DISEASE & DEATH ON THE THAI-BURMA RAILWAY*

MEDICAL ASPECTS OF BRITISH MILITARY IMPRISONMENT UNDER THE JAPANESE IN THAILAND AND BURMA, 1942-45

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INTRODUCTION

The origins of the Japanese-Allied conflict in the Pacific theatre of the Second World War are complex. They date from growing expansionist policies in the early twentieth century, culminating in the 'smouldering' war with China of the 1930s. Japanese aggression was stimulated by the beginning of war in Europe in 1939 and in 1941 a tripartite pact with Germany and Italy was signed which allocated Japan (assuming success in the war) the 'Greater East Asian Co-Prosperity Sphere' — a gigantic tract of the globe including the Far East, South-East Asia, the Pacific Islands and even Australia. In late 1941, with the bombing of Pearl Harbour, Japan began its attacks southwards with the 'lightning war' between December 1941 and April 1942, when troops overran the Malaysian peninsular in a remarkable hundred days.[1]

Allied European and American troops were (rather reluctantly) rapidly deployed and the Singapore garrison (consisting of 56,000 British and Australian troops and 60,000 Indians) famously fell to Japan by surrender on 15 May 1942. This critical defeat, generally blamed on incompetent Allied leadership, remains a point of historical debate; the traditional view probably underestimates the impressive Japanese military prowess.[2]

The well-known maltreatment of Allied prisoners under the Japanese originates in the fact that they surrendered rather than fought to the death or committed suicide (in accordance with traditional samurai philosophy); hence the overwork, semi-starvation, physical abuse and lack of medical facilities. There was however a more practical reason — the Japanese had never envisaged capturing such huge numbers of troops. Their lines of supply were long and difficult and the localities of imprisonment generally poor and barely able to support the local population.

Troops from the Singapore surrender were held in Changi Jail, on the outskirts of the city.[3] Many stayed here for the entire duration of their three and a half years' captivity. In September 1942 however some 50,000 prisoners (mainly British) were transported by train, packed in cattle trucks, on a five-day hellish journey up the Malaysian peninsula to Thailand. Their project was to build the Thai-Burma Railway.

The rationale behind the railway was to provide a transport route (for troops, supplies and arms) between Bangkok in Siam and Rangoon in Burma, ultimately to support a planned invasion of India. From the engineering point of view it was a staggering project, involving a 400 km route from Ban Pong in Siam over mountainous

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[1] Historical and medical details are included in G.V. .Gill, 'Long term health effects in former prisoners of war of the Japanese' (unpublished MD thesis, University of Newcastle upon Tyne, 1980).

[2] A secondary source of these events (written by an involved witness) is F. Owen, The Fall of Singapore (London: Quality Book Club, 1960).

[3] See D. Nelson, *The Story of Changi, Singapore* (Perth: Changi Publications Co, 1973).

jungle to Thanbyuzayat in Burma.[4] Work parties operated from both the Siamese and Burmese ends, eventually meeting in October 1943 and completing the project. The later name of 'Death Railway' refers to the deaths of 12,500 British soldiers (25% of the total UK force) working on the project.

The Thai-Burma Railway has been both vilified and romanticised by novelists and film producers, and has not been critically reviewed by either historians or doctors. This paper will aim to determine as realistic an overview as possible of life, death and medicine on the Railway by examining the available sources; these include biographies, autobiographies, novels, photographs, drawings and paintings, diaries (published and unpublished), oral accounts, military papers and hospital records.

As ever, novels are of dubious historical value. *The Bridge over the River Kwai* presents a distortion of events and life on the railway. With regard to Changi internment, however, James Clavell's *King Rat* gives a more useful account of prison life and values, Clavell himself being a Changi inmate from 1942 to 1945.[5]

Some useful biographies exist, though none written from a specifically medical viewpoint. Notable amongst these is the historian Peter Davies's account of Colonel Phillip Toosey, aptly titled *The Man behind the Bridge*.[6] Autobiographical accounts of interest include Stanley Pavillard's *Bamboo Doctor*[7] and Aidan MacCarthy's *A Doctor's War*[8] These are of course retrospective accounts, but some diaries have been published which were written during imprisonment (at great danger to the writers — their discovery would have resulted in immediate execution). Among these are the diaries of Dr Robert Hardie[9] and of Colonel Sir Edward 'Weary' Dunlop.[10]

Finally, there are important pictorial primary sources. Some photographs were taken of the project at the time but they were usually Japanese propaganda material, with particularly well-nourished and fit prisoners of war (POWs) used as subjects. Of more interest are paintings and drawings produced at the time at great personal danger to the artists. These heroic and remarkably skilful men included Robert Hardie,[11] Leo Rawlings,[12] Ronald Searle,[13] Jack Chalker[14] and Stanley Gimson.[15] If they were lucky, these men used stolen paper and pencils. More often their materials included wood charcoal, soot and oil. These paintings and drawings were often destroyed, but some

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[4] See C. Kinvig, *Death Railway* (London: Pan Books. 1973).

[5] J. Clavell, *King Rat* (London: Coronet Books, 1975).

[6] P.N. Davies, The Man behind the Bridge, Colonel Toosey and the River Kwai (London: Athlone Press, 1991).

[7] S.S. Pavillard, *Bamboo Doctor* (London: MacMillan & Co, 1960). Pavillard is still alive and remains a colourful character and frequent attender at POW reunions and Buckingham Palace garden parties.

[8] A. MacCarthy, *A Doctor's War* (Trowbridge: Robson Books, 1979).

[9] R. Hardie, *The Burma-Siam Railway*. The secret diary of Dr Robert Hardie 1942-45. (London: Imperial War Museum, 1983).

[10] E.E. Dunlop, *The War Diaries of Weary Dunlop* (Wheathampstead: Leonard Publishing, 1986). Dunlop (affectionately known as 'Weary') was an Australian surgeon of enormous repute on the Railway.

[11] as note 9 above.

[12] L. Rawlings, *And the dawn came up like thunder* (Watford: Burton Publishing, 1972).

[13] R.Searle, *To the Kwai and back. War drawings 1939-1945* (London: Collins, 1986).

[14] J.B. Chalker, *Burma Railway Artist. The war drawings of Jack Chalker* (London: Leo Cooper, 1994).

[15] Stanley Gimson's drawings are held in the Dept of Documents at the Imperial War Museum in London.

survived hidden in buried cans, or even rolled up inside hollow bamboo poles used as stretchers or crutches.

The difficulty with oral and retrospective accounts is that these sources often have an axe to grind; ex-POWs have had a longstanding claim against the Japanese government for compensation.

DISEASE AND ILLNESS ON THE RAILWAY

The jungles of Thailand and Burma were areas of intense malarial transmission and all prisoners had recurrent attacks of debilitating fever from malaria. In his diary entry dated 1 August 1943 Robert Hardie noted, 'I am having malaria again. No particular news'. He also recorded 70 deaths from malaria in a 3 day period in Kanyu Camp, a particularly mosquito-ridden area.[16]

Inadequate sanitation and impure water supplies led to a variety of serious bowel infections, the most common of which was dysentery. This caused profuse bloody diarrhoea and severe cramps. Colonel 'Weary' Dunlop described in his diary an attack he suffered on 28-30 May 1943: 'I am properly ill with fever, nausea and severe abdominal pain ...I never felt in quite so poor health ... bloody flux continues ... I am still a cot case, eating almost nothing ... look a bit like a skeleton I suppose'.[17]

Of all the diarrhoeal diseases, cholera was the worst and most feared. Hardie recorded a cholera outbreak at Takanum Camp in the monsoon season of 1943: ' this is cholera all right. There have been 10 deaths already, death supervening within 36 hours of the onset of serious symptoms'.[18] Three days later there were 56 cases and 35 deaths. To prevent spread of the disease the bodies were burnt in hideous funeral pyres. In probably the worst affected camp (the remote Sonkrai Camp on the Thai-Burma border) there were 219 cholera deaths from 315 cases (70% mortality) in 37 days.[19]

The condition of tropical ulcer should be mentioned. These were deep, infected, penetrating ulcers of the ankle caused by infection, damp, trauma and lack of footwear. They were very frequent and caused considerable debility; when they spread deeply amputation was sometimes necessary. An account of the 'F' Force trek to Sonkrai, written just after the war, mentions that 'no dressings were available ... and hideous tropical ulcers were dressed with banana leaves and puttees. The result was that 70 limb amputations were necessary'.[20]

The tropical climate, surrounding exotic diseases and relative lack of effective treatment were all major factors in the medical problems encountered on the railway. The men however were made particularly susceptible to infections by their state of nutrition. The diet was entirely rice, with occasional thin 'stew' containing a very little

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[16] Hardie, pp. 108-09.
[17] Dunlop, pp. 235-36
[18] Hardie. p. 94.
[19] P.U.Coates and P.Neild, 'Up country with 'F' Force - a chronological diary' (unpublished diary, held by Liverpool School of Tropical Medicine). This is one of a number of narratives recorded at the time under incredibly adverse conditions. The detail in these documents is often remarkable.
[20] C.H.D. Wild, 'Narrative of the 'F' force in Thailand, April-December 1943" (unpublished retrospective account probably written 1945-46 in Singapore, held by Liverpool School of Tropical Medicine). J.A. Bradley's biography of this remarkable leader (Sussex: Woodfield Publishing, 1991) is entitled *The tall man who never slept* [Wild's Japanese nickname]. Tragically, Wild died in a plane crash in 1946.

meat and/or vegetable. This led to serious B vitamin deficiency, giving rise to pellagra (causing dermatitis and diarrhoea, as well as sometimes neuropsychiatric features) and beri-beri. Beri-beri was especially common and distressing and had a high mortality. It occurred in two forms. 'Dry' beri-beri was a neuritis leading to pain and tingling in the feet, and sometimes to blindness ('camp eyes') and/or deafness. 'Wet' beri-beri was a cardiac disease leading to heart failure and body swelling. Most soldiers were affected to at least some extent by these disorders. They were easily treatable by B vitamin supplements, but such drugs were always in short supply. Severe cases required hospitalisation, as will be seen in *Table 1* below which shows that in 1943, 1298 men were admitted to Chungkai Hospital on these grounds — and 54.1% of them died.

Attempts to supplement the inadequate diet were many and various. These included buying or begging extra food from the local people, making extracts from grass and leaves, and catching and eating snakes, lizards and monkeys.[21]

Coping with the crisis

It would not be inaccurate to suggest that the spectrum, extent and exotic nature of disease seen on the Thai-Burma project had not been experienced before (or since) in British medical military history. The Allied medical officers were almost all young and relatively inexperienced, as well as being newly arrived in South-East Asia. They had little or no experience of tropical diseases and, as has been mentioned, drugs were scarce. Medical and surgical equipment was a particular problem; there was relatively little in Changi Jail in Singapore anyway, but almost none was brought up country to Thailand and Burma.

How did the Allied medical officers react to the crisis? At least one doctor was provided at every camp on the railway and there was often more than one in the larger camps. They were variably supported by occasional trained medical orderlies (ordinary soldiers assigned to 'hospital duties') but there were no nurses, of course (in those days nurses were exclusively female). Hospital 'wards' were simple 'atap' huts [thatched bamboo huts, usually with no walls]. 'Beds' were long ledges on which rows of patients lay.

Under the circumstances, remarkable records were kept, a number of which are still available. An example is shown in Table 1, which is compiled from the records of Chungkai Camp Hospital (a very large 'base' hospital):

Table 1: Chungkai Hospital admissions and mortality, 1943 and 1944 (after Dunlop)

	1943		**1944**	
	Cases	**Mortality**	**Cases**	
	Mortality			
Malaria	3,336	2.0%	1,753	0.7%
Tropical	1,353	2.7%	1,129	0.0%
Amoebic ulcer	1,309	20.3%	1,113	4.1%

[21] Pavillard, pp. 98-99.

Bacillary dysentery	734	17.5%	139	1.4%
Vitamin deficiency	1,298	54.1%	559	14.7%
Cholera	134	40.3%	8	0.0%
Pneumonia	58	82.8%	19	47.4%
Other diseases	3,349	3.6%	2,073	1.7%
Total	11,572	10.9%	6,793	2.8%

These show admissions and mortality rates of various diseases in 1943 and 1944. This data is from the meticulous records kept by Colonel Dunlop and shows very clearly the huge mortality and large number of patients with dysentery and vitamin deficiency.[22] The cholera figures here are misleadingly low — this was a base camp rather than one up country. The other interesting point to be made from this table is the remarkable reduction in admission and mortality in 1944 compared with 1943. The first full year on the railway was 1943, and this was the period of greatest work activity and most severe shortage of food. In 1944 the railway was completed, food supply was slightly better and prisoners were being moved off the railway to other areas of the Far East and South-East Asia. Nevertheless, it is also likely that better systems of care and hygiene put into operation by the medical officers were at least in part responsible for the reduction.

It has already been mentioned that food and supplies were sometimes obtained from the local population. Table 2 details a consignment of drugs and equipment received by Tamuang Base Hospital in April 1943:[23]

Table 2: Drugs and equipment (received from 'V') for Tamuang Base Hospital, April 1943

2 tubes Emetine tablets
2 bottles Dover's powders
1½ tins Zinc ointment
1 bottle Pot Permanganate
1 box Vitamins
1 box Mercurochrome
1 packet Zinc Boracic Powder
2 boxes Emetine ampoules
2 ampoules Distilled Water 20cc
2 boxes Morphine
1 bottle Bismuth Carbonate
1 bottle M & B 693
1 bottle Lysol
3 bandages

This came from 'V' — a code name for a secret organisation which supported a number of the railway camps. 'V' was allied to the TFS [Thai Freedom Society, an anti-Japanese organisation]. The main personalities were two Bangkok businessmen, one named Heath

[22] E.E. Dunlop, 'Medical experiences in Japanese captivity', *Brit.Med J*., 1(1946), 474-86.
[23] Anonymous hospital records from the archives of Will Brandt of Zimbabwe who was a POW on the railway working as a medical laboratory technician.

who was English and a Thai named Boon Phong.[24] The drugs supplied by 'V' in Table 2 were accompanied by a note:

1. Please deface or destroy all original packings.
2. Emetine is running short on the market, please try and treat the less serious cases with Dover's Powders,

Signed

V

Emetine was the only available drug for treating amoebic dysentery, hence its importance. The list in Table 2 also contains M & B 693 — at the time the only anti-bacterial drug.

Perhaps the most ingenious innovations were in the performance of surgical operations in the camp hospitals. Rudimentary operating theatres were often just comers of hospital huts and operating tables were constructed from bamboo poles. Anaesthesia was not always available; when it was, it was usually simple inhaled ether. Operating instruments sometimes included sharpened bamboo sticks or cut-throat razors.[25] Distillation equipment for antiseptic alcohol was contrived and infusion saline fluids were prepared and boiled. They were delivered via tubing which was frequently taken from stethoscopes.

The range of operations performed is exemplified by records from Nakom Paton Camp (Table 3):[26]

Table 3: Operations performed, Nakom Paton Camp (after Coates)

Appendicectomy	140
Hernia repair	114
Skin graft	100
Sequestrectomy	70
Amputation	43
Haemorrhoids	39
Ileostomy	32
Varicose veins	30

Sequestrectomies (removal of infected bone fragments), skin grafts and amputations were virtually all performed because of tropical ulcers. Ileostomies were done for severe refractory cases of amoebic colitis. Camp carpenters devised ingenious post-surgical equipment, including orthopaedic beds, traction equipment for fracture cases, physiotherapy equipment and artificial legs. Bamboo was the chief material used and Chalker's drawings show this remarkable equipment in great detail.[27]

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[24] W.Brandt, personal communication; Pavillard, pp. 110-11; Dunlop, p. 317.
[25] Pavillard, p. 97.
[26] from A.E. Coates, 'Surgery in Japanese Prison Camps',*.Aust.&New.Zeal.J.Surg*., 15(1946), 147-58.
[27] Chalker, pp. 99 and 111.

FINALE: THE AFTERMATH

Though death, disease and suffering come through clearly from the available sources, there were other aspects to imprisonment on the railway. Strong camaraderie and will to survive is evident from various accounts, and the artists Hardie and Chalker recorded in their beautiful paintings the surrounding countryside and the local flora.

Sadly, suffering did not end with release. Former POWs of the Japanese have experienced increased rates of various disease since repatriation.[28] These have included liver disease, duodenal ulcer and traumatic stress disorder.[29] Persisting nerve damage from 'dry' beri-beri affects 5% (who experience either reduced vision and/or pain and tingling in the feet).[30] Strangely also, one of the tropical worm infections which affected prisoners on the railway — strongyloidiasis — has persisted long-term and 20% of survivors have this condition.[31] It causes an itchy rash and sometimes diarrhoea, though very occasionally can be widespread and fatal. Former Thai-Burma Railway veterans are still screened for tropical conditions at centres such as the Liverpool School of Tropical Medicine. Over 50 years on, the effects of the Thai-Burma Railway live on.

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[28] see Gill 1980.

[29] G.V. Gill and D.R. Bell, 'The health of former prisoners of war of the Japanese', *Practitioner*, 225(1981), 531-38.

[30] G.V. Gill and D.R. Bell, 'Persisting nutritional neuropathy amongst former war prisoners', *J.NeuroLNeurosurg.Psychiat.*, 45(1982), 861-65.

[31] G.V. Gill and D.R. Bell, 'Strongyloides stercoralis infection in former Far East prisoners of war', *Brit.Med.J.*, 2(1979), 572-74.