

VII

MENTAL DEPARTMENT

Accommodation.—A portion of the recently built male acute hospital ("A" Hospital) was, from the first, allotted to the observation and treatment of those male patients in the general wards who developed marked mental or neurotic symptoms. A few trained male mental nurses were specially retained for this purpose. They were civilians and of low physical category. Its necessity was demonstrated quite early, and on 26th June, 1915, the first mental case was transferred to "A" Hospital. The department, though small, comprising at its busiest time only thirty beds, was kept well occupied throughout the whole period of the hospital, being the last of all the departments to close.

The pressure for accommodation suitable for the treatment of cases of mental break-down among the soldiers abroad arose quite early in the war, and I was, on more than one occasion, asked by the War Office and Board of Control as to what accommodation I could provide of this character. It was not, however, until early in 1917 that similar accommodation for insane soldiers on home service began to run short, when, at the request of the Board of Control, I forwarded a report as to the assistance I could give here in this direction (dated 4th April, 1917). Nothing further occurred until June of the same year, when, at the request of the Eastern Command, I made arrangements to admit non-expeditionary force mental cases from Aldershot.

R.A.M.C. Mental Staff Posted.—A sufficient number of R.A.M.C. mental orderlies were posted to the hospital, and, by arrangement with the War Office, the Inspector of Orderlies and two trained male mental nurses on the permanent staff of the hospital were specially enlisted in the

R.A.M.C. The Inspector was given the acting rank of regimental sergeant-major, and the male nurses became respectively acting sergeant and acting corporal. In many respects I regretted the necessity for this, but it could not be avoided under the circumstances.

Scope of Work.—In the meantime, in addition to our own mental cases, we had admitted, in emergency, insane soldiers of all kinds from neighbouring hospitals and camps, and an occasional one from overseas.

The first batch of non-expeditionary force mental cases was admitted to the newly constructed department on 7th July, 1917, from Aldershot. Later, similar cases were received from the Eastern Command Labour Centre, and in March, 1918, we began to deal with the overflow of mental cases of all kinds from the Royal Herbert Hospital.

Admission to "A" Hospital from all Sources.

Admitted from other wards (chiefly expeditionary force cases)	39
Non-expeditionary force cases	171
Expeditionary force cases	19
	229

Form of Mental Disorder.

General paralysis of the insane... ..	6
Epileptics	52
Imbeciles and mentally defectives	43
Mania and melancholia... ..	40
Delusional insanity	27
Dementia præcox	5
Alcoholic insanity	4
Traumatic insanity	6
Neurasthenia and shell shock	26
Acute suicidal impulse	9
Under observation for unclassifiable mental disturbances, and epilepsy	11
	229

Observations on War and Peace Mental Diseases.—Most of the cases, except some of the epileptics, came under my observation at one time or another, and I personally dealt with

their boarding and disposal. As regards mental symptoms, as far as my observations went, there were none which could be said to differ essentially from those in similar cases occurring in civilian life. I felt, however, that some of the cases were, in an indefinable way, dissimilar to cases I had to deal with before the war. To put it crudely, the patients did not seem to get such a grip of their symptoms, reminding me of actors at rehearsals before they had a complete knowledge of their parts.

I was in a position to keep abreast of the current literature of war psychiatry, and I gave a good deal of thought to this. My conclusions were as follows:—

(1) The war did not occasion any new form of mental disorder.

(2) It is probable that, in a case of mental break-down, there is a predisposition, not to all but to one of the generally recognised forms of mental disease, excluding, of course, definite brain lesions. The form such individuals are predisposed to is settled by constitution, conditions of early life—pre- and post-natal—adolescence, early sex and emotional experiences, education, etc.

The stress of war would appear to have been more potent in hurrying on the onset of mental symptoms at an earlier stage in the development of the predisposition than ordinary civil causes of mental break-down would take effect.

Thus, cases simulated dementia præcox; the manias and melancholias were cases with some maniacal or melancholic symptoms; delusional patients rapidly recovered; imbeciles and mental defectives suffering from exhaustion seemed to brighten up wonderfully; epileptics ceased to have fits, and so on. Some cases had curiously mixed symptoms. Probably in many cases the attack was an unexpected "rehearsal" of something which might have been properly staged later, and may yet occur if the warning is unheeded and great care is not taken for the future.

A few of the cases should never have been enlisted, and were of such dull intellects that only a fool would have engaged them for any civil business. One case was a patient who had just previously been allowed out from an asylum on an "undertaking" to the care of friends, who, the night following enlistment, tore up all his bedding. Quite a number were never able to do any drill at all, because they were

unable to understand the orders given them. I can quite appreciate the enormous difficulties there were at the time, but, even granted this, how some of them could possibly have been accepted for the army passed all imagination, unless the recruiting officers and doctors were both blind and deaf.

The cases of hysteria or dissociation manifesting themselves as shell shock were too few for me to comment upon.

Disposal of Cases.

Recovered and returned to the general wards ...	80
Discharged:—	
(1) To the care of relatives	60
(2) To Asylums	44
(3) Mental War Hospitals	42
Died	3
	229

I am unable to relate the subsequent history of those who went to the care of friends or other institutions, but probably a considerable proportion recovered. The recovery rate on the admissions was probably a high one.

Mental Sick Bay for Army Nurses, etc.—In March, 1919, on the closing of the Manor War Hospital, the army nurses who had broken down on war service, who were under treatment there, were transferred here and accommodated in a section of the women staff infirmary. Later we had to receive for observation members of the Q.M.A.A.C., Women's Legion, and W.R.N.S. having symptoms suggesting mental or nervous break-down.

VIII

DENTAL DEPARTMENT

Mr. Norman Straton, L.D.S. (until Oct., 1917).

Capt. F. Allday (Oct., 1917, to Sept., 1918).

Capt. L. W. Forsyth, M.R.C.S. Eng., L.R.C.P. Lond., L.D.S. Eng. (Sept., 1918, to Jan., 1919).

Lieut. E. A. Nunn, L.D.S. (from Jan., 1919).

THIS department commenced operations on 4th June, 1915, and I regret that I am not in possession of complete statistics covering the work during the whole period of the war hospital. Quite early it was arranged that a monthly return of work done should be rendered to the Eastern Command, and unfortunately copies have not been kept in all instances by the various dentists in charge. However, from the clinical records and statistics covering broken periods—some of them lengthy—I can give a good idea of the activities of this department. A memorandum left by Mr. Straton has been of considerable assistance.

The guiding principle of army dentistry is purely utilitarian in character. Missing teeth do not interest the army so long as a sufficient number remain to allow of proper mastication. No tooth is allowed to be removed merely because it is decayed, except when necessary, as in grave cases of pyorrhœa. If such a tooth is useful it remains.

Fillings of a simple character are permitted, but no dental treatment of any kind has to interfere with the patient's discharge from hospital if otherwise fit.

Dentures are only provided at public cost when absolutely necessary, and then only a sufficient number of teeth

to permit of proper mastication. Recommendations for dentures, accompanied by explanatory dental charts, have to be submitted to the A.D.M.S. (or D.D.M.S.) for approval. He has an advisory dental officer to guide him in coming to a decision. As may be imagined, many dentures were lost during the war, and, if the evidence of such loss was reliable, they could be replaced at public expense. The number of repairs and replacements at first were very numerous, but diminished after the facilities for doing mechanical work abroad were increased. For a considerable time Mr. H. Maurice Peacock, L.D.S., of Epsom, did all the mechanical dentistry. Latterly it has been undertaken by the army centres of mechanical dentistry.

Pyorrhœa was found to be very common and often associated with extravagant American and colonial dentistry. In quite a large number of cases considerable amounts of gold in the shape of crowns, bridge work, etc., had to be removed before the mischief could be overcome. Dentistry of this type was not designed to withstand war food and allied conditions. The mouth condition was generally found to be infinitely worse in imperial troops as compared with American and colonial. This, of course, applied mainly to the new armies. I am sure that the poor condition of the mouth and teeth in British soldiers was the cause of an appreciable loss of effective power, a factor which should not be neglected in the consideration of future plans for the Empire's defence. Mr. Straton found that the old-fashioned remedy—copper sulphate—was the best in severe cases. Autogenous vaccines were much used in very septic cases.

A considerable number of cases were supplied with splints of various kinds for fractured jaws, but the majority of such cases did very well without splints.

The department undertook a considerable amount of out-patient work, including the Eastern Command Labour Centre, and the whole of the dentistry for the auxiliary hospitals, the Manor War Hospital, and latterly the Ewell War Hospital, was carried out here.

Summary of Work.—The following summary is compiled from accurate statistics over unbroken periods, the

figures for the intervening periods being averaged from the former :—

Summary.

June, 1915, to October, 1919:—

Cases treated	...	...	...	...	7,979
Attendances	...	...	...	...	27,465
Extractions...	...	...	...	...	18,439
Anæsthetics :—					
General	...	...	...	1,130	
Local	...	...	...	5,345	
					6,475
Fillings	...	...	...	...	5,734
Scalings and gum treatments	...	...	...	...	2,191
Dentures supplied	...	...	...	...	877
„ repaired	...	...	...	...	581
Jaw injuries...	...	...	...	...	199

IX

X-RAY DEPARTMENT

Resident Radiographer.

V. E. Van den Dungen, M.D. Louv. (until Oct., 1917), Asst. Physician, Brussels Hospital and Senior Radiographer, etc., at Merxem Hospital, Antwerp.

Visiting Radiographer.

D. Findlay, M.D. Edin., M.O. in charge Electrical Department, West End Hospital for Nervous Diseases.

THERE were two installations, one attached to each of the two large operating theatres. That attached to "A" theatre was in the charge of the resident radiographer, while the visiting radiographer took charge of the "B" theatre installation. Later, on the resignation of Dr. Van den Dungen, Dr. Findlay took charge of both X-ray rooms.

The equipment was identical in each until the establishment of the officers' surgical clinique in 1918, when one of the installations was withdrawn and replaced by an entirely new one, and the room enlarged.

The original equipment, which did practically all the X-ray work of the hospital, was supplied by the Cavendish Electrical Co. Size of coils, in terms of spark gap, was 16", the mercury interrupters Cavendish and Sanez centrifugal in type, with paraffin dielectric. Tube stands were of wood and the couches of Cavendish pattern, with underslung tube boxes. Each installation had a well equipped dark room.

Importance of Röntgen Rays in War Surgery.—When, in 1895, Professor Röntgen, of Munich, announced his great discovery that electricity, when allowed to pass through a tube of rarefied gas, gave off invisible radiations which would penetrate opaque substances and affect photographic

plates, the world did not realise what an important bearing it would have in warfare. As the technique has improved, radiography has been increasingly useful in military surgery, but it was a merciful Providence that it arrived at its present state of efficiency before the Great War occurred. Nothing since the discoveries of Simpson and Lister has done so much to advance surgery and raise it to the rank of an accurate science. It is almost too horrible to contemplate what would have happened had the surgeons, in this great and terrible war, not had the assistance of the skilled radiologist. The increased losses in deaths, the masses of maimed and useless men, and, not least in importance, the vastly greater measure of suffering, form a picture too appalling for the imagination to conceive. Not only can foreign bodies now be localised in practically any situation in the human body, and the surgeon guided to them, but the progress made in the union of bones and the apposition of the fractured fragments can be kept under almost continuous observation, thereby preventing malunions and deformities and preserving useful limbs.

The Radiologist Invades the Realm of Medicine.—The X-rays are very useful to the physicians, especially as regards the chest and abdomen. Tubercular and other consolidated areas of lung can be watched, the action of the heart and great arteries investigated, and, by test meals, the alimentary functions observed. Both diagnosis and treatment are being more and more assisted in this way. Thus, it can be readily understood that the work done in this department was the basis upon which a vast amount of surgical treatment depended. As regards medical treatment, Major Barty King, the Chief Resident Physician, by screening every chest case, increased the value of his work enormously.

The radiographers were assisted by two skilled lay assistants, one for each theatre, who did the photography; one of them being a nurse on the permanent staff specially trained by Dr. Findlay.

The department, in addition to the indoor patients, dealt with a large number of out-patients from neighbouring hospitals and medical centres, and did the special examinations as required by the medical board.

SUMMARY OF WORK.

X-Ray Examinations (Photographs only).

Year		Indoor-patients		Out-patients		Occasions
1915 (from June)	...	1,588	...	195	...	3,069
1916	...	3,736	...	540	...	6,968
1917	...	4,536	...	1,359	...	8,423
1918	...	4,386	...	1,008	...	8,036
1919 (to October)	...	1,265	...	489	...	2,903
Totals		15,511		3,591		29,399

X

ELECTROTHERAPY AND MASSAGE

Medical Officers in Charge

Capt. H. M. Burke, R.A.M.C. (until Nov. 1918).

Dr. Oreste Sinanide (from Aug. 1918.)

Origin of the Department.—Dr., afterwards Captain, Burke, who had been doing excellent work as clinical assistant to the Electrical Department, St. Bartholomew's Hospital, and was unfit for foreign service, was appointed to the staff as a whole time visiting physician. I decided to make use of his special knowledge of electrotherapy at the earliest opportunity. The asylum had been equipped with two of Dr. Milne Murray's admirable combined switch-boards and the instruments necessary to carry out neuromuscular tests and various forms of electrotherapy. The installation, though small, was sufficient to commence with, and it only remained to select a room convenient for the purpose. The medical examination room of the male acute hospital, where there were several electric leads, was decided upon as a temporary measure.

Work was commenced on 23rd June, 1915, and steps taken to acquire additional apparatus. Soon afterwards a galvanic switch-board, a Lewis Jones condenser apparatus, a set of Schnee baths with a polystat and Lewis Jones rhythmic interrupter, and a small radiant heat apparatus were added. Later, a small motor was obtained, and another rhythmic interrupter to work the baths in connection with one of the combined switch-boards.

Capt. Burke gave his whole attention to the development of his department and was an enthusiastic advocate of this form of treatment, so much so that he did not rest content until the larger scheme of electrotherapeutic treatment I originally had in mind was instituted.

Reasons against Enlargement.—I was, however, in this difficulty. I was anxious that there should be no temptation to silt up the hospital with convalescent patients on the pretext of electric and massage treatment. The accommodation was not suitable for semi-convalescent cases who were up and about, and who required but little medical attention and nursing, neither had I administered for this class of patient, the retention of whom would be a waste of valuable beds and public money.

An electric treatment installation was absolutely necessary for the diagnosis, investigation and treatment of the nerve injuries of those who were unable to be up and about, and also, with massage, to keep joints and muscles healthy during immobility. Scars, stiff joints, deformities, etc., could be treated if for other reasons hospital accommodation was necessary. Immediately a patient was up and about and on ordinary diet, I resented his continuing here, and always did my best to ensure his discharge to a convalescent hospital or (later) to a command depot, which were the proper places to continue treatment of this character. Dr. Burke, in a contribution to "Archives of Radiology and Electrotherapy," Oct., 1917, bemoans the fact that the necessity for this prevented the continuity of treatment, and rendered it difficult to make an accurate and complete history of the cases and the results achieved. I have no doubt in many cases it did operate unfavourably, and made it impossible to take full advantage of consistent electrotherapeutic measures, but, nevertheless, the treatment of urgent cases from overseas was the first consideration.

Large Department Decided upon—Equipment.—However, in May, 1916, I was persuaded that the work had legitimately outgrown the temporary accommodation then in use, and a new department had become necessary. The general bathroom of "A" Division, with its commodious dressing room, which I intended originally should be the electric treatment centre, was now taken over for this purpose, wired, and adapted to meet Capt. Burke's recommendations. The instruments and fittings from the medical examination room in "A" Hospital were transferred there, and supplemented shortly afterwards by several water

resistance machines on the plan of Leduc, made by the hospital electrician, an installation of "Eau Courante," or whirlpool baths, made by the hospital engineer, and a Stirling high-frequency generator. When completed, it became a really fine centre for this form of treatment, and, in addition to in-patients, was able to undertake the treatment of numerous out-patients, pensioners, and patients from neighbouring hospitals, and required but little re-organisation on the establishment of the officers' clinique.

Officers' Clinique.—In 1918 Dr. Oreste Sinanide gave his services gratuitously to the officers' clinique, and introduced fresh ideas and gave a new life to the department. He had made, at his own expense, an additional switch-board with water resistance, a fine machine capable of giving treatment to several patients at the same time. A number of treatment couches and additional baths for ionisation were added.

Character of Work.—Capt. Burke, who in the meantime had become much enamoured with orthopædic surgery, left in November, 1918, and the hospital lost the services of one who had a thorough practical knowledge and grasp of the possibilities of electrotherapy.

In the paper already quoted he gives a description of the work in his department, which forms interesting and instructive reading. As regards the use of sinusoidal baths for maintaining muscular tone, he points out that it is not necessary to produce muscular contractions, which was the experience both at St. Bartholomew's Hospital and here.

The "Eau Courante" installation was chiefly valuable in circulatory disturbances following nerve injury, in the treatment of scars limiting movements when followed by massage, stiff joints, and the vascular disturbances in trench feet.

Much successful work was done under the supervision of Dr. Sinanide, who was an accurate observer and most painstaking in all he did.

Massage.—I always resisted the creation of a special massage department, my line of argument being that in a general hospital such treatment should not be severed from the immediate supervision of the sister and medical officer in charge of the case. There was also less likelihood of a

case being lost sight of and retained in hospital for this purpose only.

So our band of civilian masseuses, which numbered eleven to seventeen, some being obtained through the Almeric Paget Military Massage Corps, were administered by the Principal Sister, who allotted them to the wards where such treatment was called for. I always urged that massage, etc., should be commenced early, if possible long before the wound was healed, which was an additional reason for confining this treatment to the wards. During 1918 and 1919, however, a few masseuses worked in the electrotherapeutic centre, chiefly as regards out-patients.

Radiant Heat Treatment.—The main downstairs wards had been fitted with special electric points, independent of the lighting circuits, to supply current for radiant heat treatment of patients confined to bed. This was undertaken by the masseuses under medical direction, but any special treatment of this kind, if the patient was otherwise fit, was carried out at the electrotherapy centre.

A Unit of the Military Massage Service Posted.—Army Council Instruction 65, of 1919, led to the creation of the Military Massage Service. A unit was established here, consisting of one head masseuse and fifteen masseuses. In addition, there were four qualified civilian masseuses appointed by the hospital, the others either having left the hospital or joined the new corps.

The electrotherapy department closed on 21st October, 1919, and the massage personnel dispersed.

The Masseuse.—The hospital was well served by its band of masseuses. They had a clean record as regards conduct, and no case ever occurred during the whole period of the hospital where disciplinary measures were called for. They impressed me as being a body of healthy, cheerful ladies, confident of the value of their work, and fully believing in its soundness, which makes all the difference in the world as regards professional success. Like others of the female staff, they did their share in making hospital life as attractive as possible to the patients, consistent with their position and duties, and organised concerts and parties which were, as a rule, held in the tea room or soldiers' recreation room.

Effects of Electrotherapy and Massage.—Space will not allow me to give any detailed views as to the value of electrotherapeutics and massage, but, whatever doubt there may be regarding the former in some people's estimation, there can be none as regards massage in suitable cases. It is an ancient science which requires considerable training and practice to be successful. Mere mechanical rubbing is valueless; it is the human element in its application which makes all the difference. It should be remembered that the skin is the largest sense organ we have, and capable of making stronger impressions on the central nervous system than either sight, hearing, taste, or smell. The effects may not always rise into consciousness, but they are nevertheless powerful and potent for good or evil. Neither massage nor electrotherapy should be lightly undertaken, for the underlying psycho-physiological, electrical, and trophic problems are as yet by no means fully understood.

SUMMARY OF WORK.

Electrotherapy.

From 23rd June, 1915, to 23rd June, 1919.

Number of patients	...	...	...	2,034
Number of treatments	...	...	...	67,482
Average treatments per day	...	...	...	70

Records of electrotherapy separate from massage were not kept after July, 1919.

Massage.

Number of patients not available from the records. Number of treatments of 10-45 minutes duration each:—

1915	...	...	...	12,678
1916	...	...	...	61,345
1917	...	...	...	71,903
1918	...	...	...	82,212
1919	...	...	...	33,708
				261,846

XI

PATHOLOGICAL DEPARTMENT

Pathologists:

Captain R. St. John Brooks, M.D. Lond., D.P.H., D.T.M. and Hy. Camb., R.A.M.C.

M. Wilson, D.Sc. Lond. (until Sept. 30th, 1916), Lecturer, Edinburgh University.

I AM indebted to Captain R. St. J. Brooks for the details of the work accomplished in his department.

The staff of the department consisted of the Pathologist, a trained laboratory assistant, and an orderly. In addition, during the time of greatest stress the staff consisted of another trained assistant. Until 1916, Dr. Malcolm Wilson assisted the Pathologist, especially in the province of bacteriological investigations.

The following table gives a very fair idea of the volume and scope of the work carried through during the four and a third years of the Department's existence:—

Urine—Chemical and microscopical examination...	14,472
„ Bacteriological examination	84
Stools—Complete examination for enterica organisms, B. dysenteriae, etc.	1,156
„ Microscopical examination for amœbæ, cysts, flagellate protozoa, helminth ova, etc.	1,200
Gastric contents, chemical examination of	84
Blood—Agglutination for enterica group, micrococcus melitensis, etc....	60
„ Cultural examination for enterica group, M. melitensis, streptococci, etc.	132
„ Examination for malarial parasites, etc.	724
„ Cytological examination with differential counts, estimation of hæmaglobin, etc.	296

Wassermann reaction for syphilis	1,536
Examination of pathological exudates for organisms of suppuration, etc.	1,364
Examination of urethral discharges for presence of gonococci	172
Identification of micro-organisms by cultural methods	1,788
Examination for anaerobes in wounds	384
Throat swabs—Cultural examination for <i>B. diphtheriae</i>	924
Examination of sputum for tubercle bacilli and other organisms... ..	3,508
Examinations for meningococci (naso-pharynx and C. S. fluid)	172
Examination for sarcoptes, trichophyton, etc.	112
Tissues, histological examination of	124
Dissections	12
Vaccines—No. of cases treated	1,160
„ No. of injections given	4,832
Post-mortem examinations	64

At first the work was confined to this hospital, but on the establishment of the Canadian Convalescent Hospital at Woodcote Park, in 1916, the pathological and bacteriological work for that institution was dealt with here. After a time a secondary laboratory was established at Woodcote by the Canadian authorities, but we continued to deal with the examinations of venereal sores for treponema, etc., the performance of the Wassermann reaction, and cultural examinations of throat swabs, swabs for meningococci, etc. When the Manor (County of London) War Hospital was opened later, the bulk of the pathological and bacteriological work was dealt with here. For a short time a part-time bacteriologist was working there and relieved us to that extent; and during the rush of malarial cases from Macedonia a specialist did the bulk of the malarial work there, the "overflow" diagnosis being conducted here. In addition, the department undertook all the pathological and bacteriological work for the Ewell (County of London) War Hospital, the Eastern Command Labour Centre, Sutton, Surrey, the Dispersal Centre, and all the auxiliary hospitals attached to this hospital.

With regard to the 35,000 cases dealt with, upwards of 31,000 examinations (including 1,073 of the staff) were made

on patients in this hospital. Upwards of 4,000 examinations were made for Woodcote and the other hospitals referred to.

During the whole period, up to the signing of the Armistice, there were excellent opportunities of studying the flora of a great variety of war injuries, and very early in the work we were able to appreciate the almost universal infection of war wounds with anaerobic bacteria, in addition to the more obvious streptococci, enterococci, and bacillus coli and its congeners. On numerous occasions bacillus perfringens, *B. oedematis maligni*, *B. oedematis*, *B. tetani*, *B. "Hibler No. IV,"* and others, were isolated from wounds by anaerobic methods of cultivation, and the Lister Institute was supplied with a large series of specimens in connection with their work for the Anaerobe and Tetanus Committees. It is probable that Capt. Brooks was among the first to recognise that the appearance of *B. perfringens* in wounds was not of so much importance (indeed, they occurred in most cultures of war wounds examined) as the conditions under which they were living and multiplying. We found that in these early days surgeons were sometimes unduly alarmed at receiving a positive report for "gas gangrene" organisms, and that it was necessary for the bacteriologist to point out the greater significance of the local conditions present in the wound.

When convoys commenced to arrive from Gallipoli, we suddenly found ourselves almost overwhelmed with pathological and bacteriological material of a kind not usually met with in this country. Captain Brooks having had extensive experience in tropical medicine and hygiene previous to the war, was in a position to cope with every problem that presented itself. He succeeded in isolating *B. typhosus*, *B. paratyphosus A* and *B*, *B. enteritidis* of Gaertner, *B. dysenteriae flexner* and shiga, etc., in numerous instances from the stools, and also on a few occasions from the blood stream and urine. By the time the patients arrived at this hospital, in most cases the blood stream was sterile. A large number of agglutinations were carried out by Dreyer's and other methods. A large series of cases were examined for amœbæ, flagellate protozoa, and helminth ova, etc.; *E. histolytica* and its cysts, *E. coli* and cysts were frequently identified, and, more rarely, *lamblia intestinalis*, *trichomonas intestinalis*, *balintidium coli*, and

tetramitis mesnili were met with. Helminth ova were but rarely seen, and when encountered were not of surpassing interest. The Pathologist was rather struck with the comparative absence of these parasites when a mental comparison was made with the faecal fauna of eastern natives. Obviously the conditions of life were the determining factor in tropical helminth infections. A few cases of bilzarziasis were met with from time to time, principally from Egypt and the East African Protectorate. They were all cases of bladder infection with terminal-spined ova (*schistosoma hæmatobium*). One case was of peculiar interest. The man contracted the disease during the South African War in 1900, and had never been out of England since 1901. Thus for eighteen years he had been harbouring the parasites without any possibility of re-infection.

A large number of cases, returned from Macedonia and elsewhere, were examined for malarial parasites, etc. Benign tertian parasites were frequently met with, malignant tertian being less numerous among the cases examined. No cases of quartan infection nor of indigenous malarian infection were met with. Captain Brooks made a survey of the immediate neighbourhood of the hospital, but did not come across any anophiline mosquitoes, and concluded, therefore, that we were not likely to be the means of starting an indigenous outbreak of malaria.

With regard to the Wassermann reaction, the technique adopted was that recommended by Brevet-Col. Harrison, R.A.M.C., and employed by him at Rochester Row Military Hospital. The results obtained, so far as it is possible to form an opinion from a relatively small number of cases, were quite satisfactory and usually in accordance with clinical expectations. The bulk of the examinations were with the patient's blood serum, but a certain number of examinations of cerebro-spinal fluid, including Wassermann reaction, estimation of globulin content, and cytology were done. The Pathologist usually performed the lumbar puncture himself, and there never were any ill effects to the patient from this procedure. With regard to the reagents used in the Wassermann reaction, until the standard antigen supplied from Cambridge was obtainable, the department made its own antigen. The cholesterin used was prepared from gall stones, and was of a very pure quality. The

alcoholic extract of guinea-pig heart muscle was prepared in the approved manner. The home-made antigen was quite excellent.

A large number of injections of stock vaccines, either prepared in the laboratory or supplied by the R.A.M. College, etc., were made by Captain Brooks, mostly for cases of furunculosis or acne. On the whole the results were satisfactory. In a few cases injections of colosol manganese in conjunction with vaccine treatment were tried, and it was thought that in these cases recovery was accelerated. A large number of autogenous vaccines were also prepared, principally for cases in the wards. Generally speaking, the results obtained were very encouraging. In the early days of the war a few autogenous sensitised shiga vaccines for chronic cases of shiga dysentery were prepared.

Among the rarer and more curious conditions was a case in which the diagnosis was made from pus from an abscess of the parotid. The clubs and mycelium of the ray fungus were demonstrated, and the surgeon's suspicion of actinomycosis was confirmed. It is worth while also to record the voiding of a lepidopterous larva, per rectum, in a case of suspected appendicitis with blood and mucus in the stools (non-dysenteric).

I desire here to record the whole-hearted appreciation of myself and all the medical staff for the excellent work done by Captain Brooks. His work was always accurate and reliable, and everybody admired his zeal and energy. Captain Brooks spoke most highly of the loyal help given to him by Dr. Wilson and the laboratory assistants.

XII

DEPARTMENT OF THE DISPENSING CHEMIST

Pharmacist.

Mr. A. C. O'Brien, M.P.S.

THE dispensary was the department of the hospital which had to conform to military accountancy. During asylum times the records kept were few and simple, but sufficient; and the supplies of drugs, dressings, etc., were dealt with by the house steward's department. The activity of the asylum dispensary may be gauged by the fact that the work could be done by the dispenser himself with one assistant for the rough work.

A dispensary to supply the wants of a general hospital of 2532 beds was a very different proposition, especially when a new and complicated system of accountancy had to be assimilated and carried out to the satisfaction of a train of conscientious and critical bureaucracies, and finally the War Office.

The structural changes required in the dispensary proper were very few, but several additional rooms had to be allotted to accommodate the vastly increased amount of medical stores. The dispensary did the sterilisation of all the ward dressings, a large steam steriliser being placed in one of the additional store rooms for this purpose.

It soon became necessary to appoint an assistant dispenser, and later a clerk and typist had to be added.

Several civilian orderlies were needed as sterilisers, cleaners, and porters generally.

Dispenser's Inventory and Army Medical Accountancy.—The dispenser kept a complete inventory of all the medical stores, including the instruments, theatre furniture, X-ray apparatus, pathological equipment, artificial eyes, etc.,

which had always to be accurate and posted up to date, and accounted for twice a year on A.F.I. 1214. This return, a voluminous document, is the back bone of the army medical accountancy.

The keeping of the inventory, the preparation of A.F.I. 1214, and the minute stock-taking it involved, took a large slice out of the dispenser's time. At first, to the tortured brain of Mr. O'Brien, the various officials who checked Army Form I. 1214 during its progress to the War Office, and at the War Office itself, seemed to vie with each other as to who could find the most faults and split the finest hairs, but, as time went on and experiences accumulated, he became quite adept at avoiding the many pitfalls, and life became more livable. The dispensary correspondence always passed through my hands, and I became quite familiar with the army medical accountancy. As a system it is logical and complete, a magnificent piece of work, but not one which any business man could afford to carry out or would be worried with.

The chief reason, I think, for this severe and complex method of accounting for medical stores is, that not only is the property valuable and tends to go astray, owing to the phenomenal carelessness of doctors in such matters, but also that the dispenser is liable to be moved away at short notice any time, and possibly the whole unit posted to the other end of the earth. Where the dispenser occupies his post permanently, as in civilian hospitals, much can be kept in his mind and not necessarily recorded, but not so in an army unit. Records have to be kept of everything, exactly where it is, and in what condition, so that a newcomer can set to work at once without a prolonged settling up with his predecessor.

Sterilisation of Implements.—As the precautions against sepsis increased as war-surgery progressed, apart from the dressings, practically every application to wounds had to be sterilised, and a Hearson steriliser was installed in the dispensary for this purpose.

Need for Economy.—It is impossible to give the number of dispensing operations, but the figures I append convey a good idea of the enormous amount of drugs, lotions, dressings, etc., which were issued and had to be minutely

accounted for. The need for every economy was impressed upon both doctors and nursing staff. To the doctors I issued a circular letter, pointing out how economies could be secured without detriment to the patients' treatment. In it occurs the following paragraph :—

"While it is imperative that patients should receive the best treatment, yet it seems possible by using substitutes for the more expensive drugs, and exercising extra care in prescribing as regards the non-essential ingredients, to save expenditure, and, as Sir Alfred Keogh says, 'save money for men, guns, and munitions.'"

Each week a summary was made of the lotions and dressings requisitioned by the doctors and submitted to the chief resident surgeons, who enquired into the necessity for any unusual amounts.

List of some of the Dispensary Issues.

Chloroform	...	...	...	9 cwts.
Ether	...	...	...	14 "
Sutures	...	...	...	1,875 yards.
Surgeons' needles	...	...	...	2,620
Bandages	...	...	...	137,116
Gauzes	...	...	...	157 miles.
Jaconet tissue	...	...	...	2½ "
Lint	...	...	...	16 tons.
Absorbent wool	...	...	...	13 "
Safety pins	...	...	...	140,832
Surgical lotions and antiseptic solutions	...	...	...	4,235 gallons.
Sol. peroxide of hydrogen	...	...	...	3½ tons.
Liniments	...	...	...	3 cwts.
Boric acid	...	...	...	5 "
Dusting powder	...	...	...	13 "
Vaseline	...	...	...	10 "
Friars balsam for inhalations	...	...	...	147 pints.
Paregoric	...	...	...	730 "
Liver pills	...	...	...	800 gross.
Epsom salts	...	...	...	3 tons.
Cod-liver oil and malt	...	...	...	1½ "
Iron tonics	...	...	...	1,200 gallons.

These issues are exclusive of swabs and bandages, etc., supplied by war depots. Large quantities of sphagnum moss were used for packing splints, absorbing discharges, etc., and were a great economy.

Central Splint Room.—It was necessary later to create a central splint room, where all kinds of splints and surgical appliances which gradually accumulated were classified and arranged on shelves, so as to be easily selected from by the doctors and used again, any necessary alterations being made in the workshops.

The dispenser's lot was not a happy one, but he kept a brave heart and won through over all difficulties, and no accidents occurred. His work was onerous and very responsible, and he deserved the greatest credit for the success he achieved.

The hospital owes a debt of gratitude to the following voluntary associations for regular supplies of swabs, bandages, splints, sphagnum moss, and other surgical accessories. In most cases the arrangements were made through the Director-General of Voluntary Organisations, Scotland House, New Scotland Yard, London, S.W.

War Hospital Supply Depots at:—

Stockton-on-Tees.	Ely, Cambs.	Grosvenor Cres., S.W.
Brighton.	Aberdeen.	Teignmouth.
Bristol.	Londonderry.	Montrose.
Winchester.	Edinburgh.	Ryde.
Grimsby.	Hove.	Newbury.
Hayward's Heath.	Deptford.	Bury St. Edmunds.
Ipswich.	Epsom.	Dorchester.
Streatham Common.	Wimbledon.	Penzance.
Cheltenham.	Sutton.	Woodburn,
Kingston Square, W.	Forest Row.	Rutherglen.
Clerkenwell, E.C.	Molesey.	Richmond.
Norwich.	Battersea.	Gloucester.
Torquay.	Croydon.	Bromley.
Tunbridge Wells.	Tenterden, Kent,	Ascot, Berks.
The British, Colonial, and American Red Cross Societies.		
Banstead Red Cross Working Party.		
Surgical Dressing Emergency Society, Maidenhead.		

Harrogate Women's Sewing League.
 Devon V.A.D.
 Battersea Voluntary War Workers' Association.
 Central Depot Surgical Branch, Queen Mary's Needlework Guild.
 Northampton Red Cross Committee.
 Croydon War Supplies Clearing House.
 Tynemouth Relief Committee.
 Brechim Association.
 Miss Anita McLaughlan, Valparaiso.
 County and City of Gloucester Association.
 St. John's Ambulance Association, Clerkenwell, E.C.
 Surgical Requisites Association, Chelsea.
 Aberdeen University Work Party.

XIII

THE MEDICAL BOARD

THE board, strictly speaking, was an "Invaliding Board," but it undertook all kinds of medical enquiries, including the examination of cadets and pensioners, the categorisation and reclassification of soldiers generally, and enquiries regarding the injuries and diseases affecting civilian employees of the army, etc. Later, it acted as a dispersal board.

The board sat almost every day from June, 1915, to October, 1919.

I was President of the Board during the early days, and for a considerable part of the time presided at the officers' boards. I also undertook the medical boards on patients from Woodcote Convalescent Hospital, from March to August, 1917, and all the boards on mental cases. Generally speaking, however, one of the officers in charge of divisions presided, and was assisted by a member of the medical staff. It was not until May, 1919, that there was regular outside assistance, when Sir Thomas D. Gimlette, Surgeon Rear-Admiral, R.N., was posted here, at the instance of the Ministry of Pensions, until 21st October, 1919.

Personally I found the work very interesting. It gave me an opportunity of coming in close contact with the patients, both officers and men, which otherwise my time seldom permitted. It brought me in touch with the terrible experiences most of them had gone through; furthermore, instructive information of a reliable kind regarding medical administration and treatment abroad was thus obtained. I seldom found any tendency to malingering, nor do I think it existed in any appreciable degree, but my experience of nervous and mental disorders made me conscious of the constitutional unfitness of many of the patients for any form of warfare; and the resultant wreckage, more or less permanent, of the nervous system was apparent.

Summary.

Number of boards held on officers ...	...	1,976
Number of boards held on other ranks ...	...	3,034
Number of boards held on pensioners ...	...	448
Boards on patients from Woodcote ...	...	233
Dispersal boards ...	...	2,181
		7,872

The amount of clerical work and correspondence involved was considerable.

XIV

CHAPLAIN'S DEPARTMENT

"For all they that take the sword shall perish with the sword."

By these words, which were uttered on a memorable occasion, the Great Teacher is commonly thought to have forbidden war to His followers, and a good deal of utter nonsense was both spoken and written during the Great War regarding the so-called failure of Christianity. There are Christian sects which fulminate against all warfare, and we are familiar with the conscientious objector, many of whom are quite sincere when they put forward religious convictions as the basis of their abhorrence of military service. Yet Our Lord only uttered a sage saying, the truth of which none can gainsay. It is literally a fact, of which history from all times is an evidence. But does it, even with the injunction, "Put up thy sword," ban war? We read earlier that Christ forcibly cleared the temple of merchants. I wonder what weapon would have been used had the incident occurred in modern times, say in America, where, as likely as not, the buyers and sellers would carry guns in hip pockets? He would still have cleared the Temple and proclaimed its holiness.

So long as men sharpen swords, so long will there be war; and so long will men perish who draw them. If ever swords and guns are abolished, war will still continue, but with the tongue and pen, which can be almost as cruel. Strife and contention there always will be in this world, for the higher progress of mankind is impossible with a milk and honey existence, just as a blunt sword cannot be sharpened on a feather bed.

Religion, however, is essentially a personal matter, and never more so anywhere than on the battlefield. As a code of morality Christianity ought to govern the worldly policy

of nations, but it does not; it never has, and never will. For one thing, it has no cognisance of nations, only man, and as for the rest it is futile to speculate why.

Thus, it is not surprising to find that the Royal Army Chaplains Department concerns itself with the individual soldier only, and not with the fighting forces as a whole, and this fact forms the basis of its administration. It is the only section of the army which is not primarily directed towards the furtherance of fighting efficiency and overcoming the enemy—the true non-combatant service of the British Army. Civilians may beat the religious drum during war; some politicians, like Satan of old, may attempt to use religion for their own purposes; but the British Army does neither, which fact is something to be proud of.

Appointment and Posting of the Clergy.—When the war hospital commenced I received a letter of friendly advice from the Lord Bishop of Winchester, for which I was very grateful. It was early apparent that the Chaplain-General intended, as was his rightful duty, to assume responsibility for the spiritual welfare of the soldiers. He arranged that the three asylum chaplains should continue their duties, and that other army chaplains should be posted so that there should be one to every 500 patients. As already mentioned, the Free Church Minister, the Rev. J. Woodhouse, continued his labours as representing the United Board, and the Rev. Father J. Turner the Roman Catholic faith, while the Rev. J. M. Ferguson, M.A., and the Rev. F. E. England, B.D., were appointed by the Eastern Command Presbyterian and Wesleyan officiating clergymen respectively, and the Rev. S. Lipson became responsible for Jews in this respect.

The local Rector, the Rev. H. A. Bowles, M.A., gave all the help he could in the wards. The Salvation Army was represented by Mr. Gadd and Sgt. D. M. Steptoe, of Epsom.

Visit of the Chaplain-General.—The Chaplain-General, the Rt. Rev. Bishop Taylor Smith, D.D., visited the hospital on 23rd August, 1916, and expressed his satisfaction with all the arrangements I had made for the chaplains to exercise their duties. He was anxious that one of the chaplains should be resident at night time, and later I was able to carry out his wishes in this matter also.

Training Centre for Chaplains, C.E.—It was felt that a Senior Chaplain with army experience would be advisable in a hospital of this size, so Mr. Hockley was transferred to the Manor War Hospital, and the Rev. W. T. R. Crookham (2nd Class Chaplain to the Forces, C.E.), was posted here as Senior Chaplain, C.E. The Rev. F. S. Farebrother, M.A., who was appointed in April, 1916, took charge, Mr. Crookham becoming District Chaplain, C.E. Mr. Farebrother early endeared himself to both patients and staff, and it was with sincere regret that we said good-bye to him in June, 1918, when he departed for France. He was succeeded by the Rev. L. A. Hughes, M.A. On the arrival of Mr. Crookham the hospital became a training centre for chaplains, and no less than 51 army chaplains passed through it, and stayed for varying periods of time for duty and instruction.

Compulsory Attendance at Church Parade.—I had been pressed by the Senior Chaplain to take steps to enforce the attendance at church of the soldiers who were fit to go. I did all I could without issuing a definite military order. Never during the whole of my time did I on any matter weaken my authority and bring an Army Command into disrepute by issuing a military order I had not the means of enforcing. I would have needed a large detachment of R.A.M.C. orderlies and military police to carry out effectively the Senior Chaplain's wishes.

Curtain Controversy.—I am glad to say that the chaplains were all happy and comfortable here and their administration much appreciated, and their influence for good freely taken advantage of.

It is regrettable that an unfortunate controversy took place between the Sub-Committee of the hospital and the Army Chaplains Department at the War Office over the provision of a curtain to screen the chancel during the use of the chapel by other Christian religious bodies. The order received through the Senior Chaplain I passed on to the Sub-Committee, who were the body to take the necessary action. A long correspondence followed with the Board of Control and with the Major-General in charge of Administration. I need not enter into details, but as might be expected my

position was an unenviable one. The Major-General's chief anxiety was the correctness of my attitude to a military order, which I am sorry he had ever any doubts about. I was quite clear in my own mind that, according to the arrangements with the Army Council, it was the Sub-Committee only who could actually make the provision asked for.

It ended in the War Office withdrawing the request for a reason which never transpired. My chief regret was that hitherto at this hospital there had been in no instance any clashing of Military and Civilian Authorities, and the record I had hoped for throughout the war was thus broken. However, it is to the credit of the hospital that this was the only occasion when such *contretemps* occurred.

Death of Rev. D. Jenkins.—I regret to say that in March, 1919, the Rev. D. Jenkins fell a victim to duty and influenza. He was an orator of considerable merit, and completely absorbed in theology. I had many a long talk with him on religious matters and sincerely deplored his death.

Colonial Chaplains and Officiating Clergy.—The various colonial contingents were visited in addition, from time to time, by their own clergy. The officiating clergymen were very devoted to their duties and performed them entirely satisfactorily.

Religious Literature.—The grants of testaments and other religious books and literature from the British and Foreign Bible Society, Church Army, the Society for Promoting Christian Knowledge, the Y.M.C.A., and other religious organisations, were very helpful to the clergy in their work.

Summary of Chaplains' C.E. Work.—I am able through the kindness of the Rev. E. J. Hockley to give some details of the work done by the Church of England Chaplains:—

Services in Church	...	...	...	4,978
Holy Communions:—				
(a) In Church	...	...	...	19,805
(b) Bedside	...	...	...	2,375
Confirmations	...	...	...	849
Holy Baptisms	...	...	...	29
Attendances at deaths	...	...	...	198
Amount collected in church for military charities				
and the Chaplain's work, £289 17s. 9d.				

XV

ARMY EDUCATION

Education Officer.

Capt. G. M. Lloyd, M.A., M.Sc.

The Soldier and Education.—A remarkable fact impressed itself upon my mind during the time I was dealing with such a large number of men drawn from all sections of the community, and which I had hitherto hardly suspected, and that was how lightly scholastic knowledge, imparted during the elementary education, had imprinted itself upon the boy's mind. It would be incorrect to say that the men were uneducated; on the contrary, most of them were well informed, and many had a striking knowledge of worldly affairs generally. As a rule, there was no lack of conversational powers, but when it came to writing or putting down their ideas on paper, a great many failed miserably. Furthermore, a few simple questions on subjects taught them in their school days, and which for the most part would be answered readily by school children, would, I verily believe, have floored the lot of them. The soldiers used to hide their scholastic deficiencies very cleverly, and it was always open to question, when a soldier refused to sign a paper, whether the refusal was really grounded on the reason stated and not on a total inability to do so.

It is wonderful how well people can get on without even the apparently small amount of knowledge usually gained at school in early life. One soldier I remember, who, owing to partly physical and partly family reasons had escaped school altogether, and had never been to church until he joined the army, and could only read and write his name. This he could do beautifully but he understood it not, and when asked to write separately one of the letters forming

his name, in spite of attractive inducements, failed signally; yet he had earned good money working on a farm in Wales, had enlisted, and put his pretty signature to all necessary documents, and could converse about every-day affairs fairly intelligently. He could count money up to a shilling, but was quite at anybody's mercy over that amount. He was, of course, an exception; most of those who were partially or totally illiterate were so because they had forgotten, and had had no real necessity to keep alive the reading, writing and arithmetic they had been taught at school.

Conscription and Education.—Children are easily taught but few have the will to learn, which is another matter, and I believe that if schooling were mainly postponed until puberty was well established, and directly associated with the occupation it was intended to follow, education would then have a much better chance of surviving. Army conscription is an anathema in this country, but, if it is to come, it might with advantage be combined with education which could largely be postponed until service in the army commenced.

Bedside Occupational Work.—For many months previous to the army education scheme coming into operation, considerable bedside occupational work had been organised, and soldiers encouraged to employ their time in hospital usefully. Lady St. Helier and her assistants took this work in hand, and needlework, embroidery, paper bead-making, painting, toy-making, basket-making, watch-repairing, and similar light occupations became a feature of the wards. Materials were supplied by various sections of the British Red Cross Society and from the comforts funds, and any amount by the nurses and staff generally. It certainly did good and relieved the tediousness and monotony of the lives of those confined to the wards. It was, however, largely unproductive, and, in fact, a costly way of passing the time.

Lectures on Agriculture.—Provision had been made for the tea room to be used as a lecture room, and electric leads provided for lantern exhibitions, etc. During January, 1918, a series of interesting agricultural lectures were given

by Mr. A. E. Burgess, the Surrey County Superintendent of Agriculture. The holding of such lectures was thought very desirable by the War Office (14/Misc./8689 A.M.D2., 9th Dec., 1917). I wrote several reports on the matter which need not be quoted here.

Commencement of Army Educational Scheme.—I was convinced there was a real necessity for a thoroughly practical scheme of army education, not only for the good of the men as soldiers, but also for their betterment on return to civilian life. It was, therefore, with considerable interest I looked forward, in the autumn of 1918, to the commencement of an Army Education Scheme which I had seen announced in the Press.

Captain G. M. Lloyd, M.A., M.Sc., who had been on active combatant service in the East, was posted here on 28th November, 1918, as Education Officer, and he found in me a very sympathetic Officer Commanding. I gave him all the advice and help I could, and the fullest facilities for carrying out his duties.

Unfortunately, I was not here to actually see the later development of what was admittedly one of the finest army education centres in the country, but on my return I was more than pleased with the arrangements made and the fine results achieved. The educational work at this hospital was so highly thought of that, in February, 1919, it was nominated as the Training Hostel for Educational Instructors in the Eastern Command (E.C. No. 7/1588).

Army Education Scheme of September, 1918.—Much of this is abstracted from a report by the Educational Officer.

The objects of the army education scheme in hospitals were:—

1. To hasten the recovery by occupying the minds of patients and reviving mental interest.
2. (a) For normal patients, who suffered no permanent disablement, to provide courses of training likely to restore habits of concentration and otherwise, to be of use to them thereafter in their trade or calling.

- (b) For those discharged permanently disabled, to lay the foundation of the vocational training available for them after discharge under the Ministries of Pensions and Labour.

The term education in hospitals was to be understood in its widest sense. It was to cover:—

1. *General Education*.—English language and literature, history, geography, mathematics, foreign languages, etc.
2. *Commercial Training*.—Book-keeping, shorthand, precis writing, commercial correspondence, etc.
3. *Vocational and Occupational Training*.—Manual occupations to be encouraged, *e.g.*, carpentry, boot and shoe repairing, tailoring, basket-making, engineering, dental mechanics, hair-dressing, picture frame making, printing, etc.

In February, 1919, thirty-four instructors were appointed and thirty-two subjects taught. These instructors—both officers and N.C.O.'s.—were all recruited from the convalescent or discharged patients of this and the Manor War Hospital. This staff enabled the educational work to be organised into the following departments, each managed by a head officer instructor with assistant staff of officer and N.C.O. instructors:—

- (a) General Education Department.
- (b) Commercial Education Department.
- (c) School of Motor Engineering.
- (d) Musical Education Department.
- (e) Technical and Vocational Department.
- (f) Bedside occupational work.
- (g) Preparation for public examinations.

In consequence of the increase of the educational staff the instruction became more definite and vocational in aim, the purely educative phase not being eliminated. Thus, for example:—

- (a) Patients who had lost their right hand were taught to write with their left.
- (b) Training was provided for those who had lost skill, *e.g.*, in shorthand, typewriting, use of tools.

- (c) Tuition was given for the various examinations of public bodies, *e.g.*, London Chamber of Commerce, Royal Society of Arts, so that the patient could gain a certificate before leaving hospital.
- (d) Preliminary training was provided for those whose disablement necessitated a change of occupation, thus preparing for the training to be received later from the Ministry of Pensions.

In order that the patients might have full information concerning the arrangements made for their benefit by the Ministries of Labour and Pensions, an Information Bureau was established.

By the end of February the Army Educational Scheme was in full operation here, the foundations of a polytechnic had been laid, and education had become an organic part of the work of the hospital.

During the period March to June, 1919, there was continued progress and elaboration in all branches of the work. Demonstration material for practical and theoretical instruction was accumulated, *e.g.*:—

- (a) An educational library of 2,000 books, modern and adequate enough to prepare for all examinations, commercial and university, up to B.A. or B.Sc. degrees.
- (b) A complete two-seater Avro biplane, lent by the Air Ministry.
- (c) A complete wireless set, $\frac{1}{2}$ K.W., lent by the Marconi Mercantile Marine Company.
- (d) A motor car for motor tuition and driving, lent by the War Office.

The most important extensions of the education work during this period were the formation of:—

- (a) A School of Art, complete with studio and facilities for teaching all forms of drawing and painting.
- (b) A Choral Society, consisting of patients and staff, conducted by the Deputy Organist of Westminster Abbey.

In May arrangements were made with the Royal Society of Arts and London Chamber of Commerce for the holding

of their examinations in this hospital. On one occasion fifty patients sat down for examination. The results were highly satisfactory and indicated the high standard of tuition provided; thus, in one examination out of seventeen candidates thirteen gained distinction.

A study of the registers and records discloses the interesting fact that from March to October, 1919, when the scheme terminated, the average daily attendance at the classes was 50 per cent. of the up-patients in the hospital. In the education wards during the days of these months there was an average attendance of some 300 patients. The total number of patients who received organised instruction under the Army Education Scheme was 1,500.

Conclusion.—Captain Lloyd and his assistants are to be heartily congratulated on the success of their educational work; indeed, the hospital derived great benefit in many ways from the education department, for which I am very grateful. It was the one department in the hospital I saw close in October, 1919, with feelings of genuine regret.

XVI

THE AUXILIARY HOSPITALS

Inspecting Officer for Officer Commanding Central Hospital.

Major W. E. Nicholls Dunn, M.B. Lond., R.A.M.C. (28th April, 1917, to 5th May, 1919).

HORTON (COUNTY OF LONDON) WAR HOSPITAL became a "Central Hospital" *de facto* on 21st July, 1915, when I commenced my responsibilities to the A.D.M.S., Woolwich District, for St. Mary's Red Cross Hospital, Duxhurst, which had been established by Lady Henry Somerset.

Types of Auxiliary Hospitals.—Auxiliary hospitals were divided for administrative purposes into two types, "A" and "B," the former as a rule receiving its convoys direct, and able to deal with practically every class of case, the latter only able to receive patients in various stages of convalescence, or merely needing skilled nursing and ordinary medical attention. Some dealt with officers, the great majority had accommodation suitable for other ranks only. The larger proportion were Red Cross hospitals, but some were civil hospitals which had devoted either the whole or part of their accommodation to soldier patients, and a few though new establishments, preferred to be under the direct control of the Command.

Duties of County Directors.—The functions of the County Directors of the Territorial Force Association regarding the auxiliary hospitals varied in different counties, and, in fact, were not clearly defined until January, 1917, when Army Council Instruction 53, broadly speaking, made them responsible for all the internal economy of these hospitals if drawing capitation grants, except permanent civil hospitals, and a few special hospitals. The matter was

a good deal cleared up at a meeting of the County Directors, convened by the Hon. Arthur Stanley to meet the Director-General, on 19th September, 1916.

The primary duties of the Military Authorities, as regards military hospitals not administered by them, were inspections with a view to ascertaining whether the patients were adequately fed and treated, and needed hospital care and treatment. Prior to the issue of this Army Council Instruction, the degree of effective control depended a good deal upon the ability and tactful management of the military officer who represented the Army Authorities. It affected chiefly the A.D.M.S., and not so much the officer in charge of the central hospital.

Duties of O.C., Central Hospital.—All auxiliary hospitals were attached to some central hospital for military supervision, discipline of patients, and inspection. Auxiliary hospitals "B" received their patients from the central hospital. The officer commanding central hospital also supplied the clothing for the patients and sometimes other hospital stores, certified to the correctness of claims for capitation grants, conducted the military correspondence, made all military returns, and was responsible to the A.D.M.S. for medical treatment, diet, and good order generally.

It was my duty to inspect these hospitals at least once a month, and more frequently, if possible. I made a valiant attempt in the early days to find time for this but failed, and finally had to give it up as a regular duty. For a time the Registrar and divisional officers did this duty for me, but ultimately it was necessary to appoint an officer who could, if need be, devote the whole of his time to the auxiliary hospitals, and who would be solely under my control and report to me direct.

Major W. E. Nicholls Dunn, R.A.M.C., was selected as Inspecting Officer, and commenced his duties in April, 1917, after which my visits to auxiliary hospitals were limited to special occasions.

It will thus be seen that the military authorities were very fully alive to their responsibilities as regards the sick and wounded soldiers under treatment in auxiliary hospitals.

The military administration of the auxiliary hospitals, though I was relieved almost entirely of the routine inspections, involved considerable responsibility and took up a good deal of time. On the whole, it was congenial work, and interesting in that it brought me into close touch with a great variety of other hospitals and their varied activities. I was indebted to the medical officers of these institutions for considerable administrative help and much kindly consideration, and my relationships with them and the various commandants were always friendly and in many instances cordial. The visits I made I thoroughly enjoyed, and I was most courteously received. I did my best in return to help them generally and especially when in difficulties, and in this I was most ably assisted by Major Dunn, who was a thoroughly capable and loyal officer.

Proportion of Patients in Central and Auxiliary Hospitals.—Army Council Instruction 364, of 1916, laid it down that as regards hospitals not entirely chargeable to army funds, an endeavour should be made to always allot them a fair proportion of patients for financial reasons, although according to the military situation at the moment there might be many vacancies in hospitals entirely a charge on army funds. I always insisted upon this, but it was often difficult to keep them reasonably full. The situation in this respect as regards these hospitals, however, was somewhat relieved by the issue in December, 1916, of a special grant for every unoccupied bed where shown to be necessary to meet current expenditure.

St. Mary's Red Cross Hospital, Duxhurst.

Type "B." Beds, 100. Affiliated 21st July, 1915. Closed 28th Feb., 1916.

Founded by Lady Henry Somerset.

Commandant: Lt.-Colonel W. H. Sawyer.

M.O. in charge: Dr. John Walters.

Union Infirmary Kingston (Civil Hospital).

Type "B." Beds, 150. Affiliated 1st Aug., 1915. Military wards closed 22nd Jan., 1919.

M.O. in charge: Dr. J. Donald.

The wards allotted to soldier patients were of great value, as was also the work of the experienced permanent administrative officials. Originally, 150 beds were offered, but

only 100 were used until May, 1918, when the total accommodation set apart for soldiers came into use. For a time these wards were used as an adjunct to the eye department of the central hospital, and inspected by its resident ophthalmic surgeon.

Red House Red Cross Hospital, Leatherhead.

Type "B." Beds, 40. Affiliated 21st Sept., 1915. Closed 14th Feb., 1919.

Commandants: Dr. W. B. Dove and Miss Mabel Henderson.

Medical Officers: Dr. L. Potts; Dr. Von Bergen.

The Red House, Leatherhead, with extensive gardens, was lent by J. W. Burton, Esq., and opened its doors as a Red Cross Hospital on 21st October, 1914. Besides patients from overseas, local out-patients, pensioners, etc., were treated.

The Schiff Home of Recovery, Cobham.

Type "B." Beds, 21. Affiliated 28th Sept., 1915. Transferred 2nd Oct., 1919.

Commandant: Lt.-Col. J. W. Wray, I.S.C.

In February, 1919, the accommodation was raised to 61 by the addition of a new wing at the cost of £13,000.

The Ward Hospital, Reigate. (Private Hospital.)

Type "B." Beds, 18. Affiliated 28th Sept., 1915. Closed 15th Jan., 1919.

Matron: Miss Emerson Scott.

Medical Officer: Dr. J. H. Pegg.

This hospital came directly under the Command and owed both its origin and maintenance to the generosity of the Hon. Lady Ward.

Kitto Relief Hospital, Reigate. (Red Cross Hospital.)

Type "B." Beds, 26. Affiliated 28th Sept., 1915. Closed 31st March, 1919.

Commandant: Mrs. Margaret Hadley.

Medical Officer: Dr. A. Walters.

Formerly Mrs. Kitto's Free Convalescent Home, and founded over fifty years ago, it began to receive military patients on 9th November, 1914. The building and

grounds were lent by the Executors of the late W. C. Alexander, Esq., to whom the hospital was much indebted in many ways.

Epsom and Ewell War Hospital, Epsom. (Public.)

Type "A." Beds, 50. Affiliated 25th Sept., 1915. Closed 29th Feb., 1916.

Chairman: A. R. Glyn, Esq.

Medical Staff: Dr. T. A. Alexander; Dr. T. L. Braidwood; Dr. H. N. Coltart; Dr. E. C. Daniel; Dr. C. Ormerod; Dr. W. Thornely; Dr. E. N. Ryecart; Dr. W. H. Rayner; Dr. J. Ferguson.

Resident Medical Officer: Dr. W. Baly Peacock.

This hospital occupied the building attached to the Grand Stand, Epsom Race Course, lent by the Grand Stand Association. It was equipped and largely maintained by the Epsom and Ewell residents, and was opened on 21st September, 1914; a pioneer war hospital of its kind. Its earlier patients came direct from overseas, and, although strained to its utmost resources, rose splendidly to the occasion.

Nelson Hospital, Merton, S.W. (Civil Hospital.)

Type "B." Beds, 15. Affiliated 25th Sept., 1915. Military wards closed 29th June, 1916.

Hon. Sec.; D. D. Kirkaldy, Esq.

Medical Officers: Dr. Martin Randall; Dr. F. Deas; Dr. N. S. Bickford.

Wimbledon Hospital, Thurstan Road, Wimbledon.

Type "A." Beds, 32. Affiliated 4th Oct., 1915. Military wards closed 19th Feb., 1919.

Hon. Sec.: A. T. Burton, Esq.

Medical Officers: Dr. P. F. Barton; Dr. J. E. C. Bradley; Dr. J. A. Hayward; Dr. F. C. Chubb.

This hospital was authorised to receive convoys direct from overseas, and continued to do so during the whole period of its existence as an auxiliary hospital. Valuable assistance was given by the Hon. Secretary, who acted as Commandant, as regards reception and transport of the wounded from the station to the hospital and the organisation generally.

It was in receipt of the higher grant, and all the necessary special surgical and medical work was done by its own staff.

Piccard's Rough Red Cross Hospital, Guildford.

Type "B." Beds, 50. Temporarily affiliated from 6th Nov., 1915, to 3rd Dec., 1915.

Medical Officer in charge : Dr. H. A. Powell.

Relief Hospital (Red Cross), South Croydon.

Type "B." Beds, 20. Affiliated 22nd Nov., 1915. Closed 20th Dec., 1918.

Commandant and Medical Officer : Dr. W. T. Dempster.

Oaklands Red Cross Hospital, Cranleigh.

Type "B." Beds, 25. Temporarily affiliated 5th Jan., 1916, to 19th June, 1916.

Commandant : Mrs. E. L. Rowcliffe.

Medical Officer in charge : Dr. A. H. Walker.

Heywood Auxiliary Red Cross Hospital, Cobham.

Type "B." Beds, 21. Temporarily affiliated 28th Jan., 1916, to 11th Nov., 1916.

Commandant : Mrs. Armstrong.

Medical Officer in charge : Dr. J. L. W. Kitching.

Coulsdon and Purley Military Hospital, Purley.

Type "B." Beds, 30. Affiliated 1st July, 1916. Closed 29th March, 1919.

Medical Staff : Dr. R. M. Hugo ; Dr. S. D. Turner.

This hospital was one of the many results of the splendid work inaugurated by the Coulsdon and Purley Patriotic Fund, the report of which pays a well deserved tribute to the organising powers of the Hon. Sec., Mr. C. J. Barker. It was opened on 5th November, 1914, and continued its beneficent work throughout the whole period of the war.

Merstham Red Cross Hospital, Merstham.

Type "B." Beds, 30. Affiliated 1st July, 1916. Closed 10th March, 1919.

Commandant : Miss M. C. Broad.

Medical Officer : Dr. F. W. Robertson.

Hillfield Red Cross Hospital, Reigate.

Type "B." Beds, 50. Affiliated 1st July, 1916. Closed 31st Dec., 1918.

Commandant : Mrs. F. E. Keen.

Medical Officer : Dr. C. H. J. Watson.

This hospital not only treated cases from overseas, but was heavily used by local troops for severe illness, and worked to its full capacity.

Burntwood Red Cross Hospital, Caterham.

Type "B." Beds, 58. Affiliated 4th July, 1916. Closed 24th Feb., 1919.

Commandant : Mrs. C. Theodora Ward.

Medical Officers : Dr. W. Bligh ; Dr. S. Davey.

Prince of Wales Hospital for Officers, Staines.

Beds, 38. Affiliated 15th October, 1917. Closed 20th Feb., 1919.

Matron : Edith Barton.

Medical Officer : Dr. C. Bachelor.

This fine hospital, beautifully situated on the banks of the Thames at Staines, was the outcome of the generosity and patriotism of T.H. The Maharajas of Nawanagar and Patiala, and financed by them throughout the war. It nobly carried out the wishes of its founders and made good use of its fine equipment and appointments generally.

Commendation of the Work generally in Auxiliary Hospitals.—It would be difficult for me to single out any one hospital for special mention. No doubt the value of the work done in each differed, but every one of them, I can confidently say, did all they could to make the patients happy and comfortable. The medical treatment and nursing generally was of high order, and the small number of patients in each made individual treatment more thorough than in larger hospitals.

They all had their own worries and troubles, mainly administrative, and connected largely with the uncertainty of voluntary contributions, structural difficulties and make-shift arrangements. Those I visited were admirably managed, and gave one the feeling of being in a permanent hospital rather than a hastily organised temporary institution. I was favourably impressed with the self-discipline of the staff, largely voluntary and part time, and the obvious conscientious interest they took in their duties.

The work in the auxiliary hospitals was admirably done, and earned the well deserved commendation each received, on closing, from the Army Authorities.

XVII

TRANSPORT OF THE SICK AND WOUNDED

Convoys from Overseas.

AS a rule we received fair notice from the coast of the intention to despatch a convoy. It often happened, however, that the ambulance train was well on its way before any notification could be sent us, but the shortest notice always found us ready, and there was never any delay in receiving the patients. The message, when received at the centre, was at once put in writing and conveyed by an orderly to the chief officers concerned, who, after reading it, initialled it. This immediately set in motion all the administrative machinery for the reception of the convoy.

Reception at the Station.—The sitting-up cases were received on the ordinary platform, and transported to the hospital in large motors, as a rule supplied by Woodcote Convalescent Camp, but our own ambulances, soon after they arrived, were altered to carry either sitting-up or cot cases.

I have already sketched the arrangements for the transport of the sick and wounded from a special arrival platform at the London and South-Western Station, Epsom. The removal of the patients from the trains, and the loading up of the ambulances was performed by the hospital orderlies, in charge of Sergt.-Major Brown, the Inspector of Orderlies.

A detachment of the Epsom Police invariably attended, and gave valuable assistance as stretcher bearers. Their help was much appreciated, and their work kindly and skilfully carried out, and in keeping with the splendid work done for the war by the inhabitants of Epsom in many directions.

The Registrar, or his deputy, was always in attendance, and took over the patients from the M.O. in charge of the ambulance train. It is to the credit of Sergt.-Major Brown that he never missed a convoy, except when away from Epsom on leave.

Reception at the Hospital.—The Quartermaster supervised the unloading of the ambulances at the hospital. The chief resident surgeons and physician awaited the patients in the visiting corridor and allotted them to suitable wards. One of the chaplains and the House Steward or his representatives were also present.

The scene at the hospital was an impressive one and never lost its interest. The orderlies looked upon this work as a sacred duty, as was evident from their demeanour and behaviour. The skilled and tender way the patients were handled spoke more eloquently than words the heartiness of the welcome, and indeed it would have been a stony heart that was not touched by the sad spectacle some of them presented. Still, the soldiers on arrival were wonderfully cheerful, in spite of their physical condition, and obviously glad to be in "Blighty" again. Lord Rosebery, who saw the reception of a convoy at the hospital, was much affected, and said it was one of the saddest sights he had ever seen.

The time taken, as a rule, from the arrival of the train to the reception of the last patient in the hospital was, on an average, 60 minutes.

Arrival in the Wards.—The medical officers awaited the arrival of patients in the wards, and attended to all urgent cases. There were always temporary refreshments ready and a hot meal in course of preparation. As may be expected, the bath room was the first place sought by those fit, a luxury few of them had enjoyed for many a long day. Some, however, were too tired for anything, and after a hot drink immediately fell asleep. The chief surgeons and physician saw the patients later. At times it was necessary to operate at once, and the theatres were always ready for instant use.

The arrival of convoys will ever be an ineffaceable and precious memory to all of us.

Summary.—Over 30,000 officers and other ranks were received in the 227 convoys which arrived.

Year.	1915	1916	1917	1918	1919
No. of convoys ...	28	55	64	58	22
Average size...	160	132	118	130	164

Other Transport.

From the first, I decided that soldiers on discharge from hospital should be transported to the station, to make sure they commenced the first portion of the journey home and did not linger in Epsom to celebrate the occasion, as was the natural inclination. A few cases were unwise enough to leave the station and linger in Epsom, with disastrous results as a rule. They returned, or were returned by the police, intoxicated and without money, lost their furlough, and went straight to their depôts for correction.

We conducted practically all the transport to and from the auxiliary hospitals, an every-day occurrence, and brought in the local sick from the neighbourhood. The ambulances were never idle, and occasionally we had to seek the good offices of the Officer Commanding Woodcote Camp, and never in vain.

I cannot give the mileage run by the ambulances, but some idea can be obtained from the fact that they did roughly some 35,000 miles each.

Dr. Rotherham Loans his Car.—Dr. Arthur Rotherham, a Commissioner of the Board of Control, a former member of the Horton Asylum medical staff, early in 1915 offered his car for the use of the hospital. It was gratefully accepted and taken charge of by the A.S.C. (M.T.) detachment. It became the "staff car," and was used by the military officers when on official duty, inspecting auxiliary hospitals, visiting patients, etc.

The Quartermaster was the officer in charge of all the transport.

XVIII



ENQUIRY DEPARTMENT FOR MISSING SOLDIERS

Honorary Official Searchers in charge.

Harry C. Garcia, Esq., Barrister-at-law.

P. Leslie Waterhouse, Esq.

EARLY in the war the Enquiry Department of the British Red Cross Society and Order of St. John of Jerusalem for wounded and missing soldiers commenced its humane work, and its activities at this hospital will now be related.

One of the saddest features of this war, and one which caused an immense amount of worry and anxiety at home, was the uncertainty regarding those in the regions of active warfare who could not be accounted for, and whose fate was unknown to the Army Authorities. In such cases the minds of relatives and friends could not rest, hope for the best and dread of the worst alternating until life became well nigh unbearable. The publication in the illustrated press of any photographs of the wards or groups of patients was always followed by the receipt of a shoal of enquiries as to the identity of those depicted. Even now I still have letters from relatives of men recorded as missing, and in some cases officially regarded as dead, asking if I have any patient suffering from loss of memory who has not yet been properly identified. The prolonged state of suspense often resulted in an utter disbelief when definite news at last arrived that the supreme sacrifice had been made, and people go on hoping against hope that the beloved ones still live and will some day return.

Any means of gathering news of those regarded as "missing" was a blessing; work truly emblematic of the

great principles upon which the Red Cross Society was founded.

Notification of Admissions to Next of Kin.—It was the practice to distribute, at the port of arrival, Red Cross cards for the patients to fill in the names and addresses of their next of kin, which were handed to the Officer Commanding on arrival at the hospital, who was responsible for their despatch. In December, 1915, the Army Council substituted for the Red Cross card an official postcard known as A.F.W. 3229, which gave information regarding the facilities for visiting, and, when filled in, particulars of admission. The Officer Commanding the hospital became wholly responsible for one of these cards being posted to the next of kin, and failing this, to the Records office, for every soldier admitted from overseas (45/E.F./1964 C2. Casualties, 21st Dec., 1915). Thus the notification to friends of a patient's admission was put on a sound footing.

Enquiries Regarding those Missing.—One of the ways in which the Red Cross Society set to work to obtain news regarding those officers and men reported missing, or presumed dead, was to institute a register of these cases, and arrangements were made for collecting from the men in first-line hospitals any information they could give regarding the fate of brother comrades-in-arms. Official searchers were appointed to hospitals for this purpose. At this hospital the work of enquiry was commenced by Mr. Collier Jones, but at the end of May, 1915, owing to ill health, he had to cease his labours. He was succeeded by Mr. H. C. Garcia and Mr. P. Leslie Waterhouse, who carried it on continuously until March, 1919, assisted by other voluntary workers, the searchers in all averaging eight to ten in number.

Copies of the central register were issued monthly to the various centres of enquiry, where they were dissected and tabulated in units by the searchers. Soldiers on admission, who belonged to the same units as those in respect of whom enquiries were being made, were interviewed. It entailed a lot of labour, and much skilful examination and cross examination was required to arrive at the accuracy which was essential to the usefulness of the information.

Central Enquiry Office Established.—The enquiry work continued fairly satisfactory for some time, but the difficulty of securing interviews, owing to the absence of patients from hospital, and no proper organisation to overcome this, was a great obstacle to efficiency. I therefore in December, 1916, took the matter in hand and instituted a central enquiry office, opening into the soldiers' recreation room, for the use of the official searchers. Nominal rolls of patients up and about, with whom interviews were required, were sent to the sister in charge of ward, with orders from me for the patients named to attend at the central enquiry office, from 10.30 a.m. to 12.30 noon, on the days selected. Bed patients were interviewed in the afternoons. The office was also available to receive enquiries from men seeking information about any of their friends or relatives who were wounded or missing.

Appreciation of Work.—Mr. Garcia and his co-worker, Mr. Waterhouse, and those who assisted them, are to be congratulated on the success of their labours. Work such as theirs, so unobtrusively and efficiently carried out, is deserving of great commendation, and is an instance, and I fear not an only instance, in which charity in its highest sense flourished during the Great War almost unbeknown to, and unrecognised by, those to whom it must have been a source of great consolation.