THE WAR IN SOUTH AFRICA.

AN ADVANCED BASE HOSPITAL.

By Sir William Thomson, Chief Surgeon, Irish Hospital, Field Force, South Africa.

Nauwpoort Camp, March 19th, 1900.

WAR'S DELAYS.

War, as well as law, has its delays. Lord Roberts' victory at Paardeberg, and the surrender of Cronje and his force, blocked the line with trains of prisoners, and kept us at Cape-town for days, and now, when we are within the war area, we are stopped by the circumstance that the Boers have blown up the railway bridge at Norval's Font, across which we hoped to be carried last week, to join Lord Roberts' army. Thus we keep here, our waggons packed, and only a few tents pitched, waiting anxiously to comply with the orders telegraphed to us from headquarters to be ready to proceed to Bloemfontein on the shortest notice, but the way is not open. The Railway Pioneer Regiment, mainly composed of Johannesbergers, which has done such splendid work in this campaign, left this two days ago with several trains full of material, and they are striving day and night to make good the spans which have been destroyed; but when the work is concluded, the one pier gone the task is not an easy one, and it will take some days yet before we can be carried further north. Meanwhile the Irish Hospital has been able to take its share in helping the sick and wounded. As I stated in my last letter, I was able to send Dr. George Stoker, Dr. Friel, Dr. Coningham, and Mr. MacIntyvane, and a number of waggons and ordnances, to join Lord Kitchener's force, operating in the Pietsea and Carnarvon districts, a couple of hundred miles to the west of this, where the rebels have risen in considerable numbers. Their expedition will not be protracted, and they will then join us up-country.

NAPUWPORT TOWN AND CAMP.

Nauwpoort (pronounced "Noport") is not a stately town. A few red-brick cottages, and some dozens of more pretentious single-storied cottages, all with roofs of corrugated iron; two stores or general shops; a railway station; the Standard Bank, which occupies a tiny two-roomed shanty; these practically comprise the town of Nauwpoort. It is, however, an important railway junction, and only three weeks ago the camp was being sniped. For the moment the population has increased from a few hundreds to several thousands, but the addition is formed of troops of all kinds, who are gathering here ready to move up to the Free State, but detained for the same reasons as we are. White tents and stately marquees cover the dusty ground by the hundred; there is all the bustle of a community for itself for war, and in the town itself, and far out on the plain, entrenched positions and redouts show preparation for a possible struggle. Round about, and within easy shot, are kopjes from 50 to 500 feet high, from which any force could easily play havoc with the town. They are all typical South African hills, some flat topped as if they had been fashioned by man's hand, some precipitous and unclimbable, some with steepish slopes, over which lie boulders of all sizes producing only crops of the all-prevaling scrub. The camp is pitched on the sandy veld parallel with the railway line, above which it is elevated from 20 to 50 feet. No particle of green is to be seen save here and there a blade of grass struggling into life after a rain shower. But the air is South African air—clear and bright, utterly upsetting judgment of distance as one knows them at home. What we walk on is greyish dust, differing in this respect from the red of Capetown. It is very light and easily raised, and now and then, when a fierce gust comes over the hills, it is raised like a dark wall and hurried along; it sweeps through open tent doors and windows, insinuating itself into every crevice, and lays upon every person and thing the tangible marks of its visitation.

THE CLIMATE.

But, for all that, the climate is excellent. Just now we are fast approaching winter. The mornings are fresh, crisp, vitalizing; then come many hours of day when the sun is extremely hot and almost burns. Then sundown. The light breeze, fresh and clean, comes up from the south, with dewy refreshing, and in a few minutes we have passed into a temperature decidedly cool, when every wise man puts on a thicker coat. As night goes on the cold is sharp, and you are glad to pile on more blankets. These changes are trying, and save a little produce it has been the rule, with a good water supply and an elevation of 5,000 feet above the sea level, Nauwpoort is not an undesirable place from a health point of view.

No. 6 GENERAL HOSPITAL.

I have taken advantage of my enforced stay to pay some visits to No. 6 General Hospital, which has been formed here under the direction of Colonel Somerville Large as P.M.O. He has on his staff Colonel Falvey and Major Osborne, who are in charge of the medical and surgical divisions respectively; while Major Jennings is the Secretary. In addition there are several junior officers and thirteen civil surgeons.

Three weeks ago the work of organisation here began. To-day there is a town of tents and marquees, and just now there are over 500 patients under treatment. The marquees are of the usual pattern, but they might very well be improved upon. For their size and weight they do not give the accommodation that one might expect. But for all that the patients are in good condition, and are making fast progress. The men sleep on "wire-woven" mattresses on iron bedsteads; there are tables and easy chairs, and nothing is omitted which could make the lot of the men as happy as possible.

TYPHOID FEVER.

There are about 70 cases of enteric fever under treatment. These have come from various places at the front, and, practically speaking, no case has developed in this camp. The type is not very severe—not more severe, in the opinion of my colleague, Dr. Coleman, than one meets at home. That there should be many cases is not to be wondered at when the conditions are remembered. Water is very scarce on the field, and when great masses of men and horses are moving the streams have been utilised; often the rivers are the receptacles of dead men and horses. Directions given to the average soldier as to the avoidance of such water are almost useless. After marching for hours in a broiling sun and going through the excitement of an engagement, little water remains in his bottle, and when a pool is reached men drink what they can get without considering the question of possible danger. A distinguished staff officer who was in the recent fighting which culminated at Paardeberg stated that he was glad to "drink his fill" of the Modder water and to replenish his bottle with it. True there were dead men and horses in it, and it was like the dirtiest puddle; but he must at any cost assuage his thirst, and enteric fever had no terrors for him at such a moment.

SURGICAL CASES.

In the surgical wards it would be hard to see a finer or healthier lot of men, for although some of the wounds have been very dangerous, they have followed the usual course here. They are healed or healing. There were only a very few cases in which suppuration had occurred, and, for the rest, once the immediate effect of shock had passed, the patients' good condition and training in the open seemed to have benefited themselves, and most of the men looked to be in rude health.

I have seen many interesting cases, some of which may be shortly noted here.

**Bullet Wound of Pelvis.**—A private of the Oxfordshire Light Infantry received a bullet below and 8 inches behind the anterior spine of the left ilium two weeks ago, on the right side. The course was after the lower part of the abdomen. The patient passed blood for four days, and he has still a little urine. He is fully conscious and has been out of bed, and he is moving about.

**Bullet Wound of Abdomen and Pelvis.**—A private of the Bedford's was hit 4 inches below the umbilicus, half an inch to the left of the median line. The bullet passed from before backwards, and came out to the left of the base of the spine. Pus escaped; and the wound was dressed, and the injury was received on February 24th. He never had any fever or elevation of temperature, and he is well.

**Bullet Wound of Mouth and Chest.**—A private of the Duke of Cornwall's Light Infantry received a bullet in the mouth. It removed the upper central incisors, passed behind the last molar on the left side, and escaped below the spine of the left scapula. There was some bloody expectoration. He has paralysis of the deltoid, but is otherwise quite well.
Bullet Wound of Chest.—A private of the South Wales Borderers was wounded at Paardeberg. The bullet entered below the angle of the right scapula, and came out three inches below the coracoid on the same side. The patient was able to bear up to the right side, when he evidenced signs of severe pain in the neck and nerves. No pulse could be felt in the radial, brachial, or axillary arteries. There was loss of sensation on the radial side and drop wrist. The vessel is injured.

I saw another case of a like character also.

Bullet Wound of Chest: Neuro-Pathy.—A man of the O.L.I. was struck under the left clavicle near the inner third, and the bullet came out in the ninth intercostal space posteriorly. There was great dyspnoea. The heart was thrust to the right side by the precipitation of the bullet on the left side, and two pints of blood were removed; and subsequently eight ounces. There was also a pneumothorax. There was complete paralysis on the left side from the axillary artery down, and all wounds were healed and the man is doing well.

Wound of Femoral Bone.—In the case of a private of the Bedfordshire the bullet entered above the scapula on the left side, came out, and again entered below the scapula. The man appeared to be well and in the field hospital at Paardeberg. As suppuration continued from a long sinus this was opened up. A great portion of the mastoid was necrosed, and was then removed. The squamous portion of the temporal was fractured. There is deafness on that, but there is no other symptom.

Bullet Wound of Pelvis.—A private of the O.L.I. was struck at Kipl's Drift on the right side of the pelvis, two inches below the crest of the ilium and a inch behind the anterior superior spine. The bullet passed transversely, and escaped on the right side through the abdominal wall, over the coccyx. He has never had a symptom.

Wound of Femoral and Obliquum Arteries.—I saw one man in whom the femoral artery had been ligatured and divided. He was attacked by severe dyspnoea for 24 hours in the train, and on being brought into hospital was collapsed. The wound was at once opened up, and it was found that the wound had been made by a bullet close to its origin. Since the operation everything has gone well.

The surgical work here has been very well done, and Colonel Large speaks highly of his staff. The results will, of course, appear hereafter. Two deaths which are a fair and full mirror of the cases will be published by the surgeons concerned. The death-rate on the surgical side, where over 500 cases have been treated, is nil, and this will give the best idea of the thoroughness and success with which the work on the field and in the hospitals is being done. For those at home who have wounded relatives here it will be some consolation to be assured that they could not be better served at home. When we consider the conditions which necessarily belong to a campaign, the completeness of the arrangements for the sick and wounded will always remain a credit to our country.

NOTES ON THE BASE HOSPITALS IN CAPE COLONY.

From our Special Correspondent in Capetown. March 31st, 1900.

ENTERIC FEVER.

After a lull, during which the hospitals here have been surgically almost devoid of interest, there is again somewhat of a rush and a good deal to be seen. All the base hospitals are crowded, the orderlies have never been busier, and I believe the orderlies are better paid than at earlier dates. Enteric fever is increasing steadily everywhere, and I understand that No. 6 General Hospital at Naudaspont has a large number of cases. On the whole, the results of this disease appear to be fairly good, although at some of the hospitals up-country treatment has been a little hampered by the difficulty of obtaining a sufficient supply of fresh milk. The same thing, indeed, has sometimes happened even here. No one is to blame for it. At times it is simply unobtainable. Patients tire of even the best brands of condensed milk and will not take as much as is desirable.

"Open-Air" Treatment of Enteric Fever.

Comparing notes with a good many military surgeons, one conclusion seems to me obvious, and that is, given a fairly protected situation, typhoid patients do better under canvas than in permanent buildings. I lay stress on the requirement of a "protected situation," for it is obvious that a camp exposed to the tremendous South African winds cannot be placed under conditions of comfort, nor can the tents be kept open; but at No. 3 General Hospital at Rondebosch, one has an almost ideal position for open-air treatment, owing to the great break of the wind in the country, which materially breaks the force of the wind. At this hospital only 3 deaths have occurred in 124 cases, and I can discover nothing special in treatment or dietary to account for statistics much more favourable than are obtained generally in this country, either in the army or civil practice. The value of the open-air régime in typhoid was shown very conclusively many years ago by the late Dr. Fitzgerald, at the Grey Hospital at Kingwilliamstown. He had pavilions erected in the grounds of that institution, and, although I have not the figures by me, I remember he reported that patients did very much better in the pavilions than in the permanent wards. I saw a great deal of typhoid in the Kaffir and Zulu campaigns in 1879-79, and noticed precisely the same thing.

DRUGS IN TYPHOID FEVER.

No special plan of treatment seems to be more successful than another. Some use salol largely, others swear by Yeo's free chlorine and quinine mixture; others, again, use quinine simply. Apparently no difference in results is traceable to their differences of treatment. At the Woodstock Hospital a trial has been made of the eliminative treatment on Woodbridge's or, rather, on Thistle's principle—powders of salol and calomel being administered at frequent intervals, in combination with small doses of magnesia sulphate. The medical officer in charge of the typhoid wards informs me, however, that after a short trial, he has definitely abandoned this line. He found it more or less unmanageable. A violent exacerbation of diarrhoea would sometimes set in quite suddenly, and apparently no reason and proved very difficult to check. At first he thought the treatment cleaned the tongue and relieved abdominal tenderness, but later he found that patients so dealt with seemed, independently of any complication, to take on a very asthenic aspect, and more or less to collapse. As far as I can make out, Mr. Wood has beenHome to the South Wales Borderers and No. 3—the great value of monosnia ova in checking diarrhoea and hemorrhage in typhoid fever. Colonel Wood, at the latter institution, who adopted it at the suggestion of Dr. Darley-Harley, of the former, is most enthusiastic in its praise. One point must be borne in mind. The tincture, unless freshly made, is of very little use. Pneumonia does not seem to be a very frequent complication anywhere; I have not yet heard of more than a couple of cases in which it could be assumed to be the cause of death.

RELAPSE, RECURRERENCE, AND LONG-CONTINUED PYRAXIA.

Relapses are fairly common, and the great trouble is continued, irregular, febrile temperature, running into the sixth or seventh week, or longer. I do not think that these prolonged high temperatures are relapses, although they are often recrudescences, a short, nearly normal interval, being often interpolated. The temperature will run on in this way for weeks, without any return of the original symptoms. As I mentioned on a former occasion, the fact that inoculated people convalesce without this prolonged fever is very notable. The evidence, thus far, does not, however, go to show that inoculation is at all dangerous. So far as I have been able to observe I should say that the proportion of soldiers who contract typhoid as is large amongst the inoculated as the other, and this at a period when the inoculation is very recent. But we may regard it as almost proved that it is given cases run a very mild course, and are singularly free from complications. At No. 3 General Hospital phenacetin and its congeners appear to be freely used as antipyrics in typhoid; at Woodstock these are eschewed as the plague. Fortunately enough, the charts at the two hospitals show that at the former there are far more cases of hyperpyrexia than at the latter, where I am told a temperature to cause an alarm is very rarely met with, and if it is, yields to a simple cold sponging or ice rubbing. At Woodstock these last are very common, but in the great increase of barleys, and much reliance is placed on the injection of large quantities of soda water and barley water, whilst at Rondebosch broths and other light protein foods are generally freely given. Whether this has anything to do with the higher run of the temperatures is an open question.

DISSENTERY.

Comparatively few cases of dysentery are coming down, except in the correspondent's charge. The treatment generally adopted is by magnesium sulphate, followed in some clinics by opium, in others by monosnia. Some stick to ipecacuanha, but it is, I think, becoming generally admitted that this drug is not nearly so successful here as in India.
The following cases are of interest:

Coccygeal Mesenteric Gland.—I was shown the other day a calculus fully the size of a patient’s egg, which looked exactly like an ordinary calculus, and which had been taken from a patient who had died of typhoid fever at Woodstock, and was a calcified mesenteric gland. At once the diagnosis was obvious, and it is not uncommon, with calcification as a late change in these cases, but it is impossible to conceive that time had elapsed for this to be due to the effect of typhoid in question. It is, however, for that it was for any other tuberculosis, and hence, but none was discovered, and there was no history of a previous attack of typhoid fever.

Perforating Bullet Wound of Chest: Suppuration. — At No. 3 General Hospital I was shown a patient whose chest had been traversed by a bullet, which entered high up and emerged through both shoulders. At the wound of entrance appeared a tumour, which gave all the appearance of being a bullet, and on the side of the breast there was a puncture, and evacuated a pint of pus. Physical examination now revealed signs of a large cavity on the right side in front, and of an extensive collection of fluid in the right pleural space. The patient was in no way unwell, and there were no signs. A puncture with a hypodermic syringe brought away pus. A resection was done, and a perfect cavity, the boundaries of which were the ribs, was exposed. The lung was then punctured through the wound (it filled the chest normally) and still no pus was obtained. The wound was then closed up, and the patient is apparently slowly improving. Dr. Tooth has seen the case, and like all others is much puzzled. The only explanation he can suggest is that there is, or was, extensive purulent infiltration of the lung, the organ being so completely sodden as to give the flat note of pleuritic effusion. Why, however, the puncture of the lung during the operation revealed no pus it is very difficult to imagine.

Surgical Notes from South Africa.

TREPHINING IN BULLET WOUNDS OF THE SKULL.

Evidence is constantly accumulating to show how very extensive and severe injuries to the skull is the case in many bullet wounds. In a number of cases, unfortunately not at our disposal, but described by one of the officers of the hospital, the skull was perforated by a large object, and the pericranial membrane was splintered, while the posterior parietal convolutions were splintered, and the dura mater was incised. The bullet entered the cavity of the skull, and was in the parietal bone, the posterior part of the cranial vault, the scalp being preserved. The wound was not very extensive, and the patient was taken in a near condition, with no other injury. The bullet was removed, and the wound dressed, and the patient went on well, and was discharged in a perfectly healthy state.

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VALUE OF SKIAGRAPHY.

Many cases in No. 3 and the Portland Hospital illustrate the extreme difficulty of locating modern bullets without the aid of a skiagraph. The skia graph exhibited a number of cases in which a plaster cast was thrown up in front of the right coracoid process. It had entered just above the outer fourth of the clavicle and gone downwards, evidently turning upon itself, for the nose was upwards. Major Keogh, R.A.M.C., tells me that it is not at all uncommon to find that these bullets, when fired from long ranges, turn in this way. One would have imagined that a bullet in this situation could have been felt; nevertheless, the most careful examination failed to locate it. Another case illustrated strikingly.

Bullet embedded in Tibialis Posticus.-A bullet had entered the upper part of the calf. A skia graph showed it plainly. An incision was made above the point, and the bone and cartilage for ligation of the posterior tibial artery in the upper third. The gastrocnemius was turned aside and the soleus was separated from its tibial attachment, and the tibial posticus was traced by means of a bone. The bullet was not found. The patient recovered, and was sent to South Africa.

Nerve Injuries.

Nerve injuries are met with in abundance in almost every hospital, but the cases in which surgical treatment is of any value are very few. When the patient is suffering from acute pain it is difficult to withhold such chance of amelioration as may be brought about by surgical interference. But however justifiable the exploration the results are very far from encouraging. The most hopeful cases are those in which a nerve trunk is absolutely involved in a cicatrix.

If the nerve be dissected out and free there should be a prospect of improvement, and this has been successfully done in cases in which the sciotic, the median, and other nerve of the extremity have been involved. Careful explanations in which it appeared likely that the nerve was divided, operation has merely revealed that it was intact. Indeed, I have not met with any instances in which formal nerve suture has been practised, though I have witnessed many operations in which it was hoped that this result might be achieved.
Thus, a man in the General Hospital at Fort Napier had a transverse Mauser bullet wound of the thigh in the lower part. The flexors of the leg were intact, but the muscles of the leg were all paralysed, and sensation was lost in the foot over the great part. The sympa thetic shocks of the spinal nerves which follows so readily in a bullet wound that damages any extent of the trunk, would probably be very limited. The nerve was readily exposed, but to all appearance was perfectly natural. The track of the bullet passed exceedingly close to the nerve trunk, but had not really touched it. Some blood was extravasated into the tissues around, but not in sufficient quantity to cause any pressure.

A young Australian, who had received a wound through the shoulder, had severe, but only occasional, attacks of pain along the course of the nerve of Wrisberg. Possibly, division of the nerve high up might have relieved him, but there seemed good prospect of complete recovery without interference, and he was advised to wait for a time. The man rather resented this advice, for he did cherish very friendly sentiments towards the Boers, whom he accused, very circumstantially, of "playing possum when wounded on one occasion and shooting down some of my comrades at short range" when he had received his wound in this way at, undoubtedly, a range of only a few yards. No one out here can doubt that the feeling of enmity between the Boers and the Colonial and Irregular corps is far more bitter than it is between the enemy and the regular troops. Our Colonial troops have done grand service and fought magnificently, but in some matters they may very likely learn a lesson from the "Tommies," as the regular troops are now universally and affectionately called. They may learn to guard the front against every shake and bit of shooting that comes their way, without fear of the enemy and yet shake hands with him immediately after, and they may learn that in hospital, as well as out of it, it is possible to exhibit a philosophic temperament and to accept whatever is provided without complaint, without grumbling, if without apparent effusive display of gratitude.

Three very remarkable cases were all in the Mool River Hospital (No. 4 General) together, in which Mauser bullets had cleanly perforated nerve trunks. These are likely to be reported at length, and need only be briefly mentioned now. The first case was that of a man who accidentally shot himself with a Mauser pistol. The bullet raked up the inner side of the arm, injuring the brachial artery. This vessel was tied, and in the course of the operation it was found that the bullet had passed through the median nerve, leaving it much less a buttonhole, and leaving on either side strands of the nerve trunk intact. Sensation was partly lost over the distribution of the nerve, and the motor function, although impaired, was not wholly lost. The wound, which was a recent one, was healing satisfactorily, in part by granulation, and there seemed good prospect of considerable if not complete restoration of the nerve. In a second instance a Mauser bullet had passed through the musculo-spiral nerve just where it bends backwards in the axilla. The main artery was wounded, but no hemorrhage took place at the time. At the time of operation it was discovered that the nerve had been pressed back into the vessel, thus plugging up the opening and preventing bleeding. On drawing out the nerve the hemorrhage started immediately. The artery was tied. The nerve function promised to be regained. In a third case the median was cleanly perforated below the elbow. In none of these cases was there any of the intense neuralgia that is so frequent a concomitant of bruised nerves, and it would almost seem as if the perforation of a nerve trunk were a less serious injury than the passage of a bullet close to it.

**TREATMENT OF HEAD INJURIES.**

Additional experience of head injuries has greatly strengthened the conviction that there is scarcely any class of cases in which a careful and thoughtful use of the ordinary practice. Numerous cases of bullet fracture continue to occur, and almost without exception, so far as I have been able to gather, trephining, when performed, has been amply justified. In one such case, after removal of the crown of trephine, a circular fragment of the inner table was found to have been left untouched. Some refuse operation, though this appears to be generally advised, and in a few instances no operation has been recommended. As a general rule, there is little doubt that the latter counsel is unwise. The skull is seldom drilled clean through without any commination of the inner table, but this may happen. Thus in one patient in No. 4 Hospital a Mauser bullet had traversed the skull transversely, penetrating both temporo-sphenoidal lobes, grazing the upper surface of the corpus callosum on one side, and just making a laceration through the fornic through the ventricle on the other side. Both ventricles were found post mortem to be full of blood, but no fragments of bone were discovered in the track of the wound. The inner table at the wound was intact, and the bullet passed through the cerebral substance, and was broken off from the outer table at the wound of exit. The case, a very remarkable one, is likely to be described in full, and I may here only draw attention to the effect produced by the bullet on the bone.

**SPINAL INJURIES.**

There is little to add to what has already been said on this subject. Unhappily these are still frequent. In no cases is the insufficiency of the nursing and orderly staff more felt. There is no doubt that though the lives of these most unfortunate victims could not be saved, in the huge majority of cases their condition might be rendered more tolerable if it were possible to assign special attendants to each. Such an arrangement, with the present staff, even when that staff is at its full complement, is entirely out of the question. To assign night and day special orderlies to each one of the worst cases of enteric, or to patients dying slowly from gunshot wounds of the spine, would be to strain the nursing resources of the hospitals to breaking point. Offers of voluntary help come in abundance from ladies who have had some little nursing experience, and such offers are still more frequent from those who have had hospital training at all, as a duty, as a social or a noble, worthy desire to give practical help. It is to be feared that such volunteers would not readily undertake work of so unattractive a nature, and it is to be hoped that the authorities would always, as now, firmly direct, in the sense of assigning to work which seems to them responsible. This is, however, neither the time nor
the place to enter at length into the most difficult and important question of the nursing and orderly service of military hospitals in the field. It suffices to say that the whole matter must be most seriously and thoroughly considered in all its aspects—and they are many—when the proper occasion arose.

A singular case of spinal injury may be here cited, as it presented features of interest. The bullet—a Mauser—entered almost exactly in the middle line of the back over the spine of the seventh dorsal vertebra. The bullet was extracted from the patient's body just to the left of the intervertebral, fifth intercostal space. The end of the bullet was found to be slightly flattened and bent, the condition so often seen when the elastic shaft of a long bone has been struck. There was some loss of power in the legs and feet, and sensation was impaired. Movements of flexion and extension of the leg were perfect, so that the innervation of the muscles of the thigh was clearly not interfered with. The nutrition of the limbs was good, and there was no tendency to the formation of any trophic lesions. There was some difference of opinion about this case. Some held that inasmuch as Mauser bullets almost invariably travel straight through the body, the entrance and exit wounds were really in a straight line. If so, the case was absolutely unique, for the spinal cord, the thoracic spine, and probably no other vital organ was involved. All have been wounded. There was, however, no sign of wound of any of the thoracic viscera. It is infinitely more probable that the bullet, fired at long range, bent in the spine, traversed half way round the body, superficial to the ribs, by the same way that was so frequently noticed in the days of round bullets. The partial paralysis was probably due to concussion. No fracture of the spine or ribs could be detected. On the other hand, it is certainly rare for Mauser bullets to behave in this manner. When bent up, without rupture of the sheath, as this bullet was, they may deviate slightly from the straight line, particularly when they come into contact with the elastic shaft of a long bone. But in one or two instances where it was thought that Mauser bullets had been deflected by the ribs, but in none of these was the evidence very clear. It is often difficult or impossible for a patient to remember accurately the precise attitude he was in when hit, and the direction from which the bullet came is constantly a matter of pure conjecture. There was no track of tenderness, cicatricial cord, or bruising over the side of the body in the course of the track that the bullet must have taken had it gone round the body. On the other hand, however, this track was beneath the spinal muscles, and from this it is inferred that the bullet may have travelled subcutaneously. The cicatricial cord is generally more distinctly felt when the bullet has passed through muscle than when through cellular tissue. The patient was able to sit up, and was in a pretty good condition and the case aroused. The prognosis seemed favourable.

CLINTON T. DENT.

THE SICK FROM LADYSMITH.

[From an Occasional Correspondent.]

Durban, March 17th.

The first batch of sick and wounded came down from Ladysmith this week. They were taken by train to the Tugela River, were carried in stretchers across the foot bridge, and embarked on board the Cape, St. Helena, and Madeira, and may possibly go to Gibraltar and Nice also; she has done a good work out here. The Princess Christian is expected in the Cape for Durban, has been put together at the Natal Government Railway Works, and runs her trial trip to-day. To-morrow, all being well, she starts for Ladysmith direct, and will be the first train to cross the Tugela River at Colenso by the newly erected trestle bridge. This train, which consists of seven corridor carriages with through communication, will supply a much-felt want, for however excellently the hospital trains in this Colony have been administered, they have scarcely been suitable conveyances. The fact of there being no through passage from one carriage to another, and the necessity for the medical officer to scramble along the footboard in all weathers, to get from one set of patients to another, often at great risk to life and limb, is enough to condemn them.

There are over 2,000 sick in Ladysmith at present, of whom no fewer than 800 are cases of enteric fever.

Dr. Davies, who was one of the "reform prisoners," won golden opinions as principal medical officer in charge of the Imperial Light Horse in Ladysmith during the siege. He was, as has already pointed out, twice taken prisoner by the Boers, but on each occasion, to their credit it be said, was liberated. One of the Cape men who disregards as a surgeon and in every other way during the siege of Ladysmith he earned the gratitude of numbers of sufferers.
A MOBILE HOSPITAL IN NATAL.

Readers of the interesting series of letters from Mr. Treves which have been published during the last three months in the British Medical Journal will be pleased to see the accompanying photographs taken by Mr. Treves of the hospital with which he worked. They give a very good idea of the difficulties of transport and of the rough and ready conditions under which the surgical work had to be done.

Fig. 1.—An encampment of No. 4 Field Hospital. Mr. Treves's tent is in the foreground.

The hospital was No. 4 Stationary Hospital, but the term "stationary" must be understood in a Pickwickian sense, for the hospital was in fact not stationary but mobile. However, it was not technically a field hospital, although at the battle of Colenso and during the fighting about Spion Kop its officers managed to get it up not very far from the fighting line. Major Kirkpatrick, R.A.M.C., was the officer in charge, and the other officers were at first Major Mallins and Lieutenant Simon. On December 11th, 1900, it was established at Frere, a station on the line from Maritzburg to Ladysmith a few miles south of Chieveley, and Mr. Treves, with his two nurses, Miss McCaul and Miss Tarr, went up with the hospital. A day or two afterwards the nursing staff received a valuable reinforcement in the person of two sisters of the Army Nursing Service. The general appearance of the hospital camp is seen in the first photograph (Fig. 1), which shows both the large marquees and the small bell tents, in one of which—that in the foreground—Mr. Treves was established. The army moved off from Frere Camp on December 13th, and early on December 15th, the day of the first unsuccessful attempt to force the passage of the Tugela at Colenso, No. 4 Stationary Hospital was ordered to move up with all speed to Chieveley, where it was established about three and three-quarter miles from Naval Hill, where the British big guns were firing. There it remained for that day, and until December 17th, when a retirement to Frere was rendered necessary by the fact that the camp at Chieveley was within reach of the Boer shells. During these two days an enormous amount of work was done by the staff of the hospital, which Mr. Treves rejoined on the evening of the day of battle (December 15th), after a heavy afternoon's work with the field hospitals established immediately behind Naval Hill and under its shelter. The tent in which all the operations were done is seen in another photograph (Fig. 3), which shows the improvised operating table of biscuit boxes. When it is remembered that the temperature in the shade on December 15th and 16th was 100° F. and on December 18th 104° F., and that at Chieveley water was scarce, it will be understood that these were very trying days both for the wounded and their surgeons and nurses. Mr. Treves pays a warm tribute to the patient courage of the wounded, to the excellent work done by the R.A.M.C. officers, and to the devotion and cheerful endurance of the four nursing sisters, and it does not require much reading between the lines of his graphic letter to perceive that Mr. Treves spared himself not at all, but worked as hard and cheerfully as anybody.

At Frere the hospital remained, gradually passing on its wounded to the base hospitals at Pietermaritzburg or to the hospital ships in Durban harbour, but filling their places with cases of dysentery and typhoid fever until January 13th, 1900, when the order to move to Springfield, on the Lesser Tugela 18 miles away to the west, was received. Colonel Gallwey, C.B., R.A.M.C., the Principal Medical Officer with General Buller, had determined that the hospital should follow the troops, and had enlarged it to 300 beds. This involved the transportation of 60 tents and 10 marquees in 16 waggons, each drawn by 16 oxen, with nearly 100 more oxen for water carts, bread carts, and so on. There were in addition 5 ambulances, each drawn by 10 mules, and Mr. Treves's own Scotch cart with 16 mules, with which he had been liberally provided by the P.M.O. The staff had to move independently to any point where his services might be most required. Lastly, there were the saddle horses for the medical officers, whose numbers had now been raised to 12. The camp was awake at 3 A.M., the tents were struck by 4 A.M., and the huge column was in motion by 5.15, and pushed on until 7.30 A.M.; after a rest of two hours it got under weigh again, and reached Springfield at 2.30 P.M. This, considering the oxen, the roads, and the hot weather, was a most remarkable performance. In Fig. 2 is seen one of the ambulances, with some of its mules, waiting to cross a drift, and gives a fair idea of one
of the minor difficulties which attend transport in a country where every stream is, as it were, sunk in a deep trench with precipitous sides.

On January 18th the hospital moved on six miles to the Great Tugela, and the tents were pitched under Mount Alice, where the big naval guns were placed, not far from Spearman's Hill. On January 23rd, the day before Spion Kop, orders were suddenly received to increase the hospital by 100 bell tents, which meant being ready for 500 more patients, or ambulance wagons, which are of a clumsy pattern made strong to go anywhere, much suffering was prevented, and in Mr. Treve's opinion many lives and limbs saved.

At Frere, which was reached on February 11th, the wounded were received in places as near the hospital, and as soon as possible moved on by train to Mood River Base Hospital, or to the hospital ships at Durban. These trains were improvised by Major Brazier-Creagh, R.A.M.C., who did wonders with the material at his disposal. Unfortunately the communication had no through communication, and it was difficult to arrange their conversion. However, by hard work and the expenditure of much energy and ingenuity, Major Brazier-Creagh overcame all superable obstacles, and not only got the wounded in hospital, but also from Mr. Treve's photograph of one of these trains, and shows the bears at work getting the wounded into the carriages. Through the windows the white bed linen of the upper tier of beds can be seen. It was part of the general unpreparedness that there were no hospital trains in Natal. This defect has recently been repaired by the arrival of the Princess Christian Hospital train built for the Red Cross at Birmingham, and despatched to South Africa after the battle of Colenso was fought—not a conspicuous example of the alleged superiority of voluntary effort over official methods. The War Office has no train ready and does not prepare one; the Red Cross has no train built, but does set to work to build one (one for three armies resting on three different lines of railway), and manages to get work six months or thereabouts after the beginning of the fighting.

WITH THE SOUTH NATAL FIELD FORCE.

From an Occasional Correspondent.

The Fight into Ladysmith.

To appreciate fully the magnitude of the task accomplished by the troops under Sir Redvers Buller, one must have seen the country around Colenso. Opposite this village is a broad and rapid river with steep and rugged banks, which changes its course continually. For months past it has been unfordable, and the only bridges crossing it had been destroyed by the Boers. On either side of the river are irregular ranges of hills, which are divided by deep ravines into innumerable kopjes of every conceivable shape. These vary in height from 500 to 2,000 feet above the surrounding plain. Many of them are almost perpendicular, and most of them are thickly covered by dense mimosa scrub and huge boulders, so that an army corps could be hidden amongst them without a man being visible. Each kopje bristled with strong and deep trenches so skilfully constructed that as each one was captured it was exposed to a withering fire from all sides. To add to our difficulties, the plain between Colenso and Ladysmith is studded with kopjes, which completely command both the road and the railway. The seeming impossibility of the task might well have caused even the bravest troops to hesitate, and it was only after four stubborn attacks, which extended over a period of 28 days hard fighting, that the position was finally carried.

The strain which this entailed on our troops can only be realized by those who were present. Imagine an attack which lasted continuously for 17 days, as did the final one on the Boer position. During the whole of that time the troops slept on the hill-sides, amidst thunder storms and rain, with not even a gourd to cover them. No effort was spared to keep their courage, heroism, fortitude, and cheerfulness under all the hardships and privations to which they were exposed.

Ladysmith, the goal of all our hopes during so many long and weary days, may be described as a town in corrugated zinc situated in an oasis of palms and eucalyptus trees. Stretching away to eastward of the town is a large circular plain some six miles in diameter. On the south-east margin of the plains rises Umbulwana Hill. Except to eastward the town is surrounded by barren stone-clad hills, prominent amongst them being the South Wagon Hill, with Caesar's Camp to the south. Whilst wandering through Ladysmith, one is forcibly struck by its wonderful state of preservation. An angle knocked off the clock tower of the Town Hall, another off the porch of the Roman Catholic chapel, and an occasional circular hole through some stray house is all that remains to
tell of the fierce and long-continued siege and bombardment which it so successfully resisted. Amongst the troops and inhabitants, however, languid movements and pale and haggard faces showed clearly the effect of restricted rations and days and nights of broken rest. Considering the number of men and animals that were shut up in the town for a long month, the condition of those who left it must be considered marvellous. Noxious smells are absent, and our entrance into Ladysmith was attended by an almost complete relief from the swarms of flies which plagued us at Colenso. The heat of the weather has naturally suffered much. At the time of the relief there were considerably over 3,000 sick and wounded in hospital, 800, it was said, were suffering from enteric fever. It is currently rumoured that the Principal Medical Officer, Colonel T. J. Galloway, O.B., is making arrangements to send as many of the Ladysmith sick as possible to Durban, where they will be placed on board hospital ships and sent for a sea voyage.

MEDICAL ARRANGEMENTS.

As the relief column advanced towards the hills south of the Tugela the field hospitals were steadily pushed forward from Chieveley until they rested on the south slopes of Monte Cristo and Blangwana Hills. On February 21st the 5th (Irish) Brigade crossed the Tugela. The same evening the brigade crossed the Tugela and occupied the hills around Fort Wylie. On February 22nd four field hospitals were moved across the pontoon bridge, which had just been constructed, andassed to a large part on both sides of Fort Wylie, on the north side of the river. Whilst in this position the hospitals were vigorously shelled by the Boers, especially those under Lieutenant-Colonel G. T. Goggins, Major N. R. Cree, and Major G. H. Younge.

As the troops worked round the Boer left flank it was found impossible to send the wounded back in the direction of the enemy's fire. The hospitals were, therefore, ordered to recross the Tugela and advance along its south bank in the direction of Ladysmith. The evacuation of the field hospitals is unfortunately becoming increasingly difficult owing to the hospitals at the base and on the lines of communication being blocked with sick and wounded.

THE RED CROSS.

Numerous complaints have from time to time appeared as to the Boers falling to recognise the Red Cross. For instance, the field hospitals were repeatedly shelled at Spion Kop, at Val Verina, and even at Fort Wylie, for a moment, however, that this was done intentionally. It must be remembered that the Boer guns were firing at ranges varying from 6 to 8 miles, or even more, and at these distances it is almost impossible for the Red Cross flag. The hospital tents being the most conspicuous objects in the field naturally attracted the enemy's fire. In future campaigns, however, it would be well if all tents and ambulances were khaki-coloured. These would be practically invisible at long ranges, and would in every way be a very great improvement on the present light-coloured tents and ambulances.

LYDDBITE.

During the actions around Colenso we had many opportunities of studying the effects of lyddite amongst Boer prisoners who were brought in wounded. Some of the wounds were quite ghastly. In one prisoner, admitted into the 5th Brigade Field Hospital, a fragment of shell had carried away the upper part of the sternum, several of the upper ribs, and the greater part of the adjoining shoulder, leaving the lung exposed to view. Part of the same shell had smashed the right femur, and opened the knee-joint. The patient was, however, progressing favourably when he left for the base. The exposed parts of the skin of the prisoners were stained of a bright yellow colour by the lyddite fumes, and washing had no apparent effect on the discoloration.

DRY ANTISEPTIC DRESSINGS.

The dislike, not to say suspicion, which both officers and men entertain towards dry anti-septic dressings is very remarkable. This arises in part from a desire to have the wounds exposed daily, so that they may see how they are progressing; and in part from an inability to understand the advantages of anti-septic surgery. Wounded men will adopt almost any device, such, for instance, as deliberately soiling the bandages to ensure a change of dressing. If the dressings are not changed daily, many of them believe that they are being grossly neglected. The advantages of dry anti-septic dressings have, however, been clearly demonstrated during the present campaign, and it is certainly true that the army generally grasped the principle which underlies them.

BOER AMMUNITION.

At the battle of Colenso the bullet wounds were without exception caused by ordinary Mauser bullets. Not a wound was seen which even remotely suggested an expanding bullet. At Spion Kop, however, a number of the wounds showed that expanding bullets had been used. When the Boer position at Monte Cristo was captured quantities of their ammunition fell into our hands. Amongst these were found Martini-Henry, Mannlicher, sporting Lee-Metford, sporting soft nosed, and Jefferys. In every instance the latter are especially destructive. The tip of the envelope is removed and the nickel coating is scored longitudinally at a few points. When it strikes a part of the bullet breaks and fissions out like a mushroom, inflicting a truly ghastly wound.

NUMBERING OF FIELD HOSPITALS.

Before leaving England the field hospitals were numbered consecutively from No. 1 upwards without any reference to the brigade to which they belonged. On taking the field it was found that this had produced much confusion and inconveniences. Finally the number of the hospital was changed to correspond with that of the brigade to which it belonged (as for instance the 1st Brigade Field Hospital)—a change which has already had many results. It will certainly be adopted in future campaigns, as under it the number of the hospital at once denotes the brigade to which it belongs.

During the attack on Pieter's Hill it was rumoured that Captain J. H. Campbell, R.A.M.C., attached to the King's Royal Rifles, had been killed. The actual truth was that Captain Campbell was informed that some men of the regiment lay wounded on a kopje about 400 yards away. He walked to the kopje through a fire which was so fierce that he was almost hidden by the dust which was raised by the bullets. Struggling to escape he was wounded, but was wounded a day or two later whilst on duty with the regiment.

CHARGES AGAINST HOSPITAL MANAGEMENT.

Since writing the above I have learnt from the British Medical Journal for February 15th that certain charges of defective management have been brought against some at least of the hospitals in South Africa. These charges have been officially contradicted by both Lord Roberts and Sir John French. How easily charges of this kind may originate is shown by an incident which occurred after the battle of Colenso. Two wounded men complained to their commanding officer whilst he was visiting the hospital, that they had had nothing to eat for two days. On inquiry it turned out that both the men were severely wounded, and were for good reasons only allowed fluid nourishment. An ample supply of milk and beef-tea had been ordered for them, and they admitted that they had received the whole of it. As, however, they had not had solid food they complained that they had had nothing to eat.

THE PASTEUR INSTITUTE OF ALGERS.—The Annales de l'Institut Pasteur of March 25th contains a report by Dr. Trolard, Director of the Pasteur Institute of Algiers, of the successful outbreak of plague from the month of December 1894, when it was opened to December 1st, 1895. Since its foundation the Institute has received 1,836 person who had been bitten by rabid animals. The animals which inflicted the bites were dogs in 1,869 cases, cats in 130, asse in 9, jackals in 6, monkeys in 3, oxen in 2, goats in 2, while a cat, a horse, a sheep, and a hare are each accountable for 1. In addition to the 1,836 cases, preventive treatment was carried out 10. Among the whole number there were 9 deaths, a mortality of 0.49 per cent.