

## THE MEDICAL ASPECTS OF THE BOER WAR.

BY A SOUTH AFRICAN CAMPAIGNER.

## II.

## THE LINE OF ADVANCE.

The transports are still arriving. Thousands of troops and horses, guns and ammunition, field hospitals, and all the other equipment of a great army corps have already been landed on the shores of South Africa. Of the reinforcements, a portion have gone to Durban, and a larger portion are being retained to make up the invading column from the South, which will enter the Free State and subsequently the Transvaal. From Capetown to De Aar the railway is still open, and should be well defended, as it passes entirely through the Cape Colony. De Aar is the junction on the main line for Kimberley, and is one of the advanced depôts for Sir R. Buller's column. The distance from Capetown is nearly 500 miles; further eastwards on the main lines some 70 miles is Naauwpoort, the junction for the Free State. This also is securely held and used as an advanced depôt.

## KIMBERLEY.

Information is now to hand that a forward movement having for its object the relief of the garrison at Kimberley has already commenced. This is welcome intelligence, and may be regarded as the first step in that forward advance which lies before us. Kimberley is situated in the midst of rolling grass plains on the borders of the Free State; these plains extend in all directions, to the east as far as Bloemfontein, and beyond that again to the Basutoland border; to the north into Bechuanaland to Vryburg, Mafeking and beyond; to the south to the Orange River; and to the west to the sandy wastes of Namaqualand. Here and there on the surface of these elevated plains, isolated ironstone kopjes (hills) and rocky ridges are dotted, but these may always be avoided, and for the most part this country is admirably suited for the operations of cavalry and for that manipulation of a disciplined army which is so invaluable in warfare.

Kimberley itself is peculiarly situated. On the one side are the Kimberley and De Beers mines and their works, which, with the floors on which the blue ground from the mines is deposited, occupy several square miles, the whole of which is lit up with electric light and overlooked by watch towers. At a distance of some two miles from Kimberley and its two mines is situated the suburb of Beaconsfield, with the Dutoitspan and Bultfontein mines. Between these two townships is situated the sanatorium, which is the headquarters of the garrison. Over the sanatorium and also over the De Beers rock shaft are two commanding watch towers from which men continually survey the whole surrounding grass country through telescopes. The advance of the enemy is thus observed at a distance of many miles, and with the addition of search lights at night Kimberley is kept constantly advised of the movements of the enemy.

The two principal incentives to the Boers to seize Kimberley are doubtless the capture of Mr. Rhodes and the stock of diamonds which they would hope to obtain. Mr. Rhodes, as we are informed, feels perfectly secure with his "troop of horse" and the rest of the garrison against the attacks of his enemies, and the Boers are probably not aware that the stock of diamonds has been removed to Capetown, and that should they desire to possess themselves of the precious gems they will have, in addition to capturing Kimberley, to undertake the necessary mining operations to do so. Nevertheless, it is certain that the relief of Kimberley at an early date is eminently desirable in the interests of the health of the town. Although the attacks of the Boers have been absurdly ineffectual, they have succeeded in cutting off the main water supply and keeping the place closely invested. The effect of this is that the inhabitants of Kimberley will probably have been compelled in some measure to resort to wells for drinking water, and although supplies are said to be forthcoming in abundance, it is doubtful whether fresh meat can be as freely obtainable as might be desired. The population shut up in Kimberley is a large one, over 20,000, and includes, with the De Beers employees, several thousand natives. The sanitary system of Kimberley is the pail system, and involves the removal nightly by a sanitary service of the night soil

this is carted some distance out of the town, and there deposited on the veld. It is questionable whether the town is so invested as to interfere with this service, though if it be so some temporary discomfort and even menace to health might arise from this source. Kimberley once relieved, and the lines of communications freely opened up it would be an extremely valuable base for marching on Bloemfontein, the capital of the Free State. From Kimberley to Bloemfontein the distance is under 100 miles; and the country, which is entirely open, would afford an admirable route for the advance of a column.

Kimberley has a hospital with 300 beds, and many other buildings capable of conversion into temporary hospitals. Should the column proceed from here, there is no doubt it will form a most suitable spot for a military hospital on the line of communications.

## RAILWAY TRANSPORT.

The most momentous question for the Army Medical Service as well as to all other branches of the Army Corps is at what point, if any, short of Bloemfontein, and later Pretoria, the railway will finally have to be abandoned. Will the advancing column be able to repair and use the railway as they go along, carrying their rolling stock and repairing material with them; or will a point be reached beyond which repair in any reasonable period of time will become impracticable? So long as the rail is directly in touch with the army, and communication by rail with the advanced depôts of De Aar or Naauwpoort remains open, the wounded and sick can be moved without discomfort in a few easy stages to Capetown or Port Elizabeth. Once there, they can either be accommodated in temporary hospitals on land or in one of the hospital ships. But once the rail head is left, the disposal of sick and wounded will become a more difficult matter. Travelling in a hospital train, if not luxury, is far from being positive discomfort; but travelling by waggon over the roads of the Free State or Transvaal in the rainy season entails suffering on wounded men. Under these circumstances, we must hope that even if the railway lines be broken in some places beyond immediate repair, means will be found to convey at least a light train over the break to the intact railway beyond. The railway system of the Free State and Transvaal are continuous, and their permanent way so far unimpaired. Their gauge is the same as that of Cape Colony and Natal. All Boer rolling stock will of course be withdrawn by the Boers as the army advances, but if we are once able to get some of our own trains on to this system of railways, it will be available for the advance, as well as for the retirement of sick or wounded.

## DISPOSITION OF THE WOUNDED BEYOND RAILHEAD.

Nevertheless, all contingencies must be provided for, and it is quite possible that the advance of the army may have to be made for hundreds of miles without the assistance of the railway. Putting it at its worst, the distance from the southern border of the Free State to Pretoria is nearly 400 miles. Fortunately the country is magnificently open and level, so that strategically the difficulties should not be great, but the march will be a long and arduous one under the most favourable circumstances. If fighting occurs on the march, as we must assume that it will, there will be three alternatives for the wounded—they will either have to advance with the army, to be sent back to the railhead, or to some hospital on the line of communications between the army and the railhead. In either of the latter contingencies it is devoutly to be hoped there will be no such disaster as occurred at Dundee, where our wounded were left in the hands of the enemy. I do not suggest that the enemy did not take care of them and treat them well; we are assured that they do both. I will not venture to criticise the tactics which rendered such a step necessary, but it cannot be ignored that it is a bitter experience for a wounded soldier to find himself in such a position, nor can it be doubted that if such a fate came to be regarded as at all a probable contingency it could have any but a discouraging effect upon our men. The line of communications will be the greatest difficulty Sir R. Buller has to contend with, and its special bearing upon the disposal of the wounded will no doubt receive his careful consideration. Among other things recently added to the army equipment to be sent out to South Africa are a

number of traction engines and trucks. It is highly probable that these would be found most serviceable on the plains of the high veld.

#### FOOD SUPPLY.

With reference to the food supply it is certain that a large quantity of tinned meat and vegetables will have to be taken. At the same time there is no reason why fresh meat should not be made available for at least an occasional ration. During a campaign in which the writer served in South Africa a troop of cattle was taken with the column wherever it moved. Over an open country there is not much difficulty about this, and both meat and milk are thus supplied.

#### TYPES OF SICKNESS LIKELY TO OCCUR.

To estimate the probable number of the wounded on an expedition of this sort is of course beyond our power. We may reasonably hope, looking to the great strength of the army now preparing, that they will not be great; but with regard to the sick the case is somewhat different. It is certain that a large body of men cannot travel over the open veld for weeks together without a certain amount of sickness arising. The climate, taken all round, is a healthy and pleasant one, and about as well suited for an open-air life as any well could be. The country to be crossed is high; Bloemfontein is 4,000 feet, Johannesburg nearly 6,000 feet, and Pretoria over 4,000 feet above sea level. On these high plateaux true malaria scarcely ever occurs. The two elements which may give some trouble at midsummer—and Christmas is midsummer in South Africa—are the sun and the summer rains.

Transient attacks of fever will occur; in some instances true solar fever, in others one or other of those fevers which even Dr. Patrick Manson still describes as the "unclassified fevers" of the tropics. These attacks are usually of quite short duration, and not severe. Sharp attacks of diarrhoea, and also of dysentery, will arise, though much depends on the water supply. If water is good and plentiful they will not be numerous. If drought occurs—though this is unlikely on the high veld in the summer—the water supply would be indifferent, and the health of the army would be in a measure affected. Take it all round, however, for my part I would rather campaign on the high veld of South Africa than in any northern European country, including England. At these high altitudes pneumonia is the most fatal disease, the mortality being higher from this disease in South Africa than in England.

#### HOT DAYS AND COLD NIGHTS.

The paper recently issued by the War Office showing the medical arrangements for the field force on service abroad in South Africa, and dealing with medical equipment and supplies, transport, sanitation, equipment for nursing sisters, rations, and other important matters contains an Appendix (V) headed "Sanitary Notes (Natal and Transvaal), Climate." This document, in referring to the temperature, states that at Maritzburg and Ladysmith the temperature in the summer is intense. "In Pretoria the variations are not so great, the maximum in January, the hottest month, reaching 90° F., while in the coldest months (July and August) the temperature falls to a minimum of only 30° to 42° F." This information is not quite accurate. During the writer's comparatively short visits to Pretoria he has known the temperature to be 98° in the house, while the temperature in the shade sometimes exceeds that recorded for Maritzburg, namely, 105°. Pretoria is notoriously one of the hottest large towns in South Africa, and during the coming months it is highly probable that in the vicinity of Pretoria a very high degree of heat may be anticipated. The warning given as to the great variations between the day and night temperatures is certainly based on accurate observations, and is very valuable. All troops who may have to bivouac in the open, as many of our men will be called upon to do, should be provided with woollen night caps. The Tam O'Shanter is an excellent cap in its way for this purpose. It is certain that one of the essential precautions necessary for sleeping in the open is the provision of adequate covering for the head at night. A long woollen cap, such as is used by sailors on yachts, formed a part of the kit of the men in a campaign through which I served in South Africa. Among the precautions required on account of climate, waterproof sheets and cloaks as protection against the

heavy rains are recommended. There is nothing more trying to troops on the march than having to bivouac or camp at night upon damp ground. This is a contingency which frequently arises during the heavy summer rains, and one of the most practical and simple precautions which can be adopted against this evil is the provision of a waterproof sheet, say 6 feet by 3, which the soldier can place on the ground beneath him. A small sheet of this sort can be, if necessary, carried by mounted infantry and cavalry when away from the main column on distant patrols, as it goes readily with the blanket on the saddle.

#### HEADGEAR: HELMET OR WIDEAWAKE?

Suitable headgear as a protection against the sun is another precaution recommended; and in reference to that I should like to say that, while the helmet is a universally approved mode of headgear for tropical climates, it nevertheless has undoubted objections as a headgear for the soldier during a campaign. It is an impossible thing to lie down in it, and it very soon loses its smart appearance; further, in really great heat I question whether the helmet gives such protection from the sun as is obtained, say, from a wideawake hat with a pug-garree. The advantages of the wideawake, which is used by all Colonial troops, are many; the men can sleep in it at night, or during the midday halt can lie down on the ground in it. For the rough and tumble of camp life it is an infinitely more comfortable and more suitable headgear than the helmet.

#### CLOTHING.

A fourth precaution recommended in Appendix V is "warm clothing, even in summer, in the Drakensberg country." I would point out that the period spent by troops in the Drakensberg country is not likely to be at all prolonged, nor is there any appreciable degree of cold in the summer. The Drakensberg consists of the somewhat mountainous country between Ladysmith and the Transvaal frontier. For the main column proceeding from the south there will be no mountains to be encountered; and although I believe serge to be a better material than khaki, there is no reason to suppose that during the summer anything in the shape of really thick clothing will be required by the great majority of our troops.

#### ENTERIC FEVER, DYSENTERY, AND DIARRHOEA.

Reference to the extreme liability of the occurrence of enteric fever is made. This is one of the scourges of South Africa. It is common in Johannesburg and along the line of mines, and will doubtless be liable to arise in any camp remaining in the same spot for any length of time. It could have been wished that the instructions with regard to the sanitary precautions necessary against the occurrence of enteric fever had been a little more detailed and explicit. The one remedy urged appears to be the use of disinfectants, for which purpose quicklime is strongly recommended; but it must be pointed out that it may not be possible for armies on the march to carry any great quantity of material of this sort, and that after all there are very few disinfectants which are more efficacious than mother earth, which will always be ready to hand; its proper use at the latrines is, to my mind, more important than artificial disinfectants. On proper attention being given to this one particular detail more will depend probably than upon anything else. The abdominal belt is no doubt an admirable precaution against those sudden chills which are associated with the onset of dysentery and diarrhoea.

#### MALARIA, HÆMATURIA, AND PNEUMONIA.

Malarial fevers, the Appendix states, occur around Delagoa Bay and the Limpopo River, and disappear in the higher plateaux of Northern Natal and Zululand, but they are carried up some of the valleys. "High grounds should therefore be selected for camps, and valleys avoided." As has already been pointed out, the vast tracts of country which are likely to be the scene of our military operations during this war—that is, the plains of the Free State and the Transvaal, and their borders to the west and east, as well as the whole of the south-eastern portion of the Transvaal—are practically entirely free from malaria, so that I do not anticipate that this disease will occur to any appreciable extent among any of our troops. The gentle valley or "laagte" on these high plains is as healthy

and safe as the crests of the rolling undulations. Hæmaturia ("red water") is referred to among parasitic diseases as common in the low-lying coast country; it is also common, I may add, in the low-lying portions of the Transvaal; but these, as already stated, are not likely to be occupied to any extent by our soldiers. The tributaries of the Crocodile River to the immediate north of Johannesburg are infested with the bilharzia parasite. The reference to pneumonia is brief, but states that it often occurs in the form of epidemics in the Transvaal during the winter months. As already pointed out the mortality from this disease on the highlands of South Africa is high, and although it is more prevalent in winter than summer it is liable to occur all the year round.

#### DISINFECTATION.

A final note in this Appendix commends certain reports for the perusal of the medical officers joining the field force. It also adds that any medical officer considering that, in order to carry out effectively the measures indicated above for the prevention of disease in connection with standing camps, additional materials, such as disinfectants, are required, he should make an immediate demand for them. If, as I have already suggested, the medical officer will only bear in mind that mother earth is by far the most economical and admirable material for his purpose, he will be able to avoid unnecessary demands for other disinfectants which may not be readily obtainable at some odd hundred miles from our bases.

### THE WAR IN SOUTH AFRICA.

[FROM OUR SPECIAL CORRESPONDENT IN CAPE TOWN.]

November 1st.

#### THE CENSORSHIP.

It is impossible at the present time to send much news with reference to the military medical arrangements for the campaign. In the first place, the dispositions which have so far been made are merely of a temporary nature, and will be altogether remodelled as soon as General Buller has matured his plans; and secondly, the censorship is so strict that scarcely any information is obtainable as to what has actually been done. When I tell you that the Berkshire Regiment were at Stormberg Junction at least a week before any newspaper in Capetown published the information, and that only by very slow degrees has the news leaked out that a force in full of some 2,500 men is at another point—De Aar—the readers of the BRITISH MEDICAL JOURNAL will understand this. And as even Royal Army Medical Corps information may give a rough indication as to troops either being at a particular place, or being likely to be sent there, it is, except in the simplest details, invariably refused. For this reticence, the ever present Boer spy must be held responsible. Such details as are obtainable I will, however, give.

#### EXCELLENCE OF THE ARRANGEMENTS MADE BY THE ROYAL ARMY MEDICAL CORPS.

The arrangements for the war as carried on thus far appear to be very complete. The Natal force, I am assured from several trustworthy and independent sources, is admirably provided from the medical side. Colonel Supple, the Principal Medical Officer, took a journey there shortly before war broke out, and saw to every detail so completely that there was practically nothing to do when Sir George White and his staff arrived. And the arrangements he then made have stood the test of practice, for the Royal Army Medical Corps has proved thoroughly equal to its work at the fairly severe engagements that have already occurred. Contrary to what has sometimes happened, nothing has been wanting, and *mirabile dictu*, *matériel* and *personnel* have so far always been at the right place. The bearer company work was heavy at Elandslaagte owing to the extent of ground covered and the intervention of darkness immediately after the action, but it was extremely well done. Men who were there write me that the Indian bearers are preferred to their white comrades, having, as one phrases it, "the hands of a woman," and they exhibit an absolute indifference to the risks of being under fire. It is not contemplated to have a base hospital in Natal, the present arrangement being that base hospital patients will be brought down here by ship and

taken to Wynberg, a fashionable suburb about nine miles from this city. The barracks there have been entirely vacated, and converted into a hospital capable of holding from 550 to 600 patients. It is with very good reason considered that the hot climate of Durban in the summer precludes that place from being used as a hospital base. At present no base hospital except Wynberg has been arranged for, but it is quite possible that others may be established at Port Elizabeth and East London. This, however, depends entirely on the lines of advance which Sir Redvers Buller may adopt. Neither place is an ideal situation for a hospital, owing to depressing weather in summer, whilst the climate of Wynberg, in fact, the whole of the Cape Peninsula, is all that could be desired.

#### TRANSPORT OF SICK AND WOUNDED.

There is nothing special to note about the Wynberg Hospital. It is fitted up in the ordinary way, and is well found in every respect. Should any considerable column advance along the eastern frontier a base hospital in that direction might be necessary; as the long railway journey would be trying, and as neither Port Elizabeth nor East London has a good harbour, sending men down by sea would involve a good deal of trouble and risk.

Durban is only open to this latter objection in a very slight degree. A consignment of sick is already on its way from Natal. The ailments are varied, but, I am told, include a good many cases of dysentery or dysenteric diarrhoea. I should mention that the accommodation at Wynberg could be easily supplemented by huts, if necessary, and that there is excellent railway communication right from the Capetown Docks to the Wynberg Station, which is very near the hospital.

#### THE AMBULANCE TRAINS.

The idea is to make use of the railway line to the utmost extent possible, and two trains have been already constructed at the local works of the Cape Government Railways, under the supervision of the Principal Medical Officer. I had the opportunity of inspecting these yesterday, and found them very complete and well designed. Seven vehicles have been built, with two combined pharmacy and kitchen coaches. It is intended to run them as two trains usually, but although there is through communication from car to car each is detachable, and a train or trains can be made up as desired. Three of the ambulance vehicles are fitted for 4 officers and 20 men and four for 4 officers and 12 men. Being on a narrow gauge line they are, of course, somewhat deficient in width, but they are roomy enough for all practical purposes. The bunks are arranged lengthwise in two tiers, the upper furnished with weather boards. The mattresses are stuffed with horse-hair and covered with Berkmeier's prepared waterproof canvas, an excellently cool and "cleanable" material. Each bunk has a handy locker for books, glasses, and the like. The four officers' bunks are at one end screened off by curtains. Between these bunks and the rest are the side entrances to the vehicles, and at this point the uprights supporting the corner bunks can be turned aside on a hinge, thus allowing of turning a stretcher without difficulty. There are, of course, entrances at each end of the coaches. Each coach contains a couple of seats for attendants, a set of pigeon-holes for dressings or bottles, and a watercloset. The latter discharges direct on to the line, without any flush of water, a somewhat objectionable arrangement, certain to lead to fouling of the sides of the funnel. Ventilation is excellent, being on the double ridge plan, the opening being closed by adjustable screw flaps. The pharmacy waggons contain a very well equipped dispensary, with store room, a kitchen, pantry with refrigerating cupboards, room for patients' clothing, with arm racks, and bunks for six attendants. There is also a very handy shower-bath with dressing room. The cars are lighted with oil lamps. The officers of the Royal Army Medical Corps and some others of the *personnel* will be provided with an ordinary saloon carriage. The vehicles themselves are calculated to accommodate 12 or 15 *personnel*. They are intended to run up and down the main line of communication.

#### THE WORK OF THE CAPE TOWN CENTRE OF THE ST. JOHN AMBULANCE.

As at present arranged, the Royal Army Medical Corps will