WAR, EPIDEMICS, AND EMPIRE:
BRITISH MILITARY GOVERNMENT IN THE MIDDLE EAST, 1914-18

At the end of the First World War the British Empire reached its zenith. The secret wartime agreement between the French and the British (the Sykes-Picot agreement) carved up the Ottoman Empire into protectorates which allocated its former territories to the two European powers. The imperial possessions of Germany also passed into the hands of the Allies. But while the Empire was more extensive than ever before, and in some respects more meaningful in the eyes of its British subjects, it had been fatally weakened. The war had aroused nationalist sentiments in Ireland and the Dominions, and had caused great economic hardship in India. In the Middle East – in Egypt and in Britain's new protectorates – its dominion was contested and fragile.[1] This came as a surprise to those who assumed that the British would be welcomed as liberators. As soon as they captured territory from the Turks, British officials had begun the task of reconstruction, attempting to sow the seeds of empire, only to have them blown back in their faces. Although tolerated and even welcomed in some quarters, the British came to be regarded as infidels and oppressors. The reasons for this can be traced to some of the dilemmas of military government. The British Army and its Imperial allies required the assistance of the various populations of the Middle East in order to prosecute the war. Co-option of local elites was also vital if the British were to establish a long-term presence in the region. But the exigencies of war also demanded a level of intervention which simultaneously aroused expectations and fanned the flames of civil unrest.

Nowhere were these dilemmas more apparent than in the domain of public health. Sanitation and disease prevention were among the principal tasks of British military and civilian administrations in the Middle East. The influx of thousands of British, Indian, African and Dominion troops exposed them to danger in the form of infection from local 'reservoirs' of disease. Although their perspective inevitably varied from that of civilians, reformist elements in the local population sometimes sided with the British to gain improvements in their environment. However, others regarded British and Imperial troops as the causes of the disease and depravity which ravaged their societies. Another complicating factor was the presence of prisoners of war. Britain's humanitarian credentials, and its treatment of Muslims in particular, were called into question when scandals erupted over conditions in facilities run by the British. In what follows, I shall examine how the British authorities attempted to deal with this situation, balancing the requirements of the military against the wishes of the local populations and also, on occasion, civilian administrations. It will be shown that the British enjoyed some success in disease prevention and in their negotiations with local elites. However, they were also criticised for failing to do enough to preserve the health of Middle Eastern populations and POW. Some of their more insensitive interventions may also have alienated the populations over whom they ruled.

Before considering the measures taken in these theatres of the war, it is necessary to reflect on the nature of military medicine at this juncture and the history of the British Army overseas. In 1914-18, the prevention of disease was widely acknowledged to depend as much on measures taken outside the Army as inside it. Since the Crimean War, measures to promote hygiene inside military stations had been accompanied by legislation designed to erect sanitary boundaries between troops and civilians. The most

[1] Erez Manela, *The Wilsonian Moment: Self-Determination and the International Origins of Anti-colonial Nationalism* (New York & Oxford: Oxford University Press, 2007); David Fromkin, *A Peace to End All Peace: Creating the Modern Middle East 1914-1922* (London: Penguin, 1989).

infamous examples of this were the Contagious Diseases Acts of the 1860s, passed in Britain and its empire in an attempt to combat the persistent scourge of sexually-transmitted diseases, or venereal diseases as they were then known. But these were merely the tip of the iceberg. In India and many of Britain's colonies, similar legislation was enacted at around the same time in an attempt to prevent the spread of these and other infections. The Indian Cantonments Act of 1864 was a classic example, placing restrictions on the movements of troops and civilians, while enabling sanitary measures to be undertaken in the vicinity of camps.[2] The aim of this and similar legislation was to create a sanitary filter between European troops and the native population, reducing the threat posed by contact with the cooks, cleaners, and water carriers who went about their daily business in the barracks.[3]

While there was some basis for the fear of infection, sanitary measures expressed deeper anxieties about boundaries between civilian and military domains, and the maintenance of order within them. The creation of a professional army was seen to depend on its demarcation from the civilian sphere,[4] and, in the colonies, such concerns were sharpened by the belief that unregulated contact between soldiers and indigenous peoples was likely to provoke unrest. For these reasons, cantonments needed to be geographically separated from major centres of population. Infectious disease compounded these fears and was intermingled with them to such an extent that they became inseparable. First, there was the fear that soldiers would contract venereal infections from local women, and some even believed that the virulence of diseases such as syphilis would increase if they crossed the racial divide.[5] The second and more deadly threat came from epidemic disease, which was not only more fatal but had the capacity to alter, catastrophically, the balance of power. The Indian mutiny and rebellion of 1857-8 served as reminders of the dangers posed by disease among the civilian population. British troops besieged in Delhi and other Indian cities suffered severely from cholera, as did the forces sent to relieve them. Their vulnerability to this and other diseases led the Royal Commission on the Sanitary State of the Army in India, in its report of 1863, to recommend the creation of military cantonments and 'civil lines' at some remove from Indian dwellings.[6] Similar concerns were aroused during the war in South Africa (1900-02), in which at least 57,684 admissions to hospital and 8,225 deaths were attributed to typhoid. Critics inside and outside the Army, claimed that it had failed to heed the warning signs, which included severe epidemics among civilians and in British garrisons in the years running up to the war.[7]

In both cases, British military power had been badly undermined. But it was the Mutiny which provided the most relevant lessons for those involved in the government of

[2] Philippa Levine, *Prostitution, Race & Politics: Policing Venereal Disease in the British Empire* (London: Routledge, 2003).
[3] David Arnold, *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth Century India* (Berkeley: University of California Press, 1993); Mark Harrison, *Public Health in British India: Anglo-Indian Preventive Medicine, 1859-1914* (Cambridge: Cambridge University Press, 1994).
[4] Myna Trustram, *Women of the Regiment: Marriage and the Victorian Army* (Cambridge: CUP, 1994).
[5] Philippa Levine, 'Venereal Disease, Prostitution, and the Politics of the Empire: The Case of British India', *Journal of the History of Sexuality*, 4 (1994), 579-602.
[6] *Report of the Commissioners appointed to Enquire into the Sanitary State of the Army in India* (London: HMSO, 1863).
[7] Philip D. Curtin, *Disease and Empire: The Health of European Troops in the Conquest of Africa* (Cambridge: CUP, 1998), pp.208-9.

the Middle East, for it revealed the fragility of military power in climates which many regarded as inimical to European constitutions.[8]

These anxieties did not manifestly diminish over time and, in some respects increased as the new century dawned. The reasons for this are complex and cannot be ascribed to any particular theory or set of circumstances. However, two new elements of racial thinking have been noted in this regard. One is what might be loosely termed Social Darwinism, or the application of the theory of natural selection to the social realm. This led some to explain political and social hierarchies in terms of inherent characteristics.[9] Another component of racial thinking at this time was the germ theory of disease.[10] There was no intrinsic link between racial prejudice and the germ theory – or more properly germ theories – but they did provide a new idiom through which racial anxieties were expressed.[11] Native servants and camp followers were seen as bearers of invisible microbes to which they appeared immune but which were deadly to Europeans. This led to increasing emphasis upon the cleanliness of individuals and sometimes to restrictive measures designed to keep to a minimum the use of native servants and other personnel. Robert Caldwell's widely read work, *Military Hygiene,* first published in 1905, devoted many pages to the sanitary threat posed to British troops by Indian domestic servants. He regretted that their 'primitive mode of life commonly entails an almost complete disregard for ordinary acts of cleanliness, and a striking indifference to the most suitable locality for compliance with certain natural wants'.[12] Indians of the class employed as cooks and sweepers in military cantonments were, according to Caldwell, 'disseminators of the most repulsive forms of filth'. 'In India', he continued, 'the European must realise the fact that his food, his drink, his eating utensils ... his belongings generally, are habitually handled by human beings who are in a chronic state of excremental pollution'.[13] These sentiments were echoed by Captain E.C. Freeman, RAMC. 'Nothing seems more right and suitable to the native mind', he wrote, 'than that the same broom should attend to the cookhouse and the latrine'. India, according to Freeman, was 'little better than one huge latrine.'[14] Following such advice, many British regiments dispensed with their Indian cooks and domestic assistants.[15]

Perceptions of other colonised peoples were not dissimilar but it is possible to discern subtle variations. Sub-Saharan Africans were commonly portrayed as lazy and fatalistic, and as incapable of sanitary organisation except under strict European

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[8] Mark Harrison, *Climates and Constitutions: Health, Race, Environment and British Imperialism in India 1600-1850* (Delhi: OUP, 1999), p. 147.

[9] See for example: Paul Crook, *Darwinism, War and History: The Debate over the Biology of War from the 'Origin of Species' to the First World War* (Cambridge: Cambridge University Press, 1994); Michael Banton, *Racial Theories* (Cambridge: Cambridge University Press, 1998).

[10] See Micahel Worboys, *Spreading Germs: Disease Theories and Medical Practice in Britain, 1865-1900* (Cambridge: Cambridge University Press, 2000).

[11] See for example: Warwick Anderson, *Colonial Pathologies: American Tropical Medicine, Race, and Hygiene in the Philippines* (Durham & London: Duke University Press, 2006).

[12] Robert Caldwell, *Military Hygiene* (London: Ballière, Tindall & Cox, 1905), p. 43.

[13] Ibid., p. 390. The danger posed by sources of infection inside cantonments is also emphasised in E. Roberts, *Enteric Fever in India and Other Tropical and Sub-Tropical Regions: A Study of Epidemiology and Military Hygiene* (London, 1906), p. vii.

[14] E.C. Freeman, *The Sanitation of British Troops in India* (London: Rebman, 1899), pp. 8, 17.

[15] *Report of the Sanitary Commissioner with the Government of India* (Calcutta: Govt. of India Press, 1904), p. 21. For a more extensive discussion of military hygiene in India see Harrison, *Public Health in British India* & Arnold, *Colonizing the Body*.

supervision.[16] Egyptians, and what were indiscriminately termed the 'Arab' populations of the Middle East, were regarded with more ambivalence. They were generally thought more malleable than other African races and more capable of absorbing the basic principles of hygiene. Although they were said to dread responsibility 'as a cat dreaded water', it was thought that much could be achieved with proper tutelage: 'treat the Egyptians as if they were a nation of Boy Scout recruits', advised one RAMC man, 'start them right at the beginning of every elementary principle of honour, discipline, good-form, healthy hardihood of body and mind, and all the wholesome virtues', and healthy, compliant subjects would emerge.[17]

Effective management of colonial labour was therefore seen to depend on the 'essentially British quality of being able to tell one black man from another, to realise the fundamental divergences of character and temperament between the various coloured races, and to adopt his methods accordingly'.[18] But not all British officers were so discriminating, as one Sergeant-Major serving in Egypt observed:

> *The average Nabob from the Far East [here, meaning India] seems to regard his authority over the Native Orientals ... as dependent on the preservation of a demeanour compacted of frigid aloofness, suspicion, and contempt, the whole being reinforced by a carefully nurtured reputation for a ready resort to harshness, or downright brutality on occasion. But nothing of all this will do in Egypt, and the sooner we realise it the better. The pure-blooded Egyptian is at heart a child ... what we chose to make of him he will become. The most disastrous mistake we could make would be to attempt to rule him mainly by the rod ... because he is by nature essentially unwarlike, and therefore in the main, incapable of profiting in the right way by physical punishment*.[19]

The coming years were to show that claims to 'know' the subject populations of the Middle East were dubious and sometimes resulted in serious misjudgements.

Egypt

From 1914 to 1918, Egypt was the main base for operations in the Mediterranean and the Middle East, with the exception of Mesopotamia.[20] Since the controversial British occupation in 1882, Egypt had been an informal protectorate of Britain but was still nominally part of the Ottoman Empire. After the Ottomans declared war on the Allies in November 1914, a formal protectorate was imposed and the turcophile Khedive ‘Abbas Hilmi II was replaced by his uncle, the more accommodating Hussein, who took the title of sultan. Initially, a form of dual government was maintained, exercised through the

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[16] N.J.C. Rutherford, *Soldiering with a Stethoscope* (London: Stanley Paul, 1937), p. 120. On images of the black African in colonial medical texts see, for example: Megan Vaughan, *Curing Their Ills: Colonial Power and African Illness* (Cambridge & Oxford: Polity Press, 1991); Maryinez Lyons, *The Colonial Disease*; Shula Marks & Neil Anderson, 'Typhus and Social Control: South Africa: 1917-1950', in R. MacLeod & M. Lewis (eds.), *Disease, Medicine, and Empire: Perspectives on Western Medicine and the Experience of European Expansion* (London & New York: Routledge, 1988), pp. 284-300.

[17] Rutherford, *Soldiering*, p. 295.

[18] Serjeant-Major R.A.M.C. [pseud.], *With the R.A.M.C. in Egypt* (London: Cassell & Co., 1918), p. 292.

[19] Ibid., pp. 292-3.

[20] The latter is beyond the scope of this article.

Egyptian administration but the British soon imposed martial law and turned Egypt into a vast military base. Many British and imperial troops were stationed there: at Cairo, Alexandria, and on the banks of the Suez Canal, where they were relatively safe from Turkish arms. The only direct attack against Allied forces came in February 1915 and was easily repelled. These areas also contained the hospitals and convalescent camps to which sick and wounded troops were brought from Gallipoli, Palestine and East Africa. The sanitary regulation of Egypt was therefore vital to Britain's war effort but the country had long been notorious for infectious disease. From 1869, the public was reminded continually of Egypt's long association with pestilence following the opening of the Suez Canal. Cholera often arrived from India on board vessels bound for the Canal and the Red Sea and strenuous efforts were made by the International Sanitary Board at Alexandria to prevent its passage to Europe.[21] Although the threat from cholera had diminished by 1914, an older menace, redolent of Egypt's biblical past, had appeared once again. In 1899, plague returned to Egypt after ravaging Hong Kong and Bombay. Although the authorities were able to suppress it, its resurgence remained a distinct possibility.[22]

Plague did not rear its head immediately but there were numerous other problems to deal with. 'Within a few days of our arrival in Alexandria', recollected Richard Harman Luce, Assistant Director of Medical Services for the 2nd Mounted Division, 'a number of both officers and men were suffering from that strange dysenteric diarrhoea which attacks so many Europeans almost as soon as they set foot on that dry and dusty land.'[23] Intestinal disorders, mumps and measles were the diseases that most often afflicted British and colonial troops encamped in Egypt. Contemporaries attributed this partly to the medical services' inexperience of dealing with such large numbers of men; partly to sanitary indiscipline (especially among colonial troops); and partly to the filthy conditions surrounding cantonments.[24] One major source of danger was the food and water supply. In Alexandria, as in Cairo, the military camps were supplied by British-owned water companies, which were generally reliable. In the decade prior to the outbreak of war, filtration of water had contributed to a steady decline in water-borne infections among troops stationed in Egypt.[25] The problem arose with the influx of new troops who made free use of wells outside the cantonments. These were soon placed off-limits, though seldom with complete success.[26] Egyptian milk vendors were also prevented from selling their wares inside camps and Egyptians were forbidden from handling food or from entering cookhouses or messes.[27] During the first years of the war there were similar concerns about the contamination of water supplies with the bilharzia

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[21] The sanitary regulation of Egypt and the Haj is analysed in J. Baldry, 'The Ottoman Quarantine Station on Kamaran Island 1882-1914', *Studies in the History of Medicine*, 2 (1978); Nancy E. Gallagher, *Medicine and Power in Tunisia, 1780-1900* (Cambridge: Cambridge University Press, 1983); Mark Harrison, 'Quarantine, Pilgrimage and Colonial Trade: India 1866-1900', *Indian Economic and Social History Review*, 29 (1992), 117-44; Saurabh Mishra, *Pilgrimage, Politics and Pestilence:The Haj from the Indian Subcontinent, 1860-1920* (Delhi: Oxford University Press, 2011).

[22] Mark Harrison, *Contagion: How Commerce has Spread Disease* (New Haven and London: Yale University Press, 2013), pp. 185-8.

[23] Luce, 'War experiences', p. 284, RAMC 2031, Wellcome Library (hereafter, WL).

[24] Serjeant-Major R.A.M.C., *With the R.A.M.C. in Egypt*, p. 21.

[25] Philip D. Curtin, *Disease and Empire: The Health of European Troops in the Conquest of Africa* (Cambridge: Cambridge University Press, 1998), p. 145.

[26] Instructions for Senior Medical Officers and Medical Officers in charge of camps, Alexandria, 1916, pp.11-12, RAMC 1212/10, WL.

[27] Documents regarding water supply and sanitation, Egypt, 1914-18; memorandum on sanitary duties of officers in medical charge of units, RAMC 2052/4, WL.

parasite, since Egyptian peasants suffered greatly from the disease and there had earlier been cases among British troops. By the end of 1915, it was shown that the parasite could be eliminated simply by heating or chemically-purifying drinking water, so the incidence of this disease among the indigenous population gave less cause for concern.[28]

Other sanitary measures took longer to take effect. Private Charles Ammons of the 3rd London Mounted Brigade Field Ambulance recalled of Alexandria that:

> *Conditions in this vast military camp were deplorable; almost everyone on arrival was subject to acute attacks of diarrhoea but treatment was at a minimum and, indeed, to "report sick" was all but an offence in itself. I well remember the man who contracted the ear trouble otits medea who was sentenced for malingering but was treated, nevertheless, for the disease. Dirt was everywhere but personal cleanliness could be sought in the sea if nowhere else.*[29]

Responsibility for public health in the city was divided between military and civilian authorities.[30] This was not necessarily a problem, for in some areas of disease prevention a good working relationship was established between them. Most strikingly, the British were able to form an alliance with conservative sections of the Islamic and Christian communities in an attempt to suppress sexually transmitted disease.[31] But in other areas, co-operation was harder to achieve. Although the military was able to enforce sanitary discipline reasonably well within cantonments, it had to rely on civilian authorities to police their vicinity and provide them with essential services. The Alexandria municipality, for example, was charged with routine, daily sanitary work outside the perimeter of cantonments as well as the removal of kitchen refuse, ashes, manure, and night soil from barracks, camps, hospitals and other military enclosures. Unfortunately, the municipality was facing bankruptcy and was dismissing employees whose services it could no longer afford.[32] These economies were heavily criticised in both the English and Egyptian press, for in 1915 the city was facing a typhus epidemic, which spread rapidly among a population swollen by foreign troops, refugees and labour detachments. The municipality opened an isolation hospital for victims of the epidemic and the isolation of cases – 58 in all – arrested the outbreak within a few weeks.[33] But other sanitary measures were badly disrupted after the city's Health Officer, Dr Gotchlich, was sacked because of his German nationality.[34]

On top of this, the municipal authorities were facing allegations of corruption and indifference to the escalating sanitary problem facing the city. In August 1915, English language and some vernacular newspapers, such as *Wadi el Nil*, a non-aligned journal edited by a former government official, criticised the municipal commissioners and called upon them to:

> *visit the native quarters in the town and see how untidy and insanitary they are. It is not enough, gentlemen, that you should keep the streets where you reside clean*

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[28] John Farley, *Bilharzia: A History of Tropical Medicine* (Cambridge: Cambridge University Press, 1991), pp. 68-71; Capt. O. Teichman, *The Diary of a Yeoman M.O.* (London: T. Fisher Unwin, 1921), p.246.
[29] Memoirs of Pte. Charles Ammons, 3rd London Mounted Brigade Field Ambulance, p. 6, RAMC 1599, WL.
[30] Instructions for … Medical Officers in charge of camps, RAMC, p. 12, 1212/10, WL.
[31] Mark Harrison, 'The British Army and the Problem of Venereal Disease in France and Egypt during the First World War', *Medical History*, 39 (1995), pp. 149-56.
[32] *Egyptian Gazette*, 6 February 1915.
[33] *Egyptian Gazette*, 10 March 1915.
[34] *Egyptian Gazette*, 4 March 1915.

and well-lighted…. All the inhabitants of Alexandria pay taxes and there is no reason why you should not satisfy all the taxpayers alike.[35]

Other Egyptian newspapers also exposed corruption in municipal affairs. In 1917, *Al Afkar* accused some health officials of taking bribes to prevent prosecution for infringements of health regulations or for refusing to authorise burials unless paid a bribe. If none was received, the officials claimed the death was due to an infectious disease and placed the deceased's family in quarantine.[36] All of this occurred against the backdrop of continual fear of epidemics and actual outbreaks of typhus and smallpox in the provinces.[37]

An even more sensitive matter was the management of the Egyptian Labour Corps (ELC) and Camel Transport Corps (CTC), which lent vital assistance to the British Army in several theatres. The Egyptian government gave their permission for the recruitment of labourers to assist in the war effort in 1916, and over 50,000 men had entered the labour corps by December of that year. At the end of the war, the ELC numbered around 98,000 and the CTC around 96,000, all joining on contracts of three months for service within Egypt and six months for service overseas. By the end of the war, well over a million men had passed through their ranks. Their pay depended on their skills and was slightly higher for the Camel than for the ordinary Labour corps. Among the tradesmen enlisted were carpenters, blacksmiths, riveters, platelayers, wheelwrights, masons, plumbers and boatmen. As demand for labour increased, with impending operations in Sinai and Palestine, it became necessary to open large recruiting camps, the first of which was located in Assuit, Upper Egypt, in October 1916. The vast majority of Egyptian labourers (25,000) were employed in Palestine and the Lines of Communication with Egypt. Around 5,600 were stationed in the Canal Zone and the rest were sent to dockyards in Egypt or overseas. The largest overseas contingent was sent to France (9,072 men initially, 23,000 by the end of the war), 7,821 were dispatched to Basra and the rest to Salonika. The vast majority of the CTC served in Palestine. Unlike other colonial labourers, the Egyptians wore a distinctive uniform: a khaki outfit consisting of shorts and a smock, with 'ELC' emblazoned in red across the chest. They were given suitable headdresses and boots as the climate or the nature of their work demanded and in winter they were provided with underclothing and a military overcoat. When their contract expired, their uniform had to be returned for disinfection and re-use. Recruitment to the CTC was very similar but required men with different skills.[38]

Despite this regimentation, the labour corps remained a matter of concern for British commanders. As the *Egyptian Mail* put it, 'cleanliness was a word unknown to them and no sooner had the Egyptian hospitals been established when hundreds were admitted into them, no less than 80 per cent of the cases being 'relapsing fever' – a louse-borne disease resembling typhus, though less fatal.[39] More serious was the threat from plague and cholera, the latter having appeared among civilians and Turkish troops in Palestine.[40] Unlike cholera, plague had been present in Egypt for some time, but was now

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[35] Editorial of *Wadi el Nil*, quoted in *Egyptian Gazette*, 2 August 1915.
[36] Quoted in the *Egyptian Mail*, 10 October 1916.
[37] *Egyptian Mail*, 23 February 1917.
[38] *Sir Archibald Murray's Dispatches (June 1916-June 1917)* (London & Toronto: J.M. Dent, 1920), pp. 206-18, 2nd despatch, 1 October 1916.
[39] *Egyptian Mail*, 25 August 1916.
[40] Serjeant-Major R.A.M.C., *With the R.A.M.C. in Egypt*, pp. 179-80. The first case of cholera in the British Army in Palestine occurred on 7 August 1916, 3 days after the Turkish attack on the British position at Ramadi.

confined to certain provinces which did not directly threaten Imperial troops.[41] In April 1917, however, a case appeared among Indian soldiers, and soon afterwards there were outbreaks at stations along the eastern bank of the Suez Canal. No more than 85 cases were actually reported and they were largely confined to Indian troops and the ELC. Nevertheless, the prospect of a more serious outbreak remained.[42] The re-emergence of the disease also had grave implications for the vast engineering works being undertaken on the eastern side of the Canal. One of these was the construction of a pipeline to provide wholesome water to troops in forward areas. As Sir Archibald Murray, commander of the Egyptian Expeditionary Force emphasized in his dispatches:

> *The water question was especially pressing, since the stretch of desert east of Kantara was, for our purposes, practically waterless. The saline water of the local wells, though tolerable to the Bedouin and even to the Turk, is, as a rule, only a source of sickness to European soldiers; and European animals, even if they will drink it, rapidly lose condition if restricted to this water alone.*[43]

So vital was this pipeline, that any loss of manpower due to an epidemic, or even the rumour of an epidemic, would have been disastrous. As one RAMC man pointed out, it would have resulted in 'the total arrest of the stream of labour recruits to the district by giving it a bad name with the populace'.[44] These were prophetic words. In the coming months, following the outbreak of plague, the supply of labour dwindled and local authorities resorted to a corvée system, which created a great deal of resentment. Many men were pressed into service against their Turkish co-religionists, contrary to promises made by the British after their proclamation of a protectorate in 1914.[45] As these works were crucial to the success of the British campaign in Palestine, their maintenance was given the highest priority. As Murray explained, 'The necessity of combining the protection and maintenance, including the important work of sanitation, of this large force of workers, British and native, with the steady progress of the railway, roads and pipes which were vital to the success of my operations, put the severest stress upon all my energies.'[46]

Although labourers were recruited by the Egyptian authorities, recruiting officers were accompanied by a British medical officer who graded the workers' fitness. This was also true of casual labourers employed on shorter contracts by municipalities and other bodies for sanitary works.[47] In view of labour shortages, a reduction in physical standards was contemplated for a time before being rejected, except – seemingly – with regard to the infectious eye disease trachoma, in the case of the lowest class of labourers. The nature and consequences of this exemption are unclear but the near ubiquity of this infection probably made any such restriction impracticable.[48] As an alternative to relaxing other standards, the Army and the Egyptian authorities agreed to the recruitment of boys to perform certain, unspecified tasks.[49] This required a good deal of care and tact

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[41] *Egyptian Mail*, 4 April 1916.
[42] Serjeant-Major R.A.M.C., *With the R.A.M.C. in Egypt*, pp. 189-90.
[43] *Sir Archibald Murray's Dispatches*, p. 52, 2nd despatch, 1 October 1916.
[44] Serjeant-Major R.A.M.C., *With the R.A.M.C. in Egypt*, pp. 174-5.
[45] P.J. Vatikiotis, *The History of Modern Egypt From Muhammad Ali to Mubarak* (London: Weidenfeld & Nicolson, 4th edn., 1991), pp. 254-6.
[46] *Sir Archibald Murray's Dispatches*, p. 95, 2nd despatch, 1 October 1916.
[47] TNA, WO 95/4386, War Diary, ADMS Egyptian Hospitals, 1 June 1917.
[48] E.g. ibid., 19 June 1916.
[49] Ibid., 15 & 19 June 1917.

but it was recognised that the recruitment of such large numbers of Egyptians – teenagers and adults – was not only vital to the war effort but presented a tremendous opportunity to spread the gospel of hygiene.

Over the previous decades, there had been various attempts to disseminate propaganda about hygiene in Egypt in an attempt to familiarise its population with Western precepts. As in most colonial territories, this was considered to be important in cementing imperial rule. Increasingly, too, it was regarded as a justification for foreign domination, hygiene being a benchmark of good governance and humanity. Western ideas of hygiene were therefore taught in government schools in Egypt from the 1890s and various efforts were made to wean the population away from the 'charlatans' and 'impostors' who practised healing among the poor.[50] After the proclamation of a formal protectorate, these efforts intensified and newspapers began to report enthusiastically on initiatives for the teaching of hygiene in elementary schools. A reporter of the *Egyptian Mail* wrote in May 1916 that: 'We came away [from one school] feeling that good work had been done and wishing that a greater number of poor little Egyptians had the chance of acquiring such useful and practical knowledge.'[51] A contributor to *Truth* magazine, published by Palestinian Jewish émigres, supported these attempts to advance education and claimed that many Egyptians praised the British for lifting Egypt from the 'deep abyss of degeneration'.[52] Some vernacular publications agreed. The editor of the Anglophile *Al Mokattam*, one of the two most widely read Arabic newspapers in Egypt, urged the teaching of hygiene in schools and called upon the young to be the tutors of the next generation, replacing their ancient superstitions with science.[53]

The recruitment of thousands of labourers to assist the Army offered the prospect of educating an older generation, too. In August 1916, the *Mail*'s editor expressed the hope that 'the medical treatment which over 60,000 of the poorest Egyptians are now receiving, and the cleanliness and hygienic life they are taught to live will, when they go back to their homes and people, be a blessing to the country and might lead to a great improvement in their home life and public health'.[54] This optimism was shared by some members of the army medical services, reflecting the common view of Egyptians as malleable and potentially loyal subjects:

> *Every native who enters our service, and then goes back to his fellows, does so as a living illustration of the advantages of personal cleanliness, and with such a receptive, imitative people as the Egyptians, his example cannot but have far-reaching results. The Oriental who has acquired the daily habit of washing himself has already taken a great step along the road to Empire – or to British ideas of Empire, at least*.[55]

Others may have taken a more pessimistic view bit there was general agreement on the need for better medical and sanitary arrangements for the Labour Corps. The inadequacy of existing provisions had been highlighted during the Dardanelles campaign, in which thousands of soldiers and labourers fell sick with dysentery and other intestinal

[50] Timothy Mitchell, *Colonising Egypt* (Berkeley: University of California Press, 1988), pp. 99-100.
[51] *Egyptian Mail*, 6 May 1916.
[52] A. Zaroug, writing in *The Truth*, 9 March 1915, p. 2.
[53] Quoted in the *Egyptian Mail*, 6 April 1917
[54] *Egyptian Mail*, 6 May 1916.
[55] Serjeant-Major R.A.M.C., *With the R.A.M.C. in Egypt*, p. 301.

infections.[56] Among other things, there was a concerted effort to raise awareness of the dangers of fly-borne disease. Flies had been responsible for much of the dysentery contracted in Gallipoli and Egyptian newspapers placed their weight behind an empire-wide campaign against 'the spread of epidemics by insects'.[57] Up to this point, sanitary preparations for the labour corps still left much to be desired. 'We in the R.A.M.C. did our best for them', recollected one NCO, '... but in the absence of a properly organised medical system, exclusively devoted to these dusky hordes from the South, their sick- and death-rates mounted inconveniently high.' Once the sanitary problem in the Dardanelles became common knowledge, there was a serious attempt to rectify this situation and 'the whole problem of securing their [the labourers'] well-being while in our employment was thoroughly taken in hand'.[58] A separate section of the RAMC was created and a network of Egyptian hospitals and detention camps came into being, extending from the Canal Zone in the east to the Western Desert. Most of these hospitals were not permanent, except the larger ones at Ismalia and Kantara. Their establishment typically consisted of 19 medical officers, 14 non-commissioned officers and 50 Other Ranks of the RAMC, assisted by 60 'native doctors' (a mixture of fully qualified Western medical practitioners and medical students) and 400 Egyptian orderlies, or *termargis*.[59] By May 1917, there were 22 Egyptian Hospitals, as they were termed, the largest, at Kantara, having 750 beds. These hospitals included some specialist institutions, including cholera isolation units and a segregation compound (at Kantara) for those suspected of having infectious disease. The Egyptian Hospital Corps also provided sanitary gangs under the control of the RAMC.[60]

The officer in charge of these arrangements was the Assistant Director of Medical Services (ADMS) for Egyptian Hospitals, who was in frequent contact with the overall commander of medical units in the theatre, the Director of Medical Services (DMS) for the Middle East Force – later the Egyptian Expeditionary Force (EEF). The ADMS usually held the rank of Lieutenant-Colonel or occasionally Major. One of his most important tasks was the sanitary inspection of hospitals, labour camps, and refugee and POW camps.[61] The sanitary regime – on the whole – was extremely strict but the labourers, who were on short-term contracts, received far less in the way of instruction than many had hoped. Sanitary measures tended to be imposed with little explanation and entailed intrusive surveillance and harsh discipline. A soldier was always on duty at the native latrine as a policeman, for example, since it was believed that the danger of indiscriminate defecation, in the absence of 'strict policing and supervision', was very great. 'Natives' were forbidden from handling food or entering the cookhouse or mess.[62]

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[56] Mark Harrison, *The Medical War: British Military Medicine in the First World War* (Oxford: Oxford University Press, 2010), pp. 177-8, 193-7; Michael B. Tyquin, *Gallipoli: The Medical War – The Australian Army Medical Services in the Dardanelles Campaign of 1915* (Kensington: New South Wales University Press, 1993), pp. 109-24.

[57] *Egyptian Gazette*, 20 July 1915.

[58] Serjeant-Major R.A.M.C., *With the R.A.M.C. in Egypt*, pp. 278-9.

[59] Ibid., p. 281; *Egyptian Mail*, 25 August 1916; TNA, WO 95/4386, War Diary, ADMS Egyptian Hospitals, 30 May 1917, Appendix I.

[60] TNA, WO 95/4386, War Diary, ADMS Egyptian Hospitals, Appendix I.

[61] E.g. ibid., 20 and 28 June 1916.

[62] Documents regarding water supply and sanitation'; Capt. J. Davidson, 'Some practical methods adopted for the control of flies in the Egyptian campaign' & 'Memorandum on the sanitary duties of officers in medical change of unit', RAMC 2052/4, WL.

It is impossible to tell what labourers thought about such measures but it seems reasonable to conclude that some would have found them humiliating. The same can be said of the procedures they were forced to undergo on entering the labour corps:

> *recruits, on arrival, at once proceed to what is known as the 'Recruits Compound'. This is a walled-in enclosure, fitted with latrines, ablution-benches, shower-baths, cooking-places, and living tents... Here the men are detained until their turn comes for subjection to the very necessary processes of being washed and disinfected. Pending this, each man has his head close-clipped and his axillae and his pubes shaved; and then, usually within 12 hours of his arrival, he is ready to proceed with his squad to the disinfection station close by, carrying with him his blankets, and all personal effects. On arrival at the steam disinfector, he removes his clothing, wraps it, together with his belongings, in one of his blankets, and leaves the bundle to be dealt with by the disinfecting staff.*[63]

These measures were considered vital by the military medical authorities because it was assumed that all Egyptians were apt to carry disease.[64] However, British troops also faced weekly inspections for disease and disinfection when necessary.[65] The chief difference was that soldiers rarely underwent mass disinfection. The purpose of such measures would also have been explained to them or would have already been apparent. Egyptian labourers, by contrast, mostly lacked education in hygiene and came from a culture largely unfamiliar with Western ideas. Nevertheless, some RAMC staff claimed that the measures were welcomed by Egyptians and that many eagerly came forward for delousing.[66] Such accounts contrast starkly with the picture painted by imperial critics such as E.M. Forster, who later claimed that mortality remained high among the ELC and that no proper records were kept of sickness and mortality among them. He further claimed that conditions in the wards of the ELC hospitals were appalling.[67] The latter comment does not ring true of the majority of such hospitals, although there were no doubt times when they were hopelessly overcrowded. However, the official history of the Australian Army Medical Services provides some support for Forster's observations about persistently high levels of disease. It claims that Egyptian labourers in Sinai were usually infested with lice and that they were reluctant to undergo measures to remove them for (unspecified) religious reasons. Australian troops, too, were apparently unwilling to comply. Indeed, the author concludes that, 'To systematic delousing, as to every sanitary procedure, much active obstruction, and even more passive, was encountered, and had to be overcome.'[68]

If arrangements for disinfection were far from perfect and compliance less than willing, disinfection stations such as those established at camps in Alexandria and on the east bank of the Canal probably helped prevent the spread of diseases other than those carried by lice. For example, some doubled as quarantine stations for potential cholera

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[63] Serjeant-Major R.A.M.C., *With the R.A.M.C. in Egypt*, pp. 297-8.
[64] Diary of Pte. J.C. French, 24 November 1917, RAMC 1938, WL.
[65] Instructions for … Medical Officers in charge of camps, pp. 10-11, RAMC 1212/10, WL.
[66] Serjeant-Major R.A.M.C., *With the R.A.M.C. in Egypt*, pp. 297-9.
[67] E.M. Forster, 'The Government of Egypt', in Mohammed Shaheen, *E.M. Forster and the Politics of Imperialism*, (Basingstoke: Palgrave Macmillan, 2004), p. 175.
[68] R.M. Downes, *The Official history of the Australian Army Medical Services in the war of 1914-1918. Vol. 1, Gallipoli, Palestine and New Guinea. Part II: The Campaign in Sinai and Palestine* (Melbourne: Australian War Memorial, 1938), pp. 613-14.

carriers returning to Egypt from other theatres of the war.[69] Special measures were also imposed in labour camps whenever an epidemic was in progress. During outbreaks of plague, efforts were made to secure buildings against rats and to isolate cases of plague and their contacts. Such measures applied equally to Egyptian labourers and Indian troops, and reflected fears about the propensity of both these groups to spread the disease. As one RAMC man recalled: 'As each centre of infection became known, all troops were promptly withdrawn and sequestered in isolation camps, the sick men removed to plague hospitals, the 'contacts' to rigorous quarantine, and the post with everything it contained which was burnable was reduced to ashes'.[70]

Sinai and beyond

As the British moved towards Palestine in 1917, encountering the Ottoman Army and the region's impoverished, disease-ridden cities, infectious disease became a more serious problem. Apart from the enforcement of sanitary discipline among labourers and soldiers on active service, the military authorities were confronted with Turkish prisoners of war and a civilian population unused to British rule. Indeed, the towns and cities abandoned by the Turks resembled the fabled Augean Stable. At Al Arish in the Sinai Desert:

> *Human excrement, filth, garbage of all kinds, were heaped in every corner, and met the eye and nostrils at every turn. Turkish latrine pits, full to the brim with the accumulation of months, were spread indiscriminately over the whole town area... There was a plague of flies in the place and little wonder. The people were overrun with vermin. Smallpox was early discovered to be rife among them. Cholera was suspected ... We came into the place literally with our lives in our hands. Moreover, the thousands of inhabitants remaining there continued to befoul the public ways with their excreta under our very eyes, and thus added daily to the perils and difficulties of the situation.*[71]

As in the case of other towns in the Sinai peninsula, the cleansing of Al Arish was carried out promptly and rigorously. Maps of the town were prepared and the ground divided into sections, to which a sanitary unit was assigned. Each unit comprised locals under the charge of an RAMC officer. Their work began with the disinfection and burial of refuse and excreta, after which public latrines and incinerators were established. Use of the latrines was made compulsory on pain of severe penalties. At the same time, a house-to-house tour of inspection was organised, using a local doctor as an interpreter. Each house was cleansed and disinfected, as were the schools and other public buildings. Any cases of infectious disease were removed to an isolation hospital and their contacts to a detention camp. Afterwards, a permanent system of daily scavenging was established under the city's new military government.[72] Similar action was taken in other recently occupied towns as the army moved north.[73] However, it was recognised that sanitary order could not be imposed without co-opting key elements of the civilian population. In October 1917, an administrator was appointed to oversee civil-military relations, with an

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[69] Serjeant-Major R.A.M.C., *With the R.A.M.C. in Egypt*, pp. 179, 299.
[70] Ibid., pp. 187, 189.
[71] Ibid., pp. 140, 142.
[72] Ibid., pp. 142-3.
[73] General Report on the Medical History of 15th Division, 2 May-31 December 1918', RAMC 1186/2; Luce, 'War experiences', pp. 481, 577, RAMC 2031, WL.

office consisting of medical officers (British and Syrian) capable of speaking Arabic and other vernaculars.[74]

The EEF was clearly concerned about the prospect of resistance to the regulations which it put in place to prevent disease and to its efforts to vaccinate civilians against typhoid, cholera and smallpox. The Army had already encountered difficulties in Mesopotamia, where there had been stiff resistance to various types of sanitary intervention, particularly in Shia pilgrimage towns like Najef.[75] But there is no evidence of similar trouble in Palestine. This may reflect the virtual absence of local records of the early operations in Palestine or it may be that the overwhelming military presence of the British deterred violent protest. Likewise, one cannot discount the possibility that the local population willingly offered their support. In Al Arish, for example, 3,000 of the town's 3,700 inhabitants were induced to undergo smallpox vaccination on a voluntary basis. There, and in other towns in Palestine, the trust of the people may have been gained by acts of benevolence, such as the provision of food for their starving inhabitants.[76] Similar tactics were later employed in Jerusalem, which was found to be in a poor sanitary state when British troops entered the city. According to Lieutenant H.L. Milsom of the Somerset Light Infantry, there was no drainage of any kind; 'the streets were filthy, and there prevailed all manner of diseases in consequence'.[77] Cholera had visited Jerusalem in the recent past, trachoma and malaria were prevalent, and there were sporadic cases of typhus. Immediately after occupation in December 1917, No.115 Sanitary Section was ordered to begin cleaning the city and divisional medical units treated local civilians. Special field hospitals were also opened for the reception of infectious cases.[78]

In Jerusalem, perhaps even more than in Sinai, it was clear that sanitary progress would require the consent of the population, which was multi-ethnic and generally lacking in knowledge of modern hygiene. The military governor, Sir Ronald Storrs of the Egyptian Government Service, attempted to woo local support by established an orphanage in the city, among other things. His conduct won the admiration of Major-General Sir Richard Luce, RAMC (who became the Director Medical Services (DMS) of the EEF), according to whom Storrs' 'tact and knowledge of Eastern people and their ways established an equilibrium between the numerous conflicting interests – religious and racial – which made the management of Jerusalem so difficult and complex a business'.[79] In fact, considerable care was taken to secure the compliance of the civilian population in Palestine as a whole. As the cradle of Christianity and Judaism, the spotlight of the West was upon it and non-British medical units were also operating in the region. An American Zionist Red Cross unit was attempting to prevent the spread of cholera among the civilian population around the Sea of Galilee, for example.[80] In what is now Jordan, the British commander, Lieutenant-General Edmund Allenby, also set about winning the hearts and mind of civilians, directing his medical services to tackle

[74] TNA, WO 95/4386, War Diary of DMS, EEF, 23 October 1917.
[75] Harrison, *The Medical War*, p. 267.
[76] Serjeant-Major R.A.M.C., *With the R.A.M.C. in Egypt*, p. 144.
[77] Untitled MS, p. 25, Papers of Lt. H.L. Milsom, DD/SLI 20/3/15, Somerset Archives and Record Office.
[78] Eran Dolev, *Allenby's Military Medicine: Life and Death in World War I Palestine* (London & New York: I.B. Tauris, 2007), p. 102.
[79] Luce, 'War experiences', p. 542, RAMC 2031, WL.
[80] Ibid., pp. 542-3.

the twin problems of disease and destitution.[81] Civilians suffering from disease were often treated in the Egyptian hospitals established in forward areas, although the cost was sometimes borne by other organisations, such as the Syrian Refugee Fund.[82]

Allenby's intervention in civilian health was also intended to preserve that of his own army. He was keenly aware of its sanitary requirements and he knew that his force could not depend on sanitary discipline alone.[83] Indeed, as the EEF made rapid progress, it proved more difficult to attend to basic sanitary measures. Dysentery and other infectious disease began to increase, eventually to alarming rates. In November 1917, the DMS, EEF recorded in his War Diary that 'Today's report on the prevalence of dysentery is very disquieting, there being over 1,700 cases in the Force…'.[84] He called for a conference of senior medical officers and noted a consensus of opinion that the rise in cases was due to the relaxation of sanitary measures. The DMS accordingly urged that procedures be tightened.[85] A parallel problem was sanitation in the labour camps that were established as the EEF pushed north. In November 1917, for example, the DMS of the Egyptian Hospital Corps inspected railway construction facilities at Gaza where he found evidence of 'promiscuous defaecation' among labourers in the work-zone. No buckets or other receptacles had been supplied there, although sanitary conditions in the camp itself were better. The officer commanding the works promised to rectify the situation.[86]

Dysentery and other gastro-intestinal diseases among troops and labourers were a perennial cause of concern because of their capacity to reduce manpower. But this was not the only problem with which the EEF had to grapple. A more terrifying prospect was a full-blown cholera epidemic, which would not only reduce manpower through casualties but create panic throughout the theatre. Worrying signs of such an epidemic began to appear in areas over-run by the EEF during the hot weather of 1917. In late July, a suspected case of cholera appeared among Turkish POW at El Arish. The victim was subsequently confirmed and all the usual precautions – isolation of the case and suspects and close attention to water-supplies and hygiene – were taken.[87] Time-expired labourers were also prevented from being discharged while these restrictions were in place.[88] An outbreak of cholera among POW was prevented but there were still rumours of cholera among civilians. An RAMC officer was therefore ordered to implement measures for disease notification and prevention among the civilian population, referring cases of infectious disease among the latter to Egyptian hospitals if necessary.[89] In January 1918, several cases were detected not only among civilians in and around El Arish, but also among the ELC and CTC in these areas and, more worryingly, in Port Said, to which some labourers had returned.[90] For the remainder of the month and throughout February, cholera continued to be reported among local civilians and Egyptian labourers.

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[81] Allenby to Henry Wilson, Chief of the Imperial General Staff, 8 October 1918, in M. Hughes (ed.), *Allenby in Palestine: The Middle East Correspondence of Field Marshal Viscount Allenby June 1917-October 1919* (Stroud: Sutton, 2004), p. 204.
[82] TNA, WO 95/4386, War Diary, ADMS Egyptian Hospitals, EEF, 30 May 1917.
[83] Dolev, *Allenby's Military Medicine*.
[84] TNA, WO 95/4386, War Diary, DMS EEF, 8 October 1917.
[85] Ibid., 11 October 1917.
[86] TNA, WO 95/4386, War Diary, ADMS Egyptian Hospitals, 18 & 20 November 1917.
[87] Ibid., 20 July and 2 August 1917.
[88] TNA, WO 95/4454, War Diary of Eastern Force Troops – 'P' Company Camel Transport Corps, 25 July 1917.
[89] Ibid., 17 November 1917.
[90] Ibid., 3-17 January 1918.

The recently appointed British High Commissioner of Egypt, Sir Reginald Wingate, feared that cholera would ravage the country and requested that a quarantine be imposed on all Turkish POW and Egyptian labourers passing from the east to the west side of the Canal. But the EEF's priorities were rather different from those of the Egyptian government. While it was also concerned about the spread of disease, it was anxious to avoid restrictions on mobility. The DMS, Colonel Keble, thought such measures unnecessary unless cases of cholera were actually detected among groups of men sent back to Egypt and managed to persuade the Deputy Adjutant General of this. He also pointed out the impracticability of such a measure, for 10,000 contract-expired labourers passed weekly from one side of the Canal to the other. To place such a number in quarantine, he warned, 'would be a large charge on Army Funds and in addition would seriously affect the recruiting of the ELC'.[91] This was one of many disagreements between the Army and the Egyptian government, but it appears to have been the chief focus of concern at the end of 1917 and the beginning of 1918. In response to repeated calls from the government to discuss quarantine, Allenby declared that he would only accept the conclusions of such a commission if they were approved by Keble and were acceptable to the Army. As Keble recorded, 'As an axiom the C.-in-C. laid down that if quarantine measures interfered in any way with the movement of troops he would not have it, and Egypt must suffer, as his first thought must be to the defeat of the enemy.'[92]

This did not mean that either Keble or Allenby were negligent. As an alternative to general quarantine, which would have been extremely impractical, surveillance of troops, labourers and civilians in occupied areas was intensified. So-called refugees arriving in villages near army camps – many of whom appear to have been Turkish deserters – were examined to see if they were carrying cholera. Those found to be infected were sent to Egypt as POW and placed in special isolation hospitals. In addition, the usual sanitary precautions in forward areas were enforced.[93] Although quarantine was not generally imposed in the Canal Zone, all returning labourers and POW were inspected and segregation compounds expanded in order to house men while they awaited inspection. Sick men and carriers were taken to a separate compound. These facilities were paid for by the Egyptian Public Health Department but were under the administrative control of the RAMC.[94] Even after operations ceased at the end of November, no general quarantine was imposed. Medical inspection and segregation were carried out but with huge convoys of labourers returning to Egypt every few days, formal quarantine – which would have involved detention for at least 10 days – was impossible.[95]

Another problem confronting the imperial armies in Palestine and Syria was malaria. Malaria wreaked havoc in several theatres of the war, not least in Salonika, from where some divisions were drawn for the Palestine campaign. But Allenby made the prevention of the disease a priority and enjoyed a greater degree of success in this respect than his counterparts in other theatres. By 1917, British military doctors had concluded that quinine prophylaxis was of little use, having signally failed in Salonika.[96] Their attention turned back to the anti-malaria operations pioneered in India during the early years of the century, following Ronald Ross's discovery of the mosquito vector of the

[91] TNA, WO/95/4386, War Diary, DMS EEF, 5 December 1917.
[92] Ibid., 8 November 1917.
[93] Ibid., 6 January 1918.
[94] Ibid., 15 January 1918.
[95] TNA, WO 95/4749, War Diary of No.14 Egyptian Detention Hospital, 3 December 1918.
[96] Harrison, *The Medical War*, pp. 228-61.

disease. Ross, who was an itinerant advisor on malaria during the war, advocated measures such as drainage, the oiling of waters, and other expedients to kill mosquito larvae. With this in mind, Allenby engaged thousands of labourers on anti-malaria operations in the notoriously malarious Jordan Valley. Through these operations, the valley, according to Allenby, had become 'almost a summer health camp' and it was only after his force crossed into Turkish territory that it began to suffer severely from malaria.[97]

Allenby was determined that his men should treat the people of the Middle East with respect and he dealt severely with attacks on civilians. Yet he was unable to prevent brutality towards the labourers engaged in anti-malaria operations in Jordan. W. Knott, a nursing orderly who served in the Middle East, recorded in his diary that 'The treatment of these Egyptians is a scandal, they talk about modern civilization and abolishing slavery, yet these men have taskmasters paid by the British Government to whip them like dogs with long leather whips. Even the British and Australians bully them mercilessly.'[98] The harsh treatment meted out to Egyptian labourers inflamed the resentment which many already felt towards the British on account of the corvée; the same was probably true of the heavy burden of sickness and the strict regulations with which they were forced to comply in order to prevent these diseases from spreading. Reports of harsh discipline and other indignities filtered back to Egypt and circulated widely in rumours and songs.[99] For most of the war, these grievances remained latent, inducing false optimism about the prospects for British rule in Egypt. In 1917, Alfred Milner, formerly an architect of British expansion in South Africa, declared that 'Egypt will in future be as much a part of the British Empire as India or Nigeria'.[100] Similar hopes were entertained for other parts of the Middle East. But through the imposition of what was, in effect, a form of conscription, as well as through the requisition of crops and other materials, Egyptian nationalism was transformed from an elite preoccupation into a popular cause, contributing to the unrest which erupted at the end of the war and the insurrection of 1919. Broad-based opposition to British rule and a strong current of international anti-colonialism forced Britain to relinquish its hold over most of Egypt in 1922.[101]

The Hedjaz campaign

If the sanitary administration of civilians in Egypt and Palestine called for a degree of tact, this was no less essential in the case of the Arabs who had been encouraged to revolt against the Turks by the British. The relationship between the two sides was characterised by mutual suspicion and a good deal of money and diplomacy was required to maintain this arrangement. Furthermore, in October 1917 an outbreak of cholera in the newly-occupied town of Aqaba threatened to put a premature end to the guerrilla campaign begun by Sherifian and Hashamite forces, operating in conjunction with Major T.E. Lawrence of the Arab Bureau. The disease was thought to have been brought into the port

[97] Allenby to Wilson, 22 October 1918, in Hughes, *Allenby*, p. 210; Mathew Hughes, *Allenby and British Strategy in the Middle East 1917-1918* (London: Frank Cass, 1999), p. 65.
[98] Diary of W. Knott, 31 October 1917, p. 305, IWM.
[99] Stuart Hadaway, *From Gaza to Jerusalem: The Campaign for Southern Palestine* (Stroud: The History Press, 2015), chap. 6; Mak Lanver, *British in Egypt: Community, Crime and Crises 1882-1922* (London: I.B. Tauris, 2012), p. 212.
[100] Quoted in Keith Jeffery, *The British Army and the Crisis of Empire 1918-22* (Manchester: Manchester University Press, 1984), p. 111.
[101] M.W. Daly. 'The British Occupation, 1882-1922', in M.W. Daly (ed.), *The Cambridge History of Egypt*, Vol.II (Cambridge: CUP, 1998), p. 249; Manela, *The Wilsonian Moment*, chaps. 5 & 7.

by ‘some wandering Arab tribes’.[102] On hearing this, the DMS, Colonel Keble, immediately dispatched a British medical officer, Captain Willmore, together with two other RAMC men.[103] Their orders – which were not initially stated in Keble’s War Diary – were apparently to make recommendations concerning the health of British troops. Keble was clearly concerned not only about the consequences locally but also about the reaction of the Egyptian government, in view of its anxiety over cholera. By 22nd October, the disease had claimed 19 Hashamites and 5 members of the Sherifian Army, as well as many cases among the civilian population of Aqaba.[104]

After inspecting the town, Willmore attributed the spread of cholera to the 'multiplicity of open wells and complete lack of discipline' among the Arab forces. On hearing his opinion, Colonel Joyce, the officer commanding British troops in Aqaba, removed them from the infected area and placed the ‘native town’ out of bounds. However, Willmore also wired Cairo requesting a 200-bed cholera hospital and several thousand doses of vaccine for the irregular forces fighting with the British.[105] This sounded the alarm in Cairo because Willmore had no authority with respect to the Sherifian or Hashamite forces. Furthermore, it transpired that he had persuaded them to adopt precautionary measures. Lawrence had assisted in the discussions and the Sherif, Faisal, whom Willmore described as 'remarkably enlightened in his views', was apparently 'anxious to do all in his power to combat the epidemic'.[106] Willmore accordingly drew up a list of recommendations, including the sealing of wells, the establishment of quarantine camps, the institution of a Sherifian sanitary squad, and the placing of Aqaba out-of-bounds to Sherifian troops. Willmore acknowledged that such measures would be difficult to enforce at first but had no doubt that Faisal would appreciate their necessity. He further recommended that a number of Sherifian medical officers be sent to Egypt for training in 'modern methods of camp sanitation'.[107]

Willmore’s dealings with the Sherif were conducted in respectful terms but GHQ feared that his interference in the affairs of the Sherifian Army would jeopardise its new and increasingly successful alliance with the British. After being informed of Willmore’s actions, Keble conferred with the Deputy Adjutant General and the chief liaison officer for Arab troops who both replied to the effect that Willmore had exceeded his authority, as he had received no authority to make any recommendations to the Sherif.[108] Willmore was instructed to 'confine [his] activities to bacteriological work in connection with safeguarding the health of British, Egyptian, Indian and French troops.... Advice to the Sherif or his officers is outside your sphere'.[109] Although Willmore noted that the Sherifian medical officers were 'extremely jealous of any interference with what they are pleased to consider their own professional prerogatives and their professional honour', he believed that Faisal's support would ensure that any initial difficulties would be overcome.[110]

Despite his disquiet at Willmore’s actions, Keble sent a sanitary squad to the area and, as Willmore had requested, 15,000 doses of cholera vaccine ‘for the use of the

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[102] TNA, WO 95/4386, War Diary, DMS, EEF, 19 October 1917.
[103] Ibid., 10 October 1917.
[104] Ibid., 26 October 1917.
[105] Willmore to Lt.-Col. P. Fowler, ADMS Sanitation EEF, 18 & 22 October 1917, RAMC 1866, WL.
[106] Willmore to Fowler, 22 October 1917, RAMC 1866, WL.
[107] Willmore to Faisal, 23 October 1917, RAMC 1866, WL.
[108] TNA, WO 95/4386, War Diary, DMS, EEF, 26 October 1917.
[109] Naval signal, Q.230, undated, RAMC 1866, WL.
[110] Willmore to Fowler, 24 October 1917, RAMC 1866,WL.

Hedjaz Army'.[111] However, Keble also dispatched Lieutenant-Colonel Stammers, RAMC, to conduct an investigation and to 'put Capt. Willmore's actions on a proper basis'.[112] Stammers censured Willmore but the latter insisted that his written instructions, issued at the beginning of the outbreak, had not forbidden him to have contact with the Sherifian army. Moreover, the position in Aqaba was such that 'by no means could the health of British, Indian and French troops be protected without involving the bigger question of the health of the Arab and Bedawin [sic]'. He maintained that no action had been taken without first securing the permission of the officer commanding at Aqaba and the approval of the Sherif. Finally, Willmore emphasised that

> *the conditions existing in this isolated corner of the war are so entirely different to those in any other sphere that, in my opinion, they can only be visualised by the 'man-on-the-spot', and that the best justification for my actions ... has been, and is, the marked decrease in, and now the almost complete extinction of, the choleraic epidemic*.[113]

Willmore had a temporary commission and one can detect some frustration in his dealings with his superiors, most of whom were of the Regular Army. GHQ seems to have regarded him as a liability and he seems to have been recalled from the theatre. Nevertheless, he left a positive impression on most of those who had worked with him. Colonel Joyce, the officer commanding Aqaba, endorsed Willmore's account and supported him when facing Stammers' inquiry. According to Joyce, Willmore had operated through him at all times and had succeeded in gaining the confidence of Faisal and his medical officers. Most of the recommendations that Willmore made also appear to have been carried out, in Aqaba at least.[114]

The measures taken at Aqaba seem to have brought the epidemic under control but there were still occasional rumours of cholera in the Hedjaz Army. As these had not been confirmed, Keble saw no need to request a halt to the planned advance from Aqaba.[115] His main concern at this point was the prospect of the disease spreading across the Red Sea to Egypt. On 28th October HMS *Hardinge* arrived at Port Said from Aqaba with a suspected case of 'para-cholera' on board. Keble was sure that this was true cholera but the local authorities were loath to admit it, for the International Quarantine Board regulations prohibited any case of cholera from landing. In view of this, Keble thought it wise to place all POW and other personnel from the Hedjaz in the segregation camp at Suez.[116] A small cholera hospital was created in which contacts of the 'para-cholera' case were placed. These arrangements were not altogether to the liking of those who had disembarked the vessel and the chief medical officer at Suez requested Keble's permission to reduce the quarantine of officers from 10 days to 5. But Keble was determined that no exception should be made on grounds of rank.[117] Most likely, he was concerned about the impression that this would make on the Egyptian government.

Prisoners of war

[111] TNA, WO 95/4386, War Diary, DMS, EEF, 13 November 1917.
[112] Ibid., 26 October 1917.
[113] Willmore to Lt.-Col. G.F. Stammers, DMS EEF, 4 November 1917, RAMC 1866, WL.
[114] Joyce to Stammers, undated, RAMC 1866, WL.
[115] TNA, WO 94/4386, War Diary, DMS, EEF, 15 November 1917.
[116] Ibid., 28 November 1917.
[117] Ibid., 1 December 1917.

Although the British had some success in enlisting the peoples of the Middle East in their campaign to prevent disease, there was an additional factor over which they had little control: the Turkish Army. 'We were not afraid of their guns', recalled one RAMC man, 'but we did entertain a wholesome dread of disease infection through their agency. Moreover, the peril from the latter must increase in direct ratio to the success of our arms. Every prisoner we took, and every deserter that came over to our side, was a potential carrier of disease-germs.'[118] A demonic figure since Gladstone's condemnation of the massacre of Christians in the Ottoman Empire the in 1870s and '90s, the Turk seemed to epitomise the despotic and insanitary Oriental. From its inception, the British sanitary movement was closely intertwined with Christian morality and there were many people who considered cleanliness a peculiarly Christian virtue.[119] These prejudices appeared to be confirmed by the insanitary state in which the Turkish army left many of its positions and the high incidence of disease among captured Turkish soldiers.[120] Indeed, the Ottoman Army was one of the few combatant nations to experience more fatalities from disease than from battle.[121] Typhus – greatly feared because of its high case fatality rate – was in evidence throughout the war, as were cholera, dysentery and malaria.[122] In its final year, they were joined by severe influenza. One medical officer in Damascus recorded some 200 cases of the disease among Turkish POWs in the space of three days.[123]

The Ottoman Army was not, of course, alone in suffering the ravages of influenza but, on top of an already heavy disease burden, it proved crippling. Dealing with these many problems also placed an enormous strain on the British authorities. General Allenby recorded in his dispatches in early October 1918 that among the 25,000 POW currently held in Damascus many were suffering from malaria, typhus, cholera and other infections. Little could be done for them owing to the shortage of motor ambulance lorries which might have enabled them to be evacuated to hospitals outside the city.[124] In *Seven Pillars of Wisdom*, Lawrence describes how the new Arab government attempted to deal with the situation by forming sanitary squads and sending medical staff to the hospitals. The latter were in short supply, as were drugs and medical equipment.[125] Turkish prisoners were also in a pitiful, disease-ridden state. As Lawrence recalled of the improvised hospital at Beramke Barracks:

> *I stepped in, to meet a sickening stench: and, as my eyes grew open, a sickening sight. The stone floor was covered with dead bodies side by side, some in full uniform, some in underclothing, some stark naked. There might be thirty there, and they crept with rats, who had gnawed wet red galleries into them. A few were corpses nearly fresh, perhaps only a day or two old: others must have been there*

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[118] Serjeant-Major R.A.M.C., *With the R.A.M.C. in Egypt*, p. 173.
[119] The religious dimension of Gladstone's politics is explored in David W. Babbington, *William Ewart Gladstone: Faith and Politics in Victorian Britain* (Grand Rapids, Michigan: Erdmans, 1993). See also Christopher Hamlin, 'Providence and Putrefaction: Victorian Sanitarians and the Natural Theology of Health and Disease', in P. Brantlinger (ed.), *Energy and Entropy: Science and Culture in Victorian Britain* (Bloomington, Indiana: Indiana University Press, 1990), pp. 93-123.
[120] 'Medical History of 15th Division; operations around Ramadi, 16 September-30 April 1918', RAMC 1186/2, WL.
[121] Hikmet Özdemir, *The Ottoman Army, 1914-18: Disease and Death on the Battlefield*, trans. S. Kardas (Salt Lake City: University of Utah Press, 2008), p. 133.
[122] War diary of E.W.W. Cochrane, 3 April 1918, RAMC 1186/1, WL.
[123] 'A Mounted Brigade Field Ambulance in peace and war', RAMC 791/5, WL.
[124] Allenby to Wilson, 8 October 1918, in Hughes (ed.), *Allenby in Palestine*, p. 204.
[125] T.E. Lawrence, *Seven Pillars of Wisdom: A Triumph* (London: Penguin/Jonathan Cape, 2000), p. 272.

> *for longer. Of some the flesh, going putrid, was yellow and blue and black. Many were already swollen twice or thrice life-width, their fat heads laughing with black mouths across jaws harsh with stubble. Of others the softer parts were fallen in. A few had burst open, and were liquescent with decay.*[126]

Lawrence had been informed of the appalling state of this makeshift hospital by an Australian MO, who was probably alerted to the situation by fellow officers, the barracks being under the charge of Australian reservists. Although technically the Australians' responsibility, their medical officer appears to have expected the new civilian administration to assist. It is therefore likely that there was some confusion at this time over who was to take charge. On hearing this news, however, Lawrence acted quickly and visited the hospital himself. After gaining entrance, which was by no means easy because of his Bedouin clothing, he formed a working party from among those Turkish soldiers who were able to walk, and set about burying the dead.[127] Conditions improved gradually but retained the capacity to shock, as Lawrence recounts of his subsequent humiliation by a major of the RAMC – a moment vividly recalled in David Lean's *Lawrence of Arabia*.[128] As Private Charles Ammons subsequently observed:

> *The great stone-paved ground floor of the barracks was covered with hundreds of Turkish soldiers wrapped in scanty blankets and most of them were suffering from diseases of malnutrition such as pellagra and enteritis. We were also in the middle of an outbreak of typhus, endemic in these parts; when detected the infected soldiers were sent to isolation in a detached building in the grounds of the barracks.... Mortality was high from all causes and day by day the orderly would lift the blankets from the faces of yet more victims.*

Ammons and his fellow orderlies received an extra 10 pence per day on account of the extra danger of dealing with the typhus outbreak.[129]

The exact circumstances surrounding conditions at Beramke are unclear. As might be expected, Lawrence presents his actions in a positive light and is critical of the Australian soldiers guarding the barracks. Ammons appears sympathetic towards Lawrence but his remark that 'he attempted to impose order with, it seems, some success at the time but, as I saw it, it was still in a pitiful state' suggests a degree of ambivalence.[130] Whether or not Lawrence and the Arab administration ought to have done more is a moot point. Lawrence did not think the resources of the Arab government adequate to the task and requested that the hospital be transferred to military administration. Although rebuffed at first, Allenby later acceded to his request and permitted the POW hospitals to be run by his newly-appointed military governor, Ali Riza Rikabi.[131] But the abject state of the POW at Beramke was the inevitable result of an army that had deteriorated on all fronts. Everywhere the British captured Turkish soldiers or overran hospitals and barracks, similar situations were encountered. The vilification of Lawrence and the Arab government probably tells us more about contemporary prejudice towards the Arabs than circumstances as they really were. Certainly, conditions in similar

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[126] Ibid., p. 677.
[127] Ibid., p. 678.
[128] Ibid., p. 682.
[129] Memoirs of Pte. Charles Ammons, 3rd London Mounted Brigade FA, pp. 32-3, RAMC 1599, WL.
[130] Ibid., p. 32.
[131] Lawrence, *Seven Pillars*, pp. 681-2.

institutions continued to cause concern into 1919, with repeated outbreaks of typhus and other diseases.[132]

Yet, there was more at stake than Lawrence's reputation. The attribution of blame for the unhealthy condition of Turkish POW had been bitterly disputed for several years. Soldiers of the Ottoman Army captured in Palestine and Mesopotamia were mostly relieved when captured by the British, who usually kept them well fed and in sanitary conditions. But the Turkish government alleged that some were maltreated – possibly in response to British allegations of the maltreatment of prisoners captured in Mesopotamia at Kut – and at the end of the war the Turks again blamed high levels of disease on neglect and brutality by the British.[133] Such allegations were by no means confined to the Turks but were common on all sides and were prefigured in some earlier conflicts such as the South African War of 1899-1902 and the Balkan War of 1912. As a result, bodies such as the International Red Cross were regularly charged with inspecting POW camps in order to determine whether allegations of neglect had substance. Most of these institutions were under the control of British or Imperial forces but some medical facilities for POWs were run by the national Red Cross or Red Crescent societies. For instance, an hospital for Turkish POW was established by the Egyptian Red Crescent Society in early 1916, as a demonstration of sympathy for co-religionists. However, the Egyptian branch of the Red Crescent was soon mired in controversy and there were several prominent resignations. How far this affected the running of the hospital is unclear but such revelations invited perennial watchfulness and concern.[134] Rumours also surrounded the adequacy of conditions – including dietary arrangements – in internment camps for civilians such as Germans, Austrians and Turks.[135]

Since 1916, the British had been aware of the poor state of prisoners dispatched to camps in Egypt. POW hospitals such as that in Abassia treated many cases of infectious disease and had come to specialise in bacteriological diagnosis. They were run by the Army but food was supplied from civilian sources and they sometimes employed civilian doctors. Those in charge of infectious patients were given additional, specialist pay.[136] For the most, it seems that considerable care was taken to attend to the needs of POW and to maintain a good standard of health in camps. When a delegation from the International Committee of the Red Cross visited Egypt at the beginning of 1917, it inspected eight places of confinement including POW camps, civilian internment camps and hospitals for POW.[137] All were found to be in an excellent sanitary condition and inmates – who were interviewed by the delegation – declared themselves pleased with their diet and facilities for recreation. Its overall conclusions were that 'We are able to confirm that the diet of the prisoners in Egypt is nothing less than we would expect' and that 'The hygiene service is on the whole remarkably well organized. Water for drinking and washing is abundant. Showers and baths function freely in each camp. Each camp is provided with disinfecting apparatus. Bedding and clothing are sterilised weekly. There are no vermin.' During its time in Egypt, the delegation received only one serious complaint and that came from Dr Suleiman Bey, chief doctor of the town of Taif, in the Hedjaz, who protested that he had not been allowed to offer treatment in

[132] TNA, WO 95/4386, War Diary of DMS, EEF, 14 January 1919.
[133] Harrison, *The Medical War*, pp. 284-7.
[134] *Egyptian Mail*, 7 March 1916.
[135] Diary of Col. T.B. Beach, 21 March 1918, RAMC 248/2/2, WL.
[136] TNA, WO 95/4750, War Diary of No.2 POW Hospital, August 1916, 24 March 1917.
[137] CIRC, 'Rapport sur la visite aux camps de prisonniers ottomans en Egypte en Décembre 1916 et Janvier 1917', *Documents publiés a l'occasion de la Guerre Européenne (1914-1917): Rapports de MM. le Dr F. Blanchod, F. Thormeyer & Em. Schloch sur leur inspection des camps de prisonniers turcs en France, en Corse et an Egypte Décembre 1916 et Janvier 1917* (Geneva: Librarie George & Co., 1917), pp. 39-90.

the civilian camp in the Citadel of Cairo, despite the fact that the women and children interned there were suffering from poor diet and want of medical attention.[138] Taking these allegations seriously, the delegation returned to the camp to interview staff and inmates and found absolutely no foundation for the claims.[139]

The medical staff of the various internment camps were either under the direct control of the RAMC or took advice from its officers. The remainder of the staff included doctors and nurses from voluntary organisations such as the Egyptian Red Cross and Red Crescent, the Egyptian Public Health Department, and doctors of various nationalities employed for their language abilities as much as their medical expertise. These included Egyptians (Muslim and Christian), Syrians, Armenians, and various Europeans from neutral countries. Medical officers and orderlies of the Ottoman forces also assisted.[140] Inevitably, these complex arrangements produced misunderstandings which sometimes had detrimental effects on health and public opinion. The RAMC and the Egyptian Public Health Department, for instance, got into a spat over a case of cholera at the Red Cross POW hospital, the former blaming the RAMC for allowing an infected prisoner to enter the establishment. The DMS explained that this had occurred because the laboratory normally used to test suspicious cases of diarrhoea had burned down. It was confident that the camp's medical officer had taken the necessary precautions and refused the Public Health Department's demand to place an RAMC man in charge.[141] The latter's Director replied that as the RAMC refused to assume responsibility for the camp, all POW should be removed and placed directly under RAMC control. Seeing the prospect of major difficulties ahead, the DMS, Keble, immediately issued orders for the evacuation of all prisoners from the Red Cross hospital to the military hospital at Abassia.[142] The whole episode seems to be more indicative of the tensions which existed between civilian and military administrations than of a serious problem in the camps.

Nevertheless, the heavy strain placed on these facilities in the last year, and especially in the last months, of the war made it difficult for even the most diligent staff to cope. Concern was expressed not only about infectious disease but also about maladies resulting from deficiencies of nutrition. In early October 1918, a committee was formed under F.D. Boyd, the Consulting Physician with the EEF, and Lieutenant-Colonel P.S. Lelean, Assistant Professor of Hygiene at the Royal Army Medical College. The committee was charged with investigating an alleged epidemic of the vitamin deficiency disease pellagra among Turkish POW at containment camps in Kantara, on the eastern side of the Canal. Its report in late December 1918 concluded that the disease was in fact pellagra, that Turkish POW were pellagrous before their capture, and that there was no evidence of any increase due to local conditions. In other words, the Army was not to blame.[143]

Allegations centred on the fact that some prisoners had been compelled to perform labour; indeed, there were two camps, one in which prisoners worked as labourers and one in which they did not, largely on account of their poor physical condition. At that time, there was still some uncertainty over what caused pellagra. Although some people thought that it might be spread from person to person, the majority of physicians believed that it was due to the lack of some element of diet, most likely

[138] Ibid., pp. 67-8.
[139] Ibid, p. 68.
[140] Ibid.
[141] TNA, WO 95/4386, War Diary, DMS, EEF, 3 December 1917.
[142] Ibid., 4 December 1917.
[143] Report of a Committee of Enquiry Regarding the Prevalence of Pellagra among Turkish Prisoners of War, p. 4, RAMC 567, WL.

protein.[144] The latter theory was correct. Although pellagra can be caused simply by deficiency of vitamin B3 (niacin) it can also result from deficiency of tryptophan, an amino acid found in meat, poultry, fish, eggs, and peanuts. This amino acid is then converted into niacin. Some other dietary deficiencies may also be involved, although their role remains unclear. At any rate, discussion at the time centred around the feeding of prisoners and whether their diet was adequate to meet the demands of physical labour.

The committee conducted interviews with POW, questioning 50 men through interpreters. They told the investigators that they had experienced no shortage of food in the camps, though some complained of the scarcity of tobacco. All the men said they were better fed after capture than before, as their rations, especially during the past summer, had been scanty. In addition, the committee recorded its own observations of the camp. They determined that sanitary arrangements were good and that there were plenty of facilities for personal cleanliness. Labour was paid and in no way exacting. The committee declared that 'In a three years' experience of camp inspection in this theatre of war, no camp had been seen to attain a more uniform excellence of general hygiene.'[145]

Observations made at the camp reinforced some of the conclusions reached in a related clinical study. One hundred cases of pellagra among newly-captured prisoners were transferred to Cairo for close examination, accompanied by two of their own medical officers who acted as interpreters. They were kept at No. 2 POW Hospital in Abbasia, which the Army ran in co-operation with the Egyptian Public Health Department. Civilian experts in deficiency disease were used to conduct the study, as most medical officers had not previously encountered pellagra. The study reported that pellagra patients responded well to diets high in protein and recommended that the protein content of rations be increased.[146]

Taking this evidence together, the committee absolved the British authorities of blame. It seemed that pellagra occurred only among those prisoners who had been deprived of adequate nutrition prior to their internment and non-Ottoman prisoners appear to have been exempt. However, on the question of whether labour contributed to the problem, the committee was less certain and advised caution. Although it appeared that the rations provided were sufficient for most men performing labour, the heaviest men and those suffering from illness or impaired digestion, it admitted, might become pellagrous on a diet adequate for average needs.[147] There were, indeed, many prisoners whose digestion would have been impaired by suffering from two or more diseases simultaneously. As the report admitted, other diseases were even more prevalent than pellagra. The main causes of death in the camps were pneumonia (60 per cent), dysentery (11 per cent), tuberculosis (12 per cent) and malaria (8 per cent).[148] This suggests a high rate of chronic and acute infectious disease. The fact that non-Ottoman prisoners were exempt from pellagra was also far from proving that rations were adequate for hard labour. Two-thousand Germans had been imprisoned in the camps alongside the Turks and had been pellagra-free for two years despite having arrived from Arabia (following the campaign in the Hedjaz) in poor physical condition. Many had showed signs of pellagra as well as dysentery and malaria.[149] Their health had steadily improved but all had been able to supplement their rations using money given to them by their

[144] Ibid., pp. 4, 20.
[145] Ibid., p. 7.
[146] Ibid., pp. 8-9.
[147] Ibid., pp. 4, 19.
[148] Ibid., p. 11.
[149] TNA, WO/95/4750, War Diary of No.2 POW Hospital, Abassia, 21 September 1916 and 20 September 1916.

consulate.[150] In view of this, the committee could not claim that the ration was sufficient to protect prisoners against pellagra in all cases. It therefore recommended not only that the protein content of rations be increased but that it was inadvisable to employ Turkish POW as labourers.[151]

Conclusion

The POW committee's report appeared shortly after the war had ended but the fact that it had been commissioned at all shows how seriously the British were taking such matters. They were undoubtedly concerned about their reputation in the light of public opinion at home and internationally. They were also sensitive to how the alleged maltreatment of Muslim prisoners would look to the people of Egypt and perhaps in the other territories that they intended to incorporate into their empire. Similar difficulties were encountered in the management of civilian populations. Greater sanitary intervention enjoyed some support among Anglophile elites in Egypt but the results were mixed. Measures to prevent major epidemics proved fairly effective but the new regulations which municipal administrations were supposed to enforce provided more opportunities for bribery and intimidation. Local bodies also struggled to cope with the increased demands placed upon them. Educational initiatives were stepped up in major cities but the hope that exposure to Western sanitary methods would secure the loyalty of many thousands of Egyptian labourers proved ill founded, there being few attempts to explain the measures imposed upon them. As the majority of these men were illiterate, we have no first-hand accounts bearing witness to how they viewed the often intimate interventions to which they were subjected. But it is unlikely that this sanitary regime endeared them to the British, especially as many appear to have accepted it reluctantly. The harsh treatment of labourers while engaged in sanitary works is likely to have increased their resentment. Such experiences help to explain the readiness with which former labourers joined demonstrations against continued British rule in Egypt.[152]

In Palestine, the approach taken towards the civilian populations of cities captured by the British was more sensitive and most residents acquiesced in the sanitary measures imposed on them. Indeed, many seem to have welcomed attempts to improve their health. The numbers voluntarily undergoing inoculation against disease would suggest so. Despite the reservations of some senior commanders, effective sanitary control was also exerted over both local populations and Arab irregular forces fighting alongside the British in Arabia. In Syria, however, these same forces were unable to impose order on a chaotic situation, largely for reasons beyond their control.

In military terms, the results of sanitary intervention were similarly mixed. In Egypt and Palestine during 1917 and 1918 there were some 359,000 admissions to hospital from disease among British troops, as against 32,225 from wounds inflicted in battle. Disease therefore accounted for 92 per cent of hospital admissions. While this was a marginally better disease-to-wounded ratio than in Mesopotamia, where almost 94 per cent of hospital admissions were attributed to disease, it was markedly worse than in France during the same period, where the number of admissions – although numerically larger at almost a million – constituted only 16 per cent of the number admitted to hospital.[153]

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[150] Report of a Committee of Enquiry Regarding the Prevalence of Pellagra among Turkish Prisoners of War, pp. 14, 18, RAMC 567, WL.
[151] Ibid., pp. 5, 21.
[152] Claude K. Williams, *Light Car Patrols 1916-19: War and Exploration in Egypt and Libya with the Model T Ford* (London: Sylphium Press, 2013), chap. 9.
[153] MacPherson, *Diseases of the War*, p. 2.

The greater prevalence of disease among British troops in theatres such as Mesopotamia and the Middle East ought not to be taken as an indication that the Army took sanitation any less seriously than it did in France. Casualty rates from sickness depended on many things, from the nature of operations to the disease ecologies of the regions concerned. That they remained high despite the best efforts of civil and military authorities shows just how difficult the problem was. But compared with previous campaigns, the Army fared rather better than might have been expected. Sickness and mortality on a scale equivalent to that in the South African War of 1899-1902 was avoided. British and Imperial forces were able to contain outbreaks of diseases such as typhoid, typhus, cholera and plague, all of which ravaged the Ottoman armies. This was no mean achievement in view of the unfavourable circumstances that existed in this theatre. Nutritional deficiency diseases among British troops were also practically non-existent when compared to Turkish forces, although the British were sometimes less than successful in preventing such diseases among POW.

Overall, the sanitary system implemented in Egypt and elsewhere in the Middle East may be counted a success, albeit a qualified one. But political instability in the Middle East at the end of the war was accompanied by a rapid deterioration of public health. The movement of refugees and other displaced persons, the eventual return of prisoners of war, environmental spoliation and the destruction of infrastructure led to a resurgence of epidemic disease in many parts of the Balkans and the Middle East. Troops hoping to return from the region were often subjected to quarantines and long delays as a result.[154] Further unrest and conflict – especially the war between Greece and Turkey in 1922 – deepened this crisis and confronted the new international order with the largest public health emergency of the time. The humanitarian implications of this crisis, its political ramifications, and the distinct possibility that the Middle East would become the epicentre of a new wave of pandemic disease, galvanised the international community into action and created a template for future humanitarian emergencies.[155]

[154] In one case this led to a mutiny. See '1,500 Soldiers Mutiny at Plymouth – Refusal to go for Ten Days into Quarantine', *Daily Chronicle*, 9 June 1919.

[155] Iris Borowy, *Coming to Terms with World Health: The League of Nations Health Organisation, 1921-46* (Frankfurt am Main: Peter Lang, 2014), pp. 89-91.