who presented the extraordinary phenomenon of menstruating by the skin of the fingers, "per minimum manus digitum, et per annularem sinistræ manus, singulis mensibus sanguinem profundi, non copiosum, in religiosâ quâdem fœmina, cui natura menstruam purgationem per uterum dēnegaverat." Van Swieten, in his chapter headed, "Morbi Virginum," refers to a wonderful case in the following words:—"Mirabile aliud exemplum propriis oculis vidit Lacutus Lusitanus in virgine rustica, triginta et quatuor annorum ad quam a binis medicinæ studiosis adductus fuit, dum patiebatur periodicam sanguinis evacuationem, quæ menstrui fluores vices supplebat: vidit enim, *e pedis sinistri pollicis parte interna pulposa, juxta unguem, emanare rivulum sanguinis meri.*"

Believing that in almost all the cases in which this phenomenon is observed, the functions of the uterus are deranged, we must look upon it as in some respect dependent upon the deviation from the normal standard, and, as Dr. Neligan observes, direct our therapeutic measures to the restoration of the healthy function of that organ; but our experience now tells us that sometimes this does not suffice to remove the discoloration. In such cases we should follow the good advice given by De Mericourt, and which it would be well for the physician to keep steadily before his mind in the treatment of many diseases, "*la premiere indication est, à notre avis, de ne pas nuire et d'attendre.*"

ART. X.—*Critical Remarks on the Treatment of Fractures of the Thigh, and the Advocacy of "Butcher's Modification of Liston's Splint."* By RICHARD G. H. BUTCHER, Esq., M.R.I.A., F.R.C.S.I., Examiner in Surgery in the Royal College of Surgeons in Ireland; Surgeon to Mercer's Hospital; and Lecturer on Clinical Surgery, &c., &c.

HAVING experienced the greatest facility in managing the most complicated fractures of the thigh-bone by the application of the long splint, as modified by myself, I have no hesitation in referring to my former paper, published in this Journal^a, and appending such remarks and illustrative cases, bearing upon the subject, as may lead more forcibly towards securing its adoption. Besides, I am of opinion that the surgeon who has laboured hard, and with devotedness has endeavoured to concentrate his observation on particular practical

^a Dublin Quarterly Journal, February, 1853.

questions in surgery, jealously ponders over those conclusions arrived at, during the quieter hours afforded to him when released from professional duties. I, for one, believe, if further experience confirms those views, he is bound, as far as the truth with him lies, to sedulously guard, support, and maintain them. But, above all things, it is most imperative, where clinical instruction is daily carried on, and where numbers of pupils are assembled together to study disease at the bedside, as it presents itself, that right views should be inculcated, and that no narrow-mindedness on the part of him appointed to teach should subvert the facts, or divert their legitimate inferences.

An additional reason urges me to a consideration of the subject,—the doctrine set forth recently by the Professor of Clinical Surgery in the University of Edinburgh. It may appear an invidious task thus openly to assail the opinions of one so exalted at home, so enveloped and shrouded by the halo of his own greatness; but if any candid reader pauses for a moment, and considers the flagitious attacks hurled by this learned Professor at the opinions of every school except his own, then, probably, an efficient apology will present itself for departing a little from the prescribed rules of medical etiquette. Thus, for example:—

By the energy and indefatigable labour of one member of the Irish School of Surgery (I allude to the late Dr. Bellingham), we have had the treatment of aneurism by compression established and explained; the inferences which he arrived at being most conclusive, and the facts which he advanced and proved, so forcible, as to attract the notice of the most eminent in the British school of surgery, and receive their highest commendation, their sanction both by teaching and by practice. Indeed, in every class-book of the day, worthy of notice, the subject has been dealt with in the most liberal way, in the spirit of true philosophy. One example will answer my purpose; it is taken from a Scotch author. Thus, Professor Pirrie writes:—"It may now be said that this mode of treatment has received the approval of all leading surgical authorities, with the exception of Mr. Syme"^a. Mr. Syme's views are thus graciously and modestly expressed:—"So long as it is my sincere persuasion that ligature of the artery is preferable to pressure, for the cure of popliteal aneurism, I shall deem it my duty to pursue this method, *though it may not, perhaps, be the best suited for the lowest capacity of surgical skill.*" And again:—

^a Pirrie's Surgery, p. 533.

"Let every man act according to his powers; *but let no one who feels it necessary to choose inferior means throw blame upon those who are able to practise a higher exercise of their art*"^a. It will be admitted, I think, the arrogance of assumption and the insolence of invective are strongly conveyed by the words I have italicised.

But to return to the subject. We have a "Lecture on Fracture of the Thigh," delivered by Mr. Syme, and published in the "Lancet" for February, 1855; and also a paper on "Fracture through the Trochanters of the Thigh-bone," in the "Edinburgh Medical Journal," October, 1857. With the observations on each of these it is now my business to deal, and see how far they are in accordance with the tenets I have laid down. In the paper first referred to, Mr. Syme asks the question:—"Can anything be done by position of the limb (in case of fracture of the thigh-bone), as in the case of the leg?"—and after dwelling on the different sets of muscles accessory to displacement, arrives at the sage conclusion:—"All surgeons who have treated fracture of the thigh have experienced this difficulty, that there is no position that will relax the muscles; and, accordingly, various means have been resorted to for the purpose of counteracting them by extension."

He then proceeds to animadvert upon the several appliances used by surgeons to effect this object, and concludes thus:—"I have no hesitation in saying that, however heavy be the jackstone of Hildanus, or however firmly the patient be tied to the long splint, none of these means can prevent muscular contraction if the tendency to it continue; and if you obstinately persevere in combating muscular contraction with the long splint, you will incur the risk of ulceration of the skin of the perineum, or mortification of the foot." Mr. Syme then asks, "Is the treatment of fracture of the thigh therefore hopeless?" and he proceeds to lay down a method of treatment which, in some instances, as we shall see presently, may be harmless, but in others must be ineffective and ruinous. I perfectly agree with Mr. Syme, that the thigh cannot be placed in any position which will relax all its muscles, but I quite differ with him as to the power which extension exerts in overcoming muscular action. There is, I would say, no other means in this special form of fracture by which the tendency to spastic contraction can be subdued. Surely the expressions of Mr. Syme convey no sensible meaning; he says:—"Do not trust to overcoming muscular contraction by extension, but seek to prevent it by

^a Edinburgh Monthly Journal, February, 1847, pp. 569, 570.

careful adjustment of the broken bone and equable support of the limb in the proper position." The learned Professor seems altogether to have forgotten the contending force, the muscular contraction; and how the victory 'of careful adjustment of the broken bone' is to be achieved, without first subduing it, can only be answered north of the Tweed. The first instance adduced in this paper to illustrate the position is but a poor example, and one which in reality does not bear at all upon the difficulties to be encountered in the management of fractures of the thigh-bone. The case to which I refer, is that of a boy only "ten years of age, and the fracture situated in the upper third of the thigh;" we are told nothing about the amount of shortening,—nothing with regard to the direction of the fracture, or the force which produced it. Again, we should remember that at this early period of life the fracture is usually transverse, that muscular power has little to do with displacement, and, therefore, we can readily understand how that in this instance the ends of the broken bone, when drawn from their abnormal position, probably thrust there by the fracturing force, being supported laterally and around in their normal relationship, mutually afforded support one to the other. Such being my reading of this case, I can easily comprehend how Mr. Syme might "admire the tranquillity of the patient and the completeness of the cure."

I am quite certain that the picture represented here will not convey itself to the mind of the practical surgeon accustomed to treat fractures of the thigh-bone in the adult, powerful man, who probably before the accident was a perfect specimen of muscular development. Oh! no: let the accident take place in this strong man; let the shaft of the thigh-bone be broken in its middle; let the solution of continuity be, as it is found to exist at this time of life, oblique in its character; see the limb shortened from four to five inches, the thigh a distorted, shapeless mass, measuring in its bulky circumference nearly equivalent to its length; see it rigid and motionless, and directed outwards; the integuments discoloured from torn-up and ruptured vessels, and the effusion of their contents; hear the apprehensions of pain, the suffering of the man when spasms seize upon and convulse the muscles, irritated by the sharp spiculæ of the broken fragments,—I would ask any hospital surgeon could he confirm Mr. Syme's report, "that the treatment is extremely simple and uniform." Certainly that laid down by the learned Professor is simple enough:—"Draw out the limb to its full length; then apply at each side of thigh a splint of wood, pasteboard, or leather, extending on the

outer side from the knee to the great trochanter, and on the inner side from the pubis to the inner condyle; it is of little consequence which of these materials be used;" these are to be retained by "looped bandages;" "three or four such looped bandages are applied along the thigh, three being sufficient if the splints be of wood, while an additional one is desirable with leather or pasteboard, on account of their softness at the time of application;" "the spasmodic action of the muscles is continued, in consequence of their being pricked by the sharp ends of the broken bones;" then, as a means of preventing motion of the joints, Desault's splint is laid along the outside of the limb, and retained by a mode which I shall notice presently.

I admit that when the fracture is transverse, probably such mechanical means will be sufficient; but I confidently deny that these two splints can possibly retain the broken fragments in their proper position, however accurately they may have been reduced by extension, and coapted, not only in cases similar to that to which I have adverted, but even in the generality of those occurring in the practice of every surgeon; the very fact of the softness of the material, leather or pasteboard, used in the splints, and indiscriminately recommended, requiring an additional looped bandage for their sustension, proves that the due support cannot be afforded by this method of management, even until Desault's splint is applied along the limb, after a method, as Mr. Syme says, "powerless as a means of overcoming muscular contraction." The faultiness of this entire adjustment of the fracture, from beginning to end, is absolutely proclaimed by Mr. Syme himself, for he says:—"The spasmodic action of the muscles is continued in consequence of their being pricked by the sharp ends of the broken bones;" a condition that will seldom or never maintain, I believe, if the separated fragments be properly coapted. The very method used by this gentleman in retaining Desault's splints in position by means of a sheet, is both clumsy, unsurgical, and defective in affording that equable support to the limb throughout its extent, so salutary in quieting muscular twitchings, and favouring returning circulation. The objection urged against the use of rollers, namely, "though they look very neat when first applied, they soon require re-application," only applies when they are badly put on, and therefore goes for nothing. This I shall presently more forcibly point out, by showing I have had them retain their position for weeks. Mr. Syme continues:—"This apparatus has also the great advantage that it can be ob-

tained extemporaneously; there are few patients, rich or poor, whose houses do not contain a piece of wood that would answer for a long splint, and a sheet or table-cloth to wrap round it." By investigating the matter it will be seen that the poverty which can afford to Mr. Syme those requisites that he demands for adjusting the limb, will be sufficient to offer the same so that by my method a more efficient appliance of them may be made.

A remarkable case is next cited by Mr. Syme, as tending to show the inapplicability of the long splint in a certain form of displacement, when the convexity occasioned by the fragments of the thigh-bone is directed backwards. Thus he writes:—"A man was once brought to this hospital with a simple comminuted fracture of the thigh, for which the long splint was applied; the patient, however, obtained no relief from it, but suffered such extreme agony that it made him even get out of bed and drag the splint after him. I confess he met with but little sympathy, being supposed to be affected with delirium tremens. After a while, swelling of the limb came on, followed by ulceration and protrusion of bone in the ham, and I was obliged to amputate the thigh. On examination of the parts, we found that the fragments, instead of forming, as usual, a convexity forwards, projected backwards; and one fragment, as sharp as a needle, had penetrated the popliteal nerve, and obliterated the vein, so that the extreme pain and the swelling of the limb were both accounted for." Now, I ask candidly, is not this case a perfect exposition of the imperfect application of the splint? It is quite clear, if the proper extension and counter-extension, not only essential for the adjustment of the broken fragments, but likewise for maintaining them in position, had been kept up, so unfortunate an occurrence as "protrusion of the bone in the ham" could not have taken place. It is also not impossible to conceive that by due tension upon the part, the "fragment that penetrated the popliteal nerve" may have been set free; but be this as it may, I have no hesitation in stating, if the two forces had been brought properly to bear upon the limb, that the unusual direction of the fragments backwards would have offered no impediment to their reduction; while the long splint, if applied after the principles I have laid down, would have assuredly maintained them in their proper axis, and probably have averted the calamitous result—amputation.

I have determinedly stated that the direction of the fragments backwards in "comminuted fracture of the thigh" is amenable to treatment, by the modification of the long splint

which I employ; and, in proof, shall extract from my case-book the following particulars of an instance of fracture of the thigh-bone, as unpromising, and offering as numerous and serious impediments in its treatment, as any ordinarily met, besides presenting the displacement adverted to.

CASE.—A young man, aged 28, of low stature, but of powerful frame, was returning from a fair in the north of Ireland, having purchased several valuable horses. He was having them conveyed by train to Dublin, and superintended their management. As the train passed along, some sparks from the engine blew into one of the horse-boxes, and fired the straw; the animals began to kick and plunge furiously; so, in order to release them from suffering, and to save his property, the young man jumped into the box, and had just succeeded in putting out the fire, when one of the animals lashed at him with both hinder feet, striking his right thigh in front, and smashing it to pieces. In this condition he lay huddled up in the corner of the box, suffering extreme agony, afraid to move, and thus he continued several hours until the arrival of the train in Dublin. He had no way of communicating his sufferings, and had no mode of escape. I was called to see him late at night, and with my former pupil, Dr. Daniell, proceeded to the place. I shall transcribe verbatim the entry in the case-book. The patient was screaming with torture as he lay extended upon the bed. Many anxious friends were endeavouring to restrain him in the recumbent position. Having slit up the boot and trousers, and removed all his clothes, the following distortion was present:—The anterior configuration of the limb was such as I had but seldom before witnessed; it was a large, bulky, rounded mass; there was an indentation in the front, forming a well-marked concavity, while behind, and somewhat towards the outside about the centre, was the apex of a very remarkable convexity; the leg and foot were everted and motionless, until at times spasms would convulse the thigh, and drag upwards this hanging, almost lifeless portion of the member; these spasms were quick in production, oft repeated, and distortive. On seizing the thigh above and below the fracture, the leg being controlled by my very intelligent assistant, the solution of continuity was evident by the free motion permitted laterally about the centre of the femur; antero-posterior movement was more limited, and the cause was readily accounted for by the direction of the upper and lower fragments of the broken bone being thrust backwards, and from their having passed each other. Besides these two continuous portions of the bone, numerous fragments were

broken up in the vicinity, evidencing the violence by which the mischief was occasioned; in other words, there was incontrovertible evidence as to how wide an extent the bone had been shattered; and this, in some measure, accounted for the extreme shortening of the limb. I have said in some measure, because, independent altogether of the comminution of the bone, the upper and lower fragments were thrust widely beyond each other, and hence the great difficulty in reduction.

On measurement, the thigh was found to be nearly five inches shorter than the sound one; to add to the deformity, blood was extravasated in large quantity all through the site of fracture, and along the upper third of the thigh: besides this, in many points small bullæ had made their appearance, owing to the intense heat to which the limb was subjected by the burning straw having set on fire the right leg of his trousers and drawers.

In this case, as well as in many others which I have met with, the reduction of the fracture is a long, tedious process, to be obtained only by gentleness: the difficulties to one inexperienced in such matters appear at first insurmountable, and, indeed, often the necessity for prolonged, continuous traction might shake the confidence of the operator, were it not steadied and based on sound principles. In the instance before us, the man being very muscular, and in the prime of life, the difficulties met and contended against were extreme: it required four strong men, relieving each other, to keep up a gentle, steady, even traction upon the limb, and that continued for over twenty minutes before the bones were reduced, and the limb restored to its proper axis. Such being accomplished, I applied the long splint, as modified by myself, subjected to each and every precaution that I have insisted upon in my published directions. In accordance with the rules which I have laid down, after the adjustment the patient was removed to a bed prepared as I have also described in the management of these cases. Immediately after, the man was unbounded in expressions of gratitude; he was perfectly released from the torturing apprehension of the frequently recurring spasms; he rested in peace, free from all pain. Large opiates and warm wine were freely given throughout the night, as the nervous system had sustained great shock and alarming derangement. The patient was sedulously watched day after day, lest the mechanical appliances should create pain or excoriation, but no such thing. Carefully and efficiently applied at first, it did not require alteration or removal until the 14th of October,

six days after its application, and, but for the irritable state of the skin occasioned by the burns, there was no necessity for disturbing the splint.

The report on the 25th is:—Patient doing well: no requirement for interfering with the splint; the full length of the limb steadily maintained.

On the 28th readjusted the splint. Limb full length; the carded wool has been salutary in healing all abraded parts; ecchymosis rapidly disappearing. The splint was not again changed until the 11th of November, when the broken fragments were found in admirable position.

On the 30th of November the splint was removed altogether, the union of the broken bone having been perfected. The patient, intolerant of restraint, would not submit to longer restriction or confinement to bed. The length of the limb was most perfect, and preserved almost in its entirety. The most careful measurement could not detect more than a quarter to half an inch shortening, though the comminution of the bone at the site of fracture, as already dwelt upon, was considerable.

In the several adjustments of the splint, and in the institution of the measurements, I was always assisted by my pupil, Dr. Daniell, who for many years was accustomed to observe and assist me in the management of similar embarrassing cases under my care in hospital. On the 1st of December the man moved about on crutches, and immediately after proceeded to England.

I shall now make a few observations relative to the applicability of the long splint in the treatment of fractures of the thigh bone in early life and in childhood. In the paper to which I have referred, written in 1853, I made no mention of cases treated at this tender age, not because they did not come under my observation, but simply from the fact of their comparatively easy adjustment. To illustrate the treatment of fractures of the thigh bone I selected, from amongst many, the most intractable cases in adult life, implicating different parts of the member, as recognised by anatomical nomenclature. I will not deny the fact that I have met with some troublesome cases of fracture of the thigh in childhood, with considerable obliquity in the line of solution of continuity in the bone, and rest confident that such could not be treated satisfactorily, or restored to their normal length, except by the application of the long splint, according to the method which I have laid down. I shall record a few instances to illustrate this statement; I shall narrate them as entered in my case-book.

CASE I.—William Carey, aged eleven years, admitted into

Mercer's Hospital, under my care, June 1, 1854. He was thrown down by a car, and in the fall his right thigh was broken in the centre. The solution between the fragments very oblique, and shortening to an amount of two inches and a half; limb very convex externally and anteriorly; by gentle and continued traction restored to full length, and the long splint applied according to the precautions which I have written about.

June 3rd. All spasms checked; no pain or inconvenience from the constraint of the mechanical appliance.

13th. Readjusted splint; limb preserves its full length.

26th. Reapplied the splint; limb as at last report.

July 15th. Removed the splint; union perfect; not the slightest excoriation at the parts particularly subjected to pressure, and not the least shortening.

July 18th. Dismissed cured.

CASE II.—William Lord, aged twelve years, admitted into Mercer's Hospital October 14, 1854. He was holding on behind a cab, and in his struggles to retain his place his left thigh got in between the spokes of the wheel and the bone was broken below its centre. The amount of shortening here was nearly three inches; the fracture was exceedingly oblique, and there was no comminution of the bone; so sharp was the upper fragment that it lay close to the integument in front, and it was difficult to conceive how it was not thrust through the soft parts, rendering the injury compound. I was summoned at once to see the child, so extreme was the shock, even endangering life. After resuscitating him by stimulants, &c., I at once restored the fragments to their natural relationship, and applied my own splint.

October 16th. Reaction was fully established, and the limb in admirable position. The child complained of no pain.

19th. No pain; no necessity for the splint being disturbed.

25th. Report same as last.

November 6th. This day readjusted the splint for the first time since the child's admission; thigh bone preserves its full length.

15th. No pain or annoyance from the constraint adopted.

18th. Removed the splint altogether; union perfect; no shortening.

24th. Child dismissed cured.

I have intentionally selected those cases from amongst many others, occurring at a period before Mr. Syme's lecture appeared, and shall confine myself to the two to illustrate the particular point, the facility with which even oblique fracture of the thigh bone can be rectified by permanent extension when

judiciously employed. I shall also take from my case-books a few instances dated even at an earlier time, to show with what facility fracture of the thigh bone may be managed in the child, when the solution of continuity is in the transverse direction that most frequently met with during this period of life.

CASE III.—Patrick Carroll, aged ten years, admitted into Mercer's Hospital, under my care, September 28, 1853. While playing with his school-fellows he was thrown down, and his right thigh fractured a little below its centre; the deformity was not very great, but the leg and knee rotated outwards. On examination, the bone was detected broken transversely; the parts were easily reduced, and the long splint at once applied, affording the greatest relief and immunity from pain.

The splint was not readjusted until the 9th of October, and the fracture was in excellent position.

October 27th. Limb remains free from pain; no necessity to disturb the apparatus.

31st. Removed the splint; union of fracture quite firm; length of limb perfectly preserved; reapplied the splint; to remain for a few days longer, as a matter of safety; and began gentle motion of the knee and ankle.

November 10th. Dismissed cured, with the motions of the knee and ankle entirely restored.

CASE IV.—Daniel Mooney, aged fourteen years, admitted into Mercer's Hospital, under my care, February 20, 1851. The boy was running along a plank which was considerably elevated, he slipped off and fell to the ground, a height of about four feet; when taken up, it was ascertained, even by the bystanders, that his right thigh was broken. He was at once carried to the hospital, and the right thigh pronounced fractured at its centre. The separation in the bone was transverse, and there was but little deformity; spasms were annoying, but were instantly checked by the application of the long splint, which I adjusted at once. On the 24th the splint was reapplied, when the limb was found to preserve its full length. The splint was not changed again until the 17th March; and afterwards, on the 22nd of the month, at this date, the femur was quite firm, and the thigh presented its full length. On the 27th the splint was laid aside altogether, and the motions of the knee and ankle commenced, in a few days after the child was sent home cured.

I consider it quite unnecessary to enumerate any additional cases in proof of the assertion which I have advanced; and with regard to the "displacement" commented on by Mr. Syme, "the tilting of the upper fragment forwards by the action of

the psoas and iliacus," it but rarely occurs, but more especially at this early period of life; and even when it does, it is quickly and certainly subdued by gently applied pressure and continued permanent extension. In my paper on Fractures of the Thigh Bone, to which I have referred, I have dwelt at some length upon this special deformity when occurring in the adult, and pointed out by demonstration both its occasion and the method of its control. I can quite understand how Mr. Syme may have had success in the management of fracture of the thigh in children, even in the application of the long splint as imperfectly adjusted according to his directions. The solution of the question is afforded by the positions which I have dwelt upon: the comparative frequency of the fracture being transverse; the feeble vigour of the muscular system as a distorting force, and the facility with which it can be overcome; and the practical lesson known to all surgeons,—how that if deformity should occur at this tender age, even though the limb be considerably shortened, yet after some time all trace of the irregularities will be removed, so that the ignorant surgeon might begin to congratulate himself upon the superiority of his mode of treatment, while in reality nature has secured the successful issue. This is certainly a happy consummation for Mr. Syme to be aware of, and to dwell upon, in the management of oblique fractures of the thigh bone in childhood: as to transverse fractures, the simplest means will rectify them; but, unhappily, nature's efforts will prove abortive in rescuing the surgeon from annoyance, disappointment, and disgrace, and the patient from deformity, when oblique fracture of the thigh has been sustained at a more advanced period of life.

The example adduced by Mr. Syme, in his paper published in the "Edinburgh Medical Journal" for October, 1857, is, I consider, equally defective in substantiating his views. The case is one of "fracture through the trochanters of the thigh bone." The line of separation was similar to that which the late Mr. Guthrie had the merit of showing might cause inversion of the limb. Mr. Syme is, I conceive, deeply in error when he writes:—"In cases of eversion it is impossible to discriminate with certainty, by external examination, between these two conditions (alluding to fractures within and without the capsule); but when the toes are turned inwards, there cannot be any doubt as to the fracture admitting of complete recovery." From this sentence it would appear that Mr. Syme is satisfied with Mr. Guthrie's explanation as applicable to every case where inversion takes place, but inversion of the limb may take place when the fracture is intra-capsular, as re-

corded by Dupuytren, Cruveilhier, Hanby, Elk, Smith, Malgaigne, and others. No doubt, all these great authorities differ in some particulars as to an explanation of the matter, but the fact remains, and sweeps away Mr. Syme's axiom in reference to inversion, *per se*, as comparatively of little value in influencing the prognosis.

Having diagnosed the accident, Mr. Syme continues:—"In regard to the means of treatment, there does not appear to be any room for choice, since the one unquestionably most comfortable to the patient, and most conducive to the end in view, is the long splint of Desault; it was employed in this case with such success, that the patient left the hospital without there being almost any appreciable difference between the limbs by external examination." I am quite sure that in this instance there could have been no shortening of any amount from beginning to end, no more than what was present when the patient left the hospital; if there was, from the manner in which the splint was put on, and from the intentions which guided the surgeon, it must have remained permanent to the end. I am certain that there could have been no amount of shortening after the accident; and if any proof were required, it is afforded by the reiterated statement of Mr. Syme, "that the long splint is not required to maintain extension, and that the good effects produced by it depend entirely upon the prevention of motion in the limb." The "same details" about the adjustment of the fracture that I have already dwelt upon are again urged in this recent production.

Every surgeon must have met with cases of transverse fracture, or nearly so, through the trochanter, when very little shortening indicated the nature of the injury; such a case, for instance, as the following might be satisfactorily managed by laying the long splint to the outside of the limb, and binding it there according to Mr. Syme's directions:—

CASE.—Margaret Cavanagh, aged 65, admitted to Mercer's Hospital, under my care, February 23, 1855. She was struck violently on the right hip by the wheel of a car passing rapidly by; she was thrown to the ground, and unable to rise without assistance. She was soon brought to the hospital, and on examining carefully the limb, it was found to be broken transversely through the great trochanter. The limb lay very nearly in its normal position upon its posterior surface, and neither rotated inwards nor outwards; the amount of shortening was not more than half an inch; there was fulness in front over the seat of injury, and fulness behind the trochanter from extravasation of blood when the force was applied;

the least motion induced great pain, and in lifting the limb gently from the bed, the solution of continuity through the trochanter was marked; the slightest inversion or eversion of the shaft of the thigh-bone elicited crepitus. I applied my own splint, but there was here no difficulty to contend against in the adjustment of the fracture. The splint was not disturbed until the 16th of March, and there was neither abrasion nor pain complained of; on the 25th readjusted, and union far advanced. On the 6th of February I removed the splint altogether, the union being quite solid. On the 15th she could elevate and rotate the limb inwards and outwards without pain; and on the 20th she left the hospital able to move about with the assistance of a stick. Other cases of fracture present themselves, however, in this vicinity, and will demand the most strenuous exertions on the part of the surgeon, and the most perfect extension, to secure the limb in its full length after union. The following case will illustrate the point:—

CASE.—Arundell Ward, aged 36, admitted to Mercer's Hospital on the morning of June 8, 1855. She was drunk at the time, and was violently thrust off the foot-path by a man, and she was pitched with great violence upon her right hip. She was brought to hospital on a car, and after being placed in bed and stripped, the following were the appearances: limb shortened to one inch and three-quarters, and everted; the trochanter was not so prominent as upon the opposite side; and it was nearer the crest of the ilium; the transverse width of the thigh above was considerably increased. On fixing the pelvis evenly, and steadying it on the bed, and extension being made, crepitus was elicited audibly, and repeated upon rotation of the limb inwards; great pain on rotatory movement; the trochanter did not travel in its full arc of a circle, not more than half its usual extent; neither did it rotate, as it were, upon a pivot; the line of separation, in fact, could be felt traversing the great trochanter obliquely. The limb was put up at once with Liston's long splint, and I had great difficulty in overcoming the spasms, and restoring the bone to its full length. Liston's splint was put on because I had not one of my own splints disengaged. I ordered a full opiate, to be repeated at intervals. On the following morning, the 9th, she complained a good deal of the pressure round the ankle from the extension, and more particularly of the heel, when it rested upon the bed. Having procured one of my own splints, I applied it in place of Liston's, and with the greatest comfort to the patient; a few turns of the screw

raised the heel from the bed, and delivered it from pressure. I did not find it necessary to readjust the splint until the 14th of July; of course the perineal lac was changed several times, strictly in accordance with the directions which I have given. According to the same rules, the splint was reapplied, the limb retaining its perfect length, and on the 27th it was taken off altogether, the union being solidly secured. On the 4th of August, the patient in moving about could lean well upon the foot. She continued steadily to improve; and on the 26th she was dismissed, able to walk well, and without any difference in length between the limbs.

The annexed plate is taken from a patient of mine, with the long splint, as modified by me, applied. For its description, mode of adjustment, &c., I must refer to the original communication, "*On Fractures of the Thigh Bone*," already adverted to.

It is not imperative, I conceive, to adduce any further proof to show the necessity for gentle, steady, and continued extension being kept up during the treatment of fracture of the thigh bone occurring with any degree of obliquity, and in all muscular subjects.

I have the greatest confidence in referring the reader to my paper on "*Fractures of the Thigh Bone*;" every fact therein stated has, I am happy to say, been confirmed by well-tried and additional experience; and if there is any one thing that I am more certain about than another, it is the vast superiority which the method I advocate possesses over every other in the management of these cases. I shall introduce here the letter of one who has watched cautiously the practice which I inculcate: it is from the senior surgeon of our hospital, one of the most practical surgeons of the day, and the best lecturer on surgery that I ever heard.

"MY DEAR BUTCHER,—As you are about to publish additional observations on fractures, I wish to bear my testimony to the efficiency of Liston's splint, as modified and improved by you in the treatment of these injuries in the thigh. I have seen many cases in Mercer's Hospital, under your care, of fracture of this bone, in strong, muscular persons, with great deformity and shortening, where the limb was preserved in its normal length during the entire period required for union, and in some instances without a necessity of readjusting the retentive apparatus more than once during the treatment. Everything depends on the skilful appliance of the splint; the

inexperienced in the handling of fractures may consider this a facile proceeding, but such is not the case, as you and I well know.

“ Always faithfully yours,

“ WILLIAM TAGERT.

“ 54, *Camden-street*,

“ 29th *January*, 1858.”

Mr. Syme sums up his opinions in the “ *Edinburgh Monthly Journal*,” in the three following aphorisms:—

“ 1. That the great requisites for treating fractures successfully are coaptation and immobility.

“ 2. That extension, or a struggle between the two opposing forces of muscular contraction and a mechanical power, is not consistent with either of these conditions.

“ 3. That, therefore, extension should be abandoned in the treatment of fractures.”

I trust I have shown that the *first* is reasonable and correct; that the *second* is absurd, because by perfection in the extension alone can “coaptation and immobility” be secured; that the *third*, “extension should be abandoned in the treatment of fractures,” is ridiculous, because essential to the fulfilment of aphorism the first.

To those who have not read my original paper on “*Fractures of the Thigh*,” I would merely say, I think they will find every objection that has been urged by writers against the use of the long splint fairly argued, combated, and answered, as also the great advantages which it possesses, as modified by me, over every other mechanical appliance recommended in the treatment of fracture of the thigh-bone, no matter in what part it may be injured; moreover, numerous examples are introduced to prove its efficiency.

There is one point more I would advert to—the improved mode of detaching the transverse piece of wood, as described by me in the “*Dublin Quarterly Journal*” for February, 1856, where the advantages accruing from such a change will be found strictly described.