

	Cases.	Cured.	Died.
1842,	5	5	—
1843,	1	—	1
1844,	3	3	—
1845,	1	1	—
1846,	8	6	2
1847,	11	10	1
1848,	7	7	—
1849,	2	2	—
1850,	6	5	1
1851,	11	10	1
1852,	5	4	1
1853,	5	5	—
	65	58	7

From this table it appears that the mortality, after this operation, has been 1 in 9%.

Lithotrity seems to have been tried in 1844-5-6 in 4 cases, 2 of which were successful, 1 unsuccessful, and 1 fatal.

For the present, we conclude our registration of the results of operative surgery in this hospital for the last twelve years. Numerous classes of operations, most important to human life and comfort, have been omitted. We have confined our attention to those which are of the first importance; and in the balance-sheet (to speak commercially) which has been presented, the credit, it is trusted, is not inconsiderable in favour of the operative surgeon.

IX. Cases of Dislocation and Fracture. By J. G. FLEMING, M.D., Surgeon to the Royal Infirmary, &c.

Case I.—Separation of the Sacro-Iliac Symphysis.—While a stout youth, aged 19, a carter, was in the act of leaping from a cart in motion, his foot became entangled in a rope, and he fell to the ground, alighting on his face, and while in this position the wheel of the cart passed obliquely across his pelvis. The cart with its load weighed nearly two tons.

On admission to the Infirmary, a few hours after the accident, the left ilium was found to project about an inch farther behind sacrum, and its crest was fully an inch and a half higher than on the right side. Hip was elongated and swollen, but depression at joint and projection at trochanter were quite distinct. Motions of hip, knee, and ankle joints were free, and unattended by any marked pain. Limb was shortened by fully an inch. He complained of pain at lower part of abdomen, and was unable to void urine, requiring the use of the catheter. There was considerable swelling and ecchymosis around left sacro-iliac articulation. Repeated examinations were made by my colleagues and myself, both at the admission of the patient and afterwards, with

a view to discover some separation of the right sacro-iliac symphysis, or of the symphysis pubis, or fracture of some part of the pelvic bones, but no such lesion could be detected, and we were satisfied that none such then existed to any appreciable extent.

A mild aperient was administered, and a fomentation applied till next day, when he was turned on his face, and the trunk of his body and shoulders being firmly held by assistants, moderate manual extension soon brought the displaced ilium to its normal position, but it immediately returned on the extension being discontinued. This was repeated three times with the same result. Attempts were made by various means to keep the ilium in position, such as the application of a splint, with a properly padded head, extending from the axilla to several inches beyond the foot, the limb being extended and secured to this, as in fracture of the thigh, but without the perineal band. The left arm was fixed to the splint, so as to keep it in position and secure extension. Bandages embracing the splint were also applied around pelvis and chest, so as to prevent the patient assuming the sitting posture. Of all the methods attempted, this was found to secure, better than any other, the proper position of the parts, but was so irksome and irritating to the patient, who was naturally of an irritable temperament, that I was obliged to discontinue it much sooner than I would have wished, but not before some permanent benefit had resulted from its use. Attempts to keep the parts *in situ* by acting on the crest of the ilium by bandages completely failed, and after the long splint had been used for about a fortnight, all that was done was to attach a weight, which hung over the bed, to the shortened limb, and to keep a bandage firmly applied around pelvis. The patient kept free from fever, and on the third day after his admission regained the power of micturition. At the end of four weeks he was placed on crutches, and a few days afterwards he left the hospital, with strict instructions to continue to use the crutches for some time longer. When dismissed, the limb was shortened about three quarters of an inch, and the left ilium appeared as much higher than its fellow, and projected slightly more behind the sacrum than that of the right side. Union had so far advanced that he could support much of the weight of his body on the limb.

It is impossible to comprehend how such a displacement could occur without a separation, to a limited extent at least, either of the symphysis pubis, the opposite sacro-iliac symphysis, or a fracture of the bones of the pelvis. It is certain that no fracture existed, and whichever of the other ligamentary junctions of the bones of the pelvis had given way at the moment of the accident, no symptoms of such could be detected a few hours afterwards.

Larry states that he has seen several such cases, but only in young subjects, and the few cases on record appear to have occurred in persons under twenty years of age, at which age the

ligamentous and cartilaginous connections may still admit of some degree of elasticity. From the anatomical relation of the ilium to the os sacrum—the ilium overlapping the sacrum posteriorly for fully two inches—such a displacement as recorded above must be the result of the sacrum being depressed or pushed forward into the pelvis, which could not occur even in a young person without a fracture or a separation to some extent, however slight, of one of the other symphyses. I have no doubt such separation had occurred in our case, but the parts had at once so far regained their natural position that it eluded our search, and did not cause more marked uneasiness than existed in all the surrounding parts. The displacement in such cases does not always appear immediately after the accident. Several days may elapse before the shortening supervenes, by the ilium being drawn up towards the ribs; and I believe that in some, nay, the majority of cases of such diastasis, the bones spontaneously assume and retain their normal position. When shortening does exist, the free motions of the hip-joint, the power of raising the limb from the bed, and of inverting or everting the foot at pleasure, will at once show that it does not depend on dislocation or fracture of the thigh, and the mobility between the ilium and sacrum will determine the diagnosis. If the patient can submit to the irksome inconvenience of extension, secured to a splint so long as to reach from the axilla to beyond the foot, with the arm and body fixed to it, I think such will be found more effectual than any other method for keeping the parts *in situ*.

Case II. Dislocation of Femur Directly Upwards.—A stout labourer, aged 55, was admitted on Monday forenoon. On the previous Saturday, while engaged in discharging the cargo from a ship, he fell into the hold, a height of fourteen feet. He stated that he fell on his right side, and sustained a dislocation of the shoulder, which was reduced by a surgeon who saw him immediately after he met with the accident.

As he lay on his back in bed, the right limb was found to be fully two inches shorter than the left, the foot and knee very much everted, so much so that the outer side of the foot lay nearly flat on the bed; any attempt to rotate the limb produced great pain, without effecting any change in the position of the thigh. He was quite unable to sit upright, the attempt to do so being immediately checked by a resisting body in the groin, but the thigh could be flexed to a considerable extent without much pain. A round ball (the head of the bone) was distinctly felt projecting upwards from the brim of the pelvis, resting upon the anterior inferior spinous process of the ilium, the head of the bone being thus displaced directly upwards from the acetabulum. The trochanter could not be discovered. It was at once seen to be a case of the rare form of dislocation upwards, and was easily reduced by fixing the pelvis and extending the

limb in a line with the axis of the body, till the head of the bone was opposite to the acetabulum, and then turning the limb suddenly inwards. The knees were secured together, and the patient kept quiet and low. There was considerable tumefaction extending down from groin, which did not completely subside for ten days. He remained in hospital for a month, when he left quite recovered and free from lameness.

This case is interesting as a well-marked example of the rare form of dislocation of the femur upwards on the edge of the ilium, of which few examples are recorded. There can be no difficulty in the diagnosis of this form of hip dislocation, the only other for which it might be mistaken being that on the pubes, but the position of the head of the bone, and the greater shortening of the limb, will at once point out the difference. It varies considerably in extent. The head or neck of the femur may rest on either of the anterior spinous processes, or at any intermediate point between them. The reduction seems to be easily accomplished, at least it was so in our case, and in the two cases which Mr. B. Cooper has inserted in the last edition of Sir A. Cooper's *Treatise on Dislocations*. The indications are to pull directly down, and when the head of the bone is opposite the cotyloid foramen, to turn the limb inwards.

Case III. Dislocation of the Leg Forwards at Ankle-Joint.
I have met with two instances of this dislocation, in which reduction had been neglected for 15 and 24 days respectively. The cause in both was as follows:—While running rapidly, the point of the foot was suddenly caught under a fixed stone, and the patients had then thrown themselves forcibly backwards to check the forward fall, thus rendering the tibio-tarsal ligaments the point of resistance to two contending forces, the fixed foot and the weight of the body. The symptoms in both cases were quite similar, the one which had been longest out being the most complete. This dislocation may vary greatly in extent; the anterior edge of the tibia resting on any point between its normal position and the proximal ends of the metatarsal bones. In both of our cases, the heel was lengthened and drawn upwards, the toes pointed downwards, the foot anterior to the tibia shortened, and flexion and extension impossible. This form of dislocation seldom occurs without fracture of the fibula. In one of the cases (the most complete), the fibula was broken about two inches from its end, the external malleolus remaining in its proper position to the foot, while the upper portion was carried forward with the tibia. In the other case, which was only partial, the bones resting on the anterior part of the astragalus and os naviculare, having slipped only from the articulating pulley. Both malleoli were carried forwards with their respective bones, and no fracture of the fibula could be detected. Most authors are of opinion that this form of dislocation can-

not occur without a fracture of the fibula. Sir A. Cooper, in describing the symptoms, says—"The fibula is broken about three inches above the ankle;" and Dupuytren affirms that "it can only occur when the fibula is fractured, and the inner malleolus has given way." I am satisfied, however, that it may occur, to a partial extent at least, without either of these last-named lesions. There is always rapid and very considerable swelling, which may for a time somewhat obscure the diagnosis; but when this subsides, the symptoms are too apparent to admit of doubt. The reduction is by no means an easy matter in cases of some standing, as ours were. In both it was accomplished as follows:—The patient lay on his back, with the leg bent at right angles to the thigh, so as to relax the gastrocnemii muscles; a large towel was then passed round the thigh close to the knee, and properly secured, while extension was made from a bandage applied by a clove hitch-knot to the foot, embracing the heel. When extension was considered sufficient, the heel was placed on a stool, and the leg forced back. This plan succeeded in both cases; but in the one which had been out for 24 days, great force was required to push back the leg to its normal position—in fact, it was little short of a new dislocation. It was found, after the reduction had been effected, that the bones could be pushed into their normal or abnormal position at pleasure; and in a case which lately occurred under the care of my colleague, Dr. Hunter, this mobility immediately after reduction was also remarked. Some difficulty was experienced in keeping the parts *in situ*, the bones of the leg having a strong tendency to slip forward; and the plan which certainly answered best, was by bandaging the foot and leg to a splint placed on the back of the leg, properly padded to protect the heel from suffering from the pressure. A properly fitted gutta percha splint would, I think, answer better than any other. Whatever apparatus is applied will require to be worn from four to six weeks at least.

Case IV. Fracture of both Thighs, Arm, and Forearm, and other Injuries.—J. D., aged 18.—July 9th, 1848.—This morning, while in charge of a steam-engine, he was caught by one of the belts, thrown some distance, and crushed between the fly-wheel of the engine and the wall adjoining. At examination, after admission, he was found to have sustained the following severe injuries:—A very oblique fracture of right thigh, corresponding, in length and situation, to about the middle third of the bone; also, a comminuted fracture of left thigh, about the junction of middle with upper third; also, a comminuted fracture of right humerus, about five inches below its head, and a compound fracture of both bones of forearm of same side, about their middle, the proximal fractured extremity of ulna projecting through the wound. He has also received an extensive lacerated wound of axilla, from which, in fact, the integument has been completely stripped, and the

finger can be passed, for some distance, between the skin and fascia on inner side of arm, and over pectoral muscle. The two distal phalanges of right thumb have been torn off.

The thighs were both put up in the straight position, with Desault's splints. The fractured portion of the humerus was surrounded with a leather case, so as to allow the wound in the axilla to be properly attended to. It was found necessary to saw off about half an inch of the ulna, in order to its being well retained in position; after which this fracture was dressed with dry lint, and put up with anterior and posterior splints. The discharge was so trifling, that the wound may be said to have united by the first intention. It was only taken down three or four times. There was very considerable sloughing of the integuments of and around axilla; but when this ceased, the parts granulated and cicatrized most favourably. He kept wonderfully free of constitutional disturbance, his general health and appetite being good throughout. He was early put upon full diet, and four ounces of wine, which was at times alternated with a pint of porter. On the 12th of September (thirty-four days after accident), union of the fractures was found to have gone on most favourably, the forearm being the only one in which ossific union had not yet taken place. On the 20th, the fractured thighs were found firmly united, in good position, and of the same length. He now commenced to walk about the ward on crutches; and on the 27th he was dismissed. He walked with little lameness, all the motions of his joints being perfect. I saw him several months after he left the Infirmary, and the loss of the thumb, and cicatrix in and around axilla, were the only traces he bore of his numerous and severe fractures and other injuries.

This case is remarkable, as showing the powers of nature in the restoration of severe injuries to the osseous system. In estimating his rapid recovery, his age and healthy constitution must not be overlooked. He never had an unfavourable symptom. The day after his admission, I found him, at the visit, amusing himself by twirling, with his uninjured hand, a rope which hung from the roof, for aiding weakly patients in their efforts to sit up in bed. He was always cheerful and in good spirits, and, fortunately for the reunion of his five fractured bones, and the cicatrizing of his other wounds, was able to take and digest with comfort, full nutritious diet, during the time requisite for his recovery.

Case V. Compound Fractures of Thigh and Patella.—A boy, aged 15, was admitted to the Infirmary on 26th Sept., 1848. While at work on a ship in dry-dock this forenoon, he fell from a height of about forty feet among some stones. At admission, an hour after accident, he was found to have sustained a compound comminuted fracture of patella. The wound was fully an inch in length, and admitted the finger with ease into the knee-joint, which was considerably distended with coagulated blood, and

synovial fluid escaped freely from it. He had also a compound fracture of femur at junction of its middle with upper third, the external wound, which was lacerated, irregular, and fully two inches in length, being on the outer and towards the posterior part of thigh. On introducing the finger, the muscles were found severely lacerated, and separated from the bone, to the extent of an inch from each broken extremity. The fracture was slightly oblique. Pulse feeble, and extremities cold. He had two ounces of whisky, with hot water and sugar, and warm applications to extremities. A few hours after admission, when he had somewhat recovered from the shock, a consultation was held on his case, when immediate amputation of thigh above the fracture was unanimously recommended.

The boy's father having positively refused to allow the operation, water-dressing was applied to the fractures, and the limb put up with a posterior splint in the straight position. He kept remarkably free of fever, or any constitutional symptoms. The wound in the thigh healed favourably; being in a depending position, the discharges got freely away, so that the suppuration was moderate, and did not burrow among the muscles. The open knee-joint kept free from acute inflammatory swelling, but suppurated copiously. Towards the middle of October his appetite began to decline; his pulse became more rapid; he lost flesh; and had at times a slight hectic flush. The suppuration continued healthy, but as copious as formerly, and now flowed from the lower part of thigh, as well as from knee-joint. He was ordered wine, full diet, and a solution of quinine, in aromatic sulphuric acid. His friends, who now thought him dying, became very anxious to take him home, and removed him, on 22d October, to a damp, uncomfortable dwelling in the suburbs of the city. At this date, the wound in the thigh was all but healed, and the union of the bone well advanced, but the knee still suppurated freely.

This boy had little or no surgical care bestowed on him after his removal from the hospital; yet he ultimately recovered, with his limb about an inch and a half shorter than the other, and his knee-joint ankylosed. The last time I saw him, he was actively employed as a street scavenger.

Cases of recovery from compound fracture of the patella are certainly rare. In the majority of recorded cases, the wound in the soft parts was extensive, tending to illustrate what may now be looked upon as an established point in surgery, that free wounds into joints are not generally followed by such severe symptoms as small or punctured ones. In our patient, besides the compound fracture of knee, we had the severe compound fracture of thigh of same limb. When one or other of such injuries only exists, the reasons for and against primary amputation are often nicely balanced. Combined, as in our case, there can be little room

for hesitation; though contrary to the expectation of the consultation, it terminated favourably. The case is very interesting, and though the result throws no credit on our surgical prognosis, I have not hesitated to put it on record; but I take leave to warn my readers, that isolated cases of this description are often dangerous beacons, enticing surgeons to depart from what may be considered the more established principles of the art; and in their earnest desire to save the limb, allowing their better judgment to be led astray, to the great danger of the life of the patient. I could not counsel the attempt to save a limb similarly injured, except under the most favourable circumstances as to age, health, and constitution.

Case VI. Old Dislocation at Knee, with Compound Fracture of Leg.—D. M'D—, aged 40, sailor, admitted Nov., 1853, for an ulcer on right leg. The right leg presented a most remarkable appearance, of the cause of which he gave the following account:

Twenty years ago, when at sea, he got the limb severely crushed and lacerated by a heavy cask rolling over it. He was confined to bed for five or six months on board ship, without professional assistance, during which time a large piece of bone, he says about six inches in length and two in breadth, came away, after which the wound gradually healed, leaving the limb in the following condition:—

The patella appears to be very much in its natural position; but the heads of the tibia and fibula are about two inches behind it, and are only in contact with a small portion, apparently not more than half an inch, of the articulating surface of the femur; the ham strings make a semicircular curve upwards from their insertion into the bones of the leg. When he stands quite erect, the limb is shorter by half an inch than the other, shrunk throughout its whole length, and flattened anteriorly. Flexion and extension are free and complete; he has a very slight halt in his gait, but he states that of late years he has often walked twenty miles in a day, and that he can run up the



ship's rigging as well as any man on board. The original injury must have been a dislocation of the bones of the leg backwards, with severe compound fracture immediately below epiphysis. Annexed is a lateral representation of the limb, from a photograph.

This man met with his accident when about twenty years of age, and though the case demonstrates the marvellous powers of nature, both as to the healing of a sadly mutilated limb, and the restoring of the functions of that limb, still nature might here have been greatly aided by surgery. Had the dislocation of the epiphysis backwards been reduced, and, with the lower part of the leg, kept in position by a posterior splint and bandages, the cure would have been greatly expedited, the deformity would have been trifling, and the shortening and lameness prevented.

Case VII. *Comminuted Compound Fracture of Tibia and Fibula, with great Loss of Bone.*—G. W., aged 24, mason; admitted 16th May, 1853. While employed this forenoon in carrying a large stone across a plank, which was raised to a height of four feet, the plank gave way and he was precipitated to the ground, the stone falling on his left leg.

On examination the soft structures of leg were found to be very severely bruised and lacerated, particularly on anterior and lateral aspects. The posterior parts were comparatively uninjured. The finger could be carried freely from several openings among the torn muscles, and detected both bones fractured, the tibia being comminuted for several inches. The posterior muscles and integuments were in a favourable condition; extensive sloughing was inevitable, which would leave a free issue for the discharges, and show plainly the state of the comminuted bones: the man stated that he was previously in perfect health and of very temperate habits. For these reasons it was determined to endeavour to save the limb—having recourse, if necessary, to secondary amputation. The fractured limb was put up with water dressing over the wound, and splints, and he was ordered a dose of castor oil next morning.

The dressings were removed on the 19th, on account of hæmorrhage, with which exception he had kept remarkably well. The wound was now dressed with dry lint and a firmer bandage applied, after which he had no return of hæmorrhage. He kept very free of constitutional symptoms. Had no medicine except an anodyne draught every night for some weeks, and a mild aperient when necessary.

The sloughing of the integuments left an open wound of fully five inches in length, and four in breadth, about the middle of leg, exposing the tibia, comminuted and denuded of periosteum. It would be tedious, and it is unnecessary, to narrate the daily progress of the case. Healthy but profuse suppuration was established in about a fortnight. He was put on full diet, and allowed six ounces of wine daily. On the 3d of June, the pieces of com-

minuted bone were removed from their slight adhesions to the posterior parts, taking care to leave any shreds of periosteum which adhered to them. It was found that four and a half inches of the complete diameter of the tibia were thus taken out.* The fracture of the fibula had not been comminuted, so that it was not necessary to remove any part of that bone.

After the removal of the pieces of fractured bone, the parts were put up with water dressing, scultetus bandage, and splints, which were taken down as seldom as was consistent with cleanliness and comfort. He was kept on generous diet, and had a pound of lime-water in milk daily. Suppuration rapidly lessened, and the wound granulated and cicatrized so favourably, that on the 22d July it was not larger than a crown piece; but as yet it was impossible to say whether ossific union was likely to be effected. As he was in circumstances to command all the ordinary comforts of life, he was now recommended to go for some time to the country, to keep light splints applied to the leg, and to move about on crutches.

On his return to town, beginning of October, I was much gratified at the improvement which had taken place; there was now firm union of a cartilaginous character, and though this yielded considerably to lateral pressure, still he could bear some weight on the limb, and, when it was supported by splints, could walk a short distance with the aid of a staff. The fractured leg was now surrounded with a properly fitted gutta percha case, extending from the knee to the ankle, which was kept in position by a simple bandage, and he was desired to take what exercise he could, with the assistance of a crutch, without pain or fatigue. The union now progressed so favourably, that by the month of January he was able to resume his work as a mason; and now (Dec., 1854) he suffers from no inconvenience except the slight shortening, which is remedied by a high-heeled shoe. He can walk long distances (8 or 10 miles) as well as ever he could, has no pain in the seat of injury, the cicatrix of wound being firm and healthy. The union is certainly not perfectly osseous, as on minute examination there is very slight lateral motion about the middle of tibia. The fibula seems quite firm. This motion is so slight, however, as not to impede his locomotion, and he doubted its existence till I carefully pointed it out to him. The ossification has gone on so regularly, I am of opinion that in the course of a few months it will be complete.

There are few subjects which have obtained more attention from pathologists and physiologists than the formation of callus, and still it is involved in much obscurity and doubt. Mr. Paget and Mr. Stanley may be said to have demonstrated, that the mode of repair of fractures in man differs very materially from what takes place in the lower animals; so that our deductions from experiments

* The pieces of bone are preserved in the Infirmary Museum.

on dogs, rabbits, birds, &c., cannot be applied to the cure of fractures in the human subject. The descriptions of external and internal, provisional and definitive callus, and the formations of cartilage and bone, within the medullary tube and beneath the periosteum, apply to a very limited extent, according to these pathologists, in the repair of fractures of human bones. The reason of this difference seems to depend in a great measure on the movement to which the fragments are subjected in the lower animals, and probably also on the greater readiness with which bone is formed in them than in man. Mr. Paget, who has made a most careful examination of the collection of fractures in the Museum of the College of Surgeons of London, and many other specimens, says—"In as many as you like to examine, you will find the new bone formed exclusively between the fragments. Whether they were in apposition or nearly so, or wide apart, still there is no appearance of new bone being formed on the outer side of any fragment. And this is the case even in those instances in which there is so much displacement of the fragments and so much distortion, that we can hardly suppose the repair to have proceeded very quietly."*

Mr. Paget is further of opinion, that ossification may be accomplished through perfect fibrous tissue, or even by ossification of fibrous tissue in a rudimental state, and that such ossifications may be accomplished without the intervention of the smallest portion of cartilage; but perfect cartilage may also be produced. "In different specimens, or sometimes even in different parts of the same, the reparative material has displayed in one, fibrous tissue with a few imbedded corpuscles, like the large nearly round nuclei of cartilage cells; in another, a less appearance of fibrous structure, with more abundant nucleated cells, having all the characters of true cartilage cells; and in a third, a yet more nearly perfect cartilage. Through any of these structures the reparative new bone may be formed. It may be formed, first, where the reparative material is in contact with the old bone, and thence extending, it may seem as if it grew from the old bone; or it may be formed in the new material, in detached centres of ossification, from which it may extend through the intervening tissues, and connect itself with the old bone."† It is only by such a process that we can explain the great reparation of bone which took place in Cases VI. and VII., while these cases are highly confirmatory of the accuracy of the deductions in regard to the repair of fractures, which that highly distinguished pathologist, Mr. Paget, has so ably propounded, from the very numerous specimens he has examined.

Case VIII. Extensive Fracture, with Depression of the Bones of the Cranium.—P. R., aged 43, mason. At admission, on Nov. 7, he was quite intelligent, and gave the following account of the

* Ranking's Abstract, vol. xi., p. 333.

† Dr. Paget's Lectures on Surgical Pathology, vol. i., p. 246.

accident which had befallen him. On 3d inst., while assisting to carry a large cornice-stone on a scaffold, the trestle broke, so that he fell to the ground a height of six feet, and was struck on the head by the stone he had been carrying. After this he was insensible for some hours, during which time he was taken home, but in the evening he so far regained intelligence, as to be quite aware of what was going on around him. At admission there was a lacerated wound, extending from an inch above frontal prominence to within half an inch of the occipital protuberance on left side of head; the edges gaped, and discharged thin unhealthy matter. About the middle of the wound, the finger could be passed below the upper flap of integument for an inch and a half; but the bone was covered with pericranium, and seemed to be uninjured. There was some clotted blood in and around external ear of same side. Over the centre of right temporal ridge, there was a small triangular wound, with a puffy swelling around it. There was slight paralysis of left side of face. Both pupils were sensible to light. Pulse 70, rather feeble, and bowels confined. He had a purgative, and water dressing to wounds of head. No change of any moment occurred till the 12th, when the puffy swelling over the right temporal region gave way; and on introducing the finger, the bone was found to be denuded of pericranium, and a triangular portion of the parietal, about two inches in length, and one in its greatest breadth, fractured, and depressed at its narrow end. The wound on the opposite side granulated well. The opening on right side was enlarged, so as to expose the depressed portion of bone, which was now found to be comminuted. The pieces were removed with a pair of common dressing forceps, leaving an irregular opening, of fully an inch and a half in diameter. The lower border of this opening being depressed, it was raised with a common elevator, and a fracture was found to extend from this, both towards base and vertex of skull.

He continued to be quite intelligent, made little complaint, took his food, and slept fairly, till the 24th, up to which time the wounds granulated well, the purulent discharge being moderate and healthy. He then began to waver in mind, and to attempt to get out of bed. The wounds about same time assumed a pale, flabby character, the discharge became thin and offensive, the pulse more frequent and feeble, the tongue dry and parched; and on the 28th a small slough separated from the wound on left side, exposing a portion of bare bone, from which a fracture was found to extend both upwards and downwards, without any apparent depression or displacement.

He now had frequent rigors; the wounds assumed alternately a healthy and unhealthy appearance; stupor gradually supervened, though, to within two days of his death, he could be roused to answer questions relevantly. He sunk very gradually, and died

on 23d December, being fifty days from the receipt of the injury.

INSPECTION.—The fracture was found to include the whole lateral circumference of the cranium. It extended from the right parietal bone, through the petrous portion of the temporal, across the base of skull, through the cella tūrcica of sphenoid; upwards from this, through the left temporal, and across the parietals, to the opening caused on right side by the portions of bone which had been removed. The petrous portion of left temporal bone was apparently necrosed, and the parts constituting the internal ear were in a state of disorganization. The brain and dura mater were healthy. The sinuses and parts about the base of the brain, more especially on the left side, were the seat of considerable disease. The left lateral sinuses being filled up, and surrounded with purulent exudation, which passed down into the posterior lacerated foramen.

The principal point for remark in this case, is the want of corresponding intensity between the extent of injury and the physical and mental symptoms. For three weeks after this man had his skull fractured round and round, and a portion of the right parietal bone comminuted and depressed, he retained his intelligence, had no general paralysis, slept, and took his food tolerably well, complained little of pain, and was altogether very free from marked constitutional disturbance. Though at times, after this, he was in a state of stupor, or restless bewilderment, he did not become comatose, or entirely lose intelligence, till within two days of his death; and he lived for fifty days with his skull literally split in twain.

X. *The Surgical Practice in the Naval Hospital on the Bosphorus; extract of a letter to one of the Editors.* By JOHN DAVIDSON, M.D., Surgeon to the Hospital.

HOSPITAL, THERAPIA, Dec. 8, 1854.

MY DEAR SIR,—“As you may imagine, since the action of the 17th Oct., our hands have been pretty full here. We have received about 70 of the most seriously wounded—all by shell—frightful lacerations—compound fractures, and a number of amputations—very different injuries from those produced by musket shot, and with which we have nothing to put in comparison. In consequence of the great fatigue and exposure to which the men had been subjected for some time previously, and their long subsistence on salt-meat rations, their health had in general suffered much. Scorbatic symptoms, more or less marked, were manifest, and the result was, that on admission not a single stump or wound was in a healthy state, but sloughing more or less had taken place in all. Of course many deaths have occurred; though not more, I think,