The Gallipoli gallop: dealing with dysentery on the ‘fringes of hell’

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The Gallipoli campaign is a well recorded piece of New Zealand history, particularly remembered every year on ANZAC Day. Dealing with the seemingly hopeless task of facing an enemy in well entrenched positions on higher ground was made even more challenging by the appalling conditions the soldiers had to face in terms of addressing basic survival needs and dealing with infections. A particularly burdensome part of the latter was dysentery.

Dysentery is an enteric infection frequently caused by \textit{Shigella} bacteria, typically associated with unhygienic water supplies or contaminated food in developing countries. It is also caused by \textit{Entamoeba histolitica}, an amoeba, but this is more common in the tropics. The type of dysentery facing the New Zealand troops in Gallipoli was most probably bacillary dysentery (or shigellosis) caused by the \textit{Shigella} bacterium, most likely spread by contaminated water and/or food (with flies also playing a key role in this contamination\textsuperscript{1}).

There are four different species of \textit{Shigella}: \textit{Shigella sonnei}; \textit{Shigella flexneri}; \textit{Shigella boydii}; and \textit{Shigella dysenteriae}. The first is the most common and the last produces the most severe symptoms. Shigellosis is typically associated with watery stools (diarrhoea), which may include blood and mucus. This is associated with abdominal pain, tenesmus, fever and dehydration. Constipation and fatigue may also develop. The symptoms normally appear one to three days following infection and can persist for up to one week.

According to the WHO, there are approximately 120 million cases of severe dysentery annually around the world, mainly in developing nations and generally affecting children.

Treatment is based on coping with the dehydration by drinking water; however, getting clean water would have been a challenge for the soldiers at Gallipoli. Getting enough water to combat dehydration is critical. In severe cases, where rehydration is not possible, dysentery can be fatal. At least 200 of the deaths among the New Zealand soldiers at Gallipoli were from infectious diseases such as dysentery and typhoid\textsuperscript{2}. ‘Lack of clean water and sanitation in the trenches meant that diarrhoea and dysentery were common place, for the better-fed officers as well as the troops’\textsuperscript{3}.

While there is evidence to show that the New Zealand soldiers at Gallipoli generally had sufficient food in terms of energy, the military rations were deficient in some micronutrients\textsuperscript{4}. In particular the low intake of vitamin A may have contributed to the risk of becoming infected with dysentery and dying from it (given the role of vitamin A in immune function and protecting against infectious disease mortality\textsuperscript{5}). Furthermore, there were difficulties in getting sufficient water for the troops, largely due to the need to bring in the water across difficult terrain. ‘There was always a shortage of water and the possibility of no water at all. One pint of water a day was the usual issue’\textsuperscript{6}. The official ration for New Zealand soldiers was somewhat larger at two quarts (2.3 litres) a day, but it still had to be used for all purposes: drinking, cooking and washing.
Most went to make tea. As one New Zealand soldier wrote: ‘water is worth its weight in gold here’.

As the campaign progressed, the summer heat with the hordes of flies that came with it, when combined with the open latrines, inadequate diet and limited water supplies contributed to extremely high rates of dysentery on Gallipoli. By the end of May 1915, as the weather warmed and the flies appeared, the first isolated cases of dysentery occurred. By July a particularly virulent form of dysentery diarrhoea had spread through the whole allied army but was most serious at ANZAC Cove because of closely packed conditions there. The affliction was colloquially known as ‘the Gallipoli trots’ or ‘the Gallipoli gallop’. By August 1915, just prior to the great allied offensive, 80 percent of the troops at ANZAC and Cape Helles had it.

This high prevalence of dysentery continued well into October 1915 until the cooler weather arrived. That month alone, 5000 men were being evacuated from Gallipoli each week through illness, with the most prevalent cause being the ‘Gallipoli Trots’.

The whole situation was exacerbated by the preparation of food by individual soldiers in the trenches. Clearly there were issues in dealing with basic hygiene. The following quote, paints a clear picture of what the conditions for food preparation were like, ‘The baneful system of individual cooking, then prevalent, would have ruined any ration however good; every man cooked for himself, every dug-out became a midden of refuse. The New Zealand Medical Service in the Great War 11 help paint the picture of the scene at Gallipoli. McAra was a doctor from Gore, Otago, who arrived on Gallipoli with the Fifth Reinforcements in August 1915. By November he was feeling the effects of the restricted diet.

The following excerpts from the diary of Major William McAra help paint the picture of the scene at Gallipoli. McAra was a doctor from Gore, Otago, who arrived on Gallipoli with the Fifth Reinforcements in August 1915. By November he was feeling the effects of the restricted diet.

*Been sick for three days – never ate a bit, felt savage & wanted to be left alone, just too much meat & tea & no potatoes or green vegetables.*
6 November 1915

Two days later McAra was incapacitated with dysentery. He wrote in his diary:

*Was very ill – had abdominal pain all afternoon which became so acute that hadn’t time to dodge for latrine with disastrous results. Sent for Sergeant & got him to carry me up on stretcher to 16th Casualty Clearing Station. There headache seemed worse & while they gave me bromides without avail while dysentery went on increasing. Had no sleep all night.*
8 November 1915

Next day, with a temperature of 38.9°C and constant bowel pain, McAra was evacuated from Gallipoli.

Fortunately in subsequent campaigns in the First World War the enteric disease burden for New Zealand soldiers was much less. Innovations such as typhoid vaccine probably helped but there was also more scope for providing water and better sanitation systems on the Western Front. Even so, for many in the front line trenches during the rest of this War, there were persisting threats to hygiene in terms of mud and rats.

### References


### Biographies

**Steve Flint** is Professor of Food Safety and Microbiology and director of the Food Division of the Institute of Food Nutrition and Human Health at Massey University. Steve leads a team of post-graduate research students studying a variety of food safety and quality issues with an emphasis on understanding biofilm development and control. Approximately half of these projects are associated with the dairy industry. Future research will focus on bacterial interactions in biofilms and mechanisms of biofilm dispersion. Steve has more than 100 scientific publications and more than 100 presentations at national and international scientific conferences. He lectures in food safety and microbiology and does consultancy work for food manufacturers. Steve is a Fellow of the New Zealand Institute of Food Science and Technology, president of the New Zealand Microbiological Society and a certified food scientist with the Institute of Food Technology.
Glyn Harper is Professor of War Studies at Massey University in Palmerston North. He is Massey’s Team Leader for the Centenary History of New Zealand and the First World War project and is writing one of the first volumes. A former teacher, he joined the Australian Army in 1988 and after eight years transferred to the New Zealand Army, where he rose to the rank of lieutenant colonel. Glyn was the army’s official historian for the deployment to East Timor and is the author of 13 books for adults. These include: Kippenberger: An Inspired New Zealand Commander; In the Face of the Enemy: The complete history of the Victoria Cross and New Zealand; Dark Journey: Three Key Battles of the Western Front; Images of War: World War One: A Photographic Record of New Zealanders at War 1914–1918; Letters from Gallipoli: New Zealand Soldiers Write Home; and his most recent, The Battles of Monte Cassino. The campaign and its controversies. Glyn also enjoys writing books for children. Some of his children’s books include The Donkey Man, My Grandfather’s War and Le Quesnoy: The Town New Zealand Saved. Glyn’s eighth book for children, Jim’s Letters, was released in March.

Nick Wilson trained as a public health physician and now works as an associate professor in public health at the University of Otago, Wellington, New Zealand. He has worked on a wide range of infectious disease topics, but particularly the epidemiology and control of pandemic influenza and enteric diseases such as campylobacteriosis.

Losses related to infectious diseases in the Turkish army during World War I

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The lengthy period that encompasses the Balkan War (8 October 1912 to 29 September 1913), followed by WWI (28 July 1914 to 30 October 1918) fought by the Ottoman Empire and the subsequent Turkish War of Independence initiated by the secret arrival of the great leader Mustafa Kemal (in the Republican era Atatürk) at the Black Sea town of Samsun on 19 May 1919 came to an end with the signing of the Mudanya Agreement on 11 October 1922 and formally terminated with the Lausanne Agreement on 24 July 1923. Turks bravely fought at different fronts over three different continents and by the end of a decade of war the losses amounted to 1,000,000 lives as well as 4,000,000 square meters of the Ottoman Land.

Reasons for the failure of Ottoman Forces with around 3,000,000 conscripts at many fronts, and the signing of the ceasefire agreement at Moudros (The Armistice of Moudros, 30 October 1918) as the defeated party are still subject of much investigation and analysis for many historians and researchers, today. There have so far been political, military and economic explanations. However, none of these investigations included infectious diseases as a possible explanation for the heavy losses suffered by the soldiers throughout these wars. Detailed records and statistical data related to infectious diseases and their impact on the final decades of Ottoman military history have been so far unavailable. Similar to the allies, the Turkish side also started compiling records related to the losses and casualties immediately after WWI; however, records based on different sources compiled since 1919 are still far from representing the real cause of deaths. This fact is clearly presented in a book by Hikmet Özdemir who describes in detail the losses suffered by all parties.