the opening of the former having closed. The abscess was lanced, some pus escaped; lotions were again applied, and the arm bandaged as before. Another abscess formed, the lancet was again employed, and the lotions and bandage applied for the third time. But the pain had now increased to so great an extent, and she had become so weak and ill, that she was induced to come to town for further advice. She applied at the surgery of this hospital. The dresser in attendance removed the bandage, ordered two dozen leeches to be immediately applied, and afterwards warm poultices. He advised her to apply for admission into the hospital, and she entered on the 2d of September. She had experienced very great relief from the leeches and poulticing, but there was still considerable inflammation about the arm, and a sinus at the back part of the elbow, which appeared to lead to the joint.

With rest, proper nourishment, and tonics, her health soon improved; but as the joint continued to get worse, I determined to excise it, and accordingly did so on Tuesday, Oct. 20. The steps of the operation were precisely similar to those pursued in the former case, excepting that I removed the olecranon process by a pair of powerful bone forceps, which appeared to effect their object more readily than a saw. One artery required to be tied. The patient bore the operation with remarkable fortitude. Now, with regard to the subsequent progress of the case, all I can say is that there has been very little constitutional disturbance; the discharge is quite healthy, as are the granulations. She sleeps well, and has a good appetite.

The first remark I have to make is with respect to the incisions, the inner one of which should be curved close to the olecranon process, so as to insure the safety of the ulnar nerve. The nerve is then drawn inwards by a metal retractor. It is so imbedded in the lardaceous matter into which the soft parts have been covered, that it is not brought into view, and is not injured by the means we employ for its protection. The outer incision should be made sufficiently distant from the dorsum as to secure the extent of space necessary for the removal of the diseased parts, which is much facilitated by flexing the elbow-joint, after the transverse incision has been made. Some directions have been given as to precautionary means in dividing the triceps muscle from the olecranon, so as to secure its subsequent reunion to the ulna, after the olecranon has been sawn off; but in my opinion, under the most favourable circumstances this reunion never would occur, excepting through the medium of the deposition of adventitious matter, formed during the process of this reparation of the injury, and the formation of the new joint. This matter is always sufficiently firmly attached both to the ulna and to the triceps, to maintain the function of the muscle, and secure the posterior part of the joint from external violence.

Now, gentlemen, as to the *rationale* of the operation, I cannot help believing that those who have recommended the excision of joints, have dwelt too strenuously upon its advantages, as to the quantity of diseased structures which, by mechanical means, they remove. In my opinion, the great benefit which is derived is from exposing and perfectly laying open all the affected tissues, so that nature is not herself obliged to produce sinuses and ulcerations through the soft parts. It is not the quantity of bone you cut away, but, by exposing a large surface, you allow the diseased tissues to readily come away, instead of burrowing through the soft parts. No more should be removed than is evidently already destroyed by disease, and we find that this is generally confined to the articulating surfaces alone of the bones implicated. If you remove beyond this, you do no good, but, on the contrary, detach muscles which would otherwise have been of the greatest service to the new joint, and thereby render it far less capable of natural and useful motion; while, if you operate as I advise, or if the process be left to nature, those parts are alone thrown off, or removed, which can be dispensed with compatible

with the preservation of a useful limb. But the time has expired, and I must defer further remarks on this part of the subject to another opportunity.

COMPOUND FRACTURE OF THE FEMUR.

THE LIMB SAVED BY SAWING OFF THE END OF THE BONE.

TO THE EDITORS OF THE PROVINCIAL MEDICAL AND SURGICAL JOURNAL.

GENTLEMEN,—By inserting the following very remarkable case, which occurred at the Westminster Hospital a few days before I acted as house surgeon to that institution, you will oblige your obedient servant,
Worcester, Oct. 1840.

THOS. WM. WALSH.

Matthew Burgess, æt. 6½, was admitted into the Westminster Hospital, August 6, 1839, at 5 o'clock, P.M. under the care of Mr. White. The lower end of the femur, deprived of its epiphyses, and perfectly denuded of periosteum, was seen protruding through his trousers. On further examination, a large wound was discovered, extending transversely across the ham, from one condyle to the other; through this wound the bone projected, and extended as far downwards as the middle of the belly of the gastrocnemius muscle. The popliteal artery was thought to be inevitably wounded, as well as the sciatic nerve. The epiphyses were retained in situ, and the patella was uninjured.

After in vain endeavouring to reduce the fracture, amputation was thought to be the only practicable course to pursue; but, on more mature deliberation, Mr. White decided on the attempt to save the limb, by removing about an inch and a half of the lower end of the femur; when this was effected, the popliteal artery, vein and nerve, were discovered to be anterior to the bone, instead of lying on the posterior surface. Reduction was now easily accomplished; sutures were employed to bring the edges of the wound together; over these wet lint and a roller were applied, and the limb was placed in a pasteboard splint, in the semi-flexen position. There was no hæmorrhage. The accident happened in consequence of the boy riding behind a cab, and getting his leg entangled in the wheel. Twelve o'clock; seems pretty comfortable, having dozed a little.

Aug. 3. Bowels have not been open since admission. Pulse 120, small and compressible; some heat of skin. Tongue clean. In consequence of having been placed on a fracture mattress, with a hole in the centre, into which he slipped, the limb has become more bent. Half a drachm of sulphate of magnesia, half an ounce of peppermint water; to be taken every hour until the bowels are opened. Seven o'clock; bowels have not yet been moved. A house clyster at once. Twelve o'clock; bowels freely moved by injection. Slight tendency to wander, spasmodic twitchings of the limb causing him to start frequently; this has existed more or less during the day. Pulse upwards of 160. To take at once; ten drops of tincture of opium, and half an ounce of peppermint water.

4. Passed a tolerably good night, having slept for two hours successively. Complaints of pain in epigastrium; still starts in his sleep. Pulse 140; tongue furred. Repeat the opium draught. Evening, still wanders a great deal.

5. Five o'clock, A.M.—Did not receive so much relief from the opium as last night; is very irritable. Repeat the draught at once. Evening: seems more composed; skin moist; pulse quiet and regular. Repeat the draught every hour.

6. Is very restless; tongue very red, and morbidly clean; bowels open; pulse quiet and regular. The wound was dressed this morning; the extreme edges were united apparently by the first intention; the centre part had its edges well approximated, leaving a space for a free discharge of pus; no swelling or inflammation of any part of the limb beyond what must inevitably follow so extensive an injury. Repeat the draught every night.

7. Still very restless; is much annoyed by the flies, of which he did not complain two days ago; wound was dressed, and looked healthy.

8. Appears to have become much emaciated within the last two days; eyes are sunken; tongue red, with white elevated papillæ; wound looking well. Beef tea.

9. Countenance more cheerful; pulse 110, soft and regular; wound granulating. Omit the opium draught.

10. Passed a quiet night. There is some tenderness and redness over the sacrum, which rendered it necessary to shift him slightly on his side.

12. Improving in every respect; slept better last night than he has since the accident.

13. Has had a slight diarrhoea this morning; in other respects is better; limb remains in an easy position.

14. Diarrhoea ceased till this morning, when it returned; wound discharges a great quantity of healthy pus. Mercury with chalk, and rhubarb, of each three grains, to be taken at once.

15. Bowels were moved three times only by the powder.

17. The knee appears to be more swollen than heretofore, and the limb more shortened; probably in consequence of his body slipping down lower in the bed, and thereby altering the position of the thigh.

18. Appeared to be going on well; but from the most depending portion of the wound about two or three drachms of pus escaped, and mixed with it was a transparent glairy fluid, resembling synovia; on slight pressure more pus was evacuated. The limb being, as was yesterday stated, more bent, it was gently and gradually straightened till the thigh was at right angles with the trunk; when this was effected more pus was discharged from about the centre of the wound. The boy suffers no pain while the limb remains quiet; but on the slightest motion or pressure he immediately cries out; he has not had any rigors.

19. Knee not quite so much swollen, pus more abundant, and wound looking healthy; bowels open; evacuations of a clay colour. Repeat the powder in the morning.

20. A great quantity of rather fetid pus was discharged from the opening in the centre of the wound, by steady and gentle pressure. About an inch and a half above the patella the bone is clearly felt under the skin.

21. Is more irritable and peevish; the discharge appeared more healthy. Pulse small and frequent; skin hot and dry.

22. Started and screamed a great deal in his sleep. On the part where the bone is felt there is a blush of redness, and he complains of greater pain in that situation; the leg was lifted and straightened, and a piece of oil-silk placed under it.

25. The blush of inflammation over the projecting bone does not increase; the redness and swelling around the wound have much subsided, and no pus can be pressed from the opening in the centre of the wound.

29. Has complained much of pain in the part where the bone is felt projecting; the skin is redder, and the bone is nearer the surface.

31. The skin has broken, and the bone is now projecting; there is a free discharge from the opening; the original wound is proceeding favourably.

Sept. 3. The bone which projects is spongy, and moves with every motion of the thigh; it is apparently the sawn extremity of the femur.

18. Has remained in the same state since the last report; but there is observable just internal to the ulcerated portion, a redness similar to the last before the bone appeared through the skin. The original wound is healed.

Oct. 1. Can now move the whole limb; the bone has not exfoliated, but still projects from the wound; health is much improved.

23. Has been sitting up to-day; can move his limb perfectly well, but cannot flex the knee, which is swollen and hard, probably from a large deposit of callus; the wound has not enlarged, nor has the bone exfoliated.

Nov. 5. Can now stand up by himself and press on the

toes of the injured limb. There is very slight motion in the knee joint.

Dec. 26. Bone has not exfoliated; can bend the knee a little more freely; manages to hobble along on both legs, by means of flexing the sound limb to the same extent as the injured one. Is in perfect health.

May 6, 1840. Is in the same state as at last report, except, perhaps, he can bear a greater weight on the injured limb; bone has not exfoliated.

Oct. 22. I understand from Mr. Holt, the house surgeon, that the boy remains in the same state as at last report, the portion of bone not having yet exfoliated. It is, I believe, the intention of Mr. White that he should have an iron, in order that he may walk without a crutch or stick.

REMARKS.

This case affords throughout much matter worthy of observation and information, whether we consider the extreme rarity of the accident; the judicious, sound, and scientific treatment of Mr. White; or the after-progress of the wound, &c.

The accident itself is almost without a parallel, there being one case only (to my knowledge) on record, which occurred some years ago at St. George's Hospital; but in that immediate amputation was resorted to, consequently no comparison, beyond the mere accident, can be drawn with the case above related.

The reasons (as far as I can recollect) which Mr. White assigned for his treatment were these, that during his extensive experience he had seen children recover from the most dreadful accidents which were before thought inevitably fatal, and as the youth of the patient rendered it a favourable opportunity for the experiment, he would venture on the trial, and should any untoward circumstance occur, he could *then* resort to amputation; that the extreme vascularity of the bone seemed to second his intentions, for the preservation of the portion of the remaining shaft of the bone, which was stripped of its periosteum, was a great point to be gained.

The circumstance of the joint, great vessels, and nerves being uninjured, confirmed him in his decision; for had he found, during the operation of removing the portion of bone, that the joint was involved or the popliteal artery wounded, he would have immediately performed amputation.

These reasons (though imperfectly expressed), so truly characteristic of a great and a thinking mind, will, I trust, convince every practical man of the justness of the decision.

With regard to the after-progress of the case, the only circumstance which I think it necessary to notice was the patient's slipping into the hole in the mattress; for had it not been for that unfortunate occurrence, he would, in all probability, have obtained an almost straight stiff joint, which will be allowed by every one to be far preferable to any artificial leg.

PROVINCIAL MEDICAL & SURGICAL JOURNAL.

SATURDAY, NOVEMBER 7, 1840.

THERE is no fact better established in medicine than that different forms of disease are found to affect different localities, and to say that ague and neuralgia are endemic in the vicinity of fens and marshes, that rheumatism prevails where the atmosphere is cold and damp, or that enlargement of the bronchial gland destroys the symmetry of the neck amongst the inhabitants of certain districts, at the same time that in others the complaint is almost unknown, is merely to repeat observations, the frequency of which has led to their being received as incontrovertible.