I have repeatedly put up fractures in this way in a couple of hours after the accident occurred. Still, if the circulation appears impeded, or if the patient complains of pain, it will be safer to relax the apparatus than to run any risk of sloughing or gangrene.

Of the applicability of this mode of treatment in compound fracture I have had too limited an experience to speak with certainty; there is, however, no difficulty or danger in applying it when the fracture is such as will probably become simple by the union of the wound in the soft parts; and in such a case it will aid in bringing about this result.

In fracture of the patella it is very useful, and it is only necessary to strengthen the *lateral* splints by a second layer of pasteboard. It is evident, of course, that the lateral splints prevent motion in the antero-posterior direction, and the anterior and posterior splints prevent lateral displacement. Inattention to this simple mechanical fact may lead to disappointment.

ART. XVIII.—*A Case of extensive Laceration and Contusion of the Thigh, with Exposure of the Femoral Artery, followed by mortification of a large portion of the injured soft parts, and rapid progress towards Recovery.* By CHARLES F. MOORE, M.D., Medical Officer of the Galbally Dispensary; Late Senior Surgeon in the Peninsular and Oriental Steam Packet Company's Service.

ON the 5th January of this year, Mary Maher, aged 28, was caught between the vertical and horizontal cog-wheels of a water-mill. Her weight, nearly thirteen stone, aided by the increased resistance which her clothes and powerful muscles opposed to the machinery's working, broke the brass axle of one of the wheels. The moment the mill was put out of gear, Maher was thrown with great force against some sacks of corn, a few yards from the wheels; all this was the work of a moment, of which she retains no consciousness. It would appear, however, that approaching too near the machinery, her clothes were first caught and torn, and then the *glutæi* muscles of the left side, by the teeth of the wheels, which continued to cut, bruise, and lacerate the muscles and other soft parts of the thigh, leaving a deep, irregular wound somewhat in the form of the letter *J*, extending from about four inches behind the anterior superior spinous process of the ilium, in a direction downwards, forwards, and inwards, laying bare the femoral artery for three inches of its course, the skin, areolar tissue,

fascia lata, and a part at least of the sartorius, being torn through, the laceration thus extending round some three-fifths of the circumference of the thigh, curved again about half-way to the knee, towards the outer aspect of the limb, ending an inch above the knee-joint.

The marks of the teeth of the wheels were visible on a considerable portion of the skin of the outer aspect of the thigh, which was severely bruised and subsequently mortified.

Besides the extent and depth of this lacerated wound, a mass of fat, areolar tissue, torn fascia, and muscular fibre, larger than a man's closed fist, hanging from the centre of the injured parts, increased the unpromising appearance of the case.

The poor woman, being alone on recovering from the stunning effects of the fall and injury, walked to the mill-door and some distance across a large yard, unassisted; and in all probability she owes her escape from total destruction to her very considerable weight having broken the axle of the wheel, as above stated; it is equally probable, too, that had her health not been the best, and her previous habits temperate, she could not have recovered from an injury of such extent, and involving, as it did, exposure of the femoral artery and extensive injury to nerves and other important parts.

I saw the case about an hour after the accident occurred; by that time the hemorrhage, which had been very slight in comparison to the extent of the injury, owing doubtless to the nature of the wound, had almost entirely ceased. Having despatched a messenger to the nearest gentleman's house (the accident having occurred in a remote part of the Glen of Aherlow), for some wine to support the patient who had fainted, and was in a very low state, and having applied warm blankets and bottles to her feet, &c., I examined the wound with as little disturbance of the injured parts as possible. The portion of the femoral artery which was exposed was where it gave off a large branch, that from its size and direction I considered to be the profunda. I could not detect any injury to either arteries or veins; having brought the opposed surfaces of the wound as well into apposition as I could, and replaced the protruded mass of soft parts before mentioned, I tied a linen cloth round the limb, and then commenced to unite the wound by the interrupted suture.

I had some difficulty in retaining the protruded parts in their proper place, and from the strain on the stitches and length of the wound, over twenty-two inches, I was obliged to use about fifty stitches. During their insertion, which in many instances gave great pain, the patient fainted three times.

I applied a bandage around the thigh to support the parts, and thereby diminish any strain on the stitches. The patient was moved from the mill where the accident happened, into Galbally, a distance of three miles; she was placed on a mat-trass, and this laid on a jaunting-car.

January 6th. Maher did not sleep last night; tongue covered with a white fur; pulse 120, hard and small; to have one grain of calomel and half a grain of opium twice a day; also, if she continues restless to-night, half a grain of opium and five grains of Dover's powder, at 10 P. M.

7th. Pulse 110, weak; was delirious last night, and did not sleep; at noon to-day she slept a little; to continue the port wine, one or two glasses a day; omit the opiates.

8th. Pulse 100, soft; fainted once or twice to-day; had a little boiled meat; to continue the wine; I applied long straps of adhesive plaster, as recommended by Dr. Scott: namely, from behind, and the ends drawn forward, so as to encircle the limb and overlap in front, thus supporting the injured parts, and relieving the strain on the stitches more effectually than the bandage which I had at first used.

9th. Bowels copiously affected; tongue whitish, with a brown fur in the centre, at the back part; she takes a little broiled mutton and port wine daily; to have aromatic spirit of ammonia and tincture of lavender, if at all faint.

10th. Pulse 100, soft; tongue cleaner than at last report; pus and serum discharged from the wound.

11th and 12th. Pulse 92; tongue improved; sleeps better.

13th. Pulse 100; the root of the tongue again coated with a brown fur, but moist; continues to sleep better than for the first three nights after the accident.

A serous discharge, which had freely flowed from the wound at the two extreme points, and from an incision I made into a fulness at a depending point on the posterior and outer aspect of the thigh, has now ceased, and healthy pus is secreted freely; the pus is mixed in some parts with blood; there is a very offensive odour from the wound.

I daily renew a great number of the straps of plaster, with as little disturbance of the injured parts as possible.

14th. Pulse 98; tongue coated with a yellowish fur; other symptoms exhibit no change.

15th. Pulse 106; at 1 P. M. much sero-purulent discharge; continue diet, &c., as before.

17th, 18th, and 19th. On each of these days I removed a large piece of dead skin, fat, areolar tissue, and some portions of the injured muscles, which all had become completely mor-

tified, and separated by ulcerative absorption. The whole might weigh from one to one and a half pounds, and be fourteen by five or six inches mean width.

On the removal of this gangrenous mass, the muscles of the thigh were exposed; their fibres and fasciculi, form, &c., being beautifully shown. I could not find a lesion of any of them, except of the *vastus externus*, in the hurried glance which I was obliged to content myself with at them, on account of the patient complaining of the effect of the then intense frost on the exposed surface, and as I had, for the same reason, only stripped a third of the wound on each of the days above stated. I, however, found the muscle at the outer and rather posterior part of the injury—which, as I above mentioned, I believe to have been the *vastus externus*—apparently torn through, and in a large round mass as large as a hen-egg. This has now, April 5, gradually diminished in size; and thus, has by the growth of granulations around it, become nearly uniform with the surrounding parts.

25th. Since last report Maher has steadily improved. Yesterday a small quantity of venous blood came away from the lower part of the wound; to-day, healthy pus is discharged, which has been the character of the secretion from the wound for several days; pulse 72; tongue clean, except slight whitish coating; she sleeps well; appetite good; about four ounces of port wine allowed to her daily, which she relishes much; the menstrual, urinary, and *fæcal* secretions are regular and healthy.

At the commencement of the present severe frost, Maher complained of pain in the wound, which was relieved, however, by additional dressings, bandages, and bed-clothes, and a shorter exposure during the dressing of the wound; she likewise felt some oppression in her breathing, which yielded to the application of a warm plaster to the chest. The temperature of the leg and foot of the wounded limb, which was for some days apparently lower than that of the uninjured side, has been restored to the normal heat,—partly, possibly, by keeping the wounded limb on an inclined plane, the heel being the highest point, and by gentle friction along the larger veins with warm flannel. A tendency to bed-sores was overcome by the application of a spirit-lotion and slight changes of posture, with friction, &c.

26th. Maher complains to-day of pain in the venous trunks of the ham of the injured limb; frictions with spirits warmed, &c., were applied; the surface of the wound seems granulating in a most healthy manner; pulse 84; tongue covered with a slight whitish coating.

30th. The healing process has continued most favourably since last report; a perceptible margin of new integument having formed around the edges of the wound, whence the torn and contused mass separated by mortification.

The great vessels of the thigh are now completely protected by granulation (and adhesion?) of the muscles of the thigh; no pain in the limb; the patient sleeps well; bowels moved twice to-day by a draught of castor-oil, tincture of opium, and tincture of rhubarb, as they had not acted for four days previously; pulse 80; tongue as last report.

The patient relishes a piece of broiled meat daily, and a glass and a half or two glasses of port.

31st. Pulse 90; Maher had a disturbed night from the noise of an argument amongst the other inmates of the mill-house in which she lives; otherwise doing well.

February 2nd. Pulse 78; tongue clean; the surfaces of the vasti, adductores, and other muscles, whose several muscular fibres were distinct, after the mortification and removal of the injured areolar tissue, muscular fibres, fat, and integument, have now become smooth, except what I take to be part of the vastus externus, which has, however, become converted into a smooth round mass.

The dressing I have been applying to the granulating surface was lime-water and olive or linseed oil, applied on strips of lint. I have now commenced using strips of old linen, which seem to answer better. I find benefit arise from changing the oils, occasionally using the olive, and then again for a time the linseed, which plan seems somewhat to restrain the exuberance of the granulations. To continue the wine and meat.

13th. Pulse 84; tongue clean. Maher requires an occasional aperient. The whole surface of the wound is now granulating well. The same dressing as last ordered was continued.

16th. Maher continues progressing most favourably, notwithstanding the extreme severity of the weather, the thermometer having been more than 20° below the freezing point within the last three days.

It has been necessary occasionally, during several days, to resort to the treatment for prevention of bed-sores by change of posture above described.

The surface of the wound is healing rapidly; the discharge is healthy pus, with occasionally a little blood, which I find occurs on the patient remaining in the sitting posture for any length of time.

20th. Maher progresses favourably.

26th. Complains of weariness and pleurodynia; pulse 94; discharge is mixed blood and pus. The weather has changed from frost to thaw.

March 2nd. Maher has improved, and is now progressing very favourably; pulse 88.

4th. Pulse just after her dinner was 88; wound looking well.

8th. The wound is healing "beautifully;" granulations have completely filled in the spaces between the muscles, &c.; the irregularities of the vastus externus and fascia lata on the external and posterior aspect of the thigh have now become level through the healing process; "laudable pus" continues to be secreted in sufficient quantity, and the general health improves as the patient becomes more able to move her position in bed, sitting up for a good part of each day, &c.; until the last two or three weeks aperients were required once a week; now the bowels perform their functions naturally, and the whole system seems recovered from the very severe shock and drain upon its resources caused by the injury and earlier stages of the reparative process.

The pulse, however, still continues about 80.

11th. Wound rapidly healing; pulse 82; the discharge is quite healthy pus, and now diminishing as the wound lessens in extent.

Diet, bread and milk, and occasionally meat and potatoes.

At the first catamenial period subsequent to the injury, which was eight days after its occurrence, that discharge was natural. The next time it was scanty and white; this was the character of the secretion also at the third period, and on my last visit, the 7th April, I learned that no discharge had taken place at the expiration of the fourth period.

At times Maher still complains of slight stiffness and pain in the popliteal space.

14th. Pulse 90, the patient being in the sitting posture. She sat up for two hours yesterday, and had no subsequent bleeding from the wound as formerly.

17th. Pulse 80, after sitting up some time. Wound continues healing, except that the granulations are rather exuberant. Solution of sulphate of zinc, two grains to the ounce, to be applied to the wound.

20th. Maher doing well; pulse 86, while the patient was sitting up for an hour after breakfast. The solution of zinc seems useful in restraining the granulations.

23rd. Applied nitrate of silver to the larger granulations, but the pain caused was very intense.

25th. Maher progresses favourably. The nitrate of silver applied lightly to the granulations.

26th. The nitrate of silver caused great pain; the wound bleeds from some points; pulse 86.

In this case I impulsively followed what seemed the most natural course, namely, to restore the protruded parts and retain the opposite sides of the wound in apposition, to give them a chance of union by the first intention; I fully anticipated considerable suppuration from a wound so extensive and so much torn and contused, and the result, at least so far as this advanced stage warrants the expectation of a favourable result, shows the propriety of attempting union by the first intention, where one might not unreasonably fear vast loss of substance by sloughing of the injured parts: but again, I doubt not, very much of the deeper parts of the wound, as that about the femoral artery,—which was with a small part of the profunda plainly visible pulsating strongly, united by the first intention, and until the separating by the process of mortification of the very large torn and contused mass, &c., &c., formed the most natural protection to the more important tissues in immediate contact with the great vessels and nerves of the thigh.

ART. XIX.—“*Unsoundness of Mind*,” in its *Medical and Legal Considerations*. By JOSEPH W. WILLIAMS, L.R.C.S.I., Licentiate of the King and Queen’s College of Physicians, &c.

(Continued from p. 101.)

IMPULSIVE INSANITY.

IN the study of those insane states in which neither the moral nor intellectual faculty is, of necessity, inadequate to appreciate the relations of a particular act, whose commission is alone to be accounted for through the admission of an irresistible impulse, we are led to inquiries of even greater complexity than those which have previously occupied us. The investigation is one that demands on the part of the psychologist a mind free and unbiassed,—prepared to receive the mysterious realities of Nature as truths, and to reason on those realities. In no form of disease is it more essential that the physician be endued with that which, for want of a better term, we shall designate as