Addenda.

Library College of Surgeons
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(7)

This Addenda is part of the Sixth Edition of Mr. Guthrie's "Commentaries in Surgery," *now publishing; and is printed separately for private distribution among those officers who have furnished the information contained in it.*

ADDENDA.

SEVERAL reports and cases having reached me from various medical officers in the Crimea, too late for publication in their proper places, I have thought it best to notice some generally as to results, others particularly. Chloroform has been freely administered in all the Divisions of the army save the Second, and has been generally approved; one death only, as far as is known, having occurred directly from its administration, of which Staff-Surgeon Gordon, P.M.O. of the Second Division, has favoured me with the following report.

Martin Kennedy, 62nd Regiment, aged 32 years, a healthy soldier, having accidentally wounded one of his fingers by his musket going off, and the medical officer in charge considering it necessary to remove it, was brought under the influence of chloroform, but, according to his (the Surgeon's) statement, only about ʒij could have been inhaled. He had commenced the operation, when the patient suddenly expired. On the post-mortem examination, beyond a little fatty deposit on the external surface of the left ventricle, together with a degree of hypertrophy of the same, no morbid appearance existed. The usual restoratives were resorted to, but ineffectually.

The following case, furnished by Assistant-Surgeon Hannan, 49th Regiment, is given as an illustration of the success of amputation without chloroform in the Second Division.

Patrick Kenny, 49th Regiment, aged 22. This soldier whilst on duty in the trenches, on the 21st of July, received a compound comminuted fracture of the right humerus, extending from its middle third to the head of the bone. The integuments of the outer and upper part

of the shoulder were carried away. There was also a contused and lacerated wound of the left knee, opening into the joint, with comminuted fracture of the patella; these injuries being caused by pieces of shell. He was seen a quarter of an hour after admission by Dr. Gordon, P.M.O., who removed the arm at the shoulder-joint, making a sufficient flap from the integuments of the axilla. The thigh was then amputated in its lower third. These operations were performed in immediate succession without the administration of chloroform. The thigh healed nearly by the first intention—all the ligatures having come away by the fourteenth day. The shoulder healed by granulation—the ligature of the axillary artery coming away on the twenty-first day. During the progress of treatment he had not any constitutional disturbance further than three slight attacks of diarrhœa. He is now up and about, and goes to England by the next opportunity.

In the worst cases of amputation at the hip-joint, or at the upper third of the thigh, chloroform has appeared to cause insensibility to pain without diminishing the powers of the sufferer, when given with due caution, or not carried so far as to affect the pulse or respiration. (See Aphor. 51.) The evidence on this point is sufficient to authorize surgeons to administer it in all such cases, with the expectation that it will always prove advantageous, an accidental death, such as has been observed from its use, being independent of the nature of the injury. The amputations performed at the hip-joint, at least six in number, have not been successful as to the result, although the sufferers bore them well in the first instance, offering every prospect of recovery for days and even for weeks.

Deputy Inspector-General Taylor informs me, and his opinion is corroborated by all the medical officers, that the labours the troops had to perform, the privations they suffered, the frequent insufficiency of their food, the want of proper clothing, with other depressing causes, had so deprived them of that power British soldiers generally possess, that all the operations of importance performed on the lower extremities were more or less unsuccessful, whilst those on the upper were as remarkable for their

success. This deprivation of power, it is said, was even more observable in the French army; and he informs me that most of their surgeons had declined performing any of the great operations usually done on the upper third of the thigh, in consequence of their almost certain failure; preferring to let the injuries take their course, even unto the death of the sufferers, rather than hasten their dissolution by any operation usually considered, and often found to be conservative; a lamentable state of things from which Governments may draw an inference of the utmost importance—viz., that to guard against the effects of disease as well as of injuries, the utmost pains should be taken to preserve the health and maintain the vigour of their soldiers. A matter of expense as well as of arrangement.

This statement is corroborated by Deputy Inspector-General Alexander, who informed me, on the 3rd of August, 1855, that "During the whole of this campaign, where we have had ample opportunities of testing the use of chloroform, both after the battles of the Alma and Inkermann, as well as throughout the whole siege operations before Sebastopol, up to the present period, no operations whatever of any consequence (save with one or two exceptions, and then at the patients' own request) have been performed in the Light Division, without first placing the patient under the influence of chloroform, and in no single instance have either the medical officers of the Division or myself seen any bad results follow, or had to reject its use, but quite the contrary. Of course, in such a campaign many operations of the most serious character, both on the upper and lower extremities, have been performed in the Division by the different medical officers as well as by myself. At the Alma, I operated upon three patients at the hip-joint, two being our own men and the third a Russian. All the three patients were first placed under chloroform, with the results above stated. In the case of a soldier, of the 90th Regiment, whose right arm I removed at the shoulder-joint on the 10th of July, for great destruction of the soft parts, and extensive injury to the humerus, the patient was so low when placed on the table, that brandy-and-water

was given to him, and he was then immediately afterwards placed under chloroform. When I had finished, it was found that his pulse was stronger than before commencing the operation. In Sir T. Trowbridge's case, in which I had to remove both feet, one at the ancle-joint and the other above it, he was placed under chloroform for both operations, a few minutes having been allowed to elapse before giving it to him again for the second operation, and with the best results. Both feet were much injured by round shot, the bones of both being completely smashed with great destruction of the soft parts, so much so, that in the case at the ancle-joint, I had to form the flap from the cushion of the heel. I however did not remove the articular surface of the lower end of the tibia, as recommended by Mr. Syme, and the wound healed well. Of the three cases mentioned at the hip-joint, two were performed on the 21st, and the Russian on the 22nd of September. At one of the former I was assisted by the late Dr. Mackenzie, from Edinburgh. All three were carried down on the 22nd, to be placed on board ships for conveyance to Scutari. It has been reported to me that one of the two operated on the 21st, Peter Sullivan, 33rd Regiment, died at Scutari General Hospital on the 11th of October, three weeks from the date of the operation, 'from excessive debility.' Nothing could be ascertained about Peter Cleary, 23rd Fusiliers; it is therefore most likely that he died on the passage.

"The Russian died on the 22nd of October, 'from great debility and extensive sloughing.' A shoulder-joint case in the 90th Regiment never had a bad symptom, and the wound is all but healed. The flap in this case was made from the axillary portion of the arm, the deltoid having been all but destroyed.

"The flap operation has been invariably performed in Light Division, with two exceptions—viz., one of the arm and the other of the thigh."

Excision of the head, neck, and trochanter of the femur, with portions of the shaft, has been performed at least six times before Sebastopol. The result has been unfavourable in five, although in all there were well-grounded expectations of success for weeks. In one case by Mr. Blenkins, of the Grenadier Guards, he informs me, it was for the first

three or four weeks very favourable. The man however sank at the end of the fifth week from deposition of matter in the knee-joint. (See p. 42 et seq.) Of the second case, which occurred in the general hospital in the camp and ended fatally, I have no further notice. The third, in the 68th Regiment, in charge of Mr. O'Leary, the operation performed on the 19th of August, was going on most favourably on the 5th of October.

Private Thomas McKenena, aged twenty-five, was struck by a fragment of shell, on the 19th of August, over the great trochanter of the left femur. The wound, nearly an inch in length, extended down to the bone, which was distinctly fractured. Some loose scales could be felt at the bottom of the wound. On examination, the injury appeared to be a transverse fracture of the neck of the thigh-bone, apparently involving the joint.

After a consultation with superior medical officers, it was decided that excision should be performed, which was done without difficulty. No vessels required ligature, although the man lost a considerable quantity of blood.

The excised parts, which are herewith forwarded, show that the nature of the injury was different from what it was supposed to be, and that the head of the bone was intact.

After the wound, about five inches long, had been sewn up, the limb was placed in a sling made of strong canvas, and was swung from a beam over the man's cot, the bed being raised.

This method of treatment was adopted with a view to encourage approximation of the upper end of the bone to the pelvis, and by pressure on the sides of the limb to prevent the accumulation of matter among the tissues. The man progresses favourably.

Diet was very generous.

J. C. O'Leary,
Surgeon, 68th Light Infantry.

Camp, 4th Division, Crimea, Sept. 14. 1855.

The bones removed are in the Museum of the Royal College of Surgeons.

The fourth case is given at length by Staff-surgeon Crerar, as follows.

Private William Smith, First Battalion First Royals, was brought to hospital from the Greenhill trenches, in front of Sebastopol, about twelve P.M., on the 6th of August. On questioning him, I ascertained that an hour or so before, he was struck by a fragment of an exploded grenade, which first broke into small pieces a water canteen, which was suspended over the left hip, and then made an opening or wound about the size of a shilling nearly a quarter of an inch posterior to the great trochanter. Crepitus was quite distinct on moving the limb, and I easily ascertained, on exploring the wound with my finger, that a fracture through the trochanter had taken place, but was quite unable to ascertain to what extent upwards and downwards the fracture extended. I accordingly solicited a consultation with Deputy Inspector-General Taylor and Staff-surgeon Paynter. After a careful examination (the patient being under the influence of chloroform), the femur was discovered to be comminuted. Excision at the hip-joint being recommended by these officers, in which opinion I concurred, I proceeded to perform the operation by commencing an incision, nine inches in length, in a line with, and two inches posterior to, the anterior superior spinous process of the ilium, and carrying it down in a straight line directly over the trochanter major; a second incision about two and a half inches in length was made, commencing immediately below the trochanter backwards through the gluteus maximus; by a little easy dissection the seat of fracture was exposed, the trochanter was found broken into several portions, detached and imbedded in the contused muscles around, from which they were at once removed. The fracture was found to extend obliquely inwards about an inch and a half along the shaft of the bone. The femur was now protruded through the wound and I sawed off the whole of the fractured bone, leaving a smooth clean surface; I then proceeded to disarticulate the head of the femur, which was effected without difficulty. Scarcely three ounces of blood were lost, and little or no shock was induced; only one small bleeding point was secured near the tail of the wound, and the divided parts were brought together by two sutures and bands of adhesive plaster.

At twelve, A.M., two hours after the operation on the 7th instant, his pulse being rather feeble, he was ordered some wine and water.

7th, vespere.—Countenance cheerful, voice strong; says he intends keeping up his pluck, and is sure he will get well, has no inclination to take the beef tea ordered for him, but has had some arrow-root and wine. To have a morphia draught at bedtime.

8th.—Passed a good night; limb in a good position; retracted about two inches; wound looks healthy; pulse 100, soft; has made urine freely; skin moist; bowels were opened freely in the night.

9th.—Slept well all night; says that he feels very comfortable; skin moist; pulse 120; sutures were removed and the wound allowed to gape; it has a remarkably healthy appearance. To go on with the simple water dressing, chicken broth, arrow-root, and wine.

Vespere.—Has been very cheerful all day; limb has retracted about another half inch; pulse 112.

10th.—Passed a more restless night in consequence of not having the morphia draught as early as the previous night; has had several hours' sleep this morning, and is more refreshed; pulse, on waking, from 114 to 120, skin comfortable; no sign of distress in his aspect; wound suppurating healthily; bowels were opened again once last night.

10th, vespere.—Has been very easy all day; skin cool; tongue normal; pulse 120, soft and regular; has had to-day two eggs, one ounce of arrow-root, two gills of wine, and two pints of chicken-broth, all of which he relished much. To have a grain of acetate of morphia in solution at bedtime.

11th.—Slept soundly all night; when I visited him at six A.M. he had just awoke; pulse 115, soft; appears contented and comfortable.

Vespere.—Doing well; wound continues to look healthy; position of limb good; has consumed a fair quantity of chicken-broth, beef-tea, arrow-root, and three gills of sherry to-day; pulse 113 at eight P.M.

12th.—Bowels were opened in the night; the introduction of the bed-pan gave him a good deal of annoyance;

the air of the hut was rather stagnant last night, and he did not sleep as well as usual; pulse 120, soft; tongue continues clean and moist; there is more discharge from the wound to-day.

Vespere.—The progress of the case is most satisfactory; had a fresh egg, tea and toast for breakfast, his own selection, which he appeared to relish greatly; at twelve he had two mutton chops and a glass of wine, and at five P.M. a pint of chicken-broth with bread, and a second glass of wine. The morphia draught as usual.

13th.—Continues to look happy and contented. Healthy looking granulations are evident over two-thirds of the wound; swelling of limb subsiding; discharge from wound healthy; pulse 114, regular and soft; all the symptoms are so very favourable that I have every reason to expect a successful issue.

14th.—A small slough at the lower part of the wound, remainder healthy and clean; tongue a little too dry this morning, and he has more thirst than usual; pulse 118. To have effervescing draughts of bicarbonate of potass and citric acid three times a day; to continue simple water-dressing.

Vespere.—Thirst not so urgent; tongue cleaner and moister; has a feeling of fulness in the abdomen. To have his usual morphia draught and an ounce of castor-oil at bedtime.

15th.—Passed three large stools in the night with great relief; aspect resigned, and his spirits continue good; slough has come away; pulse 118, soft and regular; skin tolerably cool.

Vespere.—Felt a good deal exhausted to-day, from the heat, which was very great, ninety-two degrees.

16th.—Looks heavy and out of spirits this morning; discharge has increased, but is of a better quality since the slough separated; tongue dry, inclined to brown; pulse the same, skin rather hot; continue effervescing draughts every third hour.

Vespere.—Tongue more moist, less thirst. When asked how he felt, he replied, with a great deal of life in his countenance, "I am very well, and I feel very comfort-

able;" asked for a mutton chop early in the day, which he got, and appeared to like; he had at different times in the day arrow-root, chicken-broth, and wine.

17th.—Wound looks very healthy, and the general symptoms very favourable to-day; tongue clean and moist; less thirst; skin cooler; had him removed to a fresh bed without a great deal of pain or trouble; limb retracted less than three inches; position now good since he was shifted.

18th.—Very much worse this morning; had a rigor about ten A.M. yesterday; features now sharpened and pinched; tongue dry and brown; pulse thready, about 125.

Vespere.—Continues in a very low state; wound has a very healthy appearance; discharge healthy, but not as abundant as it was; has had besides wine, a pint and a half of porter, mutton-broth, and a chop to-day; zinc lotion to the wound.

19th.—When I visited him at six A.M. to-day, I was much pleased to find him looking quite cheerful; pulse soft, 112; skin cool and moist, paler than usual; wound doing well. Continue zinc lotion to the sore, and to have his choice to-day of mutton-broth, beef-tea, or chicken-broth; arrow-root to be given twice, four gills of sherry or port as usual.

Vespere.—No change to report.

20th.—Looking rather pale, and features pinched; pulse better, about 100, soft; skin cool; tongue more coated than usual, inclined to be dry. I fear this case is a bad one, not likely to terminate as we so much desire.

Vespere.—Has been very uneasy all day; skin hot; tongue dry.

21st, six A.M.—Has just awoke, having been asleep since nine last night; says that he feels stronger; aspect certainly improved since the last visit; coating on the tongue thicker, brown; the pulse has more strength than it had yesterday; no feeling of uneasiness; wound looking remarkably well, and discharging laudable pus; asks for cold drinks; to have his choice of iced soda, tamarind, toast or rice water; diet the same as yesterday.—Eleven A.M.: has fallen off very much since the morning, features pinched and blue; pulse irregular, small, and wiry.—

Twelve nocte: continues to sink; died at half-past twelve P.M.

Examination of the limb six hours after death.—Cut surfaces of femur perfectly smooth; bone easily denuded of its periosteum; acetabulum smooth; muscles infiltrated with pus; nature had not made the slightest attempt to repair the loss.

What would the result have been if amputation at the hip-joint had been performed? The same. The vis medicatrix naturæ is not sufficient to carry our sick through such formidable operations; it is no fault of the surgeons. A better and a more liberal allowance of animal and vegetable food during health is required, if England expects her soldiers to survive severe operations, disease, and wounds. An attempt to save the limb, for the very same reason, would most undoubtedly have been a failure. Our Minié rifle-ball fractures of the femur all sink under conservative surgery. Our amputations above the middle of the thigh have a like issue; it is truly disheartening.

J. Crerar, Surgeon, 68th Regiment.

Camp before Sebastopol, 24th August.

Dr. Crerar was greatly distressed by the loss of this man, and the manner in which he expresses his grief is declaratory of his feelings. The excised bones are in the Museum of the Royal College of Surgeons.

The fifth, by Dr. Hyde, ended fatally on the sixth day.

Corporal Benjamin Shehan, 41st Regiment, advanced with his corps, about twelve o'clock on the 8th of September, to storm the Redan. Having succeeded in getting into the work, the regiment was afterwards obliged to retire; in the retreat to our trenches he was wounded, and lay on the field till the following day, when he was brought to the hospital of the Royal Sappers and Miners. On examining the wound, it was found that a grape-shot had entered at the great trochanter, and passing inwards and a little forwards, had passed out at the groin of the same side, about an inch below Poupart's ligament, externally to, and a little in front of, the femoral vessels. The

lower fragment of the fracture protruded through the external wound, and the introduction of the finger discovered a comminuted state of the neck of the bone.

Excision of the joint having been decided on, the operation was performed in presence of Deputy Inspector-General Taylor, Staff-Surgeon Dr. Paynter, and Surgeon Elliot, Ordnance Department.

Operation performed about one P.M., 9th of September.—An incision, about four inches in length, commencing a little above the trochanter, was carried downwards along the outer side of the femur. The lower fragment, for about an inch of its extent, was cleared of its attachments. An assistant holding the thigh below, and pushing the bone upwards and outwards, so as to bring the fragment through the incision, about an inch of the bone was then sawed off. The head of the bone was next dissected from the socket; this part of the operation was considerably facilitated by an assistant catching a firm hold of the neck by means of a pair of tooth forceps, then rotating the head, and using slight force to dislodge it from the cavity, the operator dividing the capsular and round ligaments, the latter of which is more easily and safely divided at the lower and outer side of the articulation. The upper part of the trochanter was next dissected out, and several small spiculæ of bone removed. The edges of the incision were then brought together by sutures, and a bandage applied. It was not found necessary to tie any vessel, and there was very little hæmorrhage. The man bore the operation well, and was returned to his bed in good spirits, and with a good pulse.

10th.—Passed a good night; slept pretty well; pulse 106, soft; skin cool; in good spirits.

11th.—Slept some hours; pulse 106, soft; bowels open; tongue furred but moist. Wound dressed and looking well; some healthy discharge.

13th.—Going on apparently very well; pulse still 106; countenance good. Vespere: Complains of an increase of pain in the hip, but otherwise says he feels much as usual; pulse small and rapid. Ordered wine and arrow-root.

14th.—Died at six this morning.

The autopsy showed a considerable cavity filled with sanies in the situation of the operation, but no other fractured bone was discovered. The articulating surface of the acetabulum was coated by a fetid pasty substance.

GEO. HYDE, M.D., Staff-Surgeon.

The sixth, by Staff-Surgeon Coombe, also ended fatally.

Private James Nadauld, aged twenty-one, First Battalion Rifle Brigade, was admitted into the Castle Hospital, Balaklava, upon the 16th of July, 1855, five days after the receipt of a gun-shot injury of the right shoulder. Upon the 19th of July the head of the humerus was excised, and the ball was found impacted in it. The healing process went on most favourably, and the man was discharged upon the 26th of August, quite well, for the purpose of proceeding to England. The excised bone is in the Museum of the Royal College of Surgeons.

W. H. MACANDREW, M.D.,
Surgeon, 57th Regiment.

Camp, Sebastopol, Sept. 14, 1855.

Private John Purcell, 57th Regiment, aged twenty-one, was wounded upon the 18th of June, in the unsuccessful assault upon the Redan, by a Minié rifle-ball, which passed directly through the head of the humerus, but did not touch the glenoid cavity. Upon the 22nd of June, the head of the bone was excised; and upon the 26th August, the man was discharged from hospital, quite well, for the purpose of proceeding to England. The excised bone is in the Museum of the Royal College of Surgeons.

WM. H. MACANDREW, M.D.
Surgeon, 57th Regiment.

Camp, Sebastopol, Sept. 14, 1855.

The following case of wound of the larynx is instructive.

Lieutenant Charles H. Evans, 55th Regiment, aged nineteen years, was wounded on the evening of the 5th of August, 1855, about eleven o'clock P.M., while on duty in the trenches. The ball entered the right side of the neck, close to the angle of the jaw, and passed apparently be-

tween the hyoid bone and the arytenoid cartilages, and then downwards, having its exit below the cricoid cartilage on the left side. The pharynx and larynx were wounded, and the trachea was contused and displaced. Respiration somewhat hurried; a quantity of mucus collects in the trachea, and is expectorated in fits.

About seven o'clock P.M. of the 6th, the respiration becoming more difficult, with a degree of lividity of the lips, indicative of the non-oxygenation of the blood; it was deemed advisable to have recourse to tracheotomy, which, in consequence of the displacement of the parts and the swelling, was effected with considerable difficulty. The usual tubes were found too short for the purpose, and a large silver catheter was inserted, through which the air passed freely. Whenever he attempted to drink, the liquid passed into the trachea through the openings caused by the ball. From the operation no benefit arose, and he continued very restless until within an hour of his decease, which took place about twenty-six hours after the receipt of the wound. The voice was never heard above a whisper.

Post-mortem examination, twelve hours after death.—The ball would appear to have passed through the hyo-thyroid membrane, fracturing and shattering the thyroid cartilage. The membrane lining the glottis was torn and destroyed. The vessels escaped without injury, the ball having passed anteriorly.

ARCHD. GORDON, M.D.,
Staff-Surgeon, 1st Class, in Med. Charge, 2nd Division.
Camp before Sebastopol, 3rd September, 1855.

Deputy Inspector-General Taylor, who was present during the operation, adds—"The want of a longer tracheal tube than is commonly supplied for such operations was obvious, and is a good practical hint. For the first time in my life I found my two fore-fingers transfixing a man's neck from side to side. The fingers did not cause any cough or irritation, but those symptoms were occasioned by the least attempt to swallow water. The thyroid cartilage was separated into two pieces.

The following cases, one of wound of the profunda femoris, the other of the popliteal, deserve attention.

Late in the afternoon of the 14th of August, Private George Irvine, aged twenty-five, was brought from the trenches, having been struck by a Minié ball of the largest size, which had penetrated the left thigh, about two inches below Poupart's ligament, just in the course of the femoral artery. The ball passed slightly outwards, fracturing the femur, and was cut out at the back of the limb, completely flattened. As there was considerable hæmorrhage, both venous and arterial, no examination with the finger was permitted. Dr. Taylor, superintending the Division, having been informed of the case, a consultation was held.

Amputation at the hip-joint was forbidden by the prostration of the man, who had lost much blood before he was brought to camp. Excision of the head of the femur was also inadmissible, from the evident wound of a large artery, with probably that of a large vein. Search for the wounded artery, for the purpose of applying a ligature, was then determined upon, but before the operation had well proceeded, the hæmorrhage was so great, that it was found impossible to continue it, and pressure by means of graduated compresses was resorted to, with complete success.

On the following morning an operation was still out of the question. Prostration continued, with great irritability of stomach, and a small, quick pulse. No return of hæmorrhage, though the pressure of the tourniquet was but very slight.

On the 16th the pulse was more quick and irritable, with the same irritability of stomach, and urgent thirst. He had passed a better night however. At the consultation this morning, the circulation through the posterior tibial artery was so evident that the question of the femoral artery being wounded was set at rest. It was decided, as no return of hæmorrhage had occurred, that the case should be left to nature.

On the 17th, he suffered from starting pains in the thigh. There was less irritability of stomach, but the

pulse was very small and weak. During the night there was slight hæmorrhage, owing to his restlessness, but it was easily arrested by a turn or two of the tourniquet.

On the evening of the 20th, this restlessness increased; delirium set in, and early in the morning of the 22nd he died.

The limb was examined after death, when the following appearances presented.

Femoral artery intact. Femoral vein wounded, with more than half its calibre shot away. At about two inches from its origin there was a wound of the profunda artery, on which an aneurism, nearly the size of a pigeon's egg, had formed, and passed upwards through the wound made by the ball. The profunda vein was intact. The injured vessels having been removed for preservation, the bone was then cut down upon, when a fracture, nearly transverse, and not at all comminuted, was observed below the trochanters. No splitting of bone upwards; downwards its outer plate was slightly cracked, but nothing more. The preparation is in the Museum of the Royal College of Surgeons.

Private James Ross, a lad of eighteen, was brought up from the trenches, on the morning of the 3rd inst., having had his right leg blown off below the knee by a round shot. He had lost a very large quantity of blood before the tourniquet was applied, and was consequently so much collapsed that an operation was out of the question. He was therefore dressed and the tourniquets (two had been put on) removed. He never rallied, and died on the 12th, nine days after the receipt of the injury. No hæmorrhage ever occurred though all pressure had been removed from the artery.

R. V. De Lisle,
Surgeon, 4th King's Own Regiment.

Camp before Sebastopol, Sept. 14, 1855.

The following is worthy of publication, as showing the successful effects of strychnia, when carried to the extreme verge of propriety, in injuries of the spinal chord.

Sergeant William Aldridge, 46th Regiment, aged 39

years, during a sortie from Sebastopol, was knocked down in the trenches, and his back formed a bridge over which Russians and English passed. The result was serious injury to the spine, causing paralysis of the lower extremities and bladder. The pain was excruciating, and the patient could not be moved in bed for several weeks.

On the 4th of March, 1855, he was placed under my charge in the military hospital at Portsmouth, when he complained of great pain and tenderness along the spine, and incontinence of urine, together with wandering day dreams and insomnolency at night. Solution of the muriate of morphia ʒj was prescribed without any effect. (ʒj contains 1 gr.) The dose was gradually increased to ʒij of the solution.

15th March.—Fell out of bed during the night, trying to hide himself. Is wandering, and fancies that he has deserted from the Crimea, and will be shot. The narcotic has been omitted for several days. Strychnia was now ordered, one-sixth of a grain three times a day.

20th.—Continues much the same, with slight twitchings of the face.

25th.—Has been unconscious for three days. Now complains of intense pain in the back and violent cold perspiration.

28th.—Returning consciousness; feels easier, having slept uninterruptedly for forty-eight hours. Expressed a desire to make his will, and send to Dublin for his wife; both wishes were complied with.

30th.—Sensation and motion are gone from the lower extremities, and the urine is still passed involuntarily. One-eighth of a grain of strychnia was ordered twice a day.

31st.—Is powerfully under the influence of the remedy, with convulsive movements of the upper and lower extremities; wild stare and fixed jaws. The lower extremities had not moved for several months previously. This paroxysm lasted for one hour under my own observation, after which the muscles became relaxed, the face bedewed with a gentle perspiration, and resumed its ordinary tranquil appearance.

April 2nd.—Feels greatly relieved from pain, and is com-

paratively comfortable; sleeps calmly. His appearance is entirely changed; looks natural; features calm; is cheerful, and reads the papers. Strychnia was omitted for some days after the last paroxysm, and replaced by the tincture of the sesquichloride of iron with quassia, and a generous diet.

6th.—Continues to improve. Has now and then slight twitchings in the legs and arms. The strychnia was resumed and omitted, as the symptoms indicated, to the end of the month.

May 1.—Is greatly improved; goes about the balcony in a chair. Returning sensation in the right leg. Bladder still not under the control of the will.

20th.—Sensation much improved in both legs; and motion increasing in the right leg.

25th.—Convulsive movements all over the body, resulting from the use of the strychnine. Lower extremities decidedly improved, both in motion and sensation.

June 1st.—Maintains his improved condition. Recommenced the strychnine to-day, without any marked effect at the moment.

10th.—Violent tetanic spasms followed the employment of the remedy, producing considerable increase of motion in both extremities. The paroxysms *usually* continue about fifteen minutes, when the muscular system resumes its ordinary appearance.

20th.—Continues the same. Strychnia not resumed since last entry, as occasional twitchings occur about the head and face, and he is now affected by the smallest dose.

July 1st.—General health excellent.

10th.—Continues to improve daily in regaining the use of his limbs. Is now able to walk on the ramparts with crutches, but is extremely sensitive to every change of weather—damp always causing pain in the spine. Continued to improve to the end of the month.

August 1st.—No change worthy of note.

14th.—Discharged to Chatham.

T. H. Burgess, M.D.,
Military Hospital, Portsmouth.

The following case of injury of the abdomen sent to me by Dr. Rooke, Civil Surgeon with the army in the field, is very remarkable.

Robert Cousins, æt. 20, 77th Regiment, was admitted into the general hospital, camp, June 8th, with severe injuries, caused by a round shot, which struck him when he was on duty in the advanced trenches. When the shot struck him he was standing up, half-face towards the enemy, his right arm extended in front of the right hip; he was in the act of reaching his water-can, which rested against the parapet of the trench.

On admission he was in a state of semi-collapse, the integuments of the right hand and fore-arm greatly lacerated, the wrist-joint laid open, the bones of the carpus comminuted; the radius and ulna were also fractured at the middle third. There was a lacerated wound in the right iliac region, the size of the palm of the hand; over this space the skin and muscles of the abdominal wall were torn away, the peritoneum lining it was also lacerated, and at the bottom of the wound was seen a coil of intestine in situ; there was no tendency to protrusion, nor were its coats at all injured. The crest and body of the ilium were much comminuted, the fracture extending downwards between the anterior superior and anterior inferior spinous processes. The anterior superior spinous process was broken off. There was another wound just below the great trochanter; this apophysis was also shattered. The right limb was two inches shorter than its fellow, the foot everted, but from the great comminution of the pelvis and the extreme pain produced by examination it was not satisfactorily made out that the neck of the femur was fractured, but the shortening of the limb and eversion of the foot were in favour of that diagnosis. The injuries which the patient had received were considered mortal; it was thought unnecessary cruelty to amputate the fore-arm. Such pieces of the ilium as were loose were removed; wet lint applied to the wounds; and brandy and water with opiates was ordered. One of his comrades volunteered to watch over him, and he was left, as all thought, to die. The next day (June 9th) he had partially rallied from the state of collapse; had taken

liquid nourishment—beef-tea, arrow-root, &c. There was no pain or tenderness of the abdomen; had passed his water without difficulty. The surface of the abdominal wound was sloughy; intestine still visible; complains of pain in the arm. It was not yet considered advisable to perform any operation. He was ordered opium gr. j. every four hours; also a dose of morphia at night, arrow-root, beef-tea; and port wine, which he prefers to brandy.

10th.—Has rallied completely; no pain or tenderness of the abdomen; complains greatly of his arm, and is anxious that something should be done. He slept well after taking the morphia; his face is tranquil, breathing natural, pulse weak; no irritability. Deputy Inspector-General Taylor saw the case in consultation with Dr. Mouat, P.M.O. of the Hospital. It was decided to amputate the fore-arm. This was done at the upper third; chloroform was administered, and produced no ill effects. He was ordered any fluid nourishment he might fancy, with port wine, and an opiate at night.

11th.—No symptoms of peritonitis; suffers no pain; tongue clean and moist; pulse quiet; passes his water regularly; the bowels have not acted. The abdomen is quite soft and fallen; not the slightest tenderness on pressure. To continue on the same plan. He could now give some account of the way in which he was wounded. He stated that he thought it must have been a round shot that struck him. It first struck his arm, then entered the right iliac region, emerging at the lower wound. The surface of the wound in the iliac region is in a sloughy state from the severe bruising of the parts. The coil of intestine is still visible at the bottom of the wound.

12th.—No symptoms of peritonitis; bowels have not acted; tenderness down the outside of the thigh, with redness of the skin, and pitting upon pressure. Stump dressed to-day and looking well.

13th.—No unfavourable constitutional symptoms. The outer part of the thigh is tender and the skin red; free incisions were made; the fascia was sloughy. He takes nourishment: has eight ounces of port wine daily, eggs, arrow-root, and essence of beef. Bowels not acted.

21st.—He had no symptoms worthy of remark since

the 13th. The bowels have not been moved; he complained to-day of not being able to pass his motions. Two injections of warm water were administered in the course of the day. He passed a large quantity of hardened fæces, which relieved him greatly. The sloughs are separating from the incisions in the thigh; the crest and ala of the ilium are exposed: healthy granulations are springing up from the bottom of the wound. Stump healing favourably.

July 26.—The case has progressed without a bad symptom. At first it was thought that the greater part of the ala of the ilium would exfoliate, but some red points appeared on the surface, and the concavity of the bone became covered with granulations. The exfoliation was limited to the anterior part of the crest of the ilium, which separated on the 17th instant. At various times pieces of bone have been removed as they became detached; there are others still left to come away. The granulations on the upper wound are on a level with the skin of the abdomen. The crest of the ilium is covered with granulations; the wound is contracting, but there is a deficiency of skin to cover the projecting portion of the ilium. The lower wound is also open, and has been enlarged to remove pieces of bone; the incisions in the thigh have healed. The bowels have acted regularly without medicines until to-day, when he required a castor-oil injection. The right thigh is more than two inches shorter than the left; union appears to have taken place; he has no pain on motion. The dead bone that still remains, alone prevents the wounds from closing, their surfaces being covered with healthy granulations. His general health is good. He has taken at intervals some oleum jecoris aselli; and, for a mild attack of bronchitis, under which he suffered at the end of June, expectorants and diaphoretics. There has not been a single symptom of any abdominal complication. He has an opiate at night. The stump has been healed nearly three weeks.

September 14th.—Since the last report no unfavourable symptoms have occurred. The stump of the fore-arm has been healed some weeks; his health is good; indeed, from first to last, he has not had a single symptom denoting constitutional disturbance. All the dead bone from the

crest of the ilium has separated; the wound of the abdomen is skinned over, with the exception of a small spot about the size of a sixpence. This is healthy, and is gradually healing. The bowels act regularly. There are still two sinuses on the outer side of the thigh, one above, the other below the great trochanter. On probing these, dead bone is felt, which has not yet separated. The right limb is about three inches shorter than the left; is freely moveable in any direction without pain. He can raise the knee from the pillow, but cannot lift the heel from the bed; he can however turn himself over on to the left side without assistance. The prominence of the crest of the ilium is greatly diminished from loss of bone. The trochanter major is unusually projecting; the natural appearance of the hip-joint is entirely gone. The injuries to the bones have been so severe, it is difficult to say what changes have occurred. The ilium and pubis have been greatly comminuted, the fracture most probably extending through the acetabulum. Immediately below Poupart's ligament, to the outside of the femoral artery, a hard substance is felt beneath the skin. This when he was admitted, was at first supposed to have been a piece of a shell, but it is now thought to be a portion of the pubis driven downwards upon the thigh.

He may now be said to be convalescent.

John Sheehan, aged nineteen, 57th Regiment, was wounded in the left thigh before the Redan on the 18th of June. He was brought to the general hospital, and placed under the charge of a gentleman of considerable skill and experience. The wound presented two openings, an anterior and a posterior; the latter offered greater facilities for examination than the former; the finger, passed from behind, detected several fragments, which were removed, and as a tolerably uniform surface of bone (*vide* specimen) was then felt, it was determined, after consultation, to make an attempt to save the limb. The injured extremity was accordingly bound up with a long splint in the most careful manner, and matters promised favourably for a time. He however complained of a good deal of suffering in the limb from time to time, gradually

wasted, suffered from diarrhœa, and finally sank on the 6th of August. On examination post-mortem, I found the chief organs in a normal condition. There was some congestion of the ileum, and the colon presented a few points of ulceration. The condition of the parts in the left lower extremity was very remarkable. Beneath the integuments, all the muscular and other textures, from the seat of injury to the groin, were converted into a soft, broken down, black, rotten mass; and I may here observe that this low, but intense, disorganizing process, extending through the greater part of the limb, has presented itself in several of my examinations of somewhat similar injuries, and appears to me to be connected with *a peculiar pathological state in which all the vital organs remain sound, but the vis vitæ is remarkably reduced below par.* The fractured bone it is unnecessary to describe. The vertical and cross infraction of the fragments and its almost "arborescent" appearance are most remarkable. I look upon it as a specimen of no ordinary value, conveying more than one most useful lesson. The bones are in the Museum of the Royal College of Surgeons.

R. D. Lyons,
Pathologist to the Army in the East.

Camp before Sebastopol, August 30, 1855.

Private William Leah, 30th Regiment, aged twenty-one, was brought to me on the 27th of June, while I was on duty in the trenches, with fracture of the external condyle of the humerus of left arm, by a musket-ball, which had entered the joint between it and head of radius, and had made its exit over olecranon process of ulna. Artery uninjured. On being sent to camp, the joint was excised by Mr. Dowse, surgeon of the regiment. The patient progressed favourably, and the wound has been healed for nearly a month. He can use all the muscles of the fore-arm, except the flexor of the little finger, and is regaining the motion possessed by the elbow-joint.

David Milroy, M.D.,
Assistant-Surgeon, 30th Regiment.

Camp, Second Division, Heights of Sebastopol,
Sept. 5, 1855.

J. Maguire, 31st Regiment, aged twenty, wounded in the advanced trenches.

July 12, five A.M.—Carried into hospital, wounded by a splinter of shell in left elbow and on left hip. The splinter struck him in an oblique direction from behind, fracturing olecranon process and internal condyle of humerus, lacerating and otherwise injuring the joint, the ulnar nerve being also injured. The splinter continuing its onward course, inflicted a lacerated wound on the hip, with comminuted fracture of about the anterior fifth of the crest of the ilium, several small pieces of bone being driven in on the peritoneum, causing pain on the slightest motion. All the loose portions of bone were removed, and several others separated from the muscles. Abdomen painful, and swollen at that side. Abdomen continued painful during the day; bowels acted; he also passed water freely.

13th.—Pain in abdomen much less; little, if any, constitutional disturbance; elbow extremely painful; the pain accompanied with partial paralysis of the little and ring fingers. Staff-Surgeon Dr. Gordon having seen him, and not apprehending any danger from the wound in the side, the operation for excision of the elbow-joint was determined on, and performed under chloroform, by a single straight incision passing through the original wound, including the upper and lower fourths of the fore-arm and arm. There was very little hæmorrhage. The arm was then put up in an angular splint. It continued to progress favourably, the greater part healing by the first intention. There was some suppuration, but a free exit being given to the matter, it did not retard recovery.

August 19th.—This patient was discharged from the Regimental Hospital, to General Hospital, Balaklava. The wound nearly healed; sensation partially restored to the fingers; slight motion at the bend of the elbow; but he has not power to raise the hand.

THOMAS J. ATKINSON,

Assistant-Surgeon, 31st Reg. in Med. Charge.

Camp before Sebastopol, Sept. 1, 1855.

Private Anthony Murray, aged 28, 41st Regiment, a healthy man, was struck, while on duty in the trenches before Sebastopol, on the night of the 23rd of July, 1855, by a portion of a shell, which penetrated the left elbow-joint; the head of the radius and the outer half of the articulating surface of the humerus were comminuted, fragments being impacted in the cancellous structure of the humerus, and driven in between that bone and the ulna. Excision of the joint having been determined on, it was performed in the following manner: a straight incision was made along the posterior surface of the joint, the olecranon cut through, and the extremities of the several bones removed in succession; the parts were then brought together by suture, and the limb placed in a flexed position; about a third of the wound healed by the first intention; no inflammation supervened. On the 3rd of August the wound was granulating in a healthy manner; on the 22nd, it had almost healed, and the limb was put up permanently, the fore-arm at right angles to the arm; on the 31st, some union had taken place between the bones; the man can move the thumb and three fingers; he is free from pain; his health is very good, and he appears to be progressing favourably in every respect.

J. E. Scott, M.D., Surgeon, 41st Regiment.

August 31*st*, 1855.

Private Jesse Lockhurst, 31st Regiment, aged 26, was wounded in the advanced trenches 17th of August, 1855.

August 17th.—Six o'clock A.M., carried into regimental hospital, having received an extensive lacerated wound of right cheek: very little apparent hæmorrhage, but the power of deglutition was completely lost, and respiration impeded. On making an examination of the wound, it was ascertained that the right superior maxillary bone was fractured, and a portion of the hard palate with the molar teeth driven in on the tongue; there was a large piece of shell or shot lodged at the bottom of the wound, lying on left palate and, as far as could be ascertained, on the back of pharynx. Staff-Surgeon Dr. Gordon being present, the ball, after much labour, was extracted, and found to be

a grape-shot of seventeen and a half ounces weight. During the operation it was found necessary to dilate the wound by dividing the lip near its external angle—the portions of bone that were removed were the alveolar process, with all the molar teeth, including part of the palate and a portion of the orbital plate and nasal process of the superior maxillary bone, and all the malar bone. There was no serious hæmorrhage during the operation, nor immediately after the extraction of the shot. The cheek was then plugged with lint and the wound brought into apposition by sutures. The man experienced immediate relief after the operation, sat up in bed, washed out his mouth, and drank some water; he seemed extremely thankful, and blessed the doctors. During the night and part of the next day there was some oozing from the mouth. No bad symptom occurred until the 20th, when an active hæmorrhage came on from the back of the palate. The exact source could not be ascertained. He became very weak and almost pulseless; but the hæmorrhage was eventually restrained by means of ice and plugging the wound with lint moistened in tincture of matico. Iced drinks occasionally.

31st.—The man is now doing extremely well, can talk, and takes a pint of jelly daily; the external wound is not yet quite healed, in consequence of the saliva flowing through it. The right eye is uninjured, and sight unaffected.

September 1st.—He has just been discharged to General hospital, Balaclava, from the regimental hospital.

THOS. J. ATKINSON, Assistant-Surgeon,
31st Regiment, in Med. Charge.

Camp before Sebastopol, September 1st, 1855.

On the morning of July 24th, Private Francis O'Brien, a lad of eighteen, was brought from the trenches with a wound from a musket-ball in the right temple. It entered about two inches above the orbit, passed downwards, and drove out a large portion of the supra-orbital ridge, which appeared to be imbedded in the upper eye-lid, and was cut down upon by the medical officer in the trenches, in mistake for the ball, which it certainly very much resembled.

As no ball could be found, it was supposed to have passed out at the opening of entrance.

The finger when passed into the wound could feel the pulsation of the brain, yet from that day to the present no symptom of cerebral disturbance has appeared, unless it be that since his convalescence the muscles of the face work convulsively when he feels faint and weak from remaining too long in the erect posture. About a month after admission, the detached portion of the bone above the orbit was removed from the eyelid, though with considerable difficulty, and on the following morning the ball fell from the wound, much to the poor lad's horror, who thought his eye had dropped out.

Both wounds have now healed, but he is unable to raise the right eyelid; the eye is perfect, but apparently without power of vision, though sensible to the stimulus of light, for on turning the wounded side to the light, the left pupil contracts. His general health is good.

R. V. De Lisle,
Surgeon, 14th King's Own Regiment.

Camp, Sept. 10.

Private Joseph Bourke, 17th Regiment, admitted on 9th September, 1855, with fracture of anterior superior angle of right parietal bone, with depression of about one-third of an inch, for the size of a florin. No attempt was made to elevate the depressed portion. Has not had a bad symptom. Wound of scalp nearly healed.

W. P. Ward,
Surgeon, 17th Regiment.

Private Michael Caffrey, 88th Regiment, wounded at the attack upon the Redan on the 8th of September, was brought to the hospital of the 38th Regiment, on the morning of the 9th. A round rifle ball struck him at the anterior part of the left parietal bone, and passed through the brain in a line which brought it out at the vertex, fracturing the parietal bone of the opposite side; the ball at its entrance split, and one half pushing before it a small piece of bone, both lodged at the entrance; the other half of the

ball was found lodged in the brain at the upper and back part, having detached a circular portion of the skull.

A director was passed along the track of the wound, and the scalp laid open; the brain was found to protrude through the fracture. In this condition the patient lived for eleven days, utterly unconscious of everything passing around him, the urine and fæces coming away involuntarily. There was paralysis of the opposite side.

A post-mortem examination showed the brain to have been reduced to a pultaceous mass only in the direction of the passage of the missile; the remaining portion of the wounded hemisphere and that of the opposite side were healthy.

The absence of the usual train of head-symptoms, and the length of time which so extensive an injury permitted life to remain, render this case worthy of some remark.

FREDERIC WALL,
Surgeon, 38th Regiment.

Camp before Sebastopol, Sept. 20, 1855.

Private William Doyle, 19th Regiment, aged nineteen years, was wounded in the head by a rifle-ball, in the advanced trench of the right attack, on August the 13th. The scalp and pericranium were cut about two inches, and a portion of the cranium, a little in advance of the posterior and superior angle of the right parietal bone, close to the sagittal suture, about an inch in length and half an inch in breadth, was depressed. According to statement the man was rendered perfectly senseless and motionless, from the instant of being struck by the bullet. On reaching camp he presented all the usual symptoms indicating compression; pupils dilated and fixed, warm surface, total unconsciousness, complete paralysis, &c. On examination of the depressed portion of bone, no opening whatever could be felt; the edges of the sunk bone and the bone adjoining were in contact, and it was presumed to be an ordinary case of fracture with depression simply. Some very minute portions of cerebral substance were observed to be mixed with the clot of blood about the wound, such as might be squeezed through a fissure.

Trephining being determined on, it was performed at once, and the depressed bone raised without difficulty. No relief of symptoms followed. The dura mater bulged slightly upwards into the opening. On passing the finger over its surface, a little beyond the space exposed by the trephine, a defined cut edge was felt about an inch in advance of the depressed piece of bone, being the boundary of an opening into the cerebral substance.

Three hours after arrival in camp the patient died. On examination post-mortem a wedge-like section of the ball was found to have entered and penetrated the cerebral substance; it was discovered in the anterior lobe on the right side, just above the orbitar plate. It had not completely penetrated, but was lying just above the membrane covering the lobe. The ball—a conical rifle-ball with three cannelures—was cut smoothly from apex to base, as if by a sharp knife. This must have been done by the edge of broken bone above the opening made in the parietal bone, one half of the ball flying off, the other entering the skull. On close examination, several very small points of lead were found to be imbedded along the margin of the bone alluded to. The depressed portion of bone, directly after the piece of ball entered, must have sprung up again by its own resiliency, or been forced up by sudden pressure from within, so that no evidence of an aperture, but merely a fissure and depression remained. The inner table was separated, and nearly detached, for a space rather more extensive than that of the depressed part of the outer table. The superior longitudinal sinus was wounded by the sharp edge of the broken inner table, and a very considerable quantity of blood extravasated upon the surface of the brain.

The portion of bone implicated in this injury has been preserved.

THOMAS LONGMORE,

Surgeon, 19th Regiment.

Camp before Sebastopol.

REMARKS.

Six amputations at the hip-joint (if not more) have been performed in the Crimea and all the sufferers have died, a loss which has not been experienced in civil life under any circumstances, many persons having survived the operation for years. It has been fairly attributed to the depressing causes from which the army suffered, and for which the Government have been blamed; although the great functionaries appear to me to have less to account for than their subordinates, as far as regards deficiencies in the treatment of the sick and wounded.

The operation for removing the head of the femur from its connexion with the hip, leaving the limb for future use, was first recommended by me as a substitute for amputation at the hip-joint, and has been done in at least six instances, one only surviving. I limited the operation to injuries of the head and neck of the bone, or with little extension beyond these two parts, being cases which hitherto invariably died unless amputation at the hip-joint were performed; and which it was and is hoped the operation of excision might render unnecessary; but it must be done under happier circumstances, and perhaps with greater restriction. The success which has followed the removal of the head of the humerus from the shoulder-joint even with as much as one-third of the shaft, as low as the insertion of the deltoid muscle, has led to the belief that as much may be done in the thigh; and in the hope that it might be so, a considerable portion of the shaft of the femur has been removed with the head and neck in the cases alluded to, so that an approximation of the remainder of the shaft to the cavity of the joint has not been possible. If the operation performed by Surgeon O'Leary, 68th Regiment (page 621), which at the end of seven weeks is reported as doing well, although the pulse remained between 80 and 100, should succeed, it is doubtful whether the limb will be of any use or better than an artificial leg, from the extent of bone removed, which will prevent the formation of a firm joint or union. The sling used in this case has been con-

sidered very advantageous by all who have seen the man, and proves how much may be done in all cases of compound fractures by similar appliances; but which has not yet been done. A correct judgment cannot however be formed as to the value of this operation until it has been performed on one of those cases in which a ball shall simply lodge in the head or neck of the femur without injuring the shaft of the bone; an accident which has been so frequently observed in the head of the humerus, and of which I have sent two preparations to the Museum of the College of Surgeons. (See page 120.)

It has been already stated that the loss of life after amputations performed for gun-shot fractures of the upper part of the thigh has been so great, both in the French and English armies, that such operations have been nearly abandoned.

The Russians at the commencement of the siege of Sebastopol made use of a conical rifle bullet, flat at the base, weighing nearly one ounce and three-quarters. Latterly they have used a larger conical one, with three grooves around the circumference of the base of the cone, which is hollowed out to receive a cup, and shows a projection on the inside of the hollow. This ball is near two inches long, and weighs somewhat more than one ounce and three-quarters.

The balls formerly used by the French army were twenty to the pound, and by the English sixteen. The balls alluded to are nine to the pound. When this Russian ball strikes soft parts only, such as the thigh, it merely makes a larger hole than the common bullet, into which the finger passes easily and the wound heals as readily. Whenever it strikes a bone it would appear to breakit more extensively, and to require more certainly the amputation of the limb; although the smaller French ball used in former days when it struck a bone, disabled the sufferer as effectually for all future service, yet it might not as certainly lead to his death.

Dr. Lyons not only transmitted to me the case, related page 637, of John Shehan, but has since sent me the broken bones, which confirm everything I have said on this subject, page 143. The sound bone above the frac-

ture has become more solid; the splinters not having been removed are lying across, and prevent the approximation or union of the ends of the old bone, whilst the effort made by nature to effect this object by the deposition of new ossific matter adds to the evil, by fixing these splinters in so solid a manner that they cannot escape or be removed by any other means than that of forcible abstraction, after painful and perhaps dangerous operations, each splinter possibly requiring a separate one. Shehan's case was one for amputation from the first, if he had been in a state to undergo it with a prospect of success.

The treatment of gun-shot fractures of the leg ought to have been more successful than it has been, even when both bones were broken; the want of success may be in part attributed to the remissness which has taken place in supplying the necessary, nay, the essential appliances, by means of which much suffering might have been alleviated, perhaps prevented, even if cures could not have been effected.

In performing the operation for the excision of portions of the extremities of bones, a chain-saw is a most desirable aid on many occasions. There was not one with the British army in the Crimea, and when wanted they were borrowed from the French ambulances. It was only on the 30th of September last some were ordered to be sent out, and they cannot yet have arrived. In a lecture I delivered on the 14th of April last in the Theatre of the College of Surgeons, as its President, by permission of the Council, the proceeding being unusual, I drew attention, for the express purpose, to the necessity which existed for the Crimean army being supplied with a machine capable of being moved from bed to bed, by means of which the unfortunate soldier could be raised in the extended state, and after being washed, his wounds dressed, and his bed clothes changed, he might be again laid down with comparatively little uneasiness. Fifty of them would not cost 300*l.*, but there are none in the Crimea, except two, one sent to the Coldstream Guards, by Lord Strafford at his own expense, and one which the makers placed at my disposal. I hear that *three* have been ordered lately, like

the chain-saw, when too late, for many are now no more who stood in the greatest need of them, and without which machine they had little chance of being saved.

On the 14th of April, 1855, I published a lecture, in which I gave a sketch of an apparatus for slinging a broken leg, which instrument I declared to be a *sine quâ non* in the successful treatment of a gun-shot fracture of the leg. By permission of the Duke of Newcastle, I sent out forty-six sets complete for every part of the body, the year preceding. They were, I am told, left at Varna; and four medical officers, of character and knowledge, who have lately returned from the East, assure me within the last week no such, or any similarly useful apparatus was ever seen in the hospitals in front of Sebastopol. Other instances of remissness of equal importance might be adduced, if it were not useless to advert to them; for we delight, I believe, in being admitted by foreigners to be a wonderful people in the mismanagement of our affairs in the first instance, however important or trivial. It is, I believe, an admitted maxim, that the right men should be in the right place—the square ones in the square holes, the round ones in the round holes; but there is another of equal importance—viz., that the right thing should be in the right place at the right time, without which teaching or practising surgery becomes of little value.

Amputation at the knee-joint has been done, I hear, in six cases since the taking of Sebastopol: four are dead; one is doing well under Mr. Blenkins of the Guards, and the other yet survives. Excision of the knee-joint has been performed since the taking of Sebastopol in one case by Staff-Surgeon Lakin, and is doing well.

The excisions performed on the head of the humerus, and on the bones composing the elbow-joint, have been very successful. There is however a circumstance to which I am desirous of drawing attention—viz., that the head of the humerus should never be removed in amputations, when it is uninjured, however close the destruction below may have approached it. The round head of bone left in

the socket preserves the squareness of the shoulder, and renders the loss of the arm less unseemly. It tends to prevent the inclination the body generally has to the opposite side, and its being left adds nothing to the difficulties of the operation. The excisions of the ancle-joint have been numerous and more successful than might have been expected under the depressing causes alluded to.

For the preparations of the head of the humerus and of the astragalus, referred to at pages 98 and 120, I have since learned I am indebted to Deputy Inspector-General Macgregor; and I am particularly so to Assistant-Surgeon Gregg of the 17th Regiment, for the great care he has bestowed on several of the specimens of injury sent to me.

Wounds penetrating the cavities of the chest and abdomen have been no less fatal than those of the lower extremities. The same want of power has been exhibited in them; the same inability to bear the means of cure which under happier circumstances have proved successful.

I hope to receive reports on wounds of arteries, on secondary hæmorrhage, and on injuries of the head, so as to enable me to remove any doubts which may exist on these points; and I beg to assure those officers who will favour me with their opinions and facts that they shall be duly reported in another "Addenda."

I cannot conclude these remarks without expressing my sense of the great practical ability displayed by very many of the medical officers in the Crimea; of their devotion, of their self-denial—qualities which ought to obtain for them the special approbation of the nation.

October 18, 1855.