

Cholera and the Paraguayan War

Ian Read

Soka University of America

Agnes Conrad

Independent Scholar

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In May 1865, the Triple Alliance declared war on Paraguay.¹ This alliance was unlikely because the two larger allies, Brazil and Argentina, had inherited deep colonial rivalries that often manifested in quests for political influence over their smaller neighbors. However, with the unification of Argentina under Bartolome Mitre in 1862, common ground emerged in a political desire for free access to river transport.² The war was provoked by nearly all its participants and their struggle for control over the rivers of the Plata Basin, especially the Paraguay and Paraná Rivers. Paraguay's interception of a Brazilian ship in late 1864 was seen as an unjust and violent act while Brazil's military intervention in Uruguay in 1864-1865 was seen by Paraguayans as an aggressive act that would ultimately endanger Paraguayan security. President Solano Lopez had long feared Brazil's expansionist aims (much like his political predecessors), and closed the Paraguay River following Brazilian incursions into Uruguay.³ For Brazil, persistent border disputes and a desire to maintain power in its western regions provided the final impetus to enter the war.

¹ For an overview of the war and its causes, see: Kraay, Hendrik. *I Die with My Country: Perspectives on the Paraguayan War, 1864 - 1870* (Lincoln, Nebr.: Univ. of Nebraska Press, 2004); Whigham, Thomas. *The Paraguayan War. Volume 1, Volume 1, Causes and Early Conduct* (Lincoln, Neb: University of Nebraska Press, 2002)..

² Colin M. MacLachlan, *A History of Modern Brazil: The Past against the Future*. (Wilmington, Del: Scholarly Resources, 2003) 35; Fausto, *History of Brazil*, 123.

³ MacLachlan, *Modern Brazil*, 35; Fausto, *History of Brazil*, 133.



Figure 1. Rio de la Plata Basin

When the Triple Alliance declared war, they did so expecting a quick and easy Paraguayan defeat. Paraguay launched an offensive into Brazil's western province of Mato Grosso, but soon after the superior Brazilian navy laid waste to Paraguay's nautical forces in Argentine territory at the battle of Riachuelo in June of 1865.⁴ The allies moved to blockade the Paraná River and the war moved onto Paraguayan territory. Put on the defensive, Paraguay appeared to be at a disadvantage and this early Allied win reinforced the view held by many in the Triple Alliance that the Paraguayans would be quickly defeated. This expectation, however, proved to a gross underestimation of two important factors: 1) the size, preparation, and determination of the Paraguayan army; and 2) the destructive capability of epidemic and endemic diseases.

Unbeknownst to Argentine and Brazilian leaders, in the years leading up to the Paraguayan War, Solano Lopez had invested much time and money into modernizing the Paraguayan Army. Figures are unreliable, but one estimate states that at the start of the war the Brazilian army may have had around 18,000 career soldiers, the Argentine army somewhere between 6,000 and 8,000, and the Uruguayan anywhere between a couple hundred to 1,000 career soldiers. Paraguay likely had between 38,000 and 64,000 career soldiers, and a reserve of 28,000, surprising considering its relative size.⁵ The Paraguayan army also had steady and reliable access to imported military equipment, ammunitions, and European engineers until the

⁴ Ibid, 35.

⁵ Fausto, *History of Brazil*, 124; MacLachlan, *Modern Brazil*, 43; Thomas Whigham, *The Paraguayan War* (Lincoln, Neb: University of Nebraska Press, 2002) 187, 172.

defeat at Riachuelo.⁶ Unlike Paraguay, Brazil and Argentina did not have modern, nationally organized, government supported armies. Brazil had the capacity and power necessary to produce their own arms but they were forced to import almost all war materials because their production centers were disparate and they lacked the infrastructure, communication, and transportation systems necessary to support and fight a war far from home.⁷ By the time the war was over Brazil had modernized its army, but it did so at the expense of over \$300 million (4.2 billion in 2013 dollars). Brazil also had to mobilize over 200,000 men and augmented (delete this, tense agreement) its officer ranks by almost tenfold.⁸ Many of these new officers later lent support to the Republican coup, including Brazil's first president, Manuel Deodoro da Fonseca.

Though the allies won initial battles, a humiliating defeat at the Battle of Curupaity in September 1866 demonstrated the war could not be won quickly. For the next ten months, the Paraguayan side maintained a battlefield of swamps and marshes (with which they were more familiar than the allied forces) surrounded by extensive trenches. A multitude of factors contributed to this nearly year-long impasse. First, the defeat at Curupaity revealed gross inadequacies in the structure and preparedness of the Brazilian and Argentine armies. A mixture of civilian discontent and political unwillingness meant that troops and supplies were not easily replaced.⁹ One testament to this statement was a new willingness by the Brazilian government to pay for the impressment of slaves.¹⁰ A second major cause of delay arose when political uprisings, mutinies, and attacks by indigenous groups destabilized Argentina. These uprisings were severe enough to prompt Mitre's departure from the front with a force of 1,000 troops to restore order. Though Mitre returned to the front in 1867, Argentine commitment to the war had diminished—as had their ranks.¹¹ The brunt of the war effort then fell upon on the Brazilian side.

A third important reason for the war's impasse was cholera's arrival in March 1867. Along the banks of the rivers and swamps of the large Allied encampments, thousands of domestic animals foraged and watered. Soldiers and their companions washed clothing in water containing the sewage of new multitudes. That the army's primary source of water for washing and drinking contained a mixture of fecal material, mud, and refuse concerned army medics, but they worried less about the water itself than the gases and "effluvia" that emanated from contaminated sources. Nonetheless, "hard" (unclean) water was known to upset stomachs and could, at the very least, predispose a person to more serious diseases. This fact may have become better recognized as the war progressed.¹² Upon arrival, soldiers had disobeyed orders

⁶ Chris Leuchars, *To the Bitter End: Paraguay and the War of the Triple Alliance* (Westport, Conn: Greenwood Press, 2002) 159; Whigham, *The Paraguayan War*, 276.

⁷ Rollie E. Poppino *Brazil: the Land and People* (New York: Oxford University Press, 1968) 205.

⁸ MacLachlan, *Modern Brazil*, 35 & 43.

⁹ Leuchars, *To the Bitter End*, 155.

¹⁰ Slaves were never directly recruited, as Hendrik Kraay points out. "Rather owners manumitted them on condition of enlisting, upon which the freedmen were impressed." "Slavery, Citizenship and Military Service in Brazil's Mobilization for the Paraguayan War". *Slavery and Abolition*. 18, no. 3, 1997, 229.

¹¹ Fausto, *History of Brazil*, 125; Leuchars, *To the Bitter End*, 163.

¹² The chief of the medical corp, (*Cirurgião-Mor do Exercito*), wrote in February 1869 that soldiers became sick with cholera when they "made use of impure waters for the necessities of life," but this followed a

to not drink water from the river, but this transgression was more likely the result of not having good access to potable water than it was a disbelief of the dirty rivers' dangers. Indeed, a rumor spread among the ranks that the Brazilian military commander only drank water brought from Rio de Janeiro.¹³

Cholera struck in four or five waves between March 1867 and December 1868, with clear lulls that corresponded with the coolest months of the year (July and August). The *vibrio cholerae* bacteria was most likely carried to the front in infected water (drinking or ballast) from Rio de Janeiro or Porto Alegre, two cities that suffered outbreaks of the disease in the early part of 1867.¹⁴ How cholera had returned to southern and southeastern Brazil after a 12 year hiatus was debated by Brazil's Imperial health commission. Some argued it was imported into Porto Alegre by North American colonists arriving from infected ports in the Caribbean; others said it came to Rio de Janeiro on boats from France. It is possible, though, that it had arrived with recruits transported from Northeastern Brazil where the disease may have become endemic.¹⁵ Cholera did not cause large-scale outbreaks in either Rio de Janeiro or Porto Alegre, and thus did not merit much attention by the press in those cities. "Asiatic" cholera morbus had never been recorded in any of the nations of the Southern Cone. But when imported to the front of the Paraguayan War by Brazilian transport ships, it exploded. Victims were first officially identified in the small village of Paso de la Patria on March 26th and within three days it had infected and sickened hundreds of soldiers. Among the Second Corp of the Brazilian army at Curuzú, camped proximate the village, approximately 4,000 soldiers became sick with the disease and more than half died, a death rate that remained fairly consistent throughout the war. Peak mortality occurred on Palm Sunday, when as many as 500 soldiers died on that day alone. It spread to the First Army Corp at Tayutí in May and while mortality rates were lower, because of the First Corp's larger size, it likely killed about the same number as it had in Curuzú.¹⁶ Why such destructiveness? The cholera bacteria had found an ideal ecosystem within which to erupt. As the map below shows, this region of army camps was where the Paraguay and Paraná Rivers met within a large floodplain covered with sub-parallel rivulets, swamps, and lagoons where the water contained the perfect temperatures, acidity, and movement needed for the bacteria to spread.

list of other predisposing factors, including extreme temperature changes. *Gazeta Medica da Bahia*, no. 66, 30 April 1869, 212.

¹³ "O corpo de saúde do exército na Tríplice Aliança" *Anais do Seminário de História da Guerra da Tríplice Aliança (Guerra do Paraguai) 1864-1870*, Rio de Janeiro, 19 October 2011, 123.

¹⁴ José Joaquim Fernandes Torres, *Report of the Minister of the Empire* (1868) 21-23.

¹⁵ José Perreira Rego, *Report of the Minister of the Empire*, Anexo I (1868): 11-12; Alfredo. O Nascimento, *Mimetismo do cholera memoria sobre as manifestações choleriformes no Brazil como contribuição ao estudo da epidemia do Valle do Parahyba em 1894-1895* (Rio de Janeiro: Typ. Leite & Gomes, 1898) 171-172.

¹⁶ A. Asbeth, "Letter to William H. Seward, US Secretary of State," *Executive Documents Printed by Order of the House of Representatives During the Second Session of the Fortieth Congress, 1867-'68* (Washington: Government Printing Office, 1868) 167-68.



Figure 2. Area of encampment of the First and Second Army Corps during the Paraguayan War

In April and May, cholera reached its long tentacles well beyond crowded army encampments, infecting most or all populated towns along the Paraná and de la Plata Rivers, including Rosario, Buenos Aires, and Montevideo. Enormous bonfires of burning tar sent black plumes of smoke into an ominously darkened sky over Buenos Aires, an effort that the American consul commended for reducing the risk of the disease by improving the local atmosphere.¹⁷ The epidemic receded when the cold *pompero* winds arrived in May and June. By the end of this first wave, cholera had killed about 8,000 Allied troops and perhaps five to ten times as many civilians in the many Paraguayan, Argentine, and Uruguayan towns directly and indirectly connected to the front by river transport.¹⁸

¹⁷ *Ibid.*, 173.

¹⁸ About 15,000 were estimated to have died in Corrientes and 3,000 in Buenos Aires. We have not found death rates from Rosario and Paraná. Paraguay probably lost 20,000 – 30,000 people from cholera. It spread throughout that country, often killing the poor (who were more likely to drink contaminated water) and disrupting agricultural production. Charles J. Kolinski, *Independence or Death!: The Story of the Paraguayan War* (Gainesville: University of Florida, 1965) 34; Jorge Thompson, *The War in Paraguay; With a Historical Sketch of the Country and Its People and Notes Upon the Military Engineering of the War* (London: Longmans, Green, and Co., 1869) 202-203. Centurión, Juan Crisóstomo. *Memorias del coronel Juan*

At least three more cholera epidemics occurred following the initial outbreak, but details on their occurrences are scarce, in large part because army commanders kept details of the disease secret. Fragmentary evidence can be patched together for a rough timeline:

October 1867 – March 1868: Cholera is listed as the Brazilian Army's most deadly disease, killing between 53 and 66 percent of all persons diagnosed.¹⁹

September - January 1867: The Paraná and de la Plata Rivers are infected, with new deaths in Buenos Aires and Montevideo.²⁰ Cholera extends for the first time across the pampas and strikes Córdoba, killing several thousand in the city and surrounding towns.

October – December 1868: The chief of the Brazilian medical corp. reports that the cholera killed several hundred soldiers, a much lower rate than the earlier periods of epidemics.²¹

December 1868: Several ships of the Brazilian Navy are struck, including the *Barroso*.²²

A conservative estimate of total Allied deaths from cholera is 15,000, but it may have been closer to 25,000. Cholera may have been the war's top killer, demonstrating that a disrupted physical environment, not bullets or bombs, was the biggest danger to soldiers. But a discussion limited to cholera's effects on the battlefield creates too narrow of a lens to properly view the cataclysm that imported diseases caused the wider region. In fact, the story of the *Retirada da Laguna* gives us a few clues that the epidemic extended far beyond the biggest rivers. The only logical explanation for the appearance of cholera within the Expeditionary Force in mid-May 1867 was that it had been carried by sick or pre-symptomatic Terena Indians, many of whom were likely killed by the epidemic. While large columns of the belligerents' armies traveled slowly and with difficulty in Mato Grosso, this region was populated and more quickly traversed by indigenous peoples. Indigenous groups certainly remained in contact and trade with the Guaraní and other peoples of Paraguay regardless of the war, allowing for the uninterrupted exchange of microbes. Cholera's date of arrival in the expeditionary force fits with cholera's movement in Paraguay, which devastated the army in early May and appears to

Crisóstomo Centurión ó sea Reminiscencias históricas sobre la guerra del Paraguay. (Buenos Aires: Impr. de J.A. Berra, 1894) 327-330.

¹⁹ *Gazeta Medica da Bahia*, no. 48, 30 June 1868, 284.

²⁰ Pérgola, Federico, "El Cólera en el Buenos Aires del siglo XIX" *Revista Argentina de Salud Pública*, vol. 1, no. 5 (2010): 44-45. Hooker, Terry D., and Ian Heath. *Armies of the Nineteenth Century. The Americas.* (Nottingham, United Kingdom: Foundry Books, 2008), 68.

²¹ *Gazeta Medica da Bahia*, no. 66, 30 April 1869, 212.

²² Ships of the Brazilian Navy had been most affected during the first wave, with the crews of several ships decimated by the disease. Carlos Frederico dos Santos Xavier de Azevedo, *Historia medico-cirurgica da esquadra brasileira nas campanhas do Uruguay e Paraguay de 1864 a 1869* (Rio de Janeiro: Typ. Nacional, 1870) 173-187.

have spread throughout the country by the end of the month.²³ Furthermore, eight days before cholera was officially recognized, a “case of intense diarrhea” was experienced by an Indian who was traveling with or near the column.²⁴ Rumors circulated of a strange epidemic in the week that followed, likely related to epidemic disease in the surrounding indigenous villages. One of the first cholera victims recognized by the expedition’s doctors was a “chief” of the Terena Indians named Francisco das Chagas. At this point, the expeditionary force was near the banks of the Prata (not to be confused with the much larger Rio de la Plata), a stream that could transport a canoe to the Paraguay River via the Miranda.²⁵

Cholera was unlikely to have been carried from Rio de Janeiro by the Mato Grosso Expeditionary Force because the disease would have been recognized sooner. Additionally, as we have seen, cholera often strikes groups who do not (or cannot) consume clean water and strikes in severe waves that persist for a few weeks or a few months. If it is true that the expeditionary force encountered the epidemic as they interacted with neutral and allied indigenous parties in what is today central Mato Grosso do Sul, the disease would have reached deep into indigenous territory along the many rivers and streams of the Plata River Basin. This basin is an enormous area, encompassing about 3.2 million square kilometers, and was (and is) home to tens of thousands of mostly indigenous peoples (see Figure 1). The history of how a disease—imported by warring armies commanded by an emperor and presidents in distant capitals—ravaged the civilian and indigenous populations of the southern interior of South America remains to be written. That is if archival material even remains.

While cholera was one of the top killers in the Paraguayan War, it was one of many severe health risks in a war fought by undernourished soldiers living and fighting in precarious hygienic conditions in swampy regions. The enormously high death toll was bolstered by the various other diseases found rampant in the crowded army quarters. For instance, the first cholera epidemic was followed by an extended epidemic of malaria, a disease that had plagued Allied soldiers since their arrival. Smallpox was also carried by Brazilian volunteers and recruits from the north. A severe epidemic of smallpox struck as far north as Cuiabá in 1867. In the forests around that city, bodies of this plague were abandoned or dumped without burial and they could be observed from a distance by the presence of “crows and dogs” who feasted on “fetid corpses.”²⁶ Despite the widespread recognition that “Jenerian” inoculation prevented smallpox, the Allied governments were unable to carry out inoculations even among foot soldiers whose movements and actions were more easily controlled than those of civilians.²⁷

Given these dramatic obstacles and the general unwillingness of either side to negotiate, it is hardly surprising that the military deadlock of 1866-67 lasted as long as it did. In fact, it was not until late June 1867 that Allied troops broke through Paraguayan defenses to gain part of the Southern Paraguay River. Historians attribute the allied success after this point to

²³ Centurion, *Memorias*, 328.

²⁴ Rego, Report of the Minister, 51.

²⁵ Emilio Carlos Jourdan, *Historia das campanhas do Uruguay, Matto-Grosso e Paraguay; Brazil 1864-1870* (Rio de Janeiro: Imprensa nacional, 1893) 93.

²⁶ Rego, *Report of the Minister*, 63.

²⁷ Maria Teresa Garritano Dourado, “Doentes e famintos: Cotidiano de um soldado na Guerra do Paraguai (1864-1870),” *Anais do XXVI Simpósio Nacional de História – ANPUH* (São Paulo: 2011) 11-12.

structural and tactical changes set into motion in late 1866 when Luís Alves de Lima e Silva, or the Duke of Caxias, was appointed commander-in-chief of the Brazilian forces. By 1868 Caxias had taken command of the allied forces and assumed the challenge of restructuring the army. He made dramatic improvements in the troops' morale, communication lines, tactics, food, and hygiene.²⁸ Caxias ordered greater attention to cleanliness, especially in sewage removal and water supply.²⁹ His willingness to employ new war technology was demonstrated when the army employed large tethered and manned hot air balloons (assisted by American researchers who had used this tactic in the Civil War) to gain a better understanding of the locations, trenches, and terrain the Paraguayans were defending.³⁰ By 1868, the new commander had created a better organized, well disciplined institution, capable of reaching a military victory. This reorganization made the military in Brazil a more stable and formidable unit than before. Despite these gains, it is difficult to argue that the Paraguayan War ever strengthened the Brazilian nation. Deep political divisions, low public support for the war in both Brazil and Argentina, lack of organization and planning on the part of the Allies, and extreme tenacity on the part of the Paraguayans ensured that all parties had "lost" by the end of the war.

While cholera has always been recognized as having played an important part of this war, little is known about the disease besides its general virulence. Its first wave, between March and June of 1867, appears to have prolonged the war. For example, the Brazilian armies were unable to do much more than bombard the defenses at Curupaity. The Paraguayan army remained behind their deep trenches and tall embankments because "Lopez had no men to throw away on an attack." George Thompson, a British engineer who became a commander in the Paraguayan army, claimed that plans had a force of 2,000 Brazilian soldiers led by General Manoel Luiz Osório to attack Paraguay at Encarnación, the war would have been "ended by it."³¹ Osório "gave up" on these plans and moved his men to Tayuti and Curuzú at the height of the cholera epidemic. On the other hand, the subsequent waves of cholera in the final months of 1867 and in the warm months of 1868 appear to have aided the Allied advance because they had a much larger population from which to recruit and impress soldiers to "throw away," to use Thompson's words. Boys and elderly were brought into the Paraguayan army as the Allies advanced into their territory, but there were no more men to draw upon.

A debate over the impact of this disease on the fortunes of the war matters less than the health catastrophe that cholera caused in the wider region. Most of the fighting of this war occurred on a relatively small and muddy stretch of the Paraguay River, but the diseases that emanated from the battle zone killed tens of thousands of civilians who were distant and removed from the war's front. Did most of the war's victims, such the cholera victims among the Terrena or in Cordobá, even know or care much about the stakes of the war? Though the story of the devastation and death caused by imported disease in the Plata Basin during the

²⁸ Fausto, *History of Brazil*, 125.

²⁹ Richard Burton, who visited the Brazilian front in August 1868, wrote that "the camp appeared clean to the extreme, owing to the stringent orders of Marshal Caxias, who well knows that cholera is to be prevented by drainage, and that water impregnated with sewage and decay breeds fever." *Letters from the Battle-Fields of Paraguay* (London: Tinsley Brothers, 1870).

³⁰ Kolinski, *Independence or Death!*, 143.

³¹ Thompson, *War in Paraguay*, 188.

Paraguayan War remains mostly unknown, its proportions are evident enough to make folly of any of the war's justifications.