THE WAR IN SOUTH AFRICA.

THE WOUNDED FROM THE ACTIONS BETWEEN MODDER AND DRIEFONTEIN.

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IT may be of interest if I make a few remarks as to the wounds met with during the march from Modder to Bloemfontein. I can only speak of them in their early stages; as yet I have no means of knowing what happened to them after the men were sent to the base.

PROGRESS OF THE WOUNDS.

From what is said in my description of the march from Modder to Bloemfontein, it will have been clear that anything like thorough asepsis on the field, or even in the field hospitals, was a matter of the greatest difficulty; and yet it is a fact that the great majority of the wounds healed without any trouble. This is no doubt due to the very small size of the wounds made by the Mauser bullet; to the fact that it splits the khaki, and very seldom takes in pieces of clothing; to the small amount of oozing from the wounds; and, lastly, to the dryness of the air leading to rapid evaporation and formation of a scab over the surface, under which healing rapidly occurs. In fact, the cases which have done best are those in which the patients have been wounded in the early part of the day and have lain out for some hours in the sun. The asepsis of the interior of the wounds depends in these cases on the external crust; so long as that is undisturbed the wounds for the most part do well. It is doubtful, however, whether this would be the case in a moister climate. It was found, moreover, quite early in the campaign that it was a mistake to apply the piece of mackintosh which is in the field dressings, because the wounds became septic, and orders have been issued to discontinue its use.

On the other hand, as would naturally be expected where the skin wounds are large, whether caused by expanding bullets or by fragments of bone being driven outwards, an aseptic result is by no means always obtained. But from the report of the engagements on the western frontier, it appears that a considerable proportion even of these wounds scabbed over and healed without any trouble. The experience of such wounds on this march, however, has not been so good; at any rate, almost all those which I have seen two or three days after infliction have been septic, and more especially the compound fractures. Indeed, all the compound fractures with large wounds have become septic, the degree of virulence varying of course in different instances. In several cases amputation was necessary—in one instance for acute spreading gangrene. One or two of the amputation cases have died, while some will no doubt do well.

WOUNDS PRODUCED BY EXPANDING BULLETS.

The proportion of large flesh wounds was also, I understand, greater in this march than in previous ones—perhaps owing to the more frequent use of expanding bullets by the Boers. There seems to be little doubt that expanding bullets of various types are now being largely used by them, for, apart from the increased proportion of large wounds, numbers of these bullets have been found in the bandoliers and wallets and in the captured camps. In the fight at Karee Siding on March 30th a good many men were wounded at long range, and in several cases the bullets had not come out. Three of these bullets which I saw extracted were of the expanding variety; one was soft-nosed, one a Jeffreys sporting bullet, and one an ordinary Mauser with the end filed off.

DRY DRESSINGS.

To get a dry crust on such wounds is not easy in any case, and about Paardeberg especially there was so much extraneous septicity from dead horses, etc., and the water was so foul, that the septicity of the wounds, where trust was almost entirely placed in the drying of the discharge on the surface, is not to be wondered at. With the view of trying to get a better crust I provided two of the bearer companies with pepper-boxes containing various antiseptic powders with which to dust the wounds before applying the field dressings. The powders used were the double cyanide of zinc and mercury and chinosol mixed with kaolin in various proportions. Owing to the distribution of the force I have not yet been able to ascertain whether they were used in the subsequent battles, and, if so, with what result. It seems, however, that better results might be obtained if, at the dressing station or on the field, the wounds were thickly dusted with such a powder before applying the first field dressings; and, where the skin wound was large, if the dressings were removed and the wound thoroughly purified in the usual manner, followed by the application of a fresh cyanide dressing.

REMARKABLE CASES.

So many cases have been published already illustrating the remarkable course which modern bullets pursue without injuring structures which apparently could not escape, that it would be tedious were I to add to their number. I can only explain them by supposing that a wave precedes the point of the bullet in the soft fat, which drives the harder structures to each side, and thus permits the passage of the small bullet.

Injuries of the Skull.

The experience of bullet wounds through the skull seems to show that a good rule to follow is to trephine immediately over the aperture of entrance, however trivial the injury apparently is. On opening up such a wound, portions of the external table are found adhering to the periosteum, or even driven along the track; the skull is perforated, and the inner table is broken into fragments, which are driven into the brain sometimes for a very considerable distance. Where the entrance and exit wounds are near each other, even where the bullet has traversed brain substance between the two openings, I have found in several cases that the skull in about an inch in breadth between the two openings has been broken into small fragments. In many of the cases the symptoms at first are quite slight, until later convulsive attacks supervene, or until, in the case of old septic wounds, symptoms of intracranial suppuration have appeared.

Of 12 cases which I saw at Paardeberg and Poplar Grove some time after the wound, 3 were not trephined; 1 of these died, while 2 were sent back to the base two or three days after the injury, and I do not know with what result. Nine were trephined from two to eight days after the injury, either because they continued unconscious, or more often because suppuration was occurring. One of these was sent to the base on the afternoon of the operation, and the result is unknown. Four died, as was expected, from the injuries to the brain being so extensive; 3 improved very much, 1 being sent to the Boer ambulance, and the other 2 to the base. The last one, who was trephined ten days after the injury on account of suppuration, improved very much during the two following days, and was then sent away, but after a few hours in a buck waggon became worse, and died on the road.

ABDOMINAL CASES.

The remarkable results which have followed penetrating abdominal bullet wounds, where no operative interference has been attempted, have been repeatedly referred to in your pages. When at Capetown I was shown a number of cases in which bullets had traversed the abdomen, and healing had taken place without any trouble. As far as I could gather, only about 20 per cent. of the abdominal cases had died.

In what proportion of the cases, however, perforation of the intestine had occurred it is extremely difficult to judge. From the position of the wounds, from the occurrence of blood in the fæces, vomiting of blood, formation of local peritoneal abscesses during healing, etc., there seems to be no reasonable doubt that in a considerable number of the cases the intestine must have been perforated; I cannot, however, but think that in many it has escaped. When we remember the remarkable way in which other less slippery structures, such as those about the root of the neck, escape, I do not see why the same should not occur in abdominal wounds.

However that may be, the fact that a considerable number of perforating abdominal wounds recover without operation renders very difficult the question of the best treatment of such cases. The difficulty is still further increased by the fact that under the conditions for operation in the field lapar-

otomy is by no means the safe operation that it is in a London hospital. Further, some hours must in any case have elapsed, and the patient been a good deal disturbed before reaching the field hospital. It may be added that the cases in which from the symptoms there can be no doubt that the intestine has been injured, the patients are usually in a very collapsed state by the time they reach the field hospital, and not at all in a condition suitable for operation. From these various considerations I determined that in the first instance, and until I had learned from my own experience what the results in these cases were, I would not operate unless in exceptional instances; hence, up to the present time, I have only opened the abdomen twice for perforating wounds. I regret to say, however, that the results in the cases I have seen have not been nearly so good as I had been led to expect, and I am inclined to think that were the conditions for operation more favourable one might with advantage interfere in a certain number of cases.

In transverse abdominal wounds it is doubtful whether any good result would follow operative interference, because if the intestine is wounded at all it is probably perforated in many places. But in antero-posterior wounds, well to one side, where there is probably only a single injury, and more especially where it is probable that the ascending or descending colon is injured, I think that one might in some cases intervene with advantage. At any rate I intend to keep this point in mind in the future. Perhaps I can best illustrate the results following these injuries by giving my experience of the fight at Karee Siding the other day, where I was able to get notes of all the cases of abdominal injury.

On March 30th I received a telegram from Colonel Gormley, R.A.M.C., P.M.O. of the Seventh Division, saying that a fight had occurred at Karee Siding, about twenty-one miles north of Bloemfontein, on the previous afternoon; that there were a considerable number of serious cases, and asking me to come out as soon as possible. This I did partly by rail to Glen, and thence by horse to Karee, arriving there about 1 P.M. During the afternoon I went over the cases. The number of the wounded was 154, and in 15 it was considered that the abdominal cavity had been penetrated. Of these patients 5 had already died within twenty-four to twenty-eight hours after the injury, and I saw 10 who were still alive. Of these 9 were left alone, and 4 died within the next twenty-four or thirty-six hours; five were still alive when I left Karee on Sunday afternoon, April 1st. On one I operated, but he died on April 2nd.

At Paardeberg and Driefontein I saw 12 cases; of these, 11 were left alone, with 7 deaths, and 4 recovered to a sufficient extent to enable them to be sent to the base; the 1 operated on died. The total result of the 25 cases not operated on is that 16 died and 9 were apparently recovering, but whether they ultimately recovered or not I cannot say. Of course it is only the cases which are recovering which reach the stationary or base hospitals, and this may explain the discrepancy between my results and those formerly published. No doubt many cases recover which one would not have thought could possibly get well, but the above results show that abdominal bullet wounds are still very grave injuries, and must be treated accordingly. I may add that among my cases, which are improving, there are several in which the probabilities are that no abdominal viscus was injured. I should say also that I have been shown some 5 or 6 other cases which may have recovered, but as I did not see them again, and as I could not ascertain the number of cases injured at the same time with their results, they are valueless in enabling one to form conclusions, and their inclusion would only be misleading. The Karee statistics are really the only complete ones which I have as yet been able to obtain. The following are the notes of the cases above alluded to.

Besides the 5 cases of abdominal wounds which had already died, and of which I could get no complete details, the following 10 are cases which I saw from twenty-four to thirty hours after they were shot:

Cases from the Action at Karee.

Case I.—The point of entrance was 2 inches to the right of the umbilicus, and the bullet was found lying under the skin far back in the left loin. The patient was pulseless, and there was much rigidity of the abdomen, tenderness, and vomiting. He died a few hours later.

Case II.—The bullet, coming from the side, had entered the abdomen 4 inches below and behind the right nipple. There was no exit wound. The patient had been vomiting a good deal, but not any blood; the abdomen was very rigid and tender. He was obviously very ill, and died the next morning. The bullet had probably perforated the liver and stomach.

Case III.—There was a large wound above the right anterior iliac spine (probably the point of exit), and a small opening behind and near the spine on the same side. There was great tenderness and rigidity of the abdomen. He died a few hours later.

Case IV.—In this case there was a transverse wound of the abdomen, the bullet having entered on the right side in the middle of the lumbar region and passed out on the left side, rather higher up and further back. All the symptoms of acute peritonitis were present. The patient died the next morning.

Case V.—The bullet had entered the anterior end of the sixth intercostal space on the left side, and was found lying under the skin over the seventh intercostal space on the right side and about 2 inches further back. He had vomited blood on the previous day. The bullet may have perforated the stomach. The epigastrium was somewhat tender, but there were no marked symptoms. On April 1st he was going on well.

Case VI.—The place of entrance of the bullet was 1 inch in front of the right anterior superior spine, and of exit behind the left sacro-iliac synchondrosis. There was much hæmorrhage at the time. His condition when I saw him was fair, and there was no marked abdominal tenderness. On April 1st his morning temperature was 101°. There were no signs of general peritonitis, and his condition was good.

Case VII.—The bullet had entered from behind, about the tip of the twelfth rib on the left side, and had left about the middle of the epigastrium, and rather to the left of the middle line. Vomiting was still going on, but not of blood. There was much tenderness and rigidity of the abdomen, and he was almost pulseless. On April first his general condition was better, but the abdomen was very rigid and tender.

Case VIII.—The point of entrance of the bullet was about 2 inches from the anterior end of the seventh left intercostal space, and of exit rather lower down and further back on the right side. The patient said that he had vomited brown fluid after the injury. There was much abdominal pain, but his general condition was fair. On April 1st there was still much pain, but his general condition was good.

Case IX.—The bullet had entered about 1½ inch in front of the anterior inferior spine on the right side, had gone directly backwards, and had come out in the buttock. The patient, however, suffered very little. On March 31st there was slight tympanites and tenderness in the right iliac fossa. The bowels acted well, and no blood was passed. On April 1st he was very well, and it was considered very doubtful if any viscus was wounded.

Case X.—The point of entrance was in the middle of the right buttock, a little above the level of the trochanter; the exit was through the anterior abdominal wall in the right semilunar line at the level of the umbilicus. The patient was decidedly ill; the abdomen was a good deal distended, and pressure on it caused an escape of gas through the anterior opening. There was a good deal of abdominal tenderness and rigidity. I opened the abdomen outside the right linea semilunaris, and found a perforation in the anterior wall of the ascending colon, without any adhesions around, which was easily stitched up. The posterior opening was found about 2 inches lower down, with a piece of omentum firmly adherent to it and completely closing it. As the patient was in a bad state, I thought it better, instead of excising the piece of intestine beyond the holes or tearing off the omentum, to leave the wounds alone, merely cleaning out the peritoneal cavity as well as I could and arranging for free drainage. He rallied from the operation very well, and for twenty-four hours it looked as if he might get better; but he gradually got worse and died on April 2nd.

Cases from the Actions at Paardeberg and Driefontein.

Case XI.—This man was shot on February 18th, and was seen by me on February 23rd. The bullet entered in the middle line, in front, about 2 inches above the pubes, and passed out through the middle of the left buttock, about 2 inches above the trochanter. The patient was in a very bad way, very restless, and losing flesh; his temperature was 101°, and there was much tenderness about the pelvis and buttock. Urine was running from the posterior wound, but the bladder held about 8 ounces. The wound in the buttock was enlarged and drained; but he gradually became worse and died on February 27th.

Case XII.—This was a Boer, who was shot on February 24th transversely through the abdomen, just above the anterior superior spine. He was extremely collapsed; blood and fæces were coming out of the aperture on the left side. He was too far gone for any operation, but the opening was enlarged so as to allow free escape of fæces. He died the same evening.

Case XIII.—This patient was wounded on February 18th. The bullet entered behind in the right lumbar region, and came out in front close to the right side of the umbilicus. For two days he had severe peritoneal symptoms, vomiting, etc. These gradually improved, and on February 24th he was much better, and it seemed as if he would recover. While using the bedpan on that day, however, he strained a good deal, and suddenly became collapsed. He complained of violent pain in the abdomen, and died in twenty minutes.

Case XIV.—This patient was wounded on February 23rd and was seen February 24th. The bullet entered in the right lumbar region, just below the last rib, and came out near the middle line on the left side, about the level of the anterior superior spine. He was very collapsed when admitted. On the 24th there was abdominal pain and tenderness, rigidity, and vomiting. His pulse was 136 and his temperature 100.6°. His condition remained very much the same for two days, and then, on February 26th, fæces began to come through the posterior wound. After that he gradually became worse, and died on March 1st.

Case XV.—This man was wounded on February 18th and seen on February 24th. The bullet entered at the upper part of the right buttock, about the middle, and came out about 2 inches to the left of the middle line, 1 inch below the level of the umbilicus. There was much vomiting at first. When seen there was still much tenderness of the abdomen, especially about the umbilicus, and the abdomen was rigid, but he was said to be better than he had been. He was passing natural motions He, however, gradually went down hill, and died February 22nd.

CASE XVI.—The patient was wounded on March 8th, and seen on March 9th. The bullet entered a little to the left of the umbilicus, and went almost directly backwards, and slightly downwards, and came out in the upper part of the buttock. When seen on the 9th there was general peritonitis, and fæces were coming out of the posterior wound. He was taken to Driefontein in an ambulance waggon on the next day; he became much worse during the journey, and died on his arrival there.

CASE XVII was wounded on March 10th. The bullet entered the ninth interspace on the right side, about 3 inches in front of the mid-axillary line, and came out close to the spine behind, at a little lower level. The patient was very well when first seen, and continued so for some hours later, except that he complained of numbness in his right leg. However, after moving from the field hospital at Driefontein to a farmhouse, he became very ill with uncontrollable vomiting and abdominal pain, and died about thirty hours after the wound.

CASE XVIII.—This man was wounded on February 22nd, and seen on February 23rd. The bullet had entered behind at the middle of the lower part of the sacrum, and come out in the middle line in front just above the pubes. The urine was clear when drawn off some hours afterwards. He had a good deal of pain about the abdomen and pelvis, with vomiting and rigidity. On the day after I saw him the sickness was less, and the temperature was just under 100°. There had been a good deal of diarrhœa, with some blood in the motions. On the 26th urine began to come through the anterior wound, and a catheter was tied in; otherwise the patient's condition had improved. He was sent to the base on March 1st, steadily improving.

CASE XIX was similar to Case XI. Urine was coming through the posterior wound when I saw him, and there was a good deal of swelling in the buttock. A catheter was tied into the bladder, and the sinus in the buttock well opened up and drained. He was sent to the base on February 26th.

CASE XX.—This man was wounded on February 18th, and seen on February 24th. The bullet had entered in the interval between the eighth and ninth ribs in front on the left side. There was no exit wound. On the 24th there was marked rigidity of the abdomen, with pain and tenderness, and still occasional vomiting. The bowels had not yet acted. An enema was given with good results. On the 27th the patient was rather better, but there was still a good deal of rigidity. He was sent to the base on February 28th.

CASE XXI.—The patient was wounded on February 18th, and seen on February 24th. The bullet had entered the tenth interspace on the right side, rather in front of the midaxillary line, and had come out through the ninth left interspace about the same level. There was a good deal of pain about the upper part of the abdomen, lasting for about three days, and also vomiting, but no blood in the vomit. After that the patient gradually improved. On the 24th the abdomen was quite soft and flat, and he was doing well. He was sent to the base on March 26th. It is probable that the liver alone was wounded.

CASE XXII was wounded on March 9th, and was seen about eight hours afterwards. The bullet had entered about three inches to the right of the umbilicus, gone backwards and somewhat inwards, and had emerged at the edge of the lumbar muscles. The aperture of the exit was large, readily admitted a finger, and fæces and offensive bloody discharge were coming from it. The patient was much collapsed. I opened the abdomen over the ascending colon, and at once came on the bullet wound close to the mesenteric attachment. On turning over bowel it was found that the posterior opening was to the inside of the reflection of the peritoneum, and did not communicate with that cavity. The operation was done in the middle of the night, with almost no light, and as the patient was almost pulseless I contented myself with closing the anterior opening, cleansing out the peritoneum in the vicinity, and putting a large tube through the posterior opening into the bowel, so as to establish a fæcal fistula. The patient died of acute sepsis two days later.

CASE XXIII.—I may add one very interesting case which I saw two days ago. A man was wounded in the fight at the waterworks on April 1st, three days before I saw him. A spent bullet struck the abdomen just to the right of the umbilicus, but did not penetrate the skin. He became much collapsed, and when I saw him he was in the last stage of suppurative peritonitis. He died a few hours later. On *post-mortem* examination rents were found in two adjacent coils of the small intestine. In one it was about an inch in length, clean cut, and went transversely through all the coats. In the other it was as if a knife had been drawn obliquely across a wrinkled intestine, so that at three places in its course it divided the serous coat alone, while at one end all the coats were penetrated. Where the bullet struck the skin there was a small slough, still firmly adherent, and underneath it a cavity containing pus, gas, and sloughing tissue, which communicated with the peritoneal cavity by a minute opening.

THE IMPERIAL YEOMANRY HOSPITAL.

As our readers have already learnt from the letter from Mr. Alfred Fripp, M.S., F.R.C.S., Chief Surgeon, published in the BRITISH MEDICAL JOURNAL of March 31st, 1900, p. 777, the Imperial Yeomanry Hospital was ordered to be established at Deelfontein on the railway 27 miles south of De Aar, and 474 from Capetown. Some of the initial difficulties encountered in getting the hospital into working order while a single line of railway, already crowded, was the only means of getting up, not merely supplies, but the hospital tents and huts themselves are described in the following letter (delayed in transmission) which we have received from Mr. F. Newland Pedley, F.R.C.S., Dental Surgeon to the hospital:

EARLY DIFFICULTIES.

"We were originally intended to be a base hospital near Capetown, but when we arrived the whole aspect of the war had changed; General Roberts had commenced his victorious invasion of the Free State, and we were wanted near De Aar Junction. So in two days we had left Capetown, and after about forty hours spent on a train we were safely landed at Deelfontein, which consisted of a small railway station and one diminutive general store. It is situated on a sandy plateau 4,000 feet above sea level. On the south side of the railway the ground is flat for miles, whilst on the north side there is a row of kopjes not more than 600 feet high. The site of the hospital is at the base of the kopje. The neighbourhood boasts a few scattered Dutch farms.

"In imagination we found at Deelfontein a hospital complete in every detail and ready for the reception of patients; but as a fact there were only a few tents, a half-built store house, a pile of crates, and our personal luggage: everything else was in Capetown. We soon saw that it would require weeks of incessant labour before we could get the hospital into first-rate working order. In vain did we bombard Capetown with telegrams asking for our stores and material to be sent on immediately. We were compelled to recognise the fact that the railway is only a single line and that an immense army in the Free State has to be supplied with food, stores, and ammunition. We see a daily procession of trains going to the front crowded with men and horses, and at short intervals long luggage trains go panting along under the heaviest load they can carry. Goods and material arrived daily, but not always in the right order. Of all things we were anxious to erect hospital wards for the reception of patients whom the authorities were pressing us to receive, but whilst we had a quantity of sides and roofs for the wards, the parts that represented the foundation were missing for two or three days and work was stopped.

"One week after our arrival orders came that we were to receive 200 patients who would arrive in two days from the receipt of the wire. This demanded redoubled exertion on our part, and Colonel Sloggett decided to remove all his men and the whole of the medical staff to the opposite side of the railway in order to utilise some of the existing accommodation for the reception of patients. The medical staff and the dressers had to work all day long assisting to remove their tents and belongings from the old camp to the opposite side of the line. The tents had to be carried, and although a fatigue party from an adjoining military picket was kindly sent to assist us, we all had a very hot, thirsty, sandy day's work, and the medical staff could easily have been mistaken for a gang of amateur navvies.

"But if life was not quite happy for us what shall we say about Colonel Sloggett, the Commandant? Every detail connected with the installation of the hospital and the feeding commissariat has to be organised and personally superintendent by him, and the task of getting us ready in time requires a man with the strength of an ox, the patience of Job, and a flow of persuasive language. Fortunately for us, Colonel Sloggett possesses all these qualities. His wonderful organising power, his untiring energy, and his marvellous tact in dealing with his men, black and white, strike everyone with admiration.

THE SITE OF THE HOSPITAL.

"The site chosen for the hospital is particularly salubrious. The sun during the day is excessively hot, but there is generally a cool breeze, and the evenings are delightful. The sand, which rises in clouds whenever the wind blows, has given many of us a kind of sore throat which we call 'sand throat.' We have scarcely half a dozen trees in sight. The surface of the ground is covered in patches with a low growth of prickly scrub called karroo bush, which is not free from snakes. I have seen several, and we never miss a chance of killing them, for the blacks say they are poisonous."

When all the difficulties of transport had been overcome, the wards, consisting of huts and tents, were arranged in three divisions, two surgical, in charge of Mr. Fripp and Mr. Raymond Johnson respectively, and one medical, under the charge of Dr. Washbourn. Three medical officers were associated with each surgeon and five with the physician, and five dressers were attached to each surgical division. The full complement of beds in each division was three times 58 beds (174). To each 58 beds two day sisters and one night sister were allotted; thus there were eighteen sisters on day duty and nine on night. This left six extra sisters on day, and

three on night duty to be told off by the Superintendent to whichever wards were temporarily overworked. Miss Fisher, the superintendent, Miss Brereton, the operating theatre sister, and Miss Stevenson, the night sister, completed the total of thirty-nine nursing sisters.

Plan of the Hospital.

In the middle of the hospital was a cross-shaped building. The two operating theatres, one of which was devoted except in times of stress, to the dental surgeon, form the crosspiece. The short head limb of the cross, separated by a roofed-in lobby from the operating theatres, was occupied by Miss Brereton, who had charge of all surgical instruments and dressings. The long limb of the cross, similarly separated from the operating theatres by a lobby, was occupied as to the end nearest the operating theatre by the *x*-ray department, and as to the foot of the cross by the dispensary. The *x* ray room opened by a 4-foot doorway into each operating theatre, and another 4-foot doorway in the opposite side of each operating theatre rendered it very easy for the patients to be carried on a stretcher, or even in a bed, from the wards into the theatre or into the *x* ray room for photographic purposes. The photographic dark room was placed in the farthermost corner of the dispensary, so that the plates there stored should not be spoilt by the proximity of the *x*-ray apparatus, which has been of great service to us in the diagnosis and treatment of several cases.

The land occupied by the hospital was a narrow strip about 100 yards wide between the railway line and a long kopje. The nurses' quarters were at one end of the hospital grounds, and the officers' mess and commandants' office at the other end, close to the railway station. Water was laid down throughout the grounds and fed from the tank at the railway station. There were four kitchens—one for the officers' mess, one for the hospital, one for the nurses and maids, and one for the orderlies. The hospital huts are substantial, rainproof, and comfortable. The tortoise tents with eight to eleven beds, and the bell tents four beds each, were also completely successful; but the hospital marquees of the old type were found quite useless for sleeping purposes, and were all used for mess rooms, offices, recreation rooms, and so on.

The Surgical Division.

Mr. Pedley, in the letter from which we have already quoted, gives the following account of the early working of the hospital:

"Associated with Mr. Fripp and working under him are Messrs. William Turner, A. P. Parker, and H. W. Bruce. In Mr. Fripp's division there are some interesting cases, most of them were wounded in the fight at Paardeberg.

The first was a man who was a good example of a not infrequent injury in which a bullet had passed through one lung, and, as not uncommonly occurs, had only produced slight hæmoptysis. In a second case a bullet had entered through the skin 2 inches above and to the left of the right nipple, emerging 2 inches below and to the right of it. Apparently the track was subcutaneous and had not damaged the ribs, yet there had been considerable hæmoptysis.

Gunshot injury to nerve trunks have been of very frequent occurrence during the war, and immediate symptoms would often seem to indicate much more complete destruction of the nerve trunk than is consistent with the rapid improvement that has frequently ensued. We have several cases which illustrate the difficulty of arriving at an exact diagnosis of the amount of injury actually sustained by the nerve trunk.

One case has a severe shell wound in the middle of the most bulky part of the supinator longus of the right forearm. The posterior interosseous nerve was involved, the muscles supplied by it being almost completely paralysed, but in no individual muscle was the paralysis quite complete. The radial nerve also had been damaged, but only a small part of the cutaneous area supplied by it is anæsthetic.

Another case appears to present all the symptoms of a complete division of the median nerve by a shell wound in the middle of the arm, and the ulnar nerve had been damaged, though probably not quite divided.

"There are 3 or 4 curious cases of bullets tracking for a long distance only just beneath the skin.

In one case the bullet entered just over the lower angle of the scapula and emerged in the middle line just over the first sacral spine. In another the entrance wound was situated opposite the middle of the anterior border of the sterno-mastoid muscle, and the exit wound was about 1 inch to the right side of the second dorsal spine, both on the right side. The only signs that remained to indicate the injury inflicted by this long subcutaneous wound were loss of power and bulk of the rhomboids and the upper part of the trapezius muscles.

Akin to these long subcutaneous tracks there was one case in which a bullet entered the left heel on the plantar aspect and emerged just behind the inner malleolus by such an oblique aperture that it grazed no fewer than 5 inches of the skin on the inner side of the leg before it again penetrated the soft parts from just above the knee to the middle of the thigh on the antero-internal surface.

Another case in which one could not help noticing the good luck of the patient was that of a Highlander who, while on the "double," was shot through both thighs about 5 inches above the knee, the bullet passing in front of the left femur and behind the right femur without touching bone in either case.

"Wounds of the foot seem somewhat disproportionately frequent, the account given by the patient commonly being that they were sitting behind a boulder which was not big enough to provide sufficient cover for their feet without pulling up and exposing their knees. There are four perforating wounds through the metatarsal and metacarpal bones, and in every case there is a great deal of splintering of those bones; enough, indeed, to suggest that there is some particular liability to splintering in these small long bones.

"There is, as usual, in this war a proportion of marvellous cases of penetrating wounds.

In one, for instance, the bullet passed from behind upwards, inwards, and forwards through the ilium, about 1 inch below the centre of its crest, and emerged just to the right of the umbilicus. For the week before he reached the hospital he suffered from constipation and acute abdominal pain. He then suffered for a week from diarrhœa but never passed any blood, and now, with the exception of two scars, there is no sign or symptom of his having been wounded.

The Medical Division.

"In Dr. Washbourn's section there are numerous cases of dysentery and diarrhœa, several cases of typhoid, many patients with muscular rheumatism, and one or two with cardiac trouble, but nothing of really exceptional interest."

Mr. Fripp adds, in a letter dated Deelfontein, April 15th, that the division was then beginning to receive some cases of pneumonia. Fortunately the hospital had a supply of compressed oxygen, which has already been found useful.

Surgical Cases.

Mr. Fripp, in the same letter, states that a considerable number of cases of simple fracture of long bones, due generally to horse accidents, have been received.

He sends also notes of the following interesting cases:

Case I. *Complicated Bullet Wound of Neck, Face, and involving the Sympathetic and the Brachial Plexus.*—A private was wounded by a bullet which entered half an inch outside the angle of the mouth on the right side, and emerged on the same side opposite the seventh cervical spine, 2 inches outside the middle line behind. On its way it (1) smashed the alveolar process and the outer plate of the body of the mandible, and we had to remove three teeth and many fragments which together formed a pit in the cheek, causing an abscess there. The rest of the body was not broken. (2) It divided the cervical sympathetic cord, producing a diminished palpebral aperture, retracted globe, and small pupil which does not dilate in the shade; no vessel is damaged apparently. (3) It has damaged the brachial plexus sufficiently to give extreme hyperæsthesia of the entire upper extremity below the area supplied by the circumflex nerve, which is normal, and complete paralysis of almost all the muscles of the limb up to and including the deltoid. But cases of apparently total division of nerve trunks often show a wonderful amount of recovery, as if the symptoms of total division could be produced by extravasation of neuritis or even mere concussion of nerve trunks. This patient had two other bullet grazes, one transversely across the bridge of the nose (a mere graze), yet causing much splintering of nasal bones; and the second an inch and a half long in a vertical direction over the right frontal eminence, without any damage to bone.

Case II. *Recovery after Eight Wounds.*—An officer received eight wounds in half an hour at the Bloemfontein waterworks: (1) A bullet passed through his right loin just external to the kidney; (2) another went through the soft part of the right thigh; (3) a piece of shell knocked two pieces out of his scrotum and one out of each thigh just below the scrotum. The bullet wounds healed immediately, and the four shell wounds are now granulating up, and in a fortnight he will be every bit as good a man as he was when he sailed from England.

Case III. *Bullet Wounds of Pelvis and Groin: Recovery.*—A private had a bullet enter just above Poupart's ligature of the right thigh, exactly halfway between the anterior superior spine and the symphysis pubis. There is no sign of damage to the external iliac artery nor to any other important structure. No exit wound can be found, and the *x* rays do not detect any lodged bullet. The same man received another bullet on the inner surface of the thigh, 2 inches below the cruro-scrotal fold. When admitted there was a superficial abscess on the other thigh, exactly corresponding to the position of the entrance hole. This was incised, the bullet found loose and removed, and the finger could then be passed along the track the bullet (a Martini-Henry) had made from the abscess cavity up to the body of the pubes, across the front of the symphysis behind the penis, and down the other thigh to the wound of entrance.

In another letter Mr. Fripp states that everything in connection with the hospital was working well, and that the huts were most comfortable, and in every way a great success. Two hospital trains (Nos. 2 and 3) were working on the line from the north, and a private railway siding had been formed which ran right into the hospital grounds, so that the difficulty of transferring cases from the carriages to the wards was minimised. Special wards had been established for officers. The earlier cases received turned out very satisfactory, but the circumstances were different with the men who came down from Paardeberg; they had had a three days' journey in ox waggons before they reached the hospital at the Modder River, and in consequence their wounds did not run a very favourable course.

A rule had been made to keep 30 beds free for the unexpected arrival of Yeomen. Shortly before Mr. Fripp wrote, No. 2 Hospital Train had brought down 96 cases from the actions around Bloemfontein. In this way all the beds in the hospital were filled up with the exception of five, but by putting up extra stretchers to accommodate the more convalescent

earlier cases 30 beds were again set free. No sooner had this been done than a party of 14 Yeomen arrived.

Two trainloads of convalescents had been sent down to Capetown, where they would be put on transports for England; many men had, however, recovered sufficiently to return to the front, and were sent at once in parties to De Aar.

Considerable difficulty has been encountered in getting the laundry to work, as it was a large matter to provide for the washing of 750 people a week, and, up to the time of writing, sheets had not been available for the convalescent tents nor for the medical staff. As soon as the laundry was completed it would be able to deal with close upon 2,000 sheets a week, in addition to smaller linen. The engine which heated the water for the laundry provided steam also for the disinfecting of beds and bedding, and pumped the water for drinking purposes to the filter tanks.

Mr. Fripp states that the 40 nurses and nursing sisters had proved invaluable.

THE BASE HOSPITALS

[FROM OUR SPECIAL CORRESPONDENT AT CAPETOWN.]

HOSPITALS IN THE CAPE PENINSULA.

THE hospitals in the Cape Peninsula are being steadily increased in capacity. No. 3 has now 656 beds. No. 1 has increased its accommodation to 586 beds for men and 129 for officers; this has been brought about by converting the quarters of the *personnel* into wards. Major Burton has taken Major Sylvester's place in charge of the surgical division and Major Elderton has taken over the medical division from Major Barnes, who has charge of the convalescent home for officers at Claremont. Major Simpson is in charge of the officers in No. 1 itself. No. 5 General, formerly the Station Hospital, has about 550 beds, but is being rapidly enlarged. A newly-erected recreation room has been pressed into the service as a ward and will probably be retained as such. It is, I believe, intended to raise its establishment to over 700 beds by building nine huts. Lieutenant-Colonel Williamson is in command, with Major Russel as Registrar, and Majors Archer and Gibson as Divisional Officers. There are now 9 R.A.M.C. officers and about 12 civil surgeons. Of the latter all except two belong to the staff of No. 5 A, Civil Surgeons Darley-Hartley and Simon alone remaining of the original staff. Dr. W. F. Savage has returned to civil work at Bloemfontein. Drs. Troup and Peare have been sent to Kimberley, and Dr. Sterne to Walfisch Bay. Colonel Williamson has a herculean task before him in the attempt to organise No. 5 in face of the tremendous influx of patients every day. It is like remodelling an army on the battlefield. From the nature of the institution and the small *personnel*, the Woodstock Hospital under the old *régime* was worked with less attention to strict regulation than is the case now. It was impossible for it to be otherwise. Indeed Major Tuke deserves enormous credit for carrying it on at all without any serious hitch. When it is remembered that in addition to commanding R.A.M.C. details (one man's work) he had to supervise a hospital of quite the dimensions of a general without a single administrative assistant, and with only a staff of civil surgeons, one cannot but admire his energy. Indeed the R.A.M.C. officers, from the P.M.O. of the Army Corps downwards, have worked like Trojans, and what is more, they have entirely emancipated themselves from red tape and have organised on the lines dictated by their own genius. I do not think anyone who has not been an eye-witness can realise how much personal responsibility the medical chiefs have assumed.

At Orange River there are three field hospitals. A good many huts have been erected, but the majority of the patients are still in tents. They number over 400.

The hospital trains are doing excellent work. The two original trains have conveyed 4,500 patients up to date and all without a hitch. A third hospital train has been put on the East London line.

DYSENTERY WITH RHEUMATIC COMPLICATIONS.

The frequent association of rheumatism, generally in a subacute form, with dysentery, to which I alluded in a former letter, still obtains. I was at first inclined to attribute the coincidence very much to the operation of a common cause, exposure to cold and fatigue predisposing to both, but more extended observation is leading me to doubt this explanation. I have observed that the No. 5 General Hospital, which draws almost all its patients from the base and the transports, shows exactly the same coincidence. The following is a typical case at this hospital:

A staff sergeant of the Ordnance, a man doing purely office work, developed dysentery in a form for South Africa very severe. He had profuse watery and slimy stools, with abundant hæmorrhage, and a fairly high temperature, reaching 100° F. at night, for some days, stools at first 20 to 30 daily. He was admitted early, and given magnesium sulphate. The symptoms did not yield as rapidly as is the usual experience with this treatment, some five days elapsing before the stools became fæcal, and there was much anxiety about him. Ipecacuanha was tried on the third day, but proved an absolute failure, bringing on vomiting in spite of all precautions, and even when some was retained having no effect on the purgation. The magnesium sulphate was given again, and apparently with effect. So soon as the motions became partially fæcal monsonia ovata was exhibited, and the condition began steadily but slowly to mend; but about the fifteenth day, when the motions were still loose and the patient still on milk diet, pains appeared first in one joint and then in another; they were of a shifting character, and there was a slight rise of temperature, but not at all of a pyæmic character. Sodium salicylate was added to the monsonia, and in a couple of days the pains eased, and in a day or two later had gone. There were no signs of cardiac trouble, and the patient had no history of rheumatism.

Another case in No. 1 General Hospital is of a somewhat different character.

The patient had an acute attack of dysentery; then, as this was subsiding, an acute attack of rheumatism supervened, with a high temperature and severe pains. The temperature had not a pyæmic character. Endocarditis followed this attack, a loud regurgitant murmur being audible at the mitral valve, and several attacks of typical angina pectoris followed at intervals after the temperature had gone down. The patient is still anæmic, and still has the murmur, but he has not had any angina for some weeks. The latter was treated in the usual way with nitrites. In this case, also, there is no rheumatic history.

THE BOER PRISONERS.

The amount of sickness amongst the Boer prisoners is very great. The Palace Hospital at Simonstown set apart for their accommodation is full, mostly with enteric fever, but there are a few cases of dysentery. Unfortunately the results there have been bad, 22 deaths having occurred to date. No. 1 has some fifty Boers, the majority being cases of enteric fever, No. 5 about the same number, and the other hospitals a good share. All the medical officers concur in the opinion that, as a rule, the Boer does not do nearly so well under equal conditions as the Tommy. He stands the pain of a wound bravely enough, but directly he finds himself face to face with a lengthy illness he loses heart, makes up his mind to die, and his prognostication is often justified. Nothing can exceed the kindness with which the prisoners are treated. Every effort is made, as far as possible, to put them under medical men who understand their language. They are, of course, nursed exactly as the soldier, and get many little indulgences from which, for reasons of discipline, the latter would be debarred. The better class quite appreciate this. I was talking the other day to a well-educated prisoner, a pure Transvaaler, who told me that he fully expected the kindest treatment, and that he had been glad when he became sick that he fell into the hands of the English, as the arrangements on his own side were shockingly bad. He told me that unless a man were under the care of one of the foreign ambulances there was very little chance of recovering from anything bad. The actual Boer medical arrangements worked, he said, fairly well at the beginning of the war, but they had utterly broken down later. There was no system at all, and not only a deficiency of doctors, but those doctors appeared "just to wander about as they liked," so that sometimes there were two or three where they were not wanted, and none where they were. Then, again, he admitted to me that it was not at all an uncommon thing for the doctors to take up a rifle and fight. He mentioned this, not apparently with the least idea of its impropriety from a Red Cross point of view, but as a grievance on account of the doctor being wanted to do his own work. And, although this is not strictly a medical matter, another remark he made was interesting. He complained bitterly of being kept in captivity on the ground that the rebels, who were our own subjects and had been fighting, were allowed to go free to their farms on giving up their arms, whilst he and others who were only doing service to their own country, were kept in prison.

DESPATCHES.

The *London Gazette* of May 4th published despatches from General French, commanding the Cavalry Division, describing the operations of the force under his orders in the vicinity of Colesberg from December 15th, 1899, to January 25th, 1900. After narrating in detail the nature of the operations undertaken, General French concludes by bringing to special notice the services of the officers engaged. Among these is the following:

"Major H. G. Hathaway, Royal Army Medical Corps, has been attached to my staff since my arrival at Naauwport. He has been unremitting in his attention to the sick and wounded. He has on several occasions, and at critical times, carried messages to commanders of units in the field, and his services have been most useful."

The *London Gazette* of May 8th contains a despatch, dated February 15th, from Lieutenant-Colonel R. G. Kekewich, describing the military operations in the vicinity of Kimberley from September 13th to February 15th, and the defence of the town up to the latter date, when its relief was effected by the cavalry division under Lieutenant-General French.

Colonel Kekewich relates in detail the measures undertaken for the defence of the town against the Boers, and concludes by bringing to notice the service of the officers under his command. "Lieutenant C. J. O'Gorman, Royal Army Medical Corps, was," he says, "the only officer of his corps in Kimberley, and in consequence had much hard work and responsibility. I consider him a very valuable officer."

Of the medical officers belonging to the volunteer forces, Colonel Kekewich writes: "Surgeon-Major J. A. J. Smith, attached to the Kimberley Regiment, rendered most valuable assistance to the wounded in the field. Surgeon-Lieutenant A. J. Ortlopp, attached to the Diamonds Field Artillery, also rendered considerable assistance to the wounded in the field."

Colonel Kekewich also cites the names of citizens and others who distinguished themselves. Among these, he writes: "Dr. W. Russell, M.D., Resident Surgeon, Kimberley Hospital, rendered services in connection with the reception and treatment of the sick and wounded in the Kimberley Hospital, of which I cannot speak too highly. Dr. T. L. Shiels, M.B., Assistant Resident Surgeon, Kimberley Hospital, did a considerable amount of hard work in attending to the wounded. I cannot speak too highly of the energy and zeal displayed by the following visiting surgeons, Kimberley Hospital: Dr. E. O. Ashe, M.D., Dr. A. H. Watkins, M.D., Dr. J. E. Mackenzie, Dr. J. Mathias, M.D., Dr. W. J. Westerfield, M.D., and Dr. W. W. Stoney, M.D."

ASSOCIATION INTELLIGENCE.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1900.

MEETINGS of the Council will be held on July 11th and October 10th, 1900. Candidates for election by the Council of the Association must send in their forms of application to the General Secretary not later than twenty-one days before each meeting—namely, June 21st and September 27th, 1900.

Candidates seeking election by a Branch Council should apply to the Secretary of the Branch. No members can be elected by a Branch Council unless their names have been inserted in the circular summoning the meeting at which they seek election.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the Council or by any recognised Branch Council.

FRANCIS FOWKE, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

SHROPSHIRE AND MID-WALES BRANCH. The spring meeting of this Branch will be held at the Salop Infirmary on Tuesday, May 29th, at 3 P.M. Members who wish to bring forward any business, to read papers, to show cases or specimens, or to propose any new members, are requested to communicate with the Honorary Secretary, not later than Friday, May 18th.—HAROLD H. B. MACLEOD, College Hill, Shrewsbury, Honorary Secretary.

NORTH OF ENGLAND BRANCH.—The spring meeting of this Branch will be held at the Ingham Infirmary, South Shields, on Wednesday, May 16th, at 3.30 P.M. Dinner at the Royal Hotel at 6 P.M. Gentlemen wishing to propose new members, or to bring forward any business, cases, or specimens are requested to communicate at once with T. BEATTIE, 3, Ellison Place, Newcastle-upon-Tyne, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: SOUTH LONDON DISTRICT.—The annual meeting of this District will be held at Bethlem Royal Hospital at 4 P.M. on Thursday, May 17th. The election of officers for the next year will take place. Dr. Savage will read a paper on Cases of Unsoundness of Mind not certifiably Insane. Cases of clinical interest from the wards of the hospital will be shown, and demonstrated on by members of the staff. All practitioners, whether members of the Association or not, will be heartily welcomed.—MAURICE CRAIG, Bethlem Royal Hospital, S.E., Honorary Secretary (*pro tem.*).

METROPOLITAN COUNTIES BRANCH: EAST LONDON AND SOUTH ESSEX DISTRICT.—The next meeting of this District will be held at Brook House, Upper Clapton, on Thursday, May 17th, at 8.30 P.M. The chair will be taken by Dr. F. J. Smith, Vice-President of the District. Dr. Stephen Mackenzie will give a demonstration of cases of skin disease. Visitors are invited.—C. J. MORTON, 56, Orford Road, Walthamstow, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: NORTH LONDON DISTRICT.—A meeting of this District (the last of this Session) will be held at the London Temperance Hospital, Hampstead Road, on Wednesday, May 16th, at 4.30 P.M. Dr. Morton will preside. Election of officers. Dr. Thomas D. Savill will open a discussion on Occupation Neuroses, and will exhibit cases of Drapers' Palsy, Pianists' Cramp, Machinists' Tremor, and Telegraphists' Cramp. The District Committee will meet at 4.15 P.M.—H. J. MACEVOY, Brondesbury, N.W., Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH.—A special meeting of this Branch will be held on Friday, May 18th (not on Wednesday, May 16th, as previously announced in the BRITISH MEDICAL JOURNAL), at 2 P.M., in the Memorial Hall, Albert Square, Manchester, to consider medico-political and business matters.—T. ARTHUR HELME, 3, St, Peter's Square, Manchester, Honorary Secretary.

DUNDEE AND DISTRICT BRANCH.—The annual meeting will be held in Dundee Royal Infirmary on Friday, May 25th. By the courtesy of the Directors, the new Caird wards (Gynæcology and Obstetrics) will be shown to the members. Members having business to bring forward or patients to show at the Clinical Congress are requested to communicate with Dr. BUIST, Dundee, as early as possible.

MIDLAND BRANCH.—*Preliminary Notice.*—The annual meeting of this Branch will be held at Nottingham on Thursday, June 14th. Mr. A. R. Anderson, F.R.C.S., President-elect, will preside. The following papers, etc., have already been promised. Address by the new president. Dr. H. Handford: Three cases of Cerebro-spinal Meningitis. Dr. Pope and Dr. Astley V. Clarke: Cases of Acromegaly and Cretinism occurring respectively in Father and Daughter, with remarks as to the possible Connections of the Two Diseases. Members wishing to show cases or read papers are requested to communicate as soon as possible with FRANK M. POPE, 4, Prebend Street, Leicester.

BORDER COUNTIES BRANCH.

THE spring meeting of this Branch was held at Moffat on May 4th; Dr. J. R. HAMILTON (Hawick), President, in the chair.

Confirmation of Minutes.—The minutes of last meeting of the Branch were read, approved, and signed by the President.

New Members.—Dr. Francis R. Hill (Stanwix, Carlisle) was elected a member of the Association and Branch; and Dr. Geo. R. Livingston (Dumfries), already a member of the Association, was elected a member of the Branch.

Congratulations to Lady Buller and Lady White.—The PRESIDENT intimated that he had received the following replies from Lady Buller and Lady White to the telegrams of congratulation sent to them at the last meeting of the Branch:

[Copy of Letter from Lady Audrey Buller.]

Government House, Farnborough, Hants.
March 5th, 1900.

Gentlemen,—I beg to express my heartfelt thanks for your most kind congratulations on Sir Redvers Buller's success. I am deeply touched by the feeling expressed on all sides for Sir Redvers Buller.

Believe me, gentlemen, yours truly,
(Signed) AUDREY BULLER.

[Copy of Telegram from Lady White to Border Counties Branch, British Medical Association, Hawick.]

Warmest thanks for kind congratulations.—LADY WHITE.

Epsom College.—The PRESIDENT intimated that the Council recommended that the votes of the Branch at the forthcoming elections to the Royal Medical Benevolent College, Epsom, be left in the hands of the Secretary to use at his discretion. This was approved.

Midwives Bill.—The SECRETARY read a letter received from the General Secretary of the Association, enclosing copy of resolution passed by the Council of the British Medical Asso-