Bull (W. T.)

REMARKABLE CASES OF FRACTURE.

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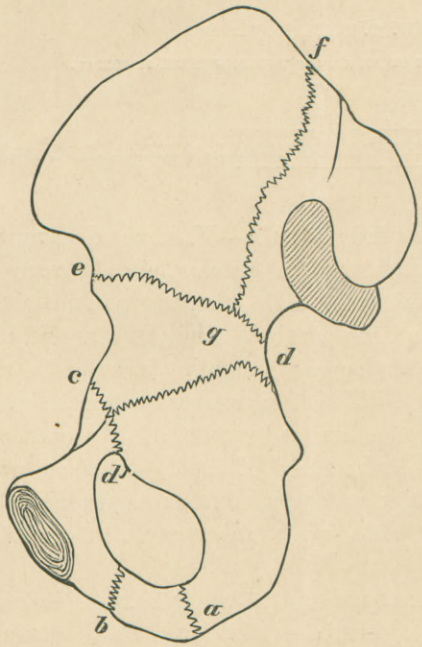
I. *Multiple Fracture of the Pelvis.*—V. S., aged seventy, a native of Germany, fell through a hatchway, a distance of about fifteen feet, December 22, 1876, striking on the right side of the body. When seen at the hospital a few minutes later, he was found to have received severe injuries to the pelvis and right shoulder. The humerus was dislocated forward and inward, so as to be situated just within the coracoid process; and on replacing the head of the bone, which was done at once by gentle manipulation, a movable fragment of the coracoid process was plainly felt below and to the inside of its normal situation.

The right lower extremity was completely helpless, but lay in a natural position. On careful measurement, a shortening of half an inch was made out. On rotation, abundant crepitus was felt in the region of the trochanter; the crest of the ileum was movable, and a fracture of the descending ramus of the pubis was felt on palpation. A pelvic girdle was applied, and the arm placed in a sling. A week later the patient was sent

to his residence at the Old Men's Unsectarian Home, 521 East 120th Street. Dr. J. B. Campbell attended him, and has been kind enough to inform me that his general health continued pretty good for about two months, when an obstinate diarrhœa set in, and he died from exhaustion, March 21, 1877, three months from the day of the injury. Before the diarrhœa began he had been about his room on crutches several times, having largely regained the use of his arm, and complaining only of pain in the hip, and inability to bear weight on the injured limb. Through the courtesy of Dr. Campbell and Mr. Ramscar, the superintendent of the institution, and with the help of Dr. W. A. Jayne, I was able to make an autopsy and remove the fractured bone. The organs were remarkably healthy, except some atheromatous patches in the aorta, and some fatty degeneration of the kidneys. The bladder and urethra were quite normal. More extensive fracture of the pelvis had occurred than was supposed. With the aid of the accompanying diagram the lines of fracture may be clearly seen, while Figs. 1, 2, and 3, will show the displacement of the fragments. Through the rami of the pubes and ischium there are two oblique lines of fracture, both directed from above downward and from within outward (*a* and *b*). The body of the pubes is fractured nearly vertically downward into the obturator foramen (*c d'*), and from the centre of this fracture there is a split through



the centre of the acetabulum, extending to the greater sacro-ischiatic notch (*c d*). The anterior and upper two-thirds of the ileum are separated by two lines of fracture, one passing from beneath the anterior superior spine to the ischiatic foramen (*e d*), and joined at its posterior third by another, which descends nearly vertically from the crest, an inch in front of the sacro-iliac synchondrosis (*f g*). There are, consequently, six distinct points of fracture.

The most striking deformity occasioned by the displacement of these fragments is seen in the acetabulum. An irregular opening exists in its roof, owing to the portion *c d e* being thrown upward and forward, while the fragment *a d d'* is displaced inward and slightly forward. The piece of the rami of the pubes and ischium *a b* is moved a little downward. There is quite firm union of all these fractures except in the line *c d'*, where slight motion can be made. Considerable callus existed, and the tissues covering the gap in the roof of the acetabulum were consolidated, so that the head of the femur rested in an apparently natural socket, the attachment of the ligamentum teres being intact.

The head of the humerus was in place, and no rent discoverable in the capsule. From the tip of the coracoid process two fragments were broken off: one, attached to some fibres of the pectoralis minor, was drawn halfway to the side of the chest; the other was displaced about an inch downward by the fibres of the coraco-brachialis.

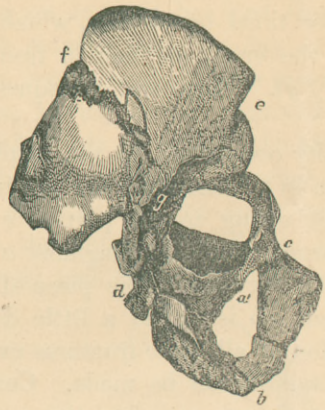
I deem this case worthy of record on account of the extent of injury to the bone following a fall, part of whose force was spent upon the shoulder; and also from the absence of damage to the pelvic viscera. It is interesting, too, to note the elaborate reparative action in an old person.

II. *Multiple Fracture of Femur* (compound).

Case I.—S. M., an Irish woman of intemperate habits, and thirty-one years of age, fell from a fire-escape on the first story, July 11, 1877, and was brought at once to the hospital. She was in a semi-intoxicated condition, and suffered but little from the shock of the accident. The left lower extremity was entirely helpless and shortened, and lay with the foot

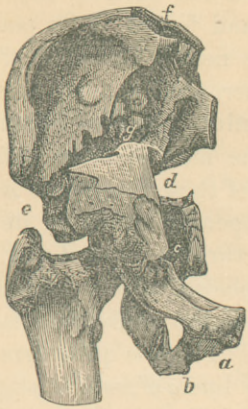
everted. On the outer side of the thigh, just below its middle, was a wound, made by projection through the skin of the

Fig. 1.



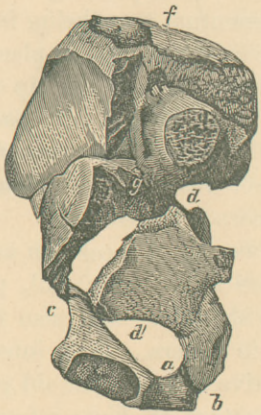
External View.

Fig. 2.



Anterior View.

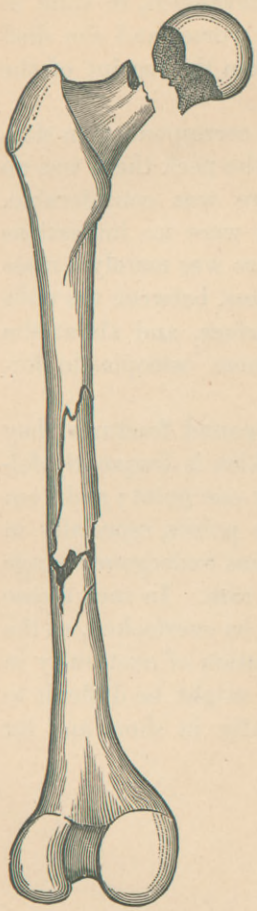
Fig. 3.



Internal View.

lower extremity of the upper half of the femur. There was little contusion about the hip, and no pain referred to that point. (The woman was short, and quite fat.) The finger passed into the wound, after the bone had been replaced, detected a transverse fracture an inch below the

middle, and a loose fragment of small size, which was at once extracted. On measuring, the shortening was one inch and a half. Buck's extension was applied, and the wound dressed antiseptically, according to Mr. Lister's method. On the fourth day the discharges were offensive. Open treatment was pursued, but the patient died on the sixth day, with symptoms of septicæmia.



At the autopsy I was surprised to find a comminuted fracture of the neck within the capsule, in addition to the fracture of the shaft, which was found to be more extensive than was supposed, a fragment two inches long being detached from the posterior and inner surface. There was, moreover, a longitudinal fissure, running from the transverse fracture toward the condyles.[1] The cut shows clearly these fractures.

Case II.—The second case is very similar to the above. C. S., aged fifty-five, an intemperate and ill-conditioned Irish woman, fell from the roof of an out-house to the ground, a distance of fifteen to twenty feet, on September 9, 1877, and struck on the left side of the body. There was a wound on the outer side of the left thigh, communicating with a transverse fracture about the middle of the femur. The shortening was three inches. The wound was explored with the finger, several small fragments of bone removed, a counter-opening made in the posterior surface of the thigh, and an antiseptic dressing applied, with Buck's extension. A month later, a plaster-of-Paris splint was applied, there being but slight discharge and no bur-

[1] Specimen exhibited at the meeting of the Pathological Society, November 28, 1877.

rowing of pus. The patient's general condition was, however, unsatisfactory, as she was troubled with cystitis and chronic bronchitis. After two weeks, Buck's extension was applied. There was no union at all. Bed-sores developed, in spite of every effort; the general condition grew worse, and she died October 28, 1877, about three months from the receipt of the injury.

At the autopsy the points of fracture corresponded in situation to those of the first case; but at the neck there was no comminution, while in the shaft there was considerable. About the intra-capsular fracture there were no indications of reparative action, and in the shaft there was merely a mass of fibrous callus, half an inch in thickness, between the ends of the fragments; on their anterior surface, and about the end of the bones, which overlapped, some osteoplastic formation.

Although these two cases were compound fractures they were produced by the sort of injury which is frequently followed by simple breaking of the femur at one point; and I am inclined to believe that fracture at two points, especially in persons in whom the neck of the femur has undergone change in structure and relations, may not be rare. In such a case the fracture at the neck would naturally be overlooked, as the symptoms would be explained by the solution of continuity in the shaft. Even if it were suspected, it might be difficult to assure one's self that it existed, especially in short and fat persons.