

CHOLERA MORBUS 1831-1833

The Example of Porto, a City Under Siege

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From winter, plague and pestilence, good Lord, deliver us!
Thomas Nash (1600)

When, in 1831, cholera morbus arrived in Europe from India, governments and people greeted the news with horror, fear and panic as this highly virulent disease soon turned into a deadly pandemic. Although the arrival of cholera coincided with reforms to existing public health systems, lack of understanding of the causes and origins of the disease, aggravated by political controversy and civic turmoil, blinded governments and medical authorities to the scientific reality of the situation. Caught unawares, governments and civil authorities rushed to put hundred-year-old anti-bubonic plague sanitary measures into effect, although from the onset it might have appeared obvious that sanitation and cleanliness played an important role in slowing the spread of the disease, as in its early stages cholera primarily attacked the urban poor who lived in squalid hovels and tenements in city slums.

Many citizens, increasingly concerned with the approaching disease, looked askance at these measures and were outspoken in their criticism. A Portuguese merchant resident in Hamburg stated that if and when cholera arrived in that city, he was not prepared to stay around as, in his opinion, no number of quarantines or cordons sanitaires were capable of halting its

spread.¹ Autocratic governments, the proliferation of officious public servants, military controls and medical police, together with the medical community's apparent inability to determine the cause of the disease and possible forms of treatment, further undermined the people's trust in the authorities.²



¹ J. R. Santos to M. P. Guimaraens, Altona, 8 July 1831. One of a collection of over 75 letters written from Hamburg and Altona by João R. Santos and José Gomes Monteiro to Manoel Pedro Guimaraens in London between 1828 and 1834. All three individuals were business partners and Portuguese merchants of Porto, Portugal, who had been forced into exile because of their political beliefs. M.P. Guimaraens, a leading member of the Portuguese Liberal Party, had lived in London since 1822. Santos and Monteiro, also strong supporters of the Portuguese Liberal cause, continued trading whilst exiled in Hamburg, where Santos also held the post of Brazilian Consul. Despite the fact that the primary topics of this correspondence were trade and the political situation in Portugal, the letters to London are sprinkled with caustic comments reflecting the authors' opinions of the preventive measures taken by the civil authorities, both in Hamburg where Santos and Monteiro had their offices and in neighboring Altona, where they lived. Santos' letters reflect an alternating fear of cholera and bravado and contain a wealth of homeopathic suggestions for protecting oneself from the disease. Monteiro's letters reveal a more sober appreciation of the impact of the epidemic.

² Richard Evans, "Epidemics and revolutions: Cholera in nineteenth-century Europe." *Past and Present* 120 (August 1988), 136.

The Serra do Pilar in Porto Under Bombardment During the Siege

Some governments, however, did have well-thought-out programs for dealing with public health issues of this sort, as was the case of Porto, beset by civil war and under siege, where the threat of cholera was endured as just another evil to add to the constant bombing and suffering of its people.

Public health in early nineteenth-century Europe

In France, the Royal Academy of Medicine declared that the French would be spared the epidemic since they possessed all the advantages that one would expect to find in a highly civilized country: geographical position, temperate climate, better educated people and “a hygienic situation that left little to be desired in either the public or private sphere.”³ One only had to look at the sanitary reforms that had been implemented since the Revolution. These included demolishing thousands of houses to create wider streets and large open squares in order to provide the city with more sunlight and encourage the flow of healthy breezes, a new reservoir to supply drinking water to fountains in every neighbourhood, razing unhealthy districts, banning industries from the city centre, moving cemeteries outside the city limits and building numerous new and better hospitals for people of all ages and every kind of disease.⁴

In England, cholera appeared in September 1831 during a period of widespread social tension arising from the rapid industrialization of the country, the mass movement of labour to new manufacturing centres and political agitation around proposed changes to the Poor Laws that, in one form or another, had provided public assistance for the poor and destitute since Elizabethan times. After hearing that cholera had appeared in Hamburg, the Privy Council recommended creating Boards of

³ François Delaporte, *Disease and Civilization – The Cholera in Paris, 1832*, translated by Arthur Goldhammer, (Cambridge: The Massachusetts Institute of Technology, 1986), 15-16.

⁴ *Ibid.*, 19.

Health in every town and city,⁵ although most local authorities were not unduly concerned until the disease actually arrived on their doorstep. Cholera was not expected to reach England as long as “there was a proper attention to cleanliness and diet, and no predisposition to the disease due to fear.”⁶

When cholera arrived in Hamburg in 1831, it found a busy mercantile port whose wealth was based on the boom in world trade that followed the fall of Napoleon. An autonomous federated city, Hamburg was governed by an autocratic Senate composed mainly of members appointed for life from the wealthy merchant aristocracy. An estimated 60% of the city’s population, employed in the harbour or in supplying trades and services to the wealthy inhabitants of the city, lived in abject poverty.⁷ As there was no state medical care, an accident, an illness, or the death of the major breadwinner was enough to plunge an entire family into destitution. The Senate kept such a tight reign on the public purse that the public health care for the poor that the city was required to provide under its constitution was left to the good will of a few private individuals and institutions.⁸

Contrary to other European capitals, where authorities were beginning to understand and act on the value of proper urban sanitation, Hamburg was a filthy city, crossed by numerous canals littered with human and animal dung and, in the words of a contemporary diarist: “dead pigs and dogs lying around for months on end, gnawed at by thousands of the most revolting

⁵ For details of the official British Government doctrine regarding the cholera and the Boards of Health, as well as the role of the medical community and other political actors, see Margaret Pelling, *Cholera, Fever and English Medicine, 1825-1865, Oxford Historical Monographs* (London: The Clarendon Press, 1978), 1-80.

⁶ T. Shapter, *The History of the Cholera in Exeter in 1832* (London, 1849), 9; quoted in M. Durey, “The First Spasmodic Cholera Epidemic in York, 1832,” *Borthwick Papers* 46, (York: University of York Borthwick Institute of Historical Research), 4.

⁷ Richard Evans, *Death in Hamburg: Society and politics in the cholera years, 1830-1910* (London: Penguin Books Ltd., 1990), 51-52.

⁸ *Ibid.*, 74-76.

maggots.”⁹ Open drains ran down the centre of the wider streets filled with household waste and general rubbish, and when it rained, the air was fouled with the stench of the slime that flowed sluggishly down these ditches into the nearest canal.¹⁰

When the first case of cholera was recorded in October 1831, the Hamburg Senate, initially believing in a moral or psychological cause for the disease, responded by arresting all the prostitutes and closing brothels and low-class taverns.¹¹ Recalling the plague pandemic of the previous century, the civil authorities attempted to halt the spread of the disease by imposing a five-day-long quarantine on ships and goods from England. When, the following February, cholera appeared to subside after peaking in mid-October, the authorities hastened to inform the people that the city was free of cholera¹² and to celebrate the city’s good fortune with a 121-gun salute.¹³ Not all residents, however, accepted the Senate’s persistent denial of any threat of an epidemic, as they remarked that people still were dying like fools from cholera, that ships from England continued to be quarantined for five days, and that every time the wind blew from the north or the northeast, people dropped like mosquitoes.¹⁴

Origins and spread of cholera morbus, or Asiatic cholera

The Asiatic cholera, so-called because it came from Asia, was thought to have originated in India, where it had been present in epidemic form since the sixteenth century. The disease is believed to have remained contained in India until a violent

⁹ Johann J. Rambach, *Versuch einer physisch-medizinischen Beschreibung von Hamburg*, (Hamburg, 1801); quoted in Evans, *Death*, 129.

¹⁰ Evans, *Death*, 130-131.

¹¹ J. R. Santos to M. P. Guimaraens, Hamburg, 12 October 1832, Guimaraens family archives, Vila Nova de Cerveira, Portugal.

¹² J. R. Santos to M. P. Guimaraens, Altona, 17 February 1831, Guimaraens family archives, Vila Nova de Cerveira, Portugal.

¹³ J. G. Monteiro to M. P. Guimaraens, Hamburg, 7 March 1832, Guimaraens family archives, Vila Nova de Cerveira, Portugal.

¹⁴ J. R. Santos to M. P. Guimaraens, Altona, 18 May 1831, and J. G. Monteiro to M. P. Guimaraens, Altona, 27 July 1831, Guimaraens family archives, Vila Nova de Cerveira, Portugal.

outbreak in Bengal in 1817. Like the bubonic plague before it, cholera spread rapidly by land and by sea along the principle trading routes, reaching Russia in 1823, where it was temporarily halted by the severe winter weather.¹⁵ By 1830, the disease had reached Moscow. When, the following year, Russia engaged in a military campaign against Poland, infected soldiers and thousands of fleeing Poles carried the disease further westwards until it reached the Baltic States, from where it spread first to Germany, then to England and eventually, France, Spain, and Italy.¹⁶

Cholera spread in many ways: by barges and ships that discharged their waste into canals, rivers and harbour waters; overland, as unsuspecting victims travelled rapidly from one place to another along well-travelled country roads; by armies engaged in military campaigns, and the thousands of people they displaced. The disease attacked indiscriminately, affecting able, healthy adults as much as, if not more than, it affected the very young, the very old, the sick and the weak.¹⁷

From the onset, the general opinion was that this was a disease of the lower classes and that the wealthier middle and upper classes were more likely to be spared, perhaps because the first cases affected the urban poor in the harbour areas of large cities. In Hamburg, the first known cholera death, recorded on 6th October 1831, was of a sixty-seven-year-old ex-sailor who lived from begging and who died from violent vomiting and diarrhoea. Soon, forty-one of his fellow lodgers, all penniless vagrants, had succumbed to the disease.¹⁸

¹⁵ For background on the origins of cholera morbus see: D. Greenberg, "Two historic world-pestilences robbed of their terrors by modern sanitation," *The Scientific Monthly* 4, no. 6 (June 1917), 562-563, retrieved 6 June 2005 from JSTOR; Delaporte, *Disease and Civilization*, 5.; Asa Briggs, "Cholera and Society in the Nineteenth Century," *Past and Present* 19 (April 1961), 76-80, retrieved 12 June 2005 from JSTOR.

¹⁶ Evans, *Epidemics*, 563.

¹⁷ *Ibid.*, 128-133.

¹⁸ J. C. G. Fricke, *Geschichtliche Darstellung des Ausbruchs der asiatischen Cholera in Hamburg*, (Hamburg, 1831); quoted in Evans, *Death*, 231.

In Britain, the first case was recorded in the port of Sunderland on October 19th, 1831. The disease rapidly spread across England to London and Liverpool, where it arrived in May 1832. Liverpool, second only to London in the number of cases of cholera, was typical of a thriving early 19th century port where thousands of poor Irish and other foreign immigrants lived in ill-ventilated tenements with little or no sanitation in a city that was notable for its filth.¹⁹

Social and civil unrest in Europe

Despite the many early nineteenth century attempts to improve the living conditions of workers and the less-favoured social classes throughout Europe, deep-rooted memories of the devastation of the bubonic plague a century earlier aggravated the horror, fear and panic with which governments and people reacted to the arrival of cholera in their countries. In England, the arrival of cholera added fuel to the moralistic and xenophobic arguments of opponents of reform to the public services that cared for the poor and destitute. Anti-reformers saw cholera as just another disease of the “dissipated, dissolute, profane, and intemperate [who inhabited] filthy alleys, lanes, and streets, and low, damp, filthy and ill-ventilated haunts, exclusively tenanted by foreigners.”²⁰

‘Foreigners’ usually meant the thousands who populated the working class districts of London and Liverpool and who were usually blamed for spreading disease.²¹ In Liverpool, riots were triggered by fear that doctors were killing hospitalized victims to provide corpses for dissection.²² Everywhere, social discontent and civil disturbance were fed by discussions, rumours and

¹⁹ Geoffrey Gill, Sean Burrell and Jody Brown, “Fear and frustration – the Liverpool cholera riots of 1832,” *Lancet* 358, issue 9277 (21 July 2001), par. 5-11. Retrieved 25 May 2005 from <http://web5.epnet.com.ezproxy.umuc.edu>.

²⁰ Alan Bewell, “Cholera Cured Before Hand: Coleridge, Abjection, and the Dirty Business of Laudanum,” review of *The Moral & Physical Conditions of the Working Classes*, by James Kay-Shuttleworth, *Romanticism* 4, no. 2 (1998), 155-173. Retrieved 21 May 2005 from <http://web5.epnet.com.ezproxy.umuc.edu>.

²¹ *Ibid.*, par. 24-26.

²² Gill et al., *Fear and Frustration*, par. 22.

suspensions, together with the people's dissatisfaction with the medical authorities.

In Russia, traders rioted as cordon sanitaires and quarantines affected their livelihood. In Hungary, where more than 100,000 people died of cholera between June and September 1831, angry mobs attacked castles and murdered the nobles whom they believed were responsible.²³ In Paris, popular opinion held that the government had poisoned the water supply and invented the cholera epidemic as part of a plot to draw attention from political issues.²⁴

Everywhere, the rising fear of the disease, and the authorities' apparent disinterest in swiftly addressing the problem, became a matter of widespread public debate when it became evident that the ravages of cholera were not restricted to the urban poor. In effect, exposure to contaminated water supplies ensured that all classes of society were vulnerable to the disease.



Blue Stage of the Spasmodic Cholera

Sketch of a girl who died of cholera November 1831, in Sunderland, near Newcastle, artist unknown.

Source: National Institutes of Health Library, Bethesda MD, USA

The Disease

²³ Evans, *Epidemics*, 137.

²⁴ David I. Kulstein, review of *Le Cholera: la Première Epidemie du XIXème Siècle*, by Louis Chevalier, *The Journal of Economic History* 20, no. 1 (March 1960): par. 2; and Evans, *Epidemics*, 138.

Cholera, morbus or Asiatic, was an acute, epidemic disease with a 6 to 48-hour incubation period followed by the sudden onset of symptoms that, if untreated, led to a rapid and painful death.²⁵ The effects of cholera, especially the speed with which the disease struck without warning, were terrifying, as a horrified J. R. Santos observed from his office in Hamburg: “Such was the young woman’s pain that she grimaced four times, let out an equal number of yells, spun around twice, and fell senseless to the ground.”²⁶ People could be walking about normally, with no symptoms one day, and yet be dead the next morning. A woman could begin her supper in good health but not live to eat her pudding.²⁷ Once it became clear that cholera affected people from all walks of life, fastidious members of the bourgeoisie lived in fear of the embarrassment of being suddenly stricken with an uncontrollable, violent attack of diarrhoea in public, amidst dozens of other respectable citizens.²⁸

No less frightening was the horrifying spectacle of an afflicted individual. His first symptoms usually were an uncontrollable, watery diarrhoea, followed by intense vomiting, thirst and dehydration. He would next suffer severe pains in his stomach and violent cramps in his arms and legs. His skin became heavily wrinkled and turned blue; his hands and feet, and later his entire body, became icy cold. His eyes dried out and sank into his face, his mind wandered until, finally, he lapsed into unconsciousness.²⁹

Stymied physicians engaged in acrimonious debates between the two camps that divided the medical community: Miasmatics, who believed that the disease was air-borne and transmitted by ill winds and contaminated atmospheres, and Contagionists, who

²⁵ Tinsley Randolph Harrison, *Harrison’s Principles of Internal Medicine*, 8th ed., s.v. “Cholera and other enterotoxic infections,” (New York: McGraw-Hill, 1977).

²⁶ Santos, 18 October 1831.

²⁷ C. A. Schröder, *Aus Hamburgs Blütezeit* (Hamburg, 1921), 80-1 in Evans, *Death*, 229.

²⁸ Evans, *Death*, 229.

²⁹ Mesa da Santa Casa da Misericórdia do Porto, *Conselhos ao Povo Contra a Cholera Morbus*, (Porto: Tipografia de Sebastião José Pereira, 1855), 14.

believed that the disease spread through person-to-person contact and contact with infected objects.³⁰

Prevention was widely discussed in the newspapers by physicians and concerned citizens alike. A Portuguese merchant in Hamburg was quick to share his opinion of the various preventive measures and make his own suggestions to his friend in London:³¹

“If you and the governments only knew what the cholera really is like, they would have long given up on the quarantines and cordons sanitaires that have been responsible for more deaths than the disease. Fumigating cloth is of no help at all and just tries our patience.

What you need to do is take the following precautions. Be moderate in all things: eat only as much as you need, drink moderate amounts of wine, EAT NO FISH. Do not drink any water unless it is warm and has been filtered – a filter only costs 25 to 30 shillings and is useful at all times, especially in London. Do not let your feet get wet, avoid colds, eat no raw fruit – make sure it is boiled first. Last, but not least, be moderate in your cult of Venus – once a week should be the norm although stricter persons say that one should limit oneself to once every fifteen days.

We now hear that the authorities believe that cholera is transmitted by the foul air that rises from the sewers. It could be so. I believe that the cause is either the water one drinks or the air that one breathes, and that some people who eat unhealthy food or who imbibe drinks that ferment in the stomach, such as beer in the case of the poor, and grogs and champagne in the case of debauched gentlemen, are more likely to fall ill.”

³⁰ For descriptions of the two schools of medical thought see: Michael Jennings, “The Medical Community’s Response to the Cholera Epidemic in London, 1831-32,” *The Student Historical Journal* 35 (Loyola University: 1993-1994). Retrieved 6 July 2005 from <http://www.loyno.edddu/~history/journal/1993-4>, par. 3-6; Durey, *Borthwick Papers*, 15; Pelling, *Cholera, Oxford Historical Monographs* (London: The Clarendon Press, 1978), 45-112.

³¹ J. G. Monteiro to M. P. Guimaraens, Altona, 28 October 1831, Guimaraens family archives, Vila Nova de Cerveira, Portugal.

A noted Portuguese physician exiled in Paris further reflected the widespread belief that contagion was not a factor and that temperate living might be the best preventive measure:³²

“I can imagine the uproar that will follow the news, in yesterday’s paper, that a person was victim to the cholera in London. Have no fear, my dear friend, as I am convinced that this malady is a mere epidemic that has nothing of contagious to it, and all that you need to do is avoid certain predisposing circumstances to decrease your chance of getting it.

Avoid everything damp with a good pair of shoes. Wear flannels of the kind that keep your skin warm but always slightly irritated. Avoid Venus, be moderate and restrained in the wars of love. In other words, all possible temperance and sobriety in all kinds of things. Pure air, preferably cleansed with chlorine. Above all, control your imagination, be courageous and manly.

So much has been written, so many remedies have been proposed, that one cannot say that one measure is more infallible than another. Some doctors praise bloodletting whilst others damn it. Stimulants, baths, calomel and opium, brandy and laudanum have proved equally successful and useless. I wish the health authorities would make a proper study and compare the results in cholera patients who have been treated and those who have been left to their own devices.”

The City of Porto and Cholera Morbus

³² Francisco d’Assis Sousa Vaz to M. P. Guimaraens, Paris, 25 November 1831, Guimaraens family archives, Vila Nova de Cerveira, Portugal.



MAP OF THE CITY OF PORTO UNDER SIEGE

Inner lines of defence: Liberal; outer lines of defence: Absolutist.³³

During the second quarter of the nineteenth century, Portugal was in deep political turmoil as Dom Pedro and Dom Miguel fought each other for the throne. At the time of the cholera epidemic, Porto, headquarters of the Liberal, or Constitutionalist, army, was besieged on three sides. The city was crossed by defensive trenches that flooded with stagnant water when it rained and the only access to the outer world came from a few ships that braved the enemy batteries to cross the bar of the River Douro into the Atlantic.

The threat of cholera did not catch the civil authorities of Porto unawares because they were prepared for such an eventuality. In addition to an established, well-run health care system, government and physicians alike had been closely following the debates and events in England and France, and by 1830 they had devised specific preventive measures.

³³ Map extracted from Simão José da Luz Soriano, *Historia do Cerco do Porto*, (Porto, A. Leite Guimarães, 1840).

Regional Boards of Health had existed in all major cities of the realm since 1626. Each board, consisting of two health inspectors and several physicians and surgeons, submitted regular reports to the Crown on all matters of public health. They also visited ships and places where cases of any kind of contagious disease had been detected or were suspected, advised on quarantines and supplied medicine to the poor. A clerk recorded all their observations and transmitted them to the respective authorities.³⁴

Five major hospitals belonging to charitable organizations and religious brotherhoods, as well as dozens of smaller hospitals, infirmaries and nursing homes run by minor religious orders, parochial associations and merchant guilds, assured the health and well-being of the citizens of Porto.³⁵ Acutely ill patients with curable diseases and maternity, convalescent and syphilitic cases were treated at the main hospitals; old people, cripples, lunatics and lepers were sent to separate institutions. The city jail kept a 40-bed infirmary for prisoners.³⁶

The major hospitals were run under similar guidelines to those set forth in 1499 for the newly-formed *Misericórdia* religious brotherhood. In addition to religious strictures, the rules included: feed the hungry, provide drink for the thirsty, clothe the naked, shelter pilgrims and the poor, succour the sick, free captives, visit the imprisoned and bury the dead.³⁷

Every hospital and nursing home was also strictly bound by official regulations. Each physician and surgeon in the realm,

³⁴ *Gazeta Médica do Porto*, vol. 5, 295; *Vereações* 83, 85 & 87, in Barros, "Assistência Hospitalar," 413-414.

³⁵ Included in the number of minor convents and nursing homes were the *Nossa Senhora da Graça* home for orphans, the *Senhora da Esperança* college for orphaned young ladies from eighteen to twenty-five years of age, the *Anjos* home for orphaned girls and daughters of noble Porto families and three hospices for the poor run by religious orders. *Simão* José da Luz Soriano, *História do Cerco do Porto*, (Porto, A. Leite Guimarães, 1840), 572.

³⁶ Luís de Oliveira Ramos, *História do Porto*, 3rd ed. (Porto: Porto Editora, 2000), 382-384.

³⁷ *Ibid.*

whether civil or military, was required by law to submit monthly reports to his local Board of Health, giving details of the incidence, probable causes and treatment of all illnesses that occurred in the hospitals, jails, quarantine hospitals, towns and villages where he practiced medicine. These reports were forwarded to the General Superintendent of Police and then to the Secretary of State for Affairs of the Kingdom.³⁸

Boards of Health met regularly to discuss the causes and treatments for the principle contagious diseases. Portugal's experience of contagious diseases during the Peninsular War, when there were no less than 9 major epidemics between 1809 and 1811, confirmed the health authorities' belief that it was overcrowded cities, poor personal and social hygiene, lack of food and a want of suitable clothing that aggravated poverty, deprivation, fear and disease.³⁹

When, late in 1830 the Porto authorities received the first news that cholera had arrived in Europe, they reacted promptly by alerting the citizens to the outbreak in Russia. In August 1831, the City Senate allocated funds for special precautions that included reopening a contagious disease hospital and establishing an area by the docks for the quarantine of ships and contaminated merchandise. On 17th March 1832, the Municipal and Military Congress convened a special meeting of all physicians in the city to appoint three health inspectors for each of the twelve city districts and to issue the following emergency directives:⁴⁰

- Every slaughterhouse, butcher shop, hospital, jail, inn, public square, hostel, public and private cesspit, sewer and stagnant pond shall be promptly cleaned.
- Citizens are expressly forbidden to discharge any type of refuse in the streets. Refuse carts shall be placed on each street and square each evening for homes without private

³⁸ Barros, "Assistência Hospitalar," 285-291.

³⁹ Ibid., 293-297.

⁴⁰ Joaquim Teixeira Duarte, *Copiador dos officios e mais papeis relativos ao Juízo da Saúde Pública 1826-1843*, (City of Porto Historical Archives, March 17 1832), File A-PUB 835.

cesspits and removed before daybreak. Each cesspit must be emptied and washed out every eight days.

- Several isolated houses on the heights of the city shall be requisitioned for the purpose of receiving victims of the epidemic should it arrive in the city. These buildings shall be fully furnished with beds and blankets and a fully-stocked pharmacy. Areas of quarantine for ships and merchandise shall be reinforced.

- Everyone must ensure that there are no damp clothes or deposits of excrement or urine in his bedroom; chamber pots must be washed immediately after use and filled with fresh water. Householders must open windows and doors wide each day to air the premises.

- Each parish priest shall draw up a list of the poor in his parish. The neediest shall be supplied with linen and food and their houses checked regularly for cleanliness. Like everyone else, the poor shall also fumigate their homes and clothing every day.

Cholera arrived in Porto by sea on 1st January 1833 with a contingent of Belgian soldiers, seventeen of whom were taken to a central military hospital on debarkation, suspected of suffering from seasickness and other effects of a particularly rough voyage. Upon arrival at the hospital, they were diagnosed with cholera and promptly quarantined but by then it was too late – cholera had breached the city’s defences.⁴¹ The medieval centre of the city on the north bank of the river was the most densely-populated district and the one most affected by the disease, as up to fifteen families crowded in four and five-storey tenements, side-by-side with the stately homes of the rich, despite widespread damage from enemy bombing and cannon-fire from the opposite bank of the river.⁴²

⁴¹ Barros, “Assistência Hospitalar,” 340.

⁴² Unlike Hamburg, where the worst slums were located along and in the immediate area of the harbour, well distant from the lavish homes of the merchant bourgeoisie. In Porto, the great majority of “*ilhas*” or closed, multi-family working and poor class hovels with little or no sanitation, could be found all over the city.

A Sanitary Commission was appointed to take over the management of the city's public health matters. The Commission ordered the demolition of trenches within the city and construction of two cemeteries for cholera victims. When the quarantine hospital was overwhelmed by the number of victims, another was opened. When the prison hospital could no longer handle the rising number of sick inmates, two city courts sat around the clock for several days to release as many prisoners as possible.⁴³

Porto, a city lacking proper sanitation at the best of times, was filthy. Siege conditions increased the strain on public sanitation as noxious refuse piled up when collection of household waste and excrement ceased. Despite the ban on throwing dead animals and other evil smelling objects into the street, the people, more concerned with the bombs that were falling on the city and the desperate lack of food and supplies of all sorts, paid little heed to these edicts.⁴⁴

Portuguese and foreign residents formed a Philanthropic Association to alleviate the hunger and suffering in the besieged city by providing daily rations. At the peak of the epidemic, the Association distributed almost six thousand rations each day.⁴⁵ The Association was supported by donations in cash and in kind from Porto residents, merchants, public servants and British sailors, and in cash from anonymous businessmen and journalists in Lisbon and Liberal exiles and supporters in England.

The state of siege and the inflow of soldiers, refugees and returning Liberals more than doubled the pre-war population and

⁴³ Barros, "Assistência Hospitalar," 342.

⁴⁴ "My dear friend, we have a profusion of the three plagues: hunger, pestilence and war. How I yearn for the freedom to enjoy your company as nobody has an idea of our troubles; only those of us who watch, wait and suffer... (...) We are totally surrounded and cannot even go into the suburbs; the enemy are besieging us most tightly; everything and everyone is under military control." Manuel Megre Restier to M. P. Guimaraens, Porto, 23 March and 26 May 1833, Guimaraens family archives, Vila Nova de Cerveira, Portugal.

⁴⁵ Report of the Philanthropic Association, Book 1 of Miscellaneous Manuscripts (City of Porto Historical Archives), 158; cited by Barros, "Assistência Hospitalar," 344.

greatly altered the demographics of the city, thereby creating conditions that favoured the progression of the disease. In 1832, a Housing Committee was charged with finding accommodation for all the civilians and military who had been trapped by the siege or had lost their homes or quarters from enemy bombing. The Porto authorities carried out a census to determine the number of houses in the city that could provide accommodation for the waves of new arrivals to the city, both military and civilian.⁴⁶ Census takers combed the city, recording the number of buildings, the number of floors in each building, the number of occupied dwellings and the social status of the owner or tenant.⁴⁷ The great majority (approximately 83%) in the centre of the city consisted of a ground floor and one or two upper stories. There were a few 5-storey, multiple family residences along the riverfront and in the surrounding neighbourhood; there were very few 6-storey buildings. In the outskirts, but within the city walls, most houses consisted of a ground floor and single upper storey. Most residences housed the head of the family, his spouse, children and servants, as well as out-of-town relatives and friends. All in all, the census recorded 5,562 dwellings, housing 22,804 inhabitants.⁴⁸

The Committee commandeered 183 houses, 28 houses and furnishings and 26 abandoned residences and empty rooms in relatively undamaged houses. Only the poor, the military, priests and foreigners were exempt, which would explain why the census figures did not include convents, monasteries, religious hostels or their residents, nor the thousands of poor who lived in squalid quarters all over the city. The following foreigners were recorded in the census as owners or tenants within the city: 87 Brazilian, 79 British, 30 Spanish, 27 Galicians, 14 French, 11 German, 9 Italian,

⁴⁶ In addition to members and public servants of the Liberal government, civilians included hundreds of Liberal sympathizers from all over the nation who had fled the Absolutist police or who had returned to the city after living in exile elsewhere in Europe.

⁴⁷ Barros, "Assistência Hospitalar," 22.

⁴⁸ Barros, "Assistência Hospitalar," 14-18.

2 Dutch, 1 Dane and 1 Austrian.⁴⁹ Of a list of 132 Absolutists who fled the city in 1832 when the Liberal forces arrived and whose property was to be requisitioned by the military, only 15 remained in the city in January 1833.

As the number of cases of cholera rose, the Sanitary Commission appointed worthy citizens to supervise hygiene in the improvised shelters. It ordered regular fumigation of private residences and military quarters and decreed the swift burial of the dead.⁵⁰ The Sanitary Commission calculated approximately 50,000 civilians to be living in the city during the epidemic⁵¹, and of these, Barros estimated that roughly 50% belonged to the poorest classes.⁵²

The besieging army also took measures to protect itself, first by creating ‘observation hospitals’ on both banks of the Douro, where all persons leaving Porto had to be examined for cholera.⁵³ “Effective immediately, all soldiers in the most advanced positions shall prevent all civilians, whether men, women or children, from

⁴⁹ Barros, “Assistência Hospitalar,” 35.

⁵⁰ Barros, “Assistência Hospitalar,” 344-346.

⁵¹ Report of the Sanitary Commission for the city of Porto, cited by Barros, “Assistência Hospitalar,” 18.

⁵² Barros, “Assistência Hospitalar,” 19. Barros estimated this value by comparing demographic values for Porto with those given in demographic studies of Spanish cities during periods of crisis, during the same timeframe.

⁵³ “Order of the Day No. 53: Considering that the epidemic known as Asian cholera morbus is raging in the city of Porto and that it has produced numerous victims, His Majesty, concerned with the well being of his subjects and with a view to doing everything in his power to protect his Army and Kingdom from the devastation of this disease, hereby orders that all persons who leave Porto shall be observed for a period of time in the houses that shall be created for this purpose on the northern and southern banks of the River Douro. His Excellency, the Minister of War and Commander in Chief of the Army of Operations is immediately ordered to ensure that all persons who leave Porto are taken straight away to either one of these Observation Hospitals. (...) Officers shall do their utmost to avoid all contact with these individuals and ensure that the troops obey the highest standards of hygiene and cleanliness.” *Order of the Day 53*, (Quartel Geral das Operações São Mamede de Infesta, 29 March 1833), Guimaraens family archives, Vila Nova de Cerveira, Portugal.

leaving the city and force them to return straight away from whence they came. This order does not apply to enemy soldiers who are crossing over and who shall be taken without delay to a quarantine hospital for examination. Foreigners from Porto who are duly identified with the flags of their country are exempt from this measure”.⁵⁴

The epidemic first peaked in February, waned in March, and raged again in April, when the greatest number of cases was reported. Although no respecter of class, those most affected by the disease were children, women and old people from the poor classes. By 22nd August 1833, when the Sanitary Commission declared that the city was free of the disease, it was estimated that cholera had claimed the lives of approximately a third of the civilian population. In eight short months, of the 9,371 persons infected by cholera, 3,612 died; of these, 1,593 died in hospital and 2,019 at home.⁵⁵

Table 1. SUMMARY OF THE CHOLERA DATA FOR PORTO

1832-33 City Census: 22,804 inhabitants and 5,562 dwellings		
First case reported on Jan 1, 1833	City declared free of the disease on 22 August 1833	
Sanitary Commission data for the period of epidemic:	50,000 inhabitants	50% belonging to the poorest classes
- Number of persons infected with cholera	9,371	

⁵⁴ Order of the Day No. 60: (...) effective immediately, all soldiers in the most advanced positions shall prevent all civilians, whether men, women or children, from leaving the city and force them to return straight away from whence they came. This order does not apply to enemy soldiers who are crossing over and who shall be taken without delay to a quarantine hospital for examination. Foreigners from Porto who are duly identified with the flags of their country are exempt from this measure. Anyone who fails to comply with this order shall be severely punished. *Order of the Day* 60, (Quartel Geral das Operações São Mamede de Infesta, 1 April 1833), Guimaraens family archives, Vila Nova de Cerveira, Portugal.

⁵⁵ Report of the Sanitary Commission of Porto, 1833, 26-28 and 31; quoted in Barros, “Assistência Hospitalar,” 345-347.

- Number of deaths from cholera	3,612 Mortality rate: 1 in 3	1,593 died in hospital 2,019 died at home
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Source: Compiled by author from data in Barros, "Assistência Hospitalar" as cited in this paper.

Concluding Remarks

Porto's handling of the cholera epidemic stands out for several reasons. Unlike the majority of other European cities where governments and authorities were taken unawares, the Porto health authorities already had a carefully-studied program of contagious disease measures ready to be implemented when cholera appeared on 1st January, 1833. The controlled siege environment and the fact that the city was under martial law enabled the city to act swiftly to ensure that these measures were strictly applied and, consequently, to limit the spread of the disease, although these very same circumstances contributed to the greater rate of infection.

Although the Porto public health authorities had clearly grasped the theories of hygiene and contamination in the prevention and treatment of a highly virulent disease, the truth is that in practice there was very little they or the government of the besieged city could do to lessen the impact of cholera. Cholera affected residents all over the city, but it was particularly lethal in the seriously overcrowded squalid hovels that housed the urban poor who, already weakened by a recent epidemic of typhoid fever, contracted cholera by the hundreds. The great majority of these did not survive.

Table II. REPORTED DEATHS FOR THE FIRST EUROPEAN CHOLERA MORBUS EPIDEMIC 1831-1833

Anecdotal data

	Country	When first reported	Estimated mortality
	Russia	1830-31	197,069 in cities & towns; 1831 data only
	Poland	February 1831	unavailable
	Hungary	June to October 1831	100,000 of 250,000 cases
	Hamburg	October 1831	1,652 one month only
	Berlin	August-September 1831	1,426 of 2,271 cases
	Finland	1831	unavailable

Sweden	1831	unavailable
Austria	1831	unavailable
England & Wales	October 1831	21,500
Scotland	October 1831	9,500
Ireland	October 1831	25,000
France (Paris)	March 1832	18,000
Spain	1832	unavailable
Portugal (Porto)	January to August 1833	3,612 of 9,371 cases

Source: Table compiled by the author with data from the São Bento da Foz Hospital, UCLA School of Public Health, Evans, *Epidemics* and Patricia Calkins.

The records for the São Bento da Foz Hospital, which treated the greatest number of poor patients from the riverside neighbourhoods, show a mortality rate of 86%, as compared with an average mortality of 38% for all hospitals in the city.⁵⁶ Nonetheless, the overall one-in-three mortality rate was not inordinately high, especially when compared with the mortality in Hamburg, a much larger city with four times the population and served by inadequate public health services.⁵⁷ That more than one tenth of the besieged population did not die was undoubtedly due to the authorities' expertise and preparations and to the strict implementation of the measures they had previously devised for this purpose. Porto, a tiny city in an almost forgotten corner of southwest Europe, had set a high standard for the management of public health care in an epidemic situation.

True to the proud city's motto, Porto, that ancient, most noble, always loyal, unconquered city, may have been bloodied, but it remained unbowed.

⁵⁶ Barros, "Assistência Hospitalar," 104.

⁵⁷ UCLA School of Public Health Department of Epidemiology, "Asiatic cholera pandemic of 1826-37". Retrieved 11 January 2006 from <http://www.ph.ucla.edu/epi/snow/pandemic1826-37.html>; Evans, *Epidemics*, 128-146; Patricia Calkins. Retrieved 11 January 2006 from <http://simpson.edu/~calkins/berlin/life/life.htm>.

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