MILLBANK AND THE FIRST WORLD WAR

During the First World War the site at Millbank occupied by both the hospital and the Army Medical College played a prominent part in providing medical care to the armed services.

THE HOSPITAL

Queen Alexandra’s Military Hospital (QAMH) was opened in July 1905 to replace the Guards hospital in London. The Chapel was added in 1909.

Before the hospital is discussed further it is perhaps prudent to give an insight in the number of beds available in military hospitals in the United Kingdom at the start of the war.

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>BED STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal Victoria Hospital</td>
<td>955</td>
</tr>
<tr>
<td>Royal Herbert Hospital</td>
<td>629</td>
</tr>
<tr>
<td>Cambridge Military Hospital</td>
<td>492</td>
</tr>
<tr>
<td>Connaught Hospital</td>
<td>472</td>
</tr>
<tr>
<td>QAMH</td>
<td>200</td>
</tr>
<tr>
<td>King George V Hospital Dublin</td>
<td>200</td>
</tr>
<tr>
<td>Alexandra Hospital Cosham</td>
<td>200</td>
</tr>
<tr>
<td>Devonport Military Hospital</td>
<td>200</td>
</tr>
<tr>
<td>Colchester Military Hospital</td>
<td>200</td>
</tr>
<tr>
<td>Curragh Military Hospital</td>
<td>200</td>
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</tbody>
</table>

HOSPITAL ACCOMMODATION, MAJOR MILITARY HOSPITALS 1914

(History of the Great War, Medical Services, General History Vol. 1, p.71)

During the war the hospital was designated number 19 Central Hospital and had 185 beds for officers and 301 beds for other ranks. Under its control it had fourteen other hospitals affiliated to it totalling 2230 officer’s beds and 850 beds for soldiers. These hospitals ranged from All Saints Hospital Vauxhall, Charing Cross Hospital, The Royal National Orthopaedic Hospital, University College Hospital and Westminster Hospital.
At the start of the war there were 7000 equipped beds in the UK with only 2000 occupied. By war’s end there were 364,133 beds of which 18,378 were for officers.

On 10th August all military hospitals were instructed to open to their fullest extent.

By the end of 1914 there were a further 5,229 beds added to the overall military hospitals.

Looking at the Admission and Discharge books for the QAMH tells us that it took a variety of cases. Surgical including gunshot wounds and wounds caused by shell fragments and also medical cases including trench fever and trench foot. The operating books shows quite a lot of fractured jaws, operated on by Sir Francis Farmer, a dental surgeon who had become something of an expert on fractured jaws as a result of treating soldiers wounded during the South African War.

During the First World War he worked at various hospitals including Millbank. In 1915 he was given an honorary commission in the Royal Army Medical Corps (RAMC) and in 1916 he was knighted for his work. He died aged 56 on Christmas Eve 1922.

There is a separate Admission and Discharge book for females and two more for United States Army Officers. These books are held in the National Archives in the series MH106.

In 1916 there were obviously plans to try to fit more beds into the space available and some temporary huts were set up between the hospital and the art gallery.

After the war the hospital did commemorate the part played by the Army Medical Services (AMS) by installing commemorative plaques in the chapel and a bronze which shows the line of evacuation of a wounded man from the front line to base hospital. This bronze is now in the AMS museum.

THE COLLEGE

With the start of the war the normal officer’s courses for Lieutenants on probation and the course for Captains qualifying for promotion to Major ceased at the college and the college concentrated on the production of vaccines and the investigation of various diseases and other work such as nutrition and water
supply in the field. Eventually in 1915 it would become the centre for the testing and production of gas protection.

At the start of the war the Commandant was Colonel Skinner but by early 1915 he had been replaced by Surgeon General Sir David Bruce.

**THE PATHALOGICAL LABORATORIES**

When war broke out there were enough pathologists serving in the (RAMC) but this would change as the war progressed but there was a requirement for more laboratory attendants and courses were initiated for RAMC orderlies to train as laboratory attendants, the course lasting nine months. These attendants could, later in their career gain further qualification and promotion.

The laboratories themselves were used as a central reference laboratory and laboratories in United Kingdom hospitals and abroad were encouraged to send material back to Millbank. The laboratories at Millbank also enjoyed close cooperation with the major hospitals in London.

As the war progressed a Pathological Committee was established under the Chairmanship of Sir David Bruce and also an Inspector of Laboratories, Colonel Simms Woodhead. Eventually in April 1918 the Advisor of pathology to the British Expeditionary Force (BEF) was recalled to act as such at the War Office.

During 1915-16 an epidemic of Cerebral Spinal Meningitis spread to parts of the UK. It was deemed necessary to establish a special laboratory service to deal with the special diagnosis tests and the special culture media required.

The Central Cerebral Spinal Fever Laboratory was set up at the college under Lieutenant Colonel Mervyn Gordon, a pathologist at Barts, who was appointed Consultant Bacteriologist in charge and granted the honorary rank of Lieutenant Colonel. The tasks of the laboratories included research, preparation of media and also running courses of instruction for hospital pathologists. This service later moved to the laboratories at Westminster Hospital.

**VACCINES**

There was a lot of work done on vaccines in the college especially against the enteric group of diseases. Since the South African War Typhoid vaccines had been improved by Almroth Wright so that by 1914 the vaccine was far superior to that used in South Africa. Typhoid was endemic in every theatre of war in August 1914 but Paratyphoid B was rare in England but was common in France and Flanders and some of the other theatres of war. Troops were not inoculated against Enteric until they proceeded abroad so that only a small number of the original BEF were actually inoculated in 1914. The number would eventually
increase so that approximately 90% of the BEF were vaccinated as they
mobilised and by January 1915 inoculation by triple vaccine was routine.

With regard to Cholera, in Mesopotamia and Egypt prophylactic inoculation
was carried out on British and Indian troops. The initial dose did not give
adequate protection so the dose of cholera bacilli was increased from 500
million to 1000 million, then 4000 & 5000 and eventually 10,000 million per
CC.

GAS WARFARE

Another aspect of the work done at Millbank was associated with gas warfare.

When gas was first used against the Allies just north east of Ypres in April 1915
there was no real protection for the individual soldier and something had to be
done urgently to find some sort of protection. The gas warfare defensive
department was entrusted to the RAMC and to the college.

In charge of this new field was the Professor of Hygiene Colonel William
Heaton Horrocks assisted by Major Percy Lelean and later by Professor EH
Starling. They set about with vigour to urgently try to find some form of
protection against this new horror.

Initially pads were made from anything to hand but very quickly the black
veiling respirator was produced.

Gas helmets were then devised to give more protection to the wearer and a
greater area of absorbency. There were major problems experienced with
finding material of the correct colour because dying was not possible. Other
problems were caused by the eye pieces cracking.

These helmets were followed by the Small Box Respirator in 1916

During all this time much of the testing was carried out using the staff including
Lelean, in what was termed the lethal chamber in the cellars below the college
and on the parade square.

In 1917 the Defensive Department was taken away from the college and
amalgamated with the Offensive Gas Department.

Whilst all this work was going on concerning gas protection there was much
other work taking place on the treatment of gas casualties.
SANITATION

As you would expect from the college there was extensive work done on sanitation. Lectures were given at the college and these became even more important with the formation of the Sanitary Companies. As the number of companies grew so did the lack of expertise of men joining the companies diminish, resulting in less experienced men enlisting. These were sent to the College for lectures on Sanitation in War. Commanding Officers were also encouraged to attend lectures on sanitation along with their quartermasters and these two and a half day courses were held at the end of the week resulting in 30 to 40 officers attending each course.

LICE PREVENTION

As the war settled into a war of trench habitation men began to suffer from various conditions peculiar to trench warfare including trench foot, trench fever and lice infestation. As early as 1914 experiments were conducted at the college using various anti lice powders composed of naphthalene 96 parts, creosote 2 parts and iodoform 2 parts. This was called NCI powder. This and many other powders were tested in the field but NCI powder was found to be the best insecticide against lice infestation and a dusting was recommended every four days. Solutions were also produced to impregnate clothing prior to wear but on the whole they were not a great success. These used solutions were based on Carbolic Acid.

Lt Colonel Monkton Copeman recommended the use of a paste made from crude naphthalene and soft soap. It was to be used to smear the seams in tunics and trousers and one application would last a week.

WATER SUPPLY AND BACTERIOLOGY

Water is an ever important commodity for the fighting soldier.

After the South African War a lot of work had been done at the School of Sanitation at Aldershot and at the college on methods of water purification, especially using active Chlorine, 1 part per million obtained from Chloride of Lime.

Most of this work was directed by Colonel Horrocks.

The 1908 pattern water cart was found to be totally unsatisfactory so a new field service water cart was designed.
A water testing case was also designed and manufactured and an officer from Millbank would go to the factory and randomly inspect these cases before they were despatched to the front.

As the war progressed and became somewhat static but with the local infrastructure breaking down abroad, larger water purification plants were required and much work was done on this at Millbank. Some of these plants were capable of treating 4000 gallons per hour.

RAMC Water Depots were formed at Brentford composed of chemists and RAMC orderlies and the men came to the college for instruction in water bacteriology and hygiene.

**NUTRITION AND FOOD**

Work had been done pre war on soldier’s food and analysis carried out by the college.

Captain RH Plimmer was the officer involved whilst a reader in Physiological Chemistry. As part of his work he analysed various food stuffs including beef, white fish and bread.

At the start of the war the scale of rations issued per man was:

<table>
<thead>
<tr>
<th>FOOD SUBSTANCE</th>
<th>QUANTITY</th>
</tr>
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<tbody>
<tr>
<td>Bread</td>
<td>1½ lb</td>
</tr>
<tr>
<td>Meat</td>
<td>1¼ lb</td>
</tr>
<tr>
<td>Tea</td>
<td>5/8 oz.</td>
</tr>
<tr>
<td>Sugar</td>
<td>3 oz.</td>
</tr>
<tr>
<td>Salt</td>
<td>½ oz.</td>
</tr>
<tr>
<td>Pepper</td>
<td>1/36 oz.</td>
</tr>
<tr>
<td>Mustard</td>
<td>1/20 oz.</td>
</tr>
<tr>
<td>Jam</td>
<td>4 oz.</td>
</tr>
<tr>
<td>Bacon</td>
<td>4 oz.</td>
</tr>
<tr>
<td>Cheese</td>
<td>3 oz.</td>
</tr>
<tr>
<td>Fresh vegetables</td>
<td>8 oz.</td>
</tr>
</tbody>
</table>

Yield: Protein 167 grams, carbohydrate 492 grams, Calories 4607

(History of the Great War, Medical Services, Hygiene of the War, Vol. 2, p.2)
On 22<sup>nd</sup> August the meat issue was reduced to 1lb and on ensuing months other components were reduced.

With 4,607 calories at the start of the war, by 1915 this had been reduced to 2,783 but the soldier did get 4d per man to purchase extra food locally to boost the calorific value.

The work on energy values and expenditure continued throughout the war including energy expenditure in relation to the soldier’s load carried.

There were also studies in feeding of patients and staff in the military hospitals and Colonel Horrocks and Lt Col Cathcart advised the War Office Economy committee and over the four years of the war the scales changed keeping in mind the rationing of the civilian population in the United Kingdom. In early 1916 the cost of feeding the patient was 2s – 2s 4d and this was reduced on 1<sup>st</sup> September 1916 to 1s 8d and eventually down to 1s 4d.

Lt Col Cathcart remained the military liaison officer with the Ministry of Food throughout the war.

At the same time work was done on the prevention of food deficiency diseases. In early 1916 Beriberi had occurred in 342 troops in Mesopotamia and a smaller number on the Gallipoli peninsular. Yeast & oatmeal were found to be successful as both a preventative and curative. Professor EH Starling was asked to report on the preparations of Yeast on the market and although he found a preparation in June 1916 Lt Col Monkton Copeman reported that Marmite had distinct advantages over yeast. Eventually a solidified preparation of Marmite was produced in ½ oz cubes. Marmite contained bacon fat resulting in it not being issued to Indian troops so a vegetable fat substitute was found.

To summarise, during the war both the college and the hospital worked tirelessly not only to treat casualties from both weapons and sickness but also working to find ways to prevent them diseases occurring.

The college produced vaccines, advised on nutrition, helped prevent soldiers suffering from gas attack and made sure water was safe to drink.

This legacy carried on at Millbank for many years afterwards.

Finally, there is one man associated with Millbank who should be mentioned, Harry Sherwood Rankin. He was already showing signs of being a brilliant researcher into tropical diseases and had previously worked with Sir William Leishman at the college. On the outbreak of war he was on leave from the Sudan Sleeping Sickness Commission but immediately volunteered to go to the front. He would lose his life in September 1914 gaining a VC at the same time.