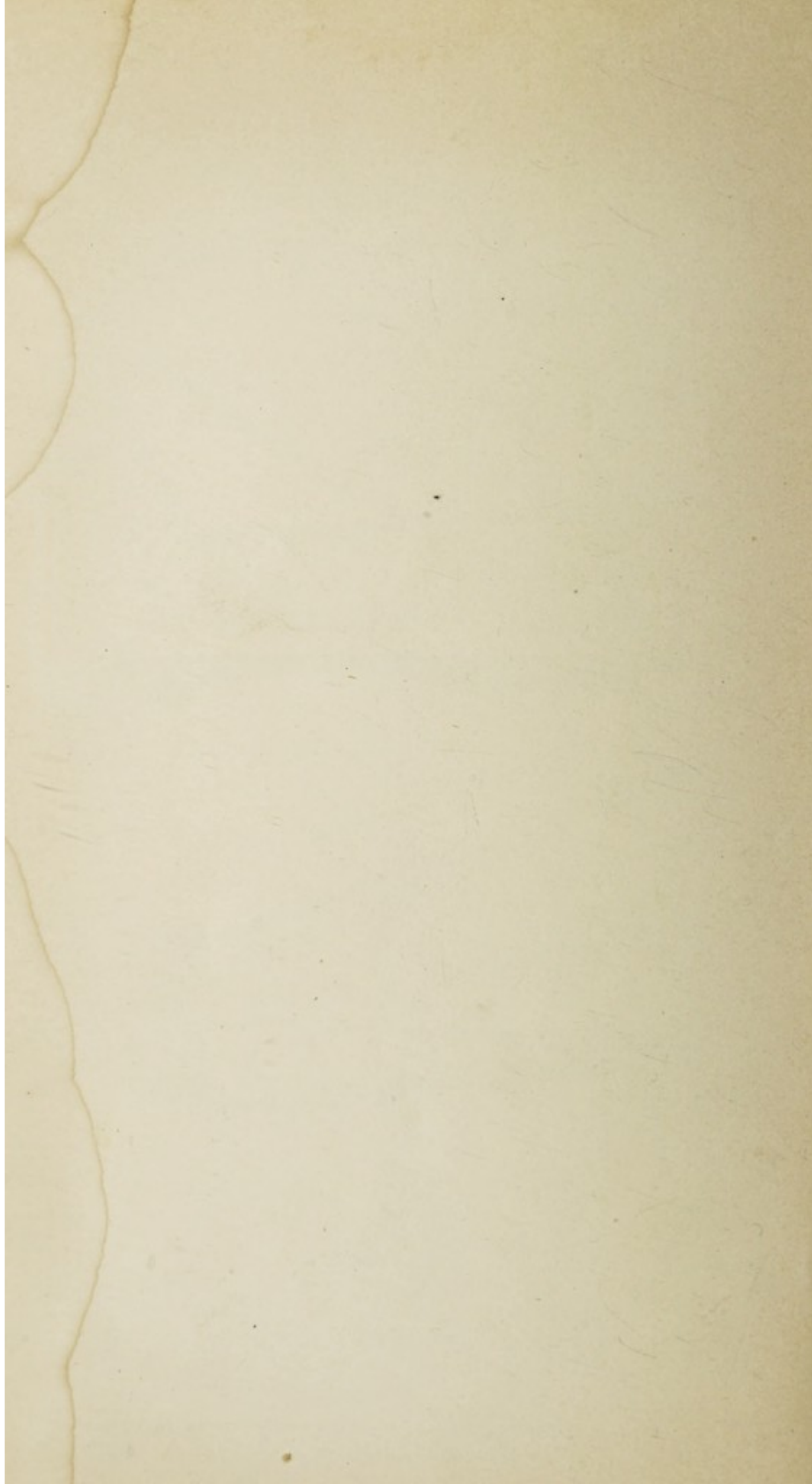


Fig. 4



Fig. 5



Fig. 3

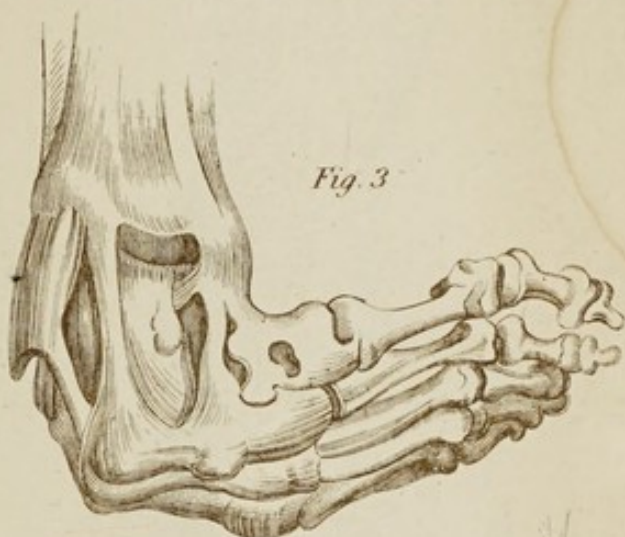


Fig. 1



Fig. 2



Fig. 6



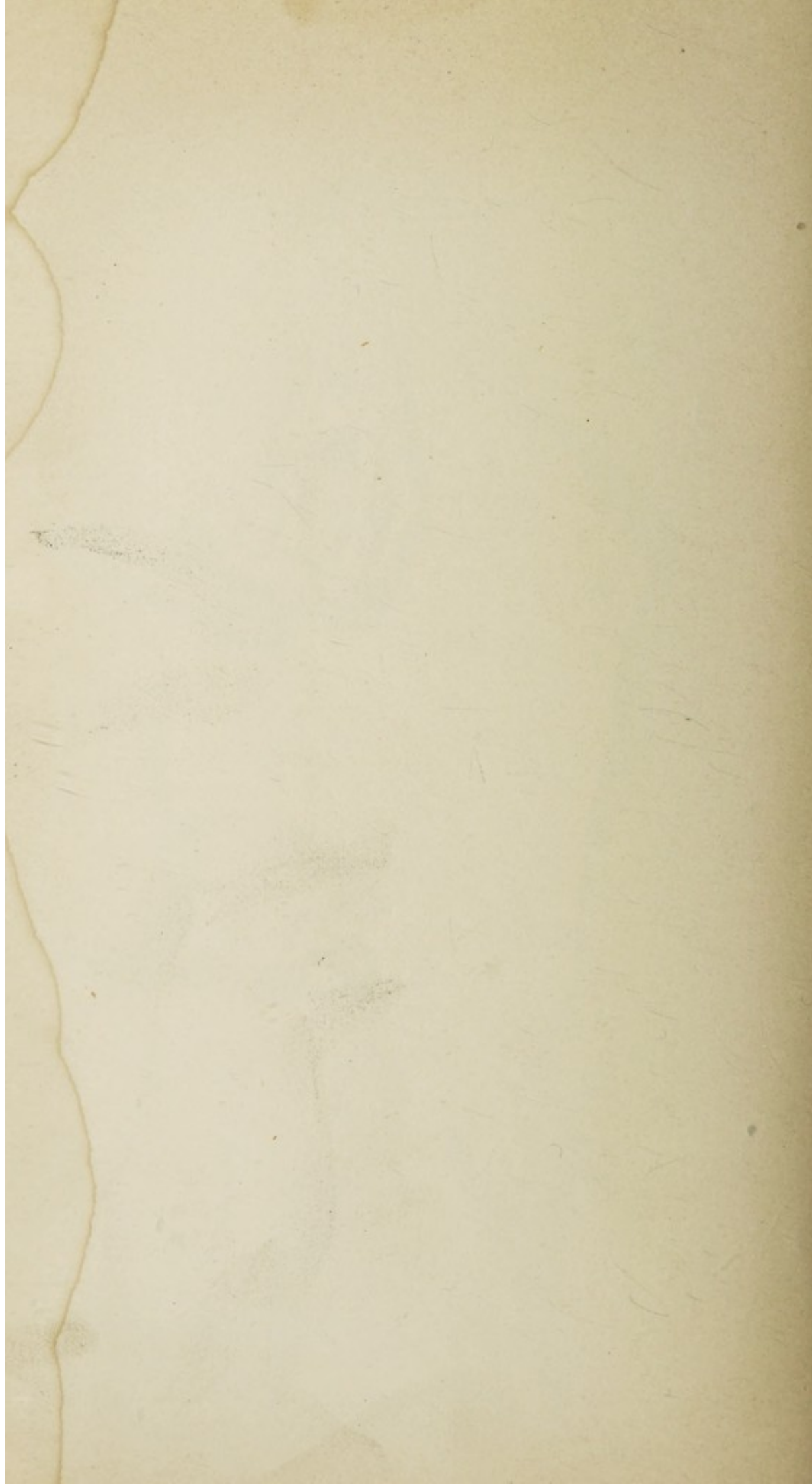


Fig. 1.



Fig. 3.

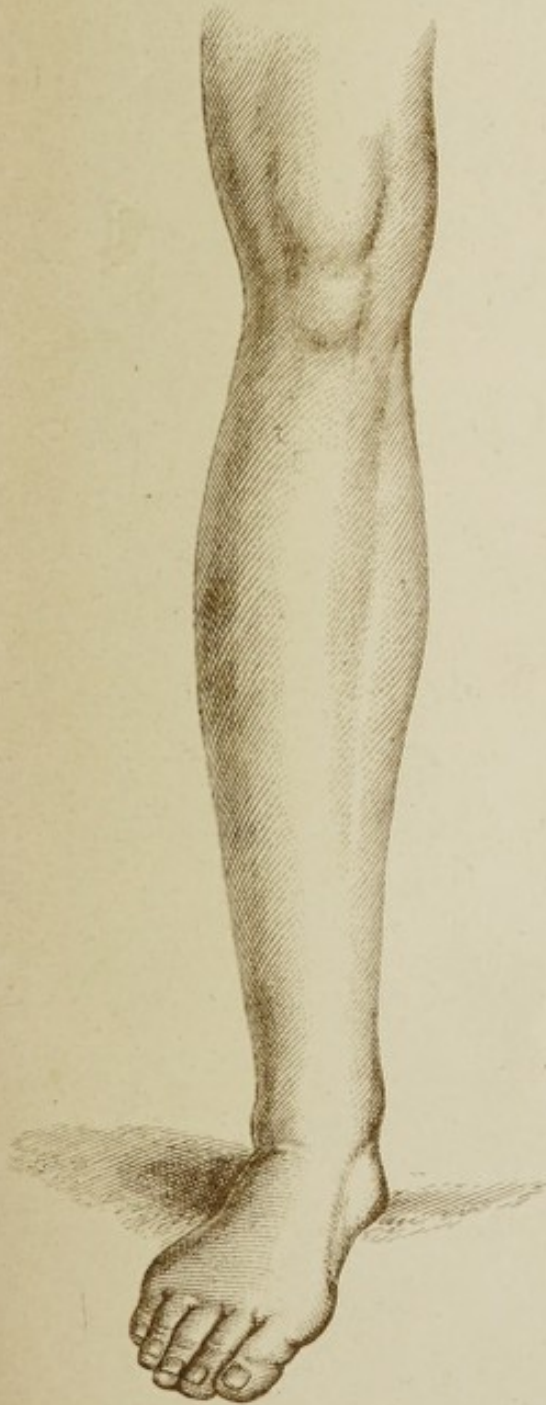


Fig. 2.



Fig. 1. represents the foot of Master James Brown, after having been three times operated upon by Professor Syme, and only the boot Fig. 2 put on.

Fig. 3. The foot of the same Boy, after having been operated upon by Professor Lizars; but the apparatus depicted in Plate III. figs. 1, 2, 3, and 4, employed. The case is detailed in pages 16, 17, and 18.

