THE WAR IN SOUTH AFRICA.

[From our Special War Correspondents]

THE MARCH TO THE TUGELA.

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Spearman's Hill, January 19th, 1900.

Dysentery and Enteric Fever.

After the disastrous battle of Colenso on December 15th, 1899, the field hospital to which I was attached returned to Frere Camp. Sir Redvers Buller also returned to Frere, and made that place once more his headquarters. I have remained at Frere under canvas ever since. The hospital was pitched in the same place, and was cleared of all the wounded. We soon became filled up with cases of dysentery and enteric fever. The dysentery was of a severe type, and we had several deaths. One of my nurses (Miss Tarr) was, I am sorry to say, taken ill with dysentery, and was at once removed to Maritzburg. She developed the affection in a very acute form, and at one time her life was despaired of. She is now, I hear, doing well, but will, of course, not be able to go to the front again.

Treatment of Dysentery.

I might mention that the treatment of dysentery which is mostly followed at Maritzburg—where there are now many cases—is that by sulphate of magnesia. The treatment is somewhat painful, but such able practitioners as Dr. Scott of Maritzburg and Dr. Brown of the Assembly Hospital are convinced of its great efficiency. Another method of treatment in favour with many is that by perchloride of mercury with a little opium.

I have had an opportunity of seeing many cases of dysentery, and my impression is that of the methods of treatment at present in vogue that by purgatives—such as sulphate of magnesia—is the best. Dr. Brown (under whose kind and skilful care my nurse was) has quite convinced himself of the value of the sulphate of magnesia mode of "cure."

The Wounded at Maritzburg.

During my stay at Frere I paid two visits to Maritzburg to see certain of the wounded. One of these visits was in response to a telegram from the War Office requesting me to see and report upon two wounded officers. The cases from Colenso still lying at Maritzburg were doing well, and one was over and over again struck by the marvellous anatomical feats performed by the Mauser bullet. Perhaps the most remarkable cases are those in which a bullet has passed through the brain without causing more than trifling symptoms.

Traumatic Aneurysm.

The number of instances of traumatic aneurysm is also curious. I have seen traumatic aneurysms of the brachial, femoral, popliteal, and posterior tibial, several varicose aneurysms of the thigh, and an aneurysmal varix in Scarpa's triangle.

Arterio-venous Aneurysms.

In one case there was a very large arterio-venous aneurysm in Hunter's canal, with free communication with the vein and great swelling of the thigh. The lesion was due to a Mauser bullet which had escaped. At the invitation of the surgeon in charge, I operated upon this case. I placed a temporary ligature on the common femoral, opened the sac, discovered the holes in the artery and vein, and ligatured the artery above and below the wound, and the vein on the proximal side only. Before the incision was closed, the temporary ligature was removed. This case, I am glad to say, did well, and when I saw the man again, fourteen days after the operation, he was well on the road to complete recovery.

The Hospital Arrangements.

On Friday, January 12th, Sir Redvers Buller left Frere, and on the following day (the 13th) we took our departure. The movement was to be to Springfield some 18 miles from Frere. In order to meet the demands of the position and the possibilities of a big battle on or near the Tugela, Colonel Gallwey, C.B., the Principal Medical Officer, decided to make No. 4 Stationary Field Hospital (to which I had been attached from the first) a mobile hospital to follow the troops, otherwise all the wounded would have to be carried back to Frere. Colonel Gallwey also established a general hospital at Mooi River with 500 beds, and these with the 1,100 beds available at Maritzburg and the few beds at Estcourt, would do much to meet a very difficult medical position. There can be no doubt that Colonel Gallwey's arrangements were ably conceived and admirably carried out. He certainly spared no trouble to make the Army Medical Department in Natal a complete success.

The Journey of the Hospital.

Our march was made on January 13th, and an account of it will give some idea of the difficulties in the way of work at the front. The hospital is to accommodate a minimum of 300 beds, and was made up of 60 tents and 10 marquees. The rank and file of the R.A.M.C. numbered 88. There were 12 surgeons including myself, 2 army sisters, and my remaining nurse Miss McCaul. We also took with us 100 coolies for camp work, who walked all the way with their earthly possessions on their heads. Our train was composed of 16 ox waggons each with 16 oxen. The water and bread carts were also drawn by oxen, so that the number of oxen employed was over 260. There were 5 ambulances, each drawn by 10 mules. My own transport consisted of a small covered waggon, a Scotch cart, 16 mules, a conductor on horseback, 4 Kaffir "boys," a groom, and my manservant. There were therefore 66 mules on the road. I rode on horseback, as did most of the other surgeons. We got up at 3 A.M., the tents were all down by 4 A.M., and at 5.15 A.M. we left Frere. It was a glorious day, a little too hot for comfort, and with a too blazing sun. We outspanned for two hours at 7.30 A.M. and reached Springfield at 2.30 P.M., having done the whole march in two treks. Considering the roads, the size of the waggons, the slowness of oxen, and the heat, this was considered a good march, On nearing Springfield we had an escort, and passed 4 Boer prisoners being marched to the base.

A View of the Battlefield.

The camp at Springfield was a very charming one, and the Lesser Tugela, which is swift but muddy, provided excellent bathing. I rode each day to the hill commanding the Great Tugela upon which our big guns are placed. The view from this hill is grand in the extreme. It commands a splendid plain covered with kopjes, across which runs the Ladysmith road. At the bottom of the hill, which was rendered beautiful by mimosa trees in bloom, was the drift. The Boer trenches were well in view, and until our guns began I could see the Boers working in their shirtsleeves at their all-pervading earthworks.

On Thursday, January 18th, the hospital moved to the banks of the Great Tugela, a distance of six miles. I had an opportunity of seeing from the hill on which our guns were placed the many details connected with the crossing of the river: the passing of our men across the drift and their hiding behind the nearest kopje, the play of the howitzers and the field artillery, the ascent of the balloon, and the hundred and one incidents which attend a great military movement. One could also watch Sir Charles Warren's advance on the left. Over and over again our shells burst right in the Boer trenches, but only very rarely could any Boers be seen. They

"lay low" with admirable patience. I cannot imagine that the area of a great battlefield could be better viewed than from the hill on which we stood, and which rose abruptly from the river bank. The quietness of the place when the guns ceased was extreme, and was broken only by the numerous doves which occupy the wood on the hill side. The country, although occupied by some thousands of Boers, appeared to be absolutely deserted. There was a suspiciously large number of Boer ambulances to be seen, and I imagine that not a few of these ambulances were carrying ammunition and supplies. The accuracy of our big gun firing was much to be admired, and there was hardly a trench, donga, or copse which had not a shell dropped into it at some time. I believe that some five miles of the Ladysmith road is in view from the hill. The soldiers have been lying out without tents and on short rations, but fortunately the weather has been fine. It is difficult to give a proper impression of the immense tract of country to be covered, and of the number and irregularity of the hills which have to be passed.

The Provisioning of the Force.

The transport of rations, fodder, and ammunition for the large force employed must tax the Army Service Corps to the utmost, but so far the difficulty has been well met. Miles of waggons are to be met with along the road, and many thousands of oxen are employed.

I shall hope to be able to give some account of the engagement which is impending. At present we are waiting ready to start at an hour's notice, and of the direction of our move we know nothing.

SURGICAL NOTES FROM THE MILITARY HOSPITALS IN SOUTH AFRICA.

BULLET INJURIES OF THE HEAD.

"A Humane War."

The remark has already been frequently made that this is a very humane war. It is to be hoped that such is really the case. As far as regards bullet wounds there is no doubt that the vast majority inflict, as a rule, little pain, either at the time that the wound is received or subsequently. Flesh wounds heal soundly in a few days. The apertures of entrance and exit, which are often scarcely to be distinguished from each other, close up at once. The track of the Mauser or the Lee-Enfield bullet cicatrises rapidly into a tough cord (most noticeable where muscle has been traversed). Large extravasations are quickly absorbed and suppuration scarcely ever occurs. A month or so after the injury the scars on the surface are often scarcely perceptible, and when they are situated in a fold of the skin, particularly about the face, as, for instance, by the eyelids, the closest inspection is necessary to detect any mark at all. The explanation of the gratifying absence of all untoward complications probably lies in the fact that, in an ordinary wound resulting from a small-bore nickel-sheathed clean bullet, little if any air is introduced into the wound. The wound is almost valvular, and little more than is frequently made in subcutaneous surgery. If the bullet passes through the ordinary helmet worn by the men it does not bore a hole clean through, such as would be made by a drill. The aperture will more probably consist of a semicircular cut through the material and the little tongue of material, corresponding in diameter with that of the bullet, is seen to be slightly depressed below the level of the clean-cut portion.

Much the same sort of effect appears to be produced on the skin and possibly on deeper structures. It is not difficult to understand, therefore, how large wounds that must have traversed most important viscera heal readily. In a subsequent letter I hope to mention cases where the lung or lungs have been perforated, the abdominal cavity traversed, or the liver shot through with little more than temporary trouble. In the abdominal cases it is certainly still a question whether, in the absence of positive indications, exploratory laparotomy is advisable. The opinion generally held now seems to be adverse to operation. But so large and important a subject requires to be dealt with fully, and at present there is scarcely material enough to hand to justify any conclusions in the matter.

With head injuries, however, the case is different. The large number already seen has probably led most of those who have had them under treatment or watched their progress generally to arrive at certain broad conclusions. Perhaps no class of cases has shown more satisfactory results, and the recoveries in many instances have been very remarkable. In detailing some few instances that have come under notice, I will confine myself chiefly to the clinical aspect of the cases, and allow the records to speak for themselves. The points already mentioned with regard to the behaviour of the bullet in traversing the soft parts such as the scalp must be borne in mind in considering injuries of the skull and its contents, and it must also be remembered that we have no details of head injuries that were immediately fatal.

"Gutter" Wounds of the Skull.

A considerable number of gutter wounds are seen. Here the skull is grazed or troughed to a greater or less depth. Even when a strip of scalp is destroyed, the wound heals up very readily, and when more or less circular apertures of entrance and exit are present, the grooving of the bone may easily escape detection. But these injuries are by no means unimportant. Even when the skull is lightly touched, there is likely to be very considerable fracture and splintering of the internal table. When such cases have been trephined owing to cerebral symptoms, the extent of underlying damage has usually excited astonishment. There is little doubt in my mind—and I believe the opinion will come to be shared by the surgeons at work in the military hospitals—that every case of gutter wound of the skull should be trephined. In head injuries it is necessary to look far ahead. To concentrate the attention on the mere healing of the wound is to miss the cardinal importance of these cases. Operation in these instances, though it may seem unnecessary, and though it must be in some degree exploratory, is really most strongly indicated as a preventive measure. We are all, in civil hospitals at home, only too familiar with cases of old head injury in which mental symptoms have gradually developed; and we would probably acknowledge, if only to ourselves, that belated surgical interference in such patients does not give very encouraging results. "Exploratory" laparotomies are perpetually being performed in civil life, often with very faint shadow of justification. Exploratory trephinings are too often omitted, simply because the symptoms which might indicate operation only slowly come on. It is very far from my intention to criticise now in any way surgical practice here. Operations for trephining here in this campaign have been so strikingly successful (as I make no doubt whatever statistics will hereafter show), that the surgeons show no reluctance to undertake them. Nevertheless, some gutter wounds are seen which have been left to themselves. It is of course a class of injury very rarely met with in civil practice. Possibly some of those wounded in this way have been sent back to the front as recovered. It will be interesting in this case to note whether the men are easily affected by the sun, for it must be a matter of common experience that for a long time after a head injury involving any damage to the encephalon, patients are peculiarly liable to be so affected, even in climates much more temperate than that of South Africa. Possibly the high velocity of modern bullets accounts for the damage to the internal tables of the skull. The vibrations set up through the thickness of the skull by the passage of a Mauser bullet, say partly through the external table, must be enormously rapid, and the mechanical explanation of the bone lesion is not far to seek.

Penetrating Wounds of the Head.

Bullet wounds actually penetrating the skull and some portion of its contents are numerous enough, and constitute at first sight the most remarkable cases met with in the military hospitals. First, with regard to the effects on the skull itself: The range will, as is well known and as has been determined experimentally, greatly influence the amount of injury inflicted on the bone. Unfortunately reliable information can very seldom be obtained on this point. All who have

read the accounts of the engagements near the Modder River and at Colenso will recognise that the men can have had but a vague idea of the range at which they were hit. At Colenso, for instance, scarcely a Boer was seen, and there were tiers upon tiers of entrenched positions. Usually the shortness of the range is much exaggerated; 250 yards is a common estimate. There is no doubt, however, that the Highland Brigade at Magersfontein were shot down at extremely close quarters. Judging by the results of the experiments made with modern small-bore rifles in England and Germany, the bulk of the head injuries seen in hospital have been inflicted at medium ranges, say 400 to 800 yards. This is really what we should expect, for at close quarters the amount of damage caused by a penetrating wound of the head is so extensive as to be probably fatal.

The more obliquely the bullet enters the skull the greater will be the amount of damage to the inner tables. If the apertures of exit and entrance are both at a right angle to the plane of the skull, both wounds may seem to be cleanly drilled through the bone, and are scarcely to be distinguished by external inspection. But in all cases the inner table will be more or less broken up at the aperture of entrance; and if the skull is trephined there will be no doubt whatever as to the direction of the wound. Even in a long wound fragments of bone may be found lying along the greater part of the track. In not a few instances where trephining has been done at the front a second operation has been found necessary at the base, and much loose bone removed.

At very short ranges the skull may be burst open to a greater or less extent in the manner which has been shown experimentally to take place. Thus in Colonel Stevenson's work on *Gunshot Wounds* a skull is figured into which a small-bore bullet had been fired at a distance of few yards. I have not the work by me for reference, but believe the distance was ten yards. The skull is seen to be most extensively fractured. The specimen is in the Museum at Netley to the best of my recollection.

The observations made above relate to the calvarium, and instances may now be cited bearing out the foregoing remarks. I have to thank the surgeons for permission to give the following sketches of the cases under their charge. Frequently the patients as they are moved from field to base hospital or on to hospital ships have been under the care of several surgeons, and it is impossible to communicate with all. Moreover, often—too often indeed—the patients are shifted about in the base hospitals, and it is far from easy to follow out a particular case without giving much trouble to the much overworked administrative staff. The following are examples of injury at close range:

Private D., wounded at Modder River on December 10th, 1899. Entrance wound 2½ inches behind right parietal eminence in a line drawn between that eminence and occipital protuberance. Exit through frontal bone in right side close to longitudinal sinus. The bullet traversed at least 6 inches of brain tissue. The left arm was completely, and the left leg partially, paralysed. There was evidence of fracture of the base on both sides. Sanious discharge from both ears and deafness. The fissure seemed to split the skull in two in the vertical plane. A large flap connecting the two bone wounds was turned down and the skull trephined on the inner side of both the exit and entrance wounds. Many fragments of bone were removed from dura mater, and also blood clot and damaged brain matter. The scalp wound united at once, save over the anterior crown of trephine, where it was healing by granulation (on December 27th), and where there seemed to be some tendency to hernia cerebri. The deafness improved rapidly, and the discharge from the ears, at first abundant, soon ceased. On December 27th he could hear well; no facial paralysis. The leg had recovered power to a very considerable extent, but, as usually happens, the footdrop was almost complete. The arm was still completely paralysed. His memory and mental condition generally were practically normal. Recovery seemed probable. Further notes of this case are promised. Probably the cortex was not damaged by the fragments of bone, but the motor areas of the arm and leg were damaged by the track of the bullet passing close beneath the cortex.

In another case of wound at undoubted short range the bullet entered close to the longitudinal sinus in the occipital vein, possibly even wounding it, and passing out through the frontal bone, traversing several inches of brain matter. The skull was trephined in front of the posterior wound, and it was found that a fissure connected the apertures of entrance and exit. Fragments of bone were removed and brain matter. Free hæmorrhage necessitated plugging the wound posteriorly, but it was not certain that the hæmorrhage came from the longitudinal sinus. Forty-eight hours later the bleeding recurred on the removal of the plug, and it was replaced. Thenceforward rapid recovery. The wound was received on December 15th, and a month later the power had almost entirely returned in the arm and to a great extent in the leg, but there was still marked footdrop. The mental condition was altogether satisfactory.

THE HELMET AS A PROTECTION.

That the helmets worn by the men afford a considerable amount of protection the following cases will show:

In one of the actions near the Modder River a private presented himself with a scalp wound and a fissure of the skull. According to his own account, the injury caused symptoms of concussion. The bullet was found beneath the inner canvas lining of the helmet, having perforated the substance but failed to pass right through. The canvas bulged in over the site of the head injury, and the bullet (a Mauser) could be distinctly felt and rattled about.

In another instance a bullet traversed the frontal lobes from side to side, and was found embedded in the substance of the helmet, fitting firmly into the hole it had made. No operation was performed in this case, and there were absolutely no symptoms. The entrance and exit wounds were close to the coronal suture.

Probably in both these cases the wounds were inflicted at long range at, say, 1,000 yards. In the second case the possibility of after-effects occurring months or even years after the injury is one to be borne in mind. The inner table, judging by the experience of other cases, was almost certainly broken, and driven in to the dura mater to some extent. As a curiosity may be here mentioned the case of a private. In this instance the bullet entered just behind the left mastoid process at the base, evidently narrowly escaping the lateral sinus, and passing out through the upper lip in the right side. The wound healed throughout immediately.

Some apology is, I feel, needed for any absence of systematic classification of the cases mentioned in this letter. I have thought it better to content myself with little more than the bare record of the cases, giving them more or less in the order in which they chance to have been seen. Moreover, our experience of the effects of the most modern firearms in actual warfare is still young, and possibly large additions may be made to it before long. The time will come later on for deliberate conclusions and for systematic analysis. At present statistics are merely being collected, and the opportunity for working out the results they may show has not arrived.

A PUZZLING CASE.

A case brought under my notice when the patient was in the hospital ship, *Lismore Castle*, is rather a puzzle. The man was wounded at Colenso on December 15th. The wounds in the scalp were characteristic of an ordinary Mauser bullet. The entrance wound was through the left frontal bone on the level of the eminence, and the exit through the parietal at the same level. The track was almost exactly parallel to the longitudinal sinus and close to it. There was no paralysis of the limbs. The sole symptom was loss of vision of the left eye. Light could just be distinguished. The man complained of weakness in the right eye. The fundus oculi appeared perfectly normal.

There seemed to be no doubt that, previous to the wound, the vision of the left eye was natural. No branch of the fifth nerve appeared to have been damaged; sensation over the area supplied by the supraorbital nerve was normal as far as could be ascertained. The loss of vision occurred immediately on the receipt of the wound. The vision of the right eye was improving slowly, but from the first was but little impaired. No change had taken place in the course of some three weeks in the vision of the left eye. Some considered that trephining was indicated in this case, not so much in any hope of restoring or improving vision, but more because tolerably extensive injury to the inner table might from the experience of other

cases be anticipated. So far, however, from this being done, it was suggested (not however by those immediately in charge of the case) that the man might return to the front, as he was capable of taking aim with his right eye. It is not in the least likely that many of the grave injuries will be considered really sufficiently recovered to go back to full duty.

HEMIPLEGIA DUE TO PERFORATING BULLET WOUNDS OF THE HEAD.

The following wound was almost certainly inflicted at long range: Private G. was wounded at Colenso on December 15th. The bullet entered close to the margin of the orbital arch in the left side, half an inch internal to the supraorbital notch. The exit was close to the lambdoid suture on the right side, some 2 inches below the level of the parietal eminence. The bullet perforated the skull at the latter point, but failed to pierce the scalp entirely, and was pulled out by a comrade. There was no loss of consciousness. The epistaxis was very free. The man was trephined on December 23rd, close to the wound of exit, which by some mistake was assumed to be the wound of entrance. Fragments of loose bone were removed. At the time of operation there was left hemiplegia and left facial paralysis. The eyes were normal. The motor area was examined at the time of operation, but appeared to be uninjured. Some brain matter escaped through the posterior wound, however, and there was evidently considerable laceration of the brain substance. The occipital wound was seen clearly to be the aperture of exit, as the bone was driven outwards at this point. The story of the removal of the bullet was not communicated before the operation. By January 18th, twenty-six days after operation, power of movement in the leg had been almost wholly restored, but there was still complete paralysis of the arm. The facial paralysis, which had been complete, was then very slight. The mental state was one of some hebetude. In very few of the cases of grave head injury from bullet wounds is the irritability, so often met with after head injuries in civil practice, to be noticed. The mental condition was slowly improving.

In several cases of hemiplegia from lesion of the cortical area the recovery of power in the arm is much slower than in the leg, and in some, at least, the prospect of recovery at all seems questionable. On the other hand, the foot drop is usually the most persistent symptom in the leg, which in not a few instances recovers rapidly up to that point, but then ceases to improve. The frontal lobes, in this and in many other of the cases, must have been extensively damaged, but no appreciable effects were manifest. As is commonly remarked, the experience of gunshot wounds of the head in this war almost appears to render the use of the frontal lobes questionable.

APHASIA: TREPHINING: GREAT IMPROVEMENT.

A case of considerable interest illustrating the fact that functional activity can be restored with almost as remarkable rapidity as the mechanical lesion is repaired is furnished by the following case:

A trooper in the South African Light Horse (like so many of these adventurous and loyal young men, a man in good business position in Johannesburg) was wounded at Colenso on December 15th. The entrance wound was situated 1½ inch above the left zygoma, and the exit was about 3 inches higher up. Evidently from the direction of the wound, which was slightly oblique, the area of Broca's convolution was likely to be injured. The man did not lose consciousness when he was struck, but was able to walk some 300 yards to an ambulance. Arrived there, according to his account, he fainted. He was sent down in due course to Maritzburg. On admission he had aphasia; there was loss of power in the right arm, and left facial paralysis. On December 22nd he was trephined, the bone between the apertures of entrance and exit being freely removed. Much loose bone was removed, together with blood clot and brain matter. Three days after the operation some power of speech returned. The arm began rapidly to recover power and the facial paralysis to disappear. By January 15th, twenty-four days after the operation, the arm had practically fully recovered its power. The facial paralysis was still evident, but was steadily mending. His power of speech was good, and he could converse readily enough, though occasionally making mistakes in using common words. Thus he occasionally said "Yes" for "No," or *vice versâ*. On January 18th the power of speech had further markedly improved. At the outset there was complete agraphia. Asked to write something on January 10th he hesitated and waited for suggestion. Some one said "Write 'nurse,'" which he immediately did without much difficulty. Then he remarked that that was all very well, but he could not write the letter he wanted to, for he could not begin as he wished by writing "My dear brother Jack." Asked to try to set down those words he wrote "Nun," and then gave it up. The word "nurses" he had previously written was before his eyes at the time.

A week later he wrote the sentence down fairly rapidly and quite accurately, though whenever he came to the letter "r" he hesitated unless it was repeated to him several times. There may be further opportunity of seeing this case, and I hope to send specimens of his writing at different dates, with some remarks on the cerebral condition. It was noticeable that with the left hand he wrote down fairly quickly what he was asked to write, and that the power of doing simple arithmetical sums was not lost. In this case there was some suppuration in the wound. The long period that elapsed between the date of injury and that of operation in this and in other of the cases recorded is noteworthy.

BULLET WOUND PRODUCING DEPRESSED FRACTURE.

The following furnishes a good instance of the injury that may be inflicted when the bullet does not penetrate the skull. It is really an example of deep "gutter" wound. Private P., wounded at Modder River, was admitted at Wynberg some forty-eight hours after the injury. On admission there were marked signs of compression. The pulse was 40. There was paralysis of the left side of the face and tongue, and loss of power in the left arm and leg. Speech was very slow and imperfect, and consciousness at a low ebb. The wound was situated in front of the lower end of the right Rolandic area. On trephining, an oval piece of the outer table was found to have been chipped off, and through the opening the diploë could be seen. The skull was unusually thick. A crown of bone was removed with the trephine. The dura mater did not pulsate. Several large fragments of bone penetrating the dura mater and much blood clot were removed. As pulsation still did not return, the dura mater was incised, and more clot and fragments of bone removed from beneath it. Eventually pulsation returned. For some days subsequently the pulse remained slow, and the symptoms seemed unrelieved; but ten days after the operation the pulse-rate rose to 74, and the paralysis rapidly cleared up. For the foregoing notes I have to thank Mr. J. J. Day, the civil surgeon in charge of the case at Wynberg.

CLINTON T. DENT.

SOME IMPRESSIONS OF MILITARY SURGERY IN SOUTH AFRICA.

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III.—WOUNDS OF THE BLOOD VESSELS.

DEATHS FROM HÆMORRHAGE.

THE small general tendency to external hæmorrhage exhibited by Mauser bullet wounds has already been alluded to, but striking as this experience has been in cases of wounds of the soft parts involving small or moderate-sized vessels, it falls into insignificance in comparison with that of wounds implicating the large arteries and veins.

Few cases of death from rapid primary hæmorrhage are observed further from the fighting line than the actual field hospitals, and unfortunately we have no exact knowledge of the cause of death in many of those who die before they have been brought in. General opinion, however, appears to support the above statement.

INTERNAL HÆMORRHAGE.

I have only had the opportunity of observing two examples of rapid death from internal hæmorrhage. In one instance while standing in a tent I heard a man exclaim, "Why I am going to die after all." The man's face was blanched, and his expression was one of great terror. On examination of the abdomen this was found to have become suddenly distended with fluid, and in a few minutes death followed. In this