Power and health in South America: international sanitary conferences, 1870-1889

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Abstract

This article analyzes the international sanitary conferences that were held in South America in 1873 and 1887, involving the Brazilian Empire and the Republics of Argentina and Uruguay, as an integral part of a series of similar events that took place in Europe and North America starting in the second half of the nineteenth century. The interests of the countries involved, namely trade relations and immigration from Europe – both directly affected by the epidemics – are discussed, and the repercussions of these sanitary agreements on the other countries in the Americas are indicated. The American health conventions in the late nineteenth century represented the first initiatives in the Americas to solve international public health problems.

Keywords: public health; diplomacy; epidemics; Brazilian Empire; Río de la Plata republics.

The international sanitary cooperation movement arose from the need to control outbreaks of epidemics that affected large regions and went beyond the legal borders between countries. The nineteenth century was characterized by large epidemics, which were a major public health concern. Throughout this period, six serious invasions of Asiatic cholera, resulting in a global pandemic, devastated Europe and America, and other diseases, such as yellow fever and smallpox, reached epidemic proportions several times and on different continents. As stated by Ilana Löwy (2006, p.32):

> The impetus for public health research stemmed from the very concrete fear of epidemics; this apprehension led to attempts to implement common health policies. Later, with the advent of the germ theory of disease, this movement promoted an effort towards standardization of laboratory practices used to recognize the agents of communicable diseases. It found support through international sanitary conferences.[1]

From 1851 to 1938 there were 14 of them, and the main goal "of the first sanitary conferences was to study to what extent one could suppress a quarantine without endangering citizens' health" (Löwy, 2006, p.33). Quarantines were a real obstacle to international trade, and, in part, the health authorities sought to address the important economic issues.

In studies of the international sanitary conferences and meetings, it is worth noting the importance of the three Latin American conferences held in the second half of the nineteenth century: the first two involved the Brazilian Empire and the Republics of Uruguay and Argentina, and were held in Montevideo in 1873, and in Rio de Janeiro in 1887; the third took place in Lima, Peru, in 1888, and included Bolivia, Chile, Ecuador, and the host country. Marcos Cueto highlights (2004, p.14) that "in all these meetings, the limitations at the time in traditional international health policy, generally fragmented, hostile to trade, and most often inefficient, were abundantly clear."

While, in Europe, the international sanitary conferences served as the genesis of the World Health Organization (WHO), founded in 1948, in the Americas, the 1873 and 1887 conferences led eventually to the establishment of the Pan American Health Organization (PAHO). The initial milestone on the path to PAHO was the First International Health Convention of the American Republics, held in 1902 in Washington (Cueto, 2004). Therefore, PAHO is older than WHO, which highlights the pioneering spirit of the Americas with respect to international health.

For a long time, the historiography of public health has centered on the analyses produced by European and North American historians, who were unaware of or placed little importance on events in Latin America. The research carried out in Brazil has not considered the conferences of enough importance to treat them as international sanitary conferences.

In Uruguay, a pioneering work by the physician Joseph Saralegui (1958), was the first to treat the 1873 and 1887 sanitary conferences as important events integrated into what was happening elsewhere. According to the author, the 1873 event, held in Montevideo "represented a health victory at the time; it was the first American International Convention that sought to standardize quarantine measures and health policies applied to vessels infected by cholera, yellow fever and the plague" (p.131).

Of the newer approaches, we must emphasize two scholars whose approach differs from that of those who did not take the events in Latin America into account: Marcos Cueto

(2004, p.14), a Peruvian historian, according to whom the sanitary conferences held by South American countries were in tune with international conferences: "Latin America also organized events at around the same time, usually resulting in an agreement between two, three and even four countries. A series of meetings on health involving Argentina, Brazil and Uruguay were among them"; and the Canadian Anne-Emanuelle Birn (2006, p.679), who also pointed out this similarity, stating that "the European concern in the mid-nineteenth century was to prevent the spread of epidemic diseases and the economic consequences in terms of trade disruptions – and this was echoed in a series of meetings held in Montevideo and Rio de Janeiro, begun in 1873, with the purpose of standardizing quarantine measures and health policy applied to sea vessels."

These two researchers, in some respects, interpreted the American sanitary conferences from another perspective, as more integrated with the discussions taking place in Europe. Further comparative analysis reveals the timely nature of the discussions at these American and European events held throughout the second half of the nineteenth century, which played an important role in public health in many parts of the world.

As noted by Nísia Lima (2002, p.25), "the role of health in international relations since the second half of the nineteenth century has not been sufficiently evaluated." It is in this context that the 1873 and 1887 sanitary conferences were held by the Brazilian Empire and the Republics of Argentina and Uruguay. The primary objective of these conferences was the removal of obstacles to trade and transport; and the protection of the region against what were seen as exotic epidemics.

The process of organizing the First South American International Sanitary Conference, in 1873, began in mid-1871 when the yellow fever epidemic in Argentina ended and that country's government presented the first draft of a health agreement between the two South American Republics in the Río de la Plata region, namely Argentina and Uruguay. A major reason was the geographical proximity of the two countries, which facilitated the movement and spread of epidemic diseases.

It is worth recalling that there was a large flow of immigrants to this region at that time and that yellow fever was associated with immigration, as it was believed that the disease affected immigrants more strongly. Thus, yellow fever was the main reason for the sanitary conference held in 1873.

With the end of the yellow fever epidemic in Argentina, the authorities' fear turned to the port, the source of many diseases. Beginning in July, 1871, the Argentine diplomatic authorities became concerned with the emergence of cases of yellow fever in Bahia[2] and the possibility of a new outbreak of the disease in their country. They proposed standardization of preventive procedures between Uruguay and Argentina for ships coming from Bahia and docking in Montevideo and Buenos Aires.

Initially, the idea was to formulate a quarantine agreement and create international lazarettos (isolation hospitals) common to the two countries. Moreover, only Argentina and Uruguay were expected to participate, since Argentina's hostilities toward Brazil due to the Paraguayan War[3] and the constant yellow fever epidemics in the Brazilian Empire, both contributed to the initial failure to invite the Brazilian government to take part in these negotiations.

However, the Brazilian diplomatic leadership, soon after the publication of the "Fundamental Plan for a Sanitary Convention between the Republics of Uruguay and Argentina," complained on October 16, 1872, in the newspaper *Telégrafo Marítimo*, that it should be allowed to participate. This fact suggests that politicians in Brazil were aware of and vigilant about events in Uruguay and that they still maintained some control over government decisions there.

That was the start of a conflict with the Argentine government, which rejected Brazil's participation in the health agreement. At the same time, Uruguay was strongly dependent on Brazil because of the agreements signed in the 1850s and still in effect. This justified Brazil's claim to participate in the health agreement, based on one of the navigation treaties with Uruguay in 1857.

The Brazilian presence in Uruguay began in the post-independence period, when the Cisplatine province (modern Uruguay) was incorporated into the Brazilian Empire between 1823 and 1824, a union that lasted until 1828. Even after the separation, Brazil continued to exert a strong influence on Uruguay's economy and politics. During the 1850s, the Brazilian presence on the Río de la Plata was redefined, not through the use of military force, but rather through trade, navigation and border treaties.

The treaties signed in 1851 and 1857 were the result of negotiations between the Brazilian Empire and the Oriental Republic of Uruguay after the defeat of President Oribe and the restructuring of the eastern state, and were, for the most part, extremely disadvantageous to the Uruguayans and the subject of great controversy.[4] One of the articles of the River Navigation Treaty, signed on September 15, 1857, stipulated that: "Health legislation to be applied to individuals or objects with suspicious origins 'shall be regulated uniformly and in agreement with all the riparian states,' so that each reconciles health precautions with humanitarian duties and the interests of commerce and navigation in general" (Uruguay, 1993, p.523; emphasis mine). It was based on this article that Brazil demanded to participate in the health agreement.

The Argentine diplomatic mission in Uruguay was informed of the – in some respects 'forced' – invitation extended by Uruguay to the governments of Brazil and Paraguay; the reaction of the Argentine authorities was hostile, given that the Argentine government had initiated the drafting of the health agreement and, according to the Fundamental Plan, other countries could only be invited after the agreement had been approved by both republics.

The 1873 International Sanitary Conference was held in Montevideo, capital of the Oriental Republic of Uruguay, from June 14 to September 3, with the participation of the Brazilian Empire, the Republic of Argentina and the Oriental Republic of Uruguay.

Paraguay was invited to participate, according to information from the Report of the Brazilian Ministry of Foreign Affairs (Brazil, 1888). However, the Paraguayan government did not send a representative, probably due to the administrative disorganization in the country after the war and the fact that "between 1869 and 1876, Paraguay was virtually a protectorate of the Brazilian Empire" (Doratioto, 2002, p.464), which desired stability in Paraguay and refuted Argentina's claim to the right to annex the country.

The objective of the conference was "to reach an agreement among the respective nations, protect them as much as possible against the epidemics that have unfortunately plagued these countries in the last few years" (Ata..., 14 jun. 1873). The conference was attended by diplomats and doctors from the three countries, whose major concern was the epidemics

that affected these countries – especially yellow fever, as indicated earlier – and the need to address them collectively and coherently.

The first activity of the 1873 conference was the presentation of the diplomatic and medical representatives of each country (Ata..., 14 jun. 1873): the Uruguayan delegation was composed of the Minister of Foreign Affairs, Gregório Perez Gomar, and physicians Gualberto Mendez (1824-1883) and Pedro Visca (1840-1912). The Uruguayan Doctors had graduated from the School of Medicine in Paris in 1857 and 1870, respectively, due, among other factors, to the lack of a medical school in Uruguay until 1875 (Mañé Garzón, Roca, 1996). Gualberto Mendez had been a member of the Board of Public Hygiene and the health physician of the port of Montevideo since 1860, and from 1872 to 1877 he served as chairman of the Board of Public Hygiene. In his training, Pedro Visca was directly influenced by the experimental medicine of Claude Bernard (1813-1878) increasingly practiced in France, as well as Pasteur's theory; he worked in a hospital in Paris during the cholera epidemic that hit Europe in 1865 (Mañé Garzón, Bonavita, 1989). In 1885, he helped organize the teaching of clinical medicine at the School of Medicine and became a professor of this area; from 1887 to 1889, he was head of that school.

Argentina sent the consul general and Jacinto Villegas, a special agent of the Argentinean government, to the sanitary conference, in addition to physicians Eduardo Wilde (1844-1913) and Pedro Mallo (1838-1889). The doctors were part of the Health Board of the Port of Buenos Aires, professors at the Medical School in the Argentine capital, founded in 1822, and members of the National Academy of Medicine in Buenos Aires, which gave them prestige and professional recognition. Eduardo Wilde was a member of the generation of hygienists that began to hold public office, as part of a process that established and consolidated the profession. The group sought to expand its participation in the bureaucratic structure of the state in order to intervene in matters relating to public health. Wilde was an example of a political doctor, defined by González Leandri (2000, p.430) as a "builder and product of both the state and his profession, being supplemented at the institutional level by the Hygiene Council, in its dual role as state institution and legitimate representative of the medical profession as a legally privileged group."

The Brazilian team included Eduardo Carlos Cabral Deschampes, consul general of Brazil in Uruguay, doctors of medicine Francisco Marques de Araújo Góes (1837-1905) and José Ignácio de Barros Pimentel (1832-1888), and Antonio Duarte de Araújo Gondim, minister of Foreign Affairs resident in Uruguay. The Brazilian Francisco Marques de Araújo Góes was a professor of natural history at the Imperial Colégio D. Pedro II (D. Pedro II Imperial Secondary School), and in the 1880s he became a member of the Academia Imperial de Medicina (Imperial Academy of Medicine) in Rio de Janeiro. The physician José Ignacio de Barros Pimentel graduated from the Faculdade de Medicina da Bahia (Bahia School of Medicine) in 1857 and, as reported by Lycurgo Santos Filho (1991, p.159) " rendered services during the War of Paraguay and, after the fighting had ended, moved to Montevideo, where he practiced for a few years." Certainly, the fact that he participated on the battlefield defending the Empire and served as brigade surgeon general and/or head surgeon in campaign hospitals increased doctor Barros Pimentel's prestige and recognition before the Brazilian diplomatic authorities in Uruguay who invited him to the event in 1873.

The criteria used when choosing physicians to attend the sanitary conference are not evident in the documentation, but they were clearly considered legitimate representatives of the medical field in their countries and enjoyed proximity to bodies of power, especially as public office holders. The tie between physicians and the state became increasingly strong in the second half of the nineteenth century, both in Brazil and in the Argentinean and Uruguayan Republics, especially after the establishment of the international sanitary agreements, according to González Leandri (2000, p.426):

> Gradually, the increasing coordination between the medical profession and the government became less sporadic as a result of a new impetus from the international health and political environment, whose main consequence was the notable increase in conferences and treaties. Furthermore, the young governments needed to respond to social and health problems and needed to have intellectual representatives and liaisons.

The principles that guided the development of this international law can be summarized in three points: (a) the application of preventive measures against cholera morbus, yellow fever and the Asian plague, all considered exotic diseases; (b) the establishment of measures that satisfied the interests of both public health and foreign trade; (c) the employment, through mutual agreement, of quarantines and *lazarettos* as a means of isolating people and goods contaminated by these diseases. In order to establish these three precepts, many discussions took place during the conference.

Quarantines were the focus of these discussions, as they were the most divisive issue among the members. The discussions took place between diplomats and physicians, which caused even more arguments and disagreements, because the political authorities sought to address economic problems, while doctors proposed solutions for public health issues.

Establishment and reinforcement of medicine as an important and influential profession in the decisions of public authorities was a long and contentious process. Flavio Edler (1992, p.64) states that low physician salaries and poor professionalization imposed a patronage system on graduates in search of secure careers:

> The virtual monopoly of government jobs was key part of the oligarchy's policy of co-opting professionals, given that both political leadership positions – and any other state positions – were distributed through patronage. ... There was little room, therefore, for the affirmation of professional ethics based on institutions guided by criteria such as competence, scientific-technical skill, competitive exams for public posts and careers guided by a meritocratic system.

It is likely that some of the physicians who participated in this conference had been nominated by political authorities and were paid for services rendered to their respective governments. There was a close dependency, making it difficult to claim the existence of autonomous medical expertise and the medical monopoly "in the policymaking process with respect to the scientific models that needed to be validated" (Edler, 1992, p.14).

In relation to yellow fever, the Argentineans and Uruguayans were in favor of the contagion theory, whereas the Brazilians defended the infection theory, arguing that, in Rio de Janeiro, the disease was sporadic and developed spontaneously. These different positions among doctors were common in this period, because knowledge was precarious.

In addition to the different theories, the differences between the physicians involved in the conference were quite convenient since they defended positions that benefited their respective governments. During this period, Argentina and Uruguay already claimed that yellow fever was a Brazilian disease, and for this reason the physicians in the Brazilian delegation tried to soften and modify that view, as it was harmful to the Brazilian Empire.

It was noted that the last word at the conference was always diplomatic; doctors had more of an advisory role than a deliberative one. However, although the final decision was in the hands of diplomats, physicians claimed professional recognition and prestige in the institutional environment. It was the beginning of a process that culminated in the late nineteenth century with the recognition of the medical profession by the political authorities of the three countries.

Although approved and signed by the representatives of the governments involved, this sanitary convention was not ratified by any of the countries. The failure to ratify the convention was evidence of the existence of hostility between the diplomats from Brazil and Argentina, who at that time had begun to compete for foreign labor and sought to forge positive images of their countries, to the detriment of the other, and ensure that European vessels full of immigrants came to their ports. This also showed how difficult it was to establish multilateral agreements at the time, and the 1873 sanitary conference became a privileged space where the antagonism between the Brazilian Empire and the Republic of Argentina could be perceived.[5]

One of the motivations behind the three countries' decision to develop a second health agreement, which would occur in 1887, was the prohibitive commercial measures taken by the Brazilian Empire upon the emergence of a cholera epidemic in the cities of Buenos Aires and Montevideo. As stated in an official letter from the Empire's Ministry of Affairs on November 13, 1886, Brazil made the drastic decision "that, until further notice, Brazilian ports shall remain closed, except for the Lazaretto on Ilha Grande, to all vessels from the Republic of Argentina and any ports infected by cholera morbus" (Brasil, 13 nov. 1886).

These measures had a significant impact on trade in the region, as Brazil was the main consumer market for beef jerky (*carne de charque*)[6], a product widely used at the time to feed slaves and poor Brazilians (Medrano, 1989).

In light of these events, in mid-1887 the Empire and the Republics of Argentina and Uruguay began discussions on holding a sanitary conference to formulate their own laws, establishing the rights and duties of each country during epidemics. The subject of meat was so important that, during the preparation of the health convention, a committee consisting of two Brazilian doctors and a Uruguayan pharmacist met to study and conduct scientific experiments to determine the ability of meat to serve as a vehicle to transmit cholera morbus.

One difference between this agreement and the 1873 attempt was that it was approved, signed by the medical and diplomatic authorities and ratified by the congressional bodies of the three nations. This resulted in the implementation of the decisions taken in health regulations formulated by the physicians to prevent the spread of epidemics. The convention established the creation of sanitary control institutions in ports and on ships and required the hiring of doctors, through public examinations, for ports and passenger ships to increase the countries' control and monitoring of diseases (Brasil, 1888, anexo

n.1, p.82-121). The health agreement had a strong impact, both in other South American countries and in some European countries.

If the yellow fever epidemics in the 1870s were responsible, in large measure, for the International Health Conference in Montevideo in 1873, in 1886 and 1887 cholera morbus was the cause of the disagreements between the authorities of the three countries. It is worth noting, however, that in addition to the fear of disease contamination, there were well-defined political disputes (border issues) and economic disputes (the meat trade and European immigration) between the Brazilian Empire and the Southern Republics. Epidemics served as 'plausible' justifications for the disruption of trade and closure of ports, affecting European immigration and the exchange of important goods between these regions, such as beef jerky, also called *tasajo* by the Spanish-speaking republics.

The Empire found it convenient to stop interactions with Argentinean and Uruguayan ports, even if only for short periods, as this caused fear in other vessels, especially those heavy with European immigrants, who were forced to take their passengers to Brazilian ports. Additionally, it wished to protect production of beef jerky in the southern Rio Grande region of Brazil, which faced competition from foreign sources.

The major complaint of the Southern Republics was the export of beef jerky to Brazil, which was very important for the economy of these countries. As emphasized by the Uruguayan diplomat in Brazil, Carlos María Ramírez, in a Note from the Uruguayan Delegation to the Imperial Government on September 26, 1887, "Uruguay alone produces and exports two thirds of the foreign beef jerky consumed annually by the Empire" (Brasil, 1888, p.7).

The interruption in the export of beef jerky from the Southern Republics between late 1886 and mid-1887, due to disease, and the development of an international health convention can be considered strong evidence that cholera morbus was a problem for the diplomatic and trade authorities and became, in the late nineteenth century, one of the primary Latin American public health issues.[7] We can not forget that, even with the arrival of immigrants and the slow and gradual abolition of slavery, Brazil was a slave-owning country and needed to preserve that source of labor.

On August 24, 1887, the Uruguayan government sent Minister Carlos María Ramírez on a special mission to negotiate a health agreement with Brazil. Along with the minister, the pharmacist José Arechavaleta (1838-1912) was part of the mission in order to show that beef jerky could not transmit cholera, in addition to Pedro Saenz de Zumarán, the diplomat's secretary.

The sending of the Uruguayan special mission to Brazil generated great expectations in Uruguay, as expressed in the Uruguayan newspaper *El Siglo*, "at this time, the most important of this Republic's international affairs is that which motivated the special mission of doctor Carlos María Ramírez to the Court in Rio de Janeiro, which was to attempt to ensure us that our beef jerky would not again be excluded from the Brazilian market" (¿Se dejarán..., 24 ago. 1887). The subject of beef jerky mobilized a significant part of the Uruguayan economic elite, which depended on the Brazilian market to ensure the production and sale of the product.

That was when negotiations for a sanitary agreement between the Brazilian Empire and the Republics of Uruguay, Argentina and Paraguay began. In the documentation, one can see a certain air of imposition on the part of Brazil with respect to the other countries. In fact, the Empire was in a privileged position because Uruguayans and Argentines depended

on Brazil buying their beef jerky, and the country had not been hit by the cholera morbus epidemic that devastated Argentina and strongly affected Uruguay.

There was an initial dispute about where to hold the event. According to the documentation found, it was the Uruguayan representative who first proposed holding a sanitary conference to Brazil and Argentina; however, Brazil was the first to suggest Rio de Janeiro as its location. The Uruguayan government did not immediately accept the 'imposition' of Rio de Janeiro, arguing that the original idea had been Uruguay's and thus Montevideo would be the ideal place not only geographically, but also because it hosted the sanitary conference in 1873.

The choice of the site for the sanitary conference, however, went beyond the limits of physical geography. It represented the imposition and conquest of a political and symbolic territory, based on the control of the establishment of common norms and laws. The country which best dominated this territory could persuade the others of its ideas and opinions and, therefore, define its political dominance in the region.

This is what happened with the Brazilian Empire, which, if it could not claim to have dominated the situation, it could at least say it prevailed and made known its position on the health issues discussed and agreed upon. It is worth remembering Brazil's domination over Uruguay since its establishment as a nation-state in 1828. Even with the end of the Paraguayan War, Brazilian supremacy in the country was still considerable. Knowing that, Brazil took advantage of Uruguay's economic fragility, as it depended on its beef jerky exports to Brazil, and set the conditions for the sanitary conference in 1887.

Having defined the site, the work of the representatives appointed by the countries effectively began. As in the meetings of the sanitary conference in 1873, both diplomatic and medical authorities participated in this conference. The Brazilian delegates were Baron Cotegipe, Foreign Affairs Minister, and the physicians Nuno Ferreira de Andrade (1851-1922), João Batista de Lacerda (1846-1915) and Araújo Goes, already mentioned.

Araújo Góes, in addition to working at the D. Pedro II Imperial Secondary School, was engaged in research on yellow fever together with João Batista de Lacerda between 1883 and 1886 in the Physiology Laboratory at the Museu Nacional (National Museum). The two worked together on several experiments and fought fervently against the yellow fever vaccine created by Domingos Freire (Benchimol, 1999). In 1885, Araújo Góes became a member of the Imperial Academy of Medicine with a scholarly work on yellow fever.

João Batista de Lacerda participated in a great variety of scientific practices of the time (Vergara, 2005) and was an important figure in Brazilian medicine in the late nineteenth century. He obtained his degree in medicine in Rio de Janeiro in 1870, six years later became an employee of the National Museum, and was its director from 1895 to 1915. In 1880, he began working in the Physiology Laboratory linked to the Museum. In 1882, he competed for a position as a professor at the School of Medicine, but was not successful. The following year, he became a member of the Imperial Academy of Medicine, which waived the formalities required by its statute, and was also president of this association in 1892-1893.

Nuno de Andrade attended the sanitary conference as the inspector general of health for the ports, a position he held from 1886 to 1889. In the first year of his administration, he created the Ilha Grande Lazaretto, located in Abraham Cove (on the island of Ilha Grande, in the state of Rio de Janeiro), to implement the quarantine regime prevailing at that time.

That measure was important when the cholera outbreak occurred because the country lacked adequate lazarettos, and Ilha Grande was the only one open to receive the vessels coming from the South.

Uruguay sent Carlos María Ramírez, extraordinary envoy and plenipotentiary minister, the pharmacist José Arechavaleta and the physician Elias Regules (1861-1929), both professors at the Montevideo School of Medicine.

The Argentine delegation included Plenipotentiary Minister Henrique B. Moreno and the physicians José María Astigueta (? -1897) and Telémaco Susini (1856-1935) who, like their Uruguayan colleagues, were likewise professors of the Buenos Aires School of Medicine. Susini was the chair of the bacteriology department, a new science at the time, and in the early 1880s he founded the Bacteriological Institute. Both also occupied the post of president of Public Welfare in the Argentine capital.

The appointment of doctors was based, in principle, on a tradition already established in various sanitary conferences in Europe and America, but also reflected the context of that conference, in which scientific and economic issues were the focus of the debate, as noted by Baron Cotegipe at the first meeting to negotiate the health convention, on October 20, 1887: "discussion and any adjustment of sanitary measures should be founded, as was already understood through notes, on the judgment of professionals, especially regarding the items that could transmit epidemic diseases, such as dried meat or beef jerky" (Brasil, 1888, anexo n.1, p.41).

The commission of physicians nominated by the Brazilian government, in addition to public office holders, brought together individuals from an ascending medical field, that of microbe chasers, those following Pasteur's legacy, contributing to establish a new field of medicine: bacteriology. However, it is important to remember that many professionals did not accept the germ theory immediately; they combined it and the miasma theory.

The coexistence of the two theories is explicit in the discussion between doctors on the conference's technical commission on how to disinfect ships. The commission's chairman, doctor Nuno de Andrade, praised the commission charged with performing experiments with cholera bacilli in the minutes and mentioned the use of "sulfurous acid in cholera morbus cases, because its use in a humid environment, forming hydrosulfuric gas, works well" (Ata..., 9 nov. 1887). Doctor Lacerda, seeking diplomatic discourse, did not question the knowledge of his colleague, who was of higher rank on the committee, but he said he agreed "with the commission's chairman, but he was convinced by Koch's studies that the cholera germ was not found in the air" (Ata..., 9 nov. 1887). Despite this, the technical committee approved the use of sulfurous acid as a disinfectant for vessels, i.e., the miasma and microbial theories coexisted for some time in South American medical science.

According to Cueto and Rivera (2009) in a study on the 1888 Sanitary Conference in Lima, these seemingly contradictory positions embodied the complex process of reception of new medical paradigms and, in practice, meant the hybrid acceptance of both traditional and modern ideas by the medical elites in South America. As in Rio de Janeiro in 1887, at the 1888 Lima conference "this type of position, which could be considered unorthodox, was well accepted by participants, who arrived at a conclusion that did not establish a difference between miasmatic and germ theories of disease" (p.144).

The 1887 sanitary conference was organized differently from the first, in that two committees were formed: a technical one consisting of physicians, and a political and diplomatic one consisting of ministers from the three governments. These two committees worked independently: the technical committee drew up proposals for international health regulations and the ministers evaluated them, suggested modifications and, ultimately, approved the work.

This change in format extended to the content of the discussions. While at the Montevideo sanitary conference in 1873, doctors and diplomats discussed the health issues of ports, quarantines and lazarettos together, causing problems and arguments, in 1887 the issues related to medicine and health were delegated to the medical professionals who had been invited to fulfill the mission of developing a health convention for the three countries. This intent to not interfere in the work of the physicians was seen in the pronouncement of Baron Cotegipe at the opening of the conference on November 1, 1887, recorded in the minutes of the second conference:

> Declaring the opening of the Conference, he said that, as had been decided, he would choose which participants would conduct the proceedings; that they would meet to work in one of the rooms of the Secretary of State for Foreign Affairs on the days and times convenient to them, submitting a summary of discussions with the draft convention, and that the ministers could attend, together or individually, but without taking part in the discussions (Brasil, 1888, anexo n.1, p.45).

He therefore made explicit that the diplomats could not issue an opinion in the physicians' meetings, and vice versa. Moreover, the conference needed to resolve an impasse created by the Brazilian government: the ban on imports of Southern beef jerky through Brazilian ports, as per the Notice of November 13, 1886. A committee of physicians from Brazil and Uruguay was formed to investigate whether or not meat could serve as a vehicle for transmitting cholera morbus. In fact, the biggest motivation for organizing the Conference was undoubtedly Brazil's restriction on beef jerky from the South, a decision that strongly affected the region's economy.

In the 1880s, important changes in medical education and medicine itself influenced the paths that professionals would take from then on. One of the milestones was the Saboia Reform at the Faculdade de Medicina do Rio de Janeiro (Rio de Janeiro School of Medicine) in 1884, which changed the teaching conditions with the creation of eleven labs and new clinical courses. As highlighted by Flavio Edler (1992), changes in medical education were not solely due to the school's director, Vicente Saboia, between 1880 and 1889, but also due to medical journalism at the time in the Court and the Popular Conferences in the Glória Parish, in which several medical leaders took an active part and spoke to denounce the terrible conditions in the medical schools in the country.

> Seen from the political point of view, the reforms in medical education at the start of the last decade of the Brazilian Empire arose from the actions of the medical elite in their own interests, begun in the 1870s, with the objective of persuading the few individuals participating in the political arena of their utilitarian worth. At the same time, they reveal that the unification of their interests was feasible. The drastic reduction in the uncertainty that until then had hung over the practical and theoretical foundations of medicine enabled more effective action on a reform agenda in medical institutions where the keystone was the issue of professional training (Edler, 1992, p.230).

Therefore, changes in teaching, combined with scientific discoveries, which gave medicine the status of reliable knowledge, formed the basis allowing medical leaders to obtain greater prestige and space on the government agenda and the ultimate legitimation of technical-professional knowledge. This was directly reflected in the Rio de Janeiro Sanitary Conference, where doctors had a key role and were able to impose their scientific knowledge.

The technical committee's first mission was to read the health convention signed in 1873 in Montevideo. The earlier convention was mentioned throughout the negotiations between the governments; the first conference showed that it was the duty of the physicians "given their instructions, and taking the health convention signed in Montevideo on July 29, 1873 as a basis for general questions, to provide their opinion as soon as possible" (Brasil, 1888, anexo n.1, p.43).

The primary goal was to indicate the importance of the first attempt at a health agreement between the three countries, especially by the Brazilian government, which initially declined the invitation by the Government of Uruguay to hold a sanitary conference in Montevideo. The Brazilian diplomats avoided direct confrontations and, to the extent possible, negotiated solutions that pleased other countries, particularly Uruguay, an old business partner of the Empire. They sought to not disparage the first agreement which, despite not having been ratified, had been signed by the representatives from each government. Secondly, one of the physicians had attended the 1873 conference, Francisco Marques de Araújo Góes, who contributed to the wording of the first document and could suggest what to keep and what to change in the health convention.

After reading and analyzing the convention that had not been ratified, the medical commission concluded that it was already outdated and that it should not be used as a model for the current conference, due to the progress of the international preventive medicine, because, as written in the minutes of the third conference, "the Montevideo Convention represented a laudable effort, but it is already out of date" (Brasil, 1887, anexo n.1, p.49). As an example of this progress, the committee pointed to sanitary conferences in Europe and the U.S., and was clearly well-informed on the subject, which confirms the thesis that the conferences in Montevideo and Rio de Janeiro were part of the circuit of international sanitary conferences beginning in 1851 in Paris:

> the Technical Committee felt that the Conferences of Vienna in 1876, Washington in 1881, Rome in 1885, Antwerp, also in 1885, and the recent Conference in Le Havre in 1887, had greatly innovated in the areas of administrative hygiene and the organization of quarantines; and therefore the three South American governments should take advantage of the rich solutions encountered in the agreements from these earlier conferences for the scientific content of the Convention of 1887 (Brasil, 1888, anexo n.1, p.49).

We must make clear here that, despite the inspiration found in European models – reflected in the teaching at the medical schools, almost all following the French model, and the educational reforms directly influenced by Europe – the Brazilian physicians were concerned with national and/or regional issues, and adapted the knowledge obtained from European books to the local reality and formulated their own theories to explain the outbreak of diseases and cures. According to Carreta (2006, p.32), the physicians had a political plan, a desire to be heard in the political sphere:

> Although the inspiration for these changes was European, the new model had to address national themes. The importance given by physicians to local problems in the reform shows their intention to participate in government decisions. Here, the development of public policies is described as principally technical, unrelated to partisan and ideological passions. Thus these policies needed to be developed and carried out by scientists, or in other words by people obligated by their profession to be above these passions.

The discussion about the impartiality and autonomy of physicians on issues related to public health at the end of the nineteenth century allows us to see that the field of medicine was still establishing itself and medical science was supported by political decisions, and used different levels of power to affirm specific assumptions. On the other hand, according to Saldaña (2000, p. 22) "state politics were crucial in the organization and promotion of scientific activities and, reciprocally, ... science was one factor legitimizing the national government." Without the presence of the States, medicine would not have established itself as a producer of knowledge in the nineteenth century.

The decision to prohibit the import of beef jerky was more political than sanitary, but still physicians in Rio de Janeiro supported the Brazilian government's decision until laboratory research showed there was no risk of Southern beef transmitting the cholera germ. It is important to note that the physicians chosen to take part in the sanitary conference were selected principally based on merit, according to Flavio Edler (2001). Despite the traces of clientelism in the imperial patronage-based society, such as public posts given to supporters, which continued to affect physicians, they sought to establish the credibility of their technical and scientific abilities. This is because, according to Edler (p.118-119),

> the scientific debates within the medical community were based not on social status, or honor, measured by the positions of the physicians in the patronage system, but rather on their position in the scientific community. Therefore, it was not a noble title that certified an opinion or claim, but rather the ability to act in accordance with the scientific rules accepted in this microcosm.

The physicians João Batista de Lacerda, Nuno de Andrade and Araújo Góes had already proven their competence in the most important institutions, such as the Academy and the School of Medicine. Batista de Lacerda and Araújo Góes had broad laboratory experience in their research on yellow fever at the National Museum, and Nuno de Andrade taught at the School of Medicine and had published various articles in medical journals, in addition to having occupied positions in the imperial bureaucracy, such as port health inspector and counselor to the Emperor Pedro II (1886).

The Argentineans José Maria Astigueta and Telémaco Susini were part of a generation that modified sanitary organization and legitimized the participation of physicians in power structures, demonstrating their competence in the management of public agencies such as the National Hygiene Department (1880). There was a change in the profile of the Argentinean medical professional, from the politically engaged physician in the 1870s to a new hygienist physician starting in the 1880s, more 'professional' and in tune with the production and dissemination of medical and scientific knowledge. As stressed by Alvarez (1999, p.299), the figure of the professional hygienist physician "increased in importance, given that the

fundamental objective of the hygienists was to create hierarchies in the medical profession and medical leadership in the field of social progress."

The first issue discussed in the technical commission's meetings was quarantines, as had occurred in the 1873 conference. The subject was important because it represented the search for a balance between economic and public health interests. In the 1880s, with the discovery of microbes, the focus was to improve city sanitation and discard the former isolation practices that, to many, had no scientifically-proven efficacy. According to Nuno de Andrade, the commission was favorable towards maintaining quarantines for the following reasons:

> There was no disagreement, not even the slightest remark, regarding the lazaretto issue, because it appeared to the Commission that the ultra-modern lemma stating that they are useless and the best preventive approach was 'improved sanitation in the country to last hamlet' in the emphatic words of Berval, indicated, in the first case, a radical defect in observation and logic, as lazarettos were considered useless without taking into account the very poor organization of some of them; and in the second case, an ideal aspiration, without a doubt generous, but in reality unlikely.
>
> However, the Commission felt that the grand plans of the hygienists who fight quarantines to the extreme in order to highlight the advantages, which no one contests, of providing sanitation in villages, germinates and propagates the seed of a reaction that, due to its excessive nature, could become dangerous against the prior quarantine exaggerations.
>
> In effect, it is not enough to prepare villages for the arrival of the disease; public safety requires that the germ be prevented from circulating through all means.
>
> Providing sanitation services in a city is not the only problem to be solved; an equally important task is to assiduously apply measures to prevent the outbreak of an epidemic.
>
> This is why the Technical Commission proposed maintaining the quarantines in their two forms: observation and rigorous quarantines (Ata..., 1º nov., 1887).

Despite unanimously accepting the establishment of quarantines, there was some controversy with respect to how long the quarantine should be in effect for each disease. The fourth session of the technical commission, on November 7, was dedicated solely to discussing quarantine periods. The Argentinean physician, Susini, made a proposal that was accepted by all: "for the effects of maximum incubation referred to in the Convention, in relation to sanitary measures, the quarantine periods shall be eight days for cholera, ten for yellow fever, and twenty for the plague" (Ata..., 7 nov. 1887).

Araújo Góes pointed out that these were the periods established by the Imperial Regulation of February 3, 1886, related to Decree No. 9,554, which reorganized the Empire's sanitation service. Section 151 of this regulation stated that "the declaration 'infected' applied to a port where cases of plague had been confirmed will result in sanitary restrictions applied to vessels coming from that port and leaving it during the period immediately prior to the manifestation of the first case, for a period of twenty days for the plague, ten days for yellow fever, and nine for cholera" (Barbosa, Rezende, 1909, p.671).

However, on November 17, during the sixth session, the Brazilian representative Araújo Góes presented the following proposal for consideration by the commission: "From May 1st to October 31, the quarantine for passengers from ports suffering from outbreaks of yellow

fever will be seven days, counting from the day they left port" (Ata..., 17 nov. 1887). This proposal was equivalent to restoring section 8 of the 1873 Montevideo Convention and, despite being accepted in 1873, it was rejected at the later conference.

Even though the incubation period for the various diseases had already been decided, the Brazilian physician continued to insist on a reduction in the quarantine for yellow fever. In the opinion of the commission, especially its Argentinean and Uruguayan members, this proposal was without basis, as a period of ten days had been considered necessary to determine if individuals had been infected by yellow fever, and a reduction in the quarantine to seven days could be dangerous. Araújo Góes argued that, at that time of the year, in the two Southern Republics, the temperature was much lower and it had already been shown that yellow fever outbreaks were much more common in the hotter months of summer and fall. However, the Southern representatives refuted the allegation, claiming that the atmospheric temperature did not dip so far as to prevent the spread of American typhus, and cited examples of outbreaks of the disease during that period of the year.

Actually, what Araújo Góes sought was to benefit Brazil almost exclusively, as deaths from yellow fever were constantly cited in the obituaries. This disease ravaged the country several times during the second half of the nineteenth century up until the start of the twentieth. Benchimol (1999, p.286) stresses that the physicians questioned whether or not "yellow fever was an endemic disease, 'domiciled' in the city, or an imported disease that could only be fought using the three traditional public health measures: quarantines, disinfection and isolation." (emphasis in the original). The responses to these questions were postponed until the first decade of the twentieth century, when the idea of transmission via mosquito became accepted.[8]

The voting on the quarantine period indicated the positions of the three governments. The Brazilian representatives Batista Lacerda and Araújo Góes voted for the measure, while the four southern representatives voted against it, with the chairman abstaining.

The suspicion that beef jerky might be able to transmit cholera was also discussed at the conference. The technical commission was responsible for approving the opinion issued by the physicians João Batista de Lacerda, Francisco Marques de Araújo Góes, Nuno de Andrade and José Arechavaleta with respect to the inability of beef jerky to transmit the Asian cholera germ. This opinion was based on a series of scientific experiments carried out in the Physiology Laboratory of the National Museum, in Rio de Janeiro, prior to the sanitary conference, due to the urgency of the diplomatic authorities, especially those from Uruguay, in defending their most important commercial product.[9]

In addition to addressing the issue of beef jerky, the sanitary conference, soon after opening, established two subcommittees: one to study yellow fever, composed of the Brazilian Araújo Góes, the Argentinean Telémaco Susini, and the Uruguayan pharmacist Arechavaleta; and the second to study susceptible materials and disinfectants, consisting of the physician Lacerda and, again, Susini and the pharmacist Arechavaleta.

However, unlike the previous commission that had researched cholera, based on scientific experiments and with international support, the report on yellow fever prepared by the physicians was based on speculation and uncertainty. As of then, no one had yet discovered the true agent of transmission for the disease. Empirical data and daily experience with

the disease were used. Beginning in 1880, some Brazilians like Domingos Freire and Batista Lacerda accepted the existence of a germ causing yellow fever, which made them rivals in the search for a vaccine against the disease. It was the height of the use of bacteriological methods by physicians.[10]

In 1880, João Batista de Lacerda even proposed a meeting of American countries to discuss the fight against yellow fever, citing the International Sanitary Conference at Constantinople in 1866, when the European countries met to discuss the cholera morbus epidemic. Lacerda "wanted the Brazilian government to hold a similar conference in Rio de Janeiro to address yellow fever, with representatives of the Southern republics and the U.S." (Benchimol, 1999, p.178), as the issue was urgent for the Americas.

In effect, the issue was discussed at the 1887 International Sanitary Conference, even if the answers to the questions raised were all vague and nothing was affirmed with certainty. This is explained in part by Lacerda and Araújo Góes' defeat with respect to the agent causing the disease. These physicians believed that a 'phyto-organism' or a vegetable produced yellow fever, and that the disease was introduced into the body through food and drink. In 1887, however, a laboratory in France disproved the Brazilians' hypothesis, suggesting that the vegetable found was just a bacteria already known to medical science.

From then on, great caution was used in discussions of the causes of yellow fever, which is clear in the 1887 technical committee's report. To the first question, on what vehicles led to direct human-to-human contagion, the answer was:

> There is nothing more in dispute than direct transmission of yellow fever. The facts cited in support of contagion also served to explain propagation of the disease through clothing and objects belonging to sick individuals or from infected locations. So, since the commission cannot make an exact statement, it says that yellow fever does not appear to be transmitted directly from sick to well individuals (Relatório..., 13 nov. 1887).

On disease propagation methods, the commission described the mixture of contagion and miasmatic theories then discussed by physicians, given that they affirmed that both contact with objects or the air could cause propagation of the epidemic. According to the commission,

> Clothing and other objects belonging to those ill with yellow fever or in more or less direct contact with them are transmitters of the disease agent.
>
> In addition, the commission also believed vessel holds could transport the disease agent...; the cadavers, due to the humors exhaled by them and capable of infecting the environment; the excretions, for the same reason; water, food and air; and even insects if they entered into contact with the excretions.
>
> the atmospheric air propagated the disease to a radius probably not surpassing one kilometer. The fact that immigrants passing quickly through the city affected by the epidemic, to embark on the Pedro II railway, suffered from yellow fever after arriving at their destination, clearly proved that infection was via air (Relatório..., 13 nov. 1887).

And thus the entire report shows uncertainties with respect to yellow fever. The most recurrent phrases were "a question that has not yet been studied," and "there have been no rigorous studies," indicating that the issue was still open for medical sciences in the eighteen hundreds. As highlighted by Marta de Almeida (2003, p.77-78) when studying the Latin

American medical conferences, in the second conference, in Buenos Aires in 1904, yellow fever was still an important topic.

> As is known, one of the most serious epidemiological concerns in the late nineteenth and early twentieth century was yellow fever. However, it only appeared as a topic of discussion at the Second Latin American Medical Conference.
>
> Moreover, it is clear that in this period there was no consensus on diagnosis or preventive measures. This is why scientists sought to be the one to understand the enigma of the disease.

The second commission of the 1887 International Conference was responsible for developing the bases for the regulations on objects capable of transmitting contagions and the means and procedures for disinfection applicable to the three epidemic diseases – cholera, yellow fever and the Asian plague.

In order to list the products cable of transmitting cholera, the commission used the decisions made at the International Sanitary Conference in Rome in 1885,

> (1) The following shall be considered objects capable of transmitting cholera: clothing, cloths and all objects that have come into contact with the ill, including bags, trunks or boxes in which these objects have been stored.
>
> (2) The following, due to their dry nature and the absence of any contact with the ill, shall not be considered objects capable of transmitting cholera: horse hair, hides, feathers, hair, hay, dried or cured leather, cereals, fruits and metals.
>
> (3) Beef jerky should be included in this second category, as its inability to serve as the vehicle for cholera germ transmission has been experimentally proven by a Commission composed of members of this Conference (Relatório..., 9 nov., 1887).

One can see, once again, to what extent the contagionist and anti-contagionist theories still influenced the physicians, defined procedures and imposed actions in the area of public health. The issue of objects capable of contagion was the sore point of the conference, since it questioned the existence of commercial products that could transmit epidemics, and the physicians understood this; indeed, they were quite conservative when defining prohibitions on goods, certainly concerned that these measures could affect the region's economy.

Although the medical field began to have increasing autonomy at the end of the nineteenth century, we cannot say that these physicians were immune to the pressure from their governments to affect trade relations as little as possible. The commission's statement with respect to cholera makes this clear:

> The elucidation on the etiology of cholera that the recent studies by Koch and his illustrious colleagues have provided, namely that the microbe producing this disease is highly susceptible to drying, perishing due to its effects in a short time, has greatly facilitated the solution of certain problems by sanitary legislators. Due to the lack of scientific grounding, these problems had been subject to arbitrary decisions, thus affecting the often respectable interests of social and economic order (Relatório..., 9 nov. 1887).

Two basic questions guided the positions of the Brazilian physicians at the conference: the import of Southern beef and European immigration. In fact, for Brazil, these were important

questions, as beef jerky was related to the system of slavery still in place in the country, despite the growing abolitionist movement, and immigration was related to the political elite's plan to solve the growing lack of manpower in the fields due to the gradual process of ending slavery. Note that the end of the 1880s was the heyday of the arrival of European immigrants in Brazil: "starting in1887, foreign immigration began to occur on a large scale, with most immigrants settling in São Paulo: 65% from 1891 to 1900, 58% in the next decade, 63% in the 1910s and 58% in the last decade of the First Republic" (Telarolli Jr., 1996, p.33).

We can conclude that the 1887 sanitary conference sought to solve, foremost, political and economic problems between the countries and not sanitary and hygienic issues. As stated by Almeida (2003, p.20),

> If the state needed, for example, scientific support for the recognition of its mineral, territorial, and botanical potential for solving emergency problems such as the control of epidemic diseases, scientists needed to create space and expand their scientific relationships in an often adverse environment, marked by political and economic priorities far from their interests.

The effective result of this conference was the preparation, approval and publication of two important documents: the Sanitary Convention between the Republic of Argentina, the Republic of Uruguay and the Empire of Brazil, and International Health Regulations.

The tension between the interests of the Empire of Brazil and the Republics of Uruguay and Argentina, which until the 1870s had led these countries into wars, had passed to the diplomatic sphere. The 'war' became that of correspondence and agreements, extensively negotiated and discussed up to the moment of their signing, as occurred with both the 1873 and 1887 sanitary conventions.

Repercussions

The Montevideo Convention, held in 1873, had few repercussions because it was not ratified by the governments of Brazil, Argentina and Uruguay, and was not, therefore, put into practice. The 1887 agreement, however, did have an initially regional effect. Later, it and the Lima sanitary agreement of 1888 were used as templates at the Washington Conference (1889-1890).

The American Sanitary Conference, held in Lima in 1888, was so named because it intended to bring together all the countries in the Americas (Cueto, Rivera, 2009). Brazil, Uruguay and Argentina were invited to participate, but did not attend due to the agreement already established the previous year. Bolivia, Chile, Ecuador and Peru participated. The main motivation for the conference in Lima, as with the Rio de Janeiro Conference in 1887, was the cholera epidemic raging in Chile and threatening to invade neighboring countries.

> In this conference, rules for preventive measures against cholera and yellow fever were established, as well as for the organization and characteristics of lazarettos, quarantines and disinfection, and even the type of questions that should be asked of passengers. It was also considered essential that each country have a central health information office and share the epidemiological data produced with other nations (Cueto, 2004, p.14).

The Rio de Janeiro Sanitary Convention served as the foundation for the sanitary regulations proposed at the American Conference in 1889-1890. In the late nineteenth century, ideologies promoted by the U.S. began to gain more strength under the new banner of pan-Americanism (a term coined in the 1880s). The First American International Conference was the result of U.S. action and took place in Washington (October 2, 1889 to April 19, 1890), with the participation of 17 American countries – all those then existing, with the exception of the Dominican Republic (Santos, 2004).

> Examining the agenda of the meeting, one can clearly see the intention of the U.S. to expand trade with Latin America: measures to promote the prosperity of various U.S. states, the pan-American trade union, communication between ports, a customs union, weights and measures, invention rights, a common currency and arbitration (Bueno, 1997, p.4).

The customs union project – proposed by the U.S. – provided for the regulation of port activities in each country, which involved import and export issues, port rights and expenses, the classification and valuation of goods, and questions on the hygiene of vessels and ports. Therefore, sanitary regulation projects were discussed for trade between the American countries, even though the sanitary discussions have not been emphasized in studies of the first American international conference. Issues related to public health were on the agenda of virtually all participating countries, hence the interest in standardizing sanitary practices in American ports.

It is important to note that, during the Washington Conference, the Brazilian Empire ended and the Republican period began. As highlighted by Luís Cláudio Santos (2004, p.125) "with the end of the Empire, the Brazilian delegation, whose leadership was transferred to Salvador de Mendonça, was authorized to add 'American spirit' to the instructions received." From that point on, Brazil's Republican diplomacy became more purposeful at the conference and it suggested changes in international relations with the other American countries:

> With the fall of the Empire, there was also a shift in Brazilian foreign policy. It sought to strengthen relations with the U.S. and Argentina and began to support the Inter-American initiatives. ... The monarchy had identified with Europe and, in this context, had been against Americanism. As a Republic, Brazil could finally assume its American identity (Santos, 2004, p.113-114).

During the American Conference, various committees were appointed, including one for sanitary regulations, which was composed of delegates from the following countries: Nicaragua, Brazil, Peru, U.S., Venezuela, Haiti and Uruguay. This commission was established in December 1889, and in February 1890 it submitted its report to the conference.

After discussing the importance of establishing common health regulations in the Americas, which could prevent and reduce conflicts among the various nations due to epidemics, the American International Conference recommended the following, on February 28, 1890:

> Whereas, given the current state of relations between the nations of the Americas, it is both easy and preferable for the development of these relations to have perfect agreement on sanitary conventions; whereas most of the South American ports on the Atlantic Ocean are governed by the International Sanitary Convention signed in

> Rio de Janeiro in 1887; whereas, although the 1888 Lima Sanitary Conference was not considered an international event, we expect that the results will be accepted by the governments that took part in that Conference, as they were discussed and approved by physicians of recognized competence; whereas the results of the 1887 Rio de Janeiro Sanitary Conference and the 1888 Lima Conference are in agreement on essential matters, to the extent that they may be considered a single body of rules and provisions; whereas, if these were properly observed across the Americas, they would always prevent potential conflicts between the obligation to ensure public health and the principle of freedom of communication between societies; whereas the nations of Central and North America were not represented at the Sanitary Conference of Rio de Janeiro, nor the Lima Conference; however, they could easily accept and apply the sanitary provisions cited above in their ports on both oceans.
>
> We recommend: that the nations represented at this Conference adopt the provisions of the 1887 Rio de Janeiro International Sanitary Convention, or those of the 1888 Lima Sanitary Conference (Brasil, 1891, p.24-25).

The reference to the Rio de Janeiro and Lima Conventions is due largely to the fact that these countries had direct representatives on the committee responsible for the creation of International Health Regulations for all of the Americas. Brazil and Uruguay were particularly interested in defending the agreement of 1887, while Peru proposed the adoption of the 1888 regulation.

At that point, not just the nations of South America, but all the nations in the Americas were invited to join the sanitary agreements of Rio de Janeiro and Lima. However, the approval of sanitary recommendations by all participating countries occurred only in 1902, in Mexico City, when PAHO was officially established.

Final remarks

Between the late nineteenth and early twentieth centuries, life in three South American countries – Brazil, Argentina and Uruguay – was marked by epidemics, which became a problem so severe as to result in joint efforts to find solutions to the problem. Cholera was the major disease of the nineteenth century and killed thousands of people around the world. In Europe, this disease resulted in the first international sanitary conferences and, in South America, it similarly led to at least two of the conferences analyzed here: the 1887 Rio de Janeiro and 1888 Lima conferences. As Anne Hardy (1993) points out when analyzing the changes in preventive health policies in England as a result of the disease, cholera took on international importance and highlighted the need for different responses in different countries.

From the scientific point of view, there were important differences between the 1873 and 1887 conferences. While the physicians at the first conference has serious questions and were uncertain about the etiology of the diseases and the way to fight them, at the second conference there was a gradual transformation of this situation due to the growing development of medical science and the start of what was known as the Pasteurian revolution, with the discovery of microbes, although the miasmatic theory continued to be supported and was often used by physicians together with the bacteriological theory. Moreover, the professionals who were

involved in 1873 had political and institutional links within their countries, whereas those who were involved in 1887 were chosen more for their knowledge in areas related to the sanitary convention than their personal affiliations. We can see the change from a political patronage system, in 1870, to a meritocratic one in the selection of public position holders.

Finally, we highlighted how these episodes interfered in the economic dynamics of several countries and had a leading role in the establishment of health rules and regulations that not even the Old World had achieved. Our research on the international sanitary conferences of 1873 and 1887 shows that these events, taking place below the equator, in South America, had major repercussions in the New and Old World.

NOTES

[1] In this and other citations of texts from non-English languages, a free translation has been provided.

[2] Bahia had strong ties with Uruguay, since some Bahian businessmen purchased meat jerky from Argentinean and Uruguayan sources, and Bahian vessels docked in their ports throughout the second half of the nineteenth century (Chaves, 2001).

[3] According to Argentine historiographers, the Paraguayan War was a diplomatic and territorial defeat. As stressed by Candeas (2005), when the conflict ended in 1870, the maintenance of Brazilian troops in Paraguay supported the Provisional Paraguayan Government's defense policies against Argentine territorial claims. Brazil and Argentina almost went to war. Tensions cleared in 1876 when Argentina and Paraguay signed a border agreement.

[4] There is a debate among Brazilian and Uruguayan historians regarding the treaties signed between Brazil and Uruguay in the 1850s. Much of this research highlights the damage to Uruguay and the advantages gained by Brazil. See Ferreira (2006).

[5] Relations between Brazil and Argentina were permeated by territorial disputes and various conflicts beginning in the early nineteenth century and the independence of these countries, such as the Cisplatine War (1825-1828), the Platine War (1851-1852) and the Paraguayan War (1864-1870), among others. In the late nineteenth century, the competition for immigrants escalated diplomatic conflicts between the two countries.

[6] Beef jerky is made from beef, cut into sheets and salted, to improve its preservation and durability. In Brazil, it is also known as dried meat (*carne-seca*).

[7] In Europe, cholera was also the focus of discussions on preventive health policies in the nineteenth century. See Hardy (1993).

[8] Despite the discovery of the mosquito that transmits yellow fever by the Cuban physician Carlos Finley (1833-1915), some Brazilian physicians, such as Nuno de Andrade, continued to believe the disease was transmitted by germs. In 1903, Nuno de Andrade presented his position contrary to the new discoveries in a series of articles published in the newspaper *Jornal do Commercio* (in Rio de Janeiro). One can thus see the conservative nature of this physician, who was at the head of important health institutions during the Brazilian Empire and the first years of the Republic. See Lowy (2006). Currently, yellow fever is known to be an acute infectious fever, viral in nature, clinically characterized by liver and kidney failure, and which can lead to death in about a week. The causative agent is the yellow fever virus, an arbovirus of the genus *Flavivirus*, in the Flaviviridae family. The mosquito of the *Aedes aegypti* species is the principal transmitter of urban yellow fever.

[9] This topic has already been discussed in an article published in the *Revista Brasileira de História da Ciência* (Chaves, 2008).

[10] See Jaime Benchimol's work (1999) on yellow fever in Brazil.

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