NO. 6 GENERAL HOSPITAL, JOHANNESBURG.

By ARCHIBALD WATSON, M.D., F.R.C.S.ENG.,

Professor of Anatomy in the University of Adelaide, South Australia;
lately Consulting Surgeon H.M.'s Forces, Natal.

THE following notes on No. 6 General Hospital, Johannesburg, may be of interest:

This hospital, which landed at Capetown on February 17th, 1900, entrained at once, and arrived at Naauwpoort on February 20th, in time to receive 600 wounded from Paardeberg. The hospital camp occupied a gentle slope on the veld, within 8 miles of which at one time fighting was proceeding. The hospital comprised four divisions:

1. Medical	...	...	...	...	...	450 beds.
2. Surgical	...	...	...	...	...	450 beds.
3. Enteric, dysenteric, and infectious	...	...	...	...	...	Beds ranging up to 400.
4. Sick officers	...	...	...	...	...	30 beds.

The patients were accommodated in marquees, each containing 7 beds. Between the marquees were paths 6 feet wide, rows of stones painted white serving as landmarks for the guidance of nurses and officials at night time. The dry earth system was employed in the latrines, with removal of excreta morning and evening to pits 2 miles from camp, slaked lime being used as a disinfectant. Enteric excreta were boiled in Kaffir pots, chloride of lime being added. A system of lighting by means of candle and oil lamps was installed, and an efficient bakery at once established.

After the occupation of Johannesburg by the British, the hospital was transferred to that city in July, and took up its quarters in the beautiful grounds of the Wanderers' Club, with its protecting fringe of well-grown eucalyptus and other Australian trees, and for the introduction of which South Africa has to thank the late Sir Ferdinand von Mueller of Melbourne. This is an ideal situation, and an ideal hospital was there installed. The staff consists of Colonel Somerville-Large, R.A.M.C., P.M.O.; Major R. Jennings, R.A.M.C., Registrar; Major J. Osborne, R.A.M.C., M.O.C. Surgical Division; Major Colledge, R.A.M.C., M.O.C. Medical Division; Major Hart, R.A.M.C., and Dr. Pershouse, in charge of Enteric Division; and in addition to these there are about twenty junior officers, mostly civil surgeons sent out from England.

The nursing establishment consists of Lady Superintendent Miss Oram (a lady already decorated by our late beloved Queen with the Royal Red Cross for distinguished service in Egypt), 28 nursing sisters, and about 250 orderlies. Nursing Sister Burdett took charge of a special enteric section of two "store" tents, of which more anon. Sister Gould, Lady Superintendent of the New South Wales Army Nursing Reserve, was placed in charge of another section, with four sisters of the same body under her orders.

The Wanderers' Ground is situated at the back of the Johannesburg Park Railway Station, a two-chain road intervening. The Principal Medical Officer had a railway siding constructed direct to the hospital, thereby obviating the necessity of ambulances and the employment of the now celebrated MacCormac-Brook wheel stretcher, so universally used in Natal.

On arrival, the kits and rifles of the sick and wounded are handed over to the charge of a staff of men, and soldiers may rely, when they are discharged for duty, on finding their rifles oiled and their kit replenished and repaired.

The capacious operating theatre of wood and iron erected in the centre of the surgical section possesses both roof and side lights, illumination at night being provided by travelling electric lights of 250 candle power. This theatre is well equipped, and I noticed a case of French instruments by Collin, Paris (Farabeuf's model) of far less clumsy pattern than the army regulation case seen elsewhere. To the operating theatre is attached an x-ray room, 20 feet by 12 feet, fully equipped. An immense advantage gained by the hospital on arrival at Johannesburg was the electric light, replacing the dimmer oil and paraffin illumination of Naauwpoort. Each marquee has inside illumination of 25-candle power, a separate switch being provided for each.

As previously mentioned, those enteric cases under Sister Burdett are accommodated in what are known as "store" tents—long apartments holding 16 beds, which are prefer-

able to the ordinary marquees with a capacity of only 7, the labour of nursing being proportionately less than where the sister has to pass from tent to tent. Colonel Somerville-Large contemplates a still further improvement, namely, making the ends square instead of rounded, thus increasing the carrying capacity of the tent by a bed in each corner, bringing the total up to 20 in all. By rolling up the curtains at the sides the cool air is admitted and patients are able to rest their eyes on the verdure of the surrounding eucalyptus.

As at Naauwpoort, the hospital has its own bakery. The meals are served as follows, Breakfast, 7.30 A.M.; dinner, 12.30 P.M.; tea, 4.30 P.M. Hot soup and milk are ready at all hours day and night.

The sanitary arrangements are favoured by the good water supply of Johannesburg, which has rendered perfect the most thorough system of drainage. The dry-earth system is also in use here, the excreta being removed morning and evening and sunk in deep pits six miles beyond the town limits, slaked lime being used.

All milk is thoroughly sterilised in apparatus brought from England. The kitchens consist of large wood and iron huts, with large ranges and boilers. The staff in this department for the general wards consists of a *chef* and nine other cooks under a military superintendent. A dairy well supplied with ice for keeping the milk fresh, also a separate kitchen for sterilising it, have been constructed; these are under a special cook. Additional facilities are provided in the Sisters' sculleries in the shape of special oil ranges for heating soup, milk, etc.

The officers' division is in a handsome brick structure, the so-called "palace" of the Wanderers' Club; it possesses a separate cooking establishment, under a head cook and assistant. This division is run quite independently of the rest of the hospital.

Very complete arrangements obtain for the washing of linen, etc., ordinary soiled clothing being handed over to Kaffir women, who are under careful supervision, to be dealt with. Enteric clothes are boiled before being sent to the laundry, a Thresher's apparatus doing good service in their disinfection. Enteric (and dysenteric) excreta are boiled in a watery solution of carbolic izal or chloride of lime, much as described by Major Cummings, R.A.M.C., in a recent number of the *BRITISH MEDICAL JOURNAL*. From this there is absolutely no obnoxious smell—indeed, the Kaffir attendants often enjoy their meals in the boiling-down establishment, or go to sleep therein when not prevented.

The total number of cases treated since the inception of No. 6 Hospital up to January, 1901, was 13,000, and the percentage of deaths 2.15. The enteric cases numbered some 2,500, with a percentage of deaths 7.86. Not the least noticeable feature is the healthy appearance of the nursing staff, bearing excellent testimony to the bracing climate of Johannesburg, as well as to the care bestowed on them by the lady superintendent. There is a Central News Agency supplied with papers, books, and writing materials of all sorts for the use of patients at cost price; also a large reading and writing room well supplied with daily and illustrated papers, magazines and books of all sorts, principally the gifts of kind friends in England, the Good Hope Society, Capetown, and the Public Library, Johannesburg. This room is fitted with lounge cane chairs, smoking is allowed, and games provided; it is much appreciated. A general post-office branch under the management of a non-commissioned officer from the London Postal Corps is also established in the hospital grounds.

Colonel Somerville-Large has been indefatigable in providing amusement for those under his care. Continental evenings by moonlight or electric light are held weekly, to which the public are admitted on payment. The entrance ticket has the dual advantage of providing an evening's amusement, and also serving as a pass until midnight, a privilege otherwise difficult to obtain by the ex-burgers, etc., who flock to the entertainment with their wives and families. A military band is in attendance, whilst Colonel Carr of the Scotch Fusiliers often supplies some Highland pipers (the enteric wards are located at a distance). The proceeds of these concerts, which up to date amount to £1,000, has been handed into the Widows and Orphans Fund, R.A.M.C. Convalescents, who are always present in large

numbers, occupy the seats in the grand stand. Cricket matches and cycle sports are of frequent occurrence.

What more favourable environment could a disabled soldier of the Empire desire? From all the world over have they come, these battered warriors—together they have fought, and now together they suffer—South Africans, Canadians, New Zealanders, Australians, wounded Boers, and the British foot soldier, than whom there lives no braver man.

CLINICAL NOTES ON THE WOUNDED IN SOUTH AFRICA.*

By J. W. SMITH, M.B., F.R.C.S.,

Surgeon to the Withington Infirmary, Manchester; Honorary Assistant Surgeon, Cancer Hospital, Manchester; late in charge of the Surgical Division, No. 9 General Hospital, South African Field Force.

I ARRIVED at Bloemfontein at the beginning of April, 1900, three weeks after its occupation by our forces under Lord Roberts. I went out on the staff of No. 9 General Hospital, and we were the first hospital to arrive at the Free State capital, being brought up by the new line of communication along the railway, established by the rapid retreat of the Boers from Cape Colony when the occupation of Bloemfontein threatened them in rear. Already the colleges, Raadzaal, and other buildings in the town had been converted into hospitals and staffed by medical officers from the various brigade field hospitals and bearer companies. The field hospitals, encamped at various points round the town, were already filled to overflowing, and men were daily going sick in large numbers. Greatly increased hospital accommodation was therefore urgently required.

Owing to the congested state of the single line of railway, which daily had to forward the food required for so large an army, as well as the necessary accumulation of food and ammunition before any advance could be made, our equipment came up in dribbles, and it was not till April 20th that the hospital was able to take in patients.

A general hospital is equipped for 520 patients in large large double-curtained marquees, each of which holds from six to eight beds. Having after our arrival secured some extra marquees and beds, we were able to accommodate about 600 patients. The staff consisted of twenty medical officers, seven of them belonging to the R.A.M.C., including one officer from the London companies and myself from the Manchester companies of the V.M.S.C. who had been gazetted to temporary commissions in the R.A.M.C. before leaving England. The remaining thirteen were civil surgeons and included Mr. A. B. Smallman of our own medical school. We had about twenty nursing sisters and 140 orderlies obtained from various sources; thirty were London and Edinburgh medical students, fifty St. John Ambulance men, thirty from the North London Volunteer Brigade Bearer Company, and the remainder R.A.M.C., some old members of the corps, and some recently recruited.

Within the first week of our existence as a hospital we were called upon to increase largely our accommodation by the addition of a large annexe to it, consisting of bell tents, which rapidly grew in number until they finally reached over 200, each accommodating at the time of greatest pressure five patients. This bell tent division was pitched in rear of the main camp and was placed under the care of Major H. J. Barratt, R.A.M.C., who afterwards became, and still is, Principal Medical Officer of the hospital; and to attend to the patients we were supplied with 150 extra orderlies from various regiments, and therefore called "regimental orderlies" who did their work exceedingly well. They implicitly obeyed orders, and did their best for their sick comrades with a gentleness that could hardly have been looked for, and a devotion that was beyond praise. The small proportion that proved unfit for their new work were speedily returned to duty with their units.

During the first week we admitted 1,400 patients, and our daily average in hospital during May was over 1,500, on one occasion reaching 1,743, which was our high-water mark. The utmost care was taken day by day to keep the more serious cases in the comfortable marquees, the slighter cases in the

bell tents, and daily those in the bell tents who were found to be seriously ill were transferred to the marquees, room being made for them by taking convalescent cases back to the bell tents or sending them "down country" in special or hospital trains, by which about 1,000 per week were sent to the base from Bloemfontein.

The original hospital of marquees was divided into a medical and a surgical division, each holding about 300 beds. Major M. T. Yarr, R.A.M.C., had charge of the medical division and I was given the care of the surgical side. The great majority of the beds in my division were, of course, filled by sick patients, mostly at first suffering from enteric or dysentery; but, when the hospital was being filled up, a convoy of wounded arrived from the actions then taking place in the Thabanchu district, east of Bloemfontein, which filled up 64 of my beds, and these I was able to keep occupied by surgical cases during May. In June the surgical beds diminished to 40, rising early in July to 70 or 80, at which number it remained for the rest of the time I spent with the hospital. These beds were mainly under my direct charge, and three or four civil medical officers attended to the other part of the division. Gunshot wounds constituted, therefore, only a very small proportion of the patients in hospital, but altogether we had nearly 300 such cases.

The wounded came, as I have said, in the first place from the fighting east of Bloemfontein. In May, when the advance north began, we had them from Brandfort and places further north. Early in July we had a large convoy, resulting from an encounter with the ubiquitous De Wet, mainly Irish Rifles and Munster Fusiliers, sent down by rail from Heilbron. In August and September the cases were chiefly more or less convalescent, transferred back from the Transvaal.

The time of pressure on the hospital lasted till about the middle of June. Shortly afterwards we were able to reduce the number of beds in each marquee from eight to six; a few weeks later the bell tent division was closed, and when I left the hospital in the middle of September the number of patients had sunk to 300, and of these all but a very small number were convalescent.

Perforating Wounds.

Much has been written of the marvellous recoveries which have occurred after wounds perforating important cavities and vital organs, and I may mention several such cases which came under my own observation.

CASE I.—Sergeant H., of the Shropshires, admitted April 30th, wound of chest, entering in front at the right border of the sternum in the fourth interspace; exit behind the posterior axillary line at the level of the ninth rib. Hæmoptysis began instantly, and continued for some days, but on the fifth day patient sat up in bed and made a rapid recovery.

CASE II.—Trooper B., of the Imperial Yeomanry, also a chest wound entering on the left side 1 inch internal and above the left nipple, exit below angle of left scapula. There was hæmoptysis for three days, but on the eighth day patient was up and the wound practically healed. It is almost impossible to suppose that the right auricle was not involved in the first of these cases and the left ventricle in the second. A Mauser bullet may presumably pass through the thick muscular wall of the ventricle, and even penetrate the ventricular cavity, without a fatal result, owing to its small size, but one can scarcely imagine that the thin-walled auricle could so escape.

CASE III.—The bullet in this case must also have passed close to the upper margin of the heart, the wound of entry being immediately above the third left costal cartilage, the bullet traversing the chest and issuing posteriorly through the infraspinous fossa. After a few days of hæmoptysis, speedy recovery resulted.

CASE IV.—Private F., New Zealand Mounted Rifles, wounded April 30th, entry in the seventh right intercostal space in the anterior axillary line, 1½ inch below the upper limit of liver dullness. The bullet passed obliquely through the abdominal cavity, issuing on the left side immediately above the centre of the iliac crest. A quantity of blood was vomited two hours after the wound, but there was no subsequent hæmatemesis, and the patient was sent down convalescent a month later. In this case the pleura, liver, stomach, colon, and probably the small intestine must have been traversed.

CASE V.—Private W., of the C.I.V., wounded June 11th at Bronkhorst Spruit, entry at the junction of the fourth right rib with its cartilage, two inches from the right sternal border. Exit in the groin two inches below anterior superior iliac spine. Patient had hæmoptysis and shortness of breath for two days, along with great abdominal pain and tenderness. The bowels were not moved for nine days afterwards. The bullet had grooved the ilium below the spine, and there was subsequently considerable thickening of the bone and tenderness.

CASE VI.—Private McK., of Inniskilling Fusiliers, wounded at Colenso, February 24th. The bullet had passed obliquely through the lower part of the neck and the upper part of the thorax, with entry at the centre of the left sterno-mastoid and exit in the right posterior axillary fold, one inch external to the angle of the scapula. It is difficult to imagine how the great vessels escaped. The chief injury was to the left

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