

Environmental history dossier

«Putrid waters are healthy».
Environment and epidemic in 19th century Buenos Aires

«Aguas pútridas son saludables».
Ambiente y epidemia en el Buenos Aires del siglo XIX

Received: 25 December 2021

Accepted: 22 April 2022

DOI: 10.22517/10.22517/25392662.24999

pp. 120-141

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Abstract

This article revisits the 1871 epidemic that Buenos Aires suffered under the light of the history of disasters. An attempt will be made to provide a new look at the phenomenon and reflect on the environmental and pandemic present. The first objective is to characterize the climatic conditions of the city before and during the pathogenic scourge. Then, analyze the explanations that the professionals gave to the environmental conditions as the etiology of evil, and the discussion confrontations and sanitary-environmental policies that on what was considered, in principle, the main source of contagion was carried out: the rotten Riachuelo.

Keywords: epidemic, Stream, pollution, climate, flood, Buenos Aires.

Resumen

El presente artículo revisita la epidemia de 1871 que padeció Buenos Aires bajo la luz de la historia de desastres. Se intenta aportar una nueva mirada sobre el fenómeno y reflexionar sobre el presente medioambiental y pandémico. El primer objetivo consiste en caracterizar las condiciones climáticas de la ciudad antes y durante el flagelo patógeno. Luego, analizar las explicaciones que los profesionales otorgaron a las condiciones medioambientales como etiología del mal y las confrontaciones discursivas, políticas, sanitarias y ambientales de lo que en principio se consideró el principal foco de contagio: el putrefacto Riachuelo.

Palabras clave: epidemia, Riachuelo, contaminación, clima, inundación, Buenos Aires.

Introduction

It is necessary to bring into the spotlight the terrible yellow fever epidemic that decimated the city of Buenos Aires during the fateful first half of 1871. The epidemic spread rapidly through eight of the fourteen parishes. The daily death toll swelled from 20 to more than 500 deaths in the month of April alone. The total death toll was greater than 13,000 victims out of a population of 180,000 inhabitants. It caused the mass exodus of the city, the saturation of the already precarious health system, the improvisation of lazarets, the organization of a popular commission driven by distinguished families, campaigns of persecution against immigrants and the creation of a new cemetery in La Chacarita. The epidemic, which was declared over on June 21st, is remembered as a turning point between the great village and that longed for modern nation¹.

The epidemic crisis of 1871 has generated a diversity of historical studies, some of which focused on the role of certain social actors who faced the disaster. These have emphasized the procedures of the medical professionals, but also that of the healers and charlatans²;

1 Diego Armus, «El descubrimiento de la enfermedad como problema social», en *Nueva Historia Argentina. El progreso, la modernidad y sus límites (1880-1916)*, tomo V, dir. por Mirta Lobato (Buenos Aires: Sudamericana, 2000), 509.

2 Ismael Bucich, *Bajo el horror de la epidemia: escenas de la fiebre amarilla de 1871 en Buenos Aires* (Buenos Aires: Taller Gráfico Ferrari Hnos., 1932). Leandro Ruiz, *La peste histórica de 1871. Fiebre amarilla en*

the role of the Church, the police institution and the municipal and neighborhood commissions³. Other investigations analyzed both the representation of death and the funerary practices during the outbreak⁴, its demographic impact and the spatial reconfiguration that the city underwent in the midst of the plague⁵.

However, despite the diversity of studies on the epidemic, the repercussions, discussions and environmental actions that the phenomenon unleashed have remained largely unexplored. The classic, and at the current time, work of Miguel Angel Scenna, *Cuando murió Buenos Aires* (When Buenos Aires Died), dedicated passages to the sanitary state of the city, emphasizing the deficiencies of the services for running water and sewers; in the context of overcrowding as well as the lack in the collection of garbage⁶. A recent article by Nicolás Rey, used the analytical tools from environmental history and stressed the dominant hypothesis regarding the causes of the origin of the disease in Buenos Aires. To do this, he analyzed the overseas transnationalization of pathology from the theoretical basis proposed by Alfred Crosby⁷.

For decades, environmental history in Latin America has had a growing historiographical space⁸. It focuses on society's interactions with its natural environment: "It is the narrative of what has happened to humanity in its geological, meteorological and biological

Corrientes y en Buenos Aires (1870-1871) (Paraná: Editorial Nueva Impresora, 1949). Maximiliano Figuepron, «Saberes expertos y profanos entorno a las epidemias de fiebre amarilla y cólera en Buenos Aires (1867-1871)», *Investigaciones y Ensayos* 66 (2018): 43-74. Lucas Guiastrennec, «De los márgenes al centro. Ofertas terapéuticas y charlatanismo durante la epidemia de fiebre amarilla en el Buenos Aires de 1871», *Anuario de la escuela de Historia Virtual* 12, n.º 19, (2021): 7-32, <http://dx.doi.org/10.31049/1853.7049.v.n19.30910>.

3 Jorge García, «La Iglesia en Buenos Aires durante la epidemia de fiebre amarilla de 1871», *Revista Teología* 82 (2003): 115-147. Diego Galeano, «Médicos y policías durante la epidemia de fiebre amarilla (Buenos Aires, 1871)», *Salud Colectiva* 5 n.º 1 (2009), 107-120, <https://doi.org/10.18294/sc.2009.233>. Maximiliano Figuepron, *Morir en las grandes pestes. Las epidemias de cólera y fiebre amarilla en la Buenos Aires del siglo XIX* (Ciudad Autónoma de Buenos Aires: Siglo Veintiuno Ediciones, 2020). Valeria Pita, «Intromisiones municipales en tiempo de fiebre amarilla: Buenos Aires, 1871», *Revista Historia y Justicia* 6 (2016), 44-71, <https://doi.org/10.4000/rhj.531>.

4 Laura Malosetti Costa, «Buenos Aires 1871: imagen de la fiebre civilizada», en *Avatares de la medicalización en América Latina 1870-1970*, comp. por Diego Armus (Buenos Aires: Editorial Lugar, 2005), 41-64. Maximiliano Figuepron «Cadáveres, epidemias y funerales en Buenos Aires (1856-1886)», en *Muerte, Política y sociedad en la Argentina*, ed. por Sandra Gayol y Gabriel Kessler (Buenos Aires: Edhasa, 2015), 227-250.

5 Andrea González, «El impacto de la enfermedad en la organización social y el espacio urbano. El caso de la Epidemia de Fiebre Amarilla en la Ciudad de Buenos Aires en 1871», *Medicina & Sociedad* 24 n.º 2 (2001): 93-102. Carolina Maglioni y Fernando Stratta, «Impresiones profundas. Una mirada sobre la fiebre amarilla en Buenos Aires», *Población de Buenos Aires, revista semestral de datos y estudios demográficos* 6, n.º 9 (2009): 7-19.

6 Miguel Ángel Scenna, *Cuando murió Buenos Aires* (Buenos Aires: Cantaro, 2009), 147-157.

7 Nicolás Fernán Rey, «El Atlántico, los inmigrantes y la transnacionalización de la enfermedad. Una nueva mirada sobre la epidemia de fiebre amarilla en Buenos Aires (1870-1871)», *Letras Verdes, Revista Latinoamericana de Estudios Socioambientales* 30 (2021): <https://doi.org/10.17141/letrasverdes.30.2021.5058>, 51-64.

8 Sandro Dutra e Silva, Marina Miraglia y Wilson Picado, «Balances de Historia Ambiental en América Latina», *Historia Ambiental Latinoamericana y Caribeña (HALAC) Revista De La Solcha* 9 n.º 2 (2019): <https://doi.org/10.32991/2237-2717.2019v9i2.p09-15>, 9-15.

context"⁹. Enrique Leff, at the dawn of the 21st century, uneasy at the backwardness that history presented with regard to environmental issues, postulated that environmental history was "the narrative that emerges from the vanquished nature, of an ecological debt that is now expressed in the subjugated knowledge that has not been able to say its suffering as a consequence of the abatement of nature"¹⁰.

This article tries to review the terrible epidemic of 1871, from the assumptions provided from environmental history, particularly the thematic line that proposes to analyze how societies have modified their environment and its consequences, the history of disasters. As has been argued, the latter "are not only natural but socio-natural." That is, they are considered products or materialization of existing risks that, when managed inadequately, are not only the triggers, but also "the conditions of vulnerability that increase their impact and occurrence."¹¹. Therefore, disaster "is the most evident expression of a vulnerable coexistence between different social groups and its environment, highlighting the lack of environmental sustainability"¹².

It is true that acute studies by specialists enunciate the need to widen the appreciation of this tragic era, a characteristic element of environmental history, which constitutes a sort of "historiographic constriction that did not allow us to see other elements"¹³. Despite this, we consider that analyzing an epidemic situation, under the lens of the history of disasters can provide, on the one hand a new look at a phenomenon widely examined by Argentine historiography; on the other hand develop some reflections on the realities of the environmental and pandemic present.

To this end, this work will reconsider the elements that the classic work *Historia y desastre en América Latina* (History and disaster in Latin America) highlighting the following as indispensable:

- 1) If the disaster is the result of the confluence between a dangerous natural phenomenon and a vulnerable context, it will be necessary to know the latter in depth;
- 2) recognize that disasters are the result of processes that become triggers of pre-existing critical situations in social, economic and political terms;
- 3) If society is not a passive entity in which certain dangerous natural phenomena affect, it is necessary to take into account two elements. On the one hand, what we call adaptive strategies, which are those

9 Margarita Gascón, «Historia y Ambiente», *Entelequia Revista Interdisciplinar* 5 (2007): 204-205.

10 Enrique Leff, «Vertientes y vetas de la historia ambiental: una nota metodológica y epistemológica», *Anuario IEHS* 19 (2004): 141.

11 Julián Salas, «Vulnerabilidad, pobreza y desastres "socionaturales" en Centroamérica y el Caribe», *Informes de la Construcción* 59 (2007). <https://doi.org/10.3989/ic.2007.v59.i508.580>.

12 Hilda Herzer, «Construcción del riesgo, desastre y gestión ambiental urbana: Perspectivas en debate», *Revista Virtual REDESMA* 5, n° 2 (2011): 53.

13 Vladimir Sánchez-Calderón y Jacob Blanc, «La historia ambiental latinoamericana: cambios y permanencias de un campo en crecimiento», *Historia Crítica*, n.º17 (2019), 7 <https://doi.org/10.7440/histcrit74.2019.01>. On the concentration of these studies with respect to the issue of climate change and their limitations, see Katherinne Mora, «Pensar el pasado para adaptarse al cambio climático. El aporte necesario de la historia ambiental latinoamericana», *Letras Verdes. Revista Latinoamericana de Estudios Socioambientales* 24 (2018): 8-26, <https://doi.org/10.17141/letrasverdes.24.2018.3317>.

measures, attitudes, postures that the affected society finds, adopts and adapts; on the other, the resilience of the various sectors or social groups¹⁴.

Based on these contributions and a qualitative methodology, this paper has as its first objective to characterize the climatic and meteorological conditions of the city before and during the pathogenic scourge, therefore deepening the appreciation of the vulnerable socio-natural context. Recognizing, both the implication of natural phenomena, and also the disaster as a processual result.

The second objective is to analyze one of the consequences that the epidemic disaster has left in its wake, and that historiography has not fully explored: the debate that linked environmental conditions with the origin of evil. To this end, the study will focus, first, on the etiological explanations that health professionals assigned in environmental conditions; then the discursive confrontations will be analyzed that surround the sanitary-environmental policies that are considered the main source of contagion: the putrefied Riachuelo¹⁵.

To achieve the objectives a variety of sources (that were produced before, during and after the epidemic, 1869-1881) were gathered and analyzed. This selection aims to reconstruct both the vulnerable context of the disaster, the conditions from which it originated and developed within, as well as its impact and the behaviors and efforts deployed to face it¹⁶. The first national population census, two years before the disaster, gives us an overview of the scenario that will be examined. It was complemented by the memoirs of Vicente Quesada (who is behind the pseudonym Manuel Gálvez) and José Wilde, along with the studies of the hygienists Emilio Coni and Guillermo Rawson. To investigate the environmental controversies generated by the epidemic, medical theses, brochures, newspaper graphics and official documents such as municipal decrees were also used.

The city and its "modern airs". Pre-disaster socio-economic and environmental aspects.

In 1869 the city of Buenos Aires had a total of 177,987 inhabitants, composed of 89,661 Argentines and 88,126 foreigners¹⁷. Like a locomotive that had started to move, this accelerating trend of arriving European immigrants had only just begun, it was in fact a pre-

14 Virginia García, «Introducción. El estudio histórico de los desastres», en *Historia y desastres en América Latina*, coord. por Virginia García Acosta (Bogotá: Red de Estudios Sociales en Prevención de Desastres en América Latina/CIESAS, 1996), 7.

15 Some time ago, Stefania Gallini pointed out how environmental history challenged the traditional units of scale of historical studies. Here, instead of dealing with the national state or the capital city as a whole, a focus was placed on the area of the spread of the plague. Stefania Gallini, «Problemas de métodos en la historia ambiental de América Latina», *Anuario IHES* 19 (2004): 150-153.

16 Nilson Correa y Lizardo Narvárez, «Egoyá: degradación ambiental y riesgo», en *Cambios ambientales en perspectiva histórica*, comp. por Carlos López y Martha Cano (Pereira: Universidad Tecnológica de Pereira, 2004), 132.

17 Instituto Nacional de Estadísticas y Censos (INDEC), *Primer Censo Nacional de la República Argentina 1869* (Buenos Aires: Imprenta del Porvenir, 1872).

lude to what some intellectuals called the Alluvial Era¹⁸. A project desired and promoted by a liberal elite that conceived European immigration (particularly that of Anglo-Saxon origin), a key component of the modernizing process. The national census is illustrative in terms of the socio-demographic composition of the city. Most of the immigrants arrived from Italy (44,233), followed by the Spanish (14,609) and the French (14,180). Although people of other nationalities arrived, they arrived in considerably fewer numbers when compared to these predominant three nationalities¹⁹. In many cases, the desires of these immigrants, to obtain plots of land in the agricultural-livestock areas of the humid Pampa, were shattered by the concentration of large territories held by a few monopolizing landowners. From this situation, the city offered profitable alternatives for work opportunities. The development of infrastructure, which involved jobs in the port and constructing railways, combined with the emergence of workshops and light industries, particularly the saltworks, were all sectors that required manual labor²⁰.

These statistical details become significant when compared with other numbers that did not accompany the material progress of the city. It is noted that, in the process of urban modernization, there was a significant gap between the excessive population growth and the expansion of the city's infrastructure. From a geographical and architectural perspective, Buenos Aires around 1870 had very modest urban dimensions compared to its dizzying demographics. The center was limited between the streets Piedras (Bartolomé Mitre) to the north and Potosí (Alsina) to the south, that is to say- what is now the Plaza de Mayo and its closest surroundings. To that center were added fourteen small administrative fragments whose central points were its parishes, (Catedral al Sur, Catedral al Norte, San Nicolás, El Socorro, San Miguel, Monserrat, Concepción, San Telmo, La Piedad, Balvanera, Pilar, Barracas al Norte, San Juan [La Boca] and San Cristóbal). The urban plan had a triangular structure, its base on the Rio de la Plata, between Retiro to the north, and Plaza Constitución to the south, which was becoming narrow as it approached Plaza Once.

The 1869 census indicates that the city consisted of 20,838 houses, and was broken down into 18,507 single-story houses, 2,078 two-story houses and 253 three-story houses. Notably the urban spread did not increase to match the rate of the population growth during that time. This immigration boom was concentrated in neighborhoods whose essential characteristic was placed in their ethnic features²¹. The parishes located to the south were the main destination for immigrants. There, tenements proliferated, a type of collective housing that aroused the worrying attention of hygienists. Famous for their chaotic divisions, typically their few square meters served as a bedroom, dining room and living room with zero ventilation. This compacted area and use of space generated the mixture of hideous effluvia.

18 Concept used in José Luis Romero, *Las ideas políticas en Argentina* (Buenos Aires: Fondo de Cultura Económica, 1991), 169-183.

19 INDEC, *Primer censo Nacional de la República Argentina...*

20 For an extension of this issue, see Fernando Devoto, *Historia de la inmigración en Argentina* (Buenos Aires: Sudamericana, 2004), 247-254.

21 Scenna, *Cuando murió...*, 32-33.

ditionally, this precariousness included a lack of drinking water services for its inhabitants²².

However, the water problem did not only exist within the various tenements. The modern requirements for a city that was intended as such, denounced the need for the provision of drinking water and sewage services. As early as 1862 the municipal state had studied the possibility that the population of the city had drinking water. It was not until 1867, during the Alsina government, that drinking water infrastructure was implemented, when under the direction of the engineer Coghlan, the necessary elements were imported from Great Britain. In 1869, Buenos Aires inaugurated its first stretch of running waters, a mere 20,000 meters of plumbing with filters in La Recoleta. Obviously the service was minimal and therefore its beneficiaries were also very few. This was followed by the total interruption of the project in 1870, evidencing its real failure. At the end of the year of the plague, the provincial legislature ordered the extension of the water network to the entire city and the addition of sewers. However, the materialization of the law was delayed until 1888.

Up until this point, the water supply had been incredibly complicated and dangerous. There were two main ways to obtain it: either it could be bought for a few cents from the water sellers, who offered it in the streets from a dirty barrel. Water extracted from the river was taken from the same sector where women washed dirty clothing and effluent from the horse stables was thrown. José Antonio Wilde recalls that, although the authority indicated the place where the water sellers (*aquateros*) should extract their provision, the provision was frequently ignored. It was removed from where it suited them most, even when the water was visibly clouded and muddy²³. The other way, unquestionably worse, was to obtain it directly from the cistern. Here the risk was due to the layout of the infrastructure that was aligned closely to the blackwater wells of the latrines. In this instance, the time the water spent in the tubing, combined with the porosity of the land, caused fecal waters to mix with those destined for drinking water.

Another concern at this time was garbage collection. This service was limited to the central area of the city and the collection method, used since 1856, had become inadequate. The carts literally took days to collect the garbage which meant it began to ferment causing negative impacts for the environment and general health. The numerical insufficiency of the carts, and their insufficient capacity were obstacles to providing an adequate service. But the garbage collection did not guarantee its disposal. Garbage was sometimes used as backfill for areas that required leveling for future urbanization. The garbage was then compacted down and covered by the cobblestone. Trapped below the cobblestones, in summer, the garbage fermented and let its presence be felt, sending a symphony of mephitic smells through the joints

22 Regarding concerns about living conditions, housing and epidemics, a contemporary hygienist process similar to that of the city of Buenos Aires was the case of Rio de Janeiro, capital of the Brazilian Empire. Concerns about overcrowding, living conditions, lack of basic sanitary services and certain racial arguments (slavery for Rio de Janeiro, European immigration for Buenos Aires) were the causes, according to the hygienists, of the pestilential outbreaks of yellow fever. In the case of Brazil, those of 1850 and 1870, cf. Sidney Chalhoub, *Cidade Febril. Corticos e epidemias na Corte imperial* (Sao Paulo: Companhia das Letras, 1996).

23 José Antonio Wilde, *Buenos Aires desde 70 años atrás (1810-1880)* (Buenos Aires: Eudeba, 1960), 148.

of the pavement²⁴. To this we must add that, given the lack of drains for waste water or rain, it also meant this putrid water ended up in the streets. José Wilde described that:

... until not many years ago, there were still in the most central points of the city, immense swamps that sometimes occupied four entire blocks. The marshes were covered with the garbage that the police cars added. These deposits of filth, these true foci of infection produced, particularly in the summer, an unbearable smell, and attracted thousands of flies that invaded the immediate houses at all times²⁵.

The British traveler, Lucy Dowling, outlined in her notes how Callao Street had become a “prolonged swamp”. She insisted on the deplorable state of the city’s squares, which she described as a “mixture without taste of all kinds of poorly cared for trees, with fountains that never play their waters”, and on the lack of concurrence of the inhabitants to healthy green spaces. She was surprised that there were “never people occupying the benches in public places, nor children running under the trees in the squares. These walks are not just luxury, it is the hygiene that requires going out to breathe the fresh air.”²⁶.

The clean air problem had deep roots, according to Dr. Guillermo Rawson. Buenos Aires was a city with poor oxygenation since its foundation. Its very layout was an attack on public health: “Its narrow streets prevent the ample and free circulation of air, which is the most significant drawback [...] the city's lungs are too small that subsequently they threaten to suffocate the society”²⁷.

To this vulnerable context that was so favorable for the spread of any disease fit to unleash a socio- natural disaster, the climatic and meteorological conditions that occurred between 1870 and 1871 in Buenos Aires must be added. This natural phenomenon has gone virtually unnoticed in studies about the epidemic. However we consider this factor fundamental to further explain the spread of the two main diseases that ravaged the city between 1850 and 1887, cholera and yellow fever.

Exactly one year before the disaster, the scenario was prepared by copious rainfall. On the 31st of March, 1870, a single downpour of a few minutes totalled 145 mm, about 20% of the annual average. This caused flooding in the south of the city and a state of emergency announced by the provincial government on the 4th of April, 1870. All the lower parts of the city became swamps while the upper parts became quagmires, flooding from the black waters mixed together with overflowing fecal materials²⁸. These wetlands and putrid ponds transformed the city into an eden for the *Aedes aegypti* mosquito.

24 Scenna, *Cuando murió...*, 150.

25 Wilde, *Buenos Aires...*, 19-20.

26 Víctor Gálvez, *Memorias de un viejo. Escenas de costumbres de la República Argentina* (Buenos Aires: Academia Argentina de Letras, 1990), 166-171.

27 Luis Maglione, *Conferencias sobre higiene pública dadas en la Facultad de Medicina de Bs. As., por el Dr. Guillermo Rawson (año 1874)* (París: Connamette y Hatu, 1875), 1-2. Also see for an overall view Emilio Coni, *El servicio sanitario de Bs. As.* (Buenos Aires: Pablo E. Coni, 1879).

28 Nicolás Besio, *Historia de las epidemias de Buenos Aires: Estudio demográfico estadístico*, tomo III. (Buenos Aires: Publicaciones de la Cátedra de Historia de la Medicina, 1940), 157.

The lack of air circulation within the city can be associated with its initial planning; the floods can be associated with the same moment of its founding in 1580. Commenting on this phenomenon, Hilda Herzer and María Di Virgilio emphasized that "the specific site where the first buildings were installed responded to a topographical requirement: to be on high ground"²⁹. However, the topographic characteristics of the city are conducive to flooding. As has been argued, "the flood processes that have occurred in Buenos Aires since the beginning of the 18th century can be considered as an "anthropogenic disaster", generated by errors, neglect or human interests"³⁰. Considering this, the horizontal expansion and paving of the city represented an obstacle to the successful drainage into rivers and drains. Additionally the political-military conflicts, which between 1852 and 1880 combined with the capitalization of the city, hindered the possibility of a lasting administrative management that would allow the stability required to design solutions to the problems of the habitat. The inertia of policies aimed in this regard resulted in the lack of sanitary works until the end of the 19th century³¹.

To this socio- natural problem, it is worth adding what was pointed out by Nicolas Rey regarding the coincidence between the yellow fever epidemic of 1870 and 1871 and the meteorological phenomenon known as El Niño³²; as its torrential rains and increased humidity affected the region of the Rio de la Plata.

Thus, "the epidemics of cholera, dysentery, malaria and yellow fever that broke out between 1860 and 1871 in the basin of *The River Plata* could be associated with different climatic variables of the ENSO with estimated intensity: 1861 (Medium), 1864 (Strong) and 1871 (Very Strong)"³³.

Considering the rainfall and floods that occurred in those years, it is important to add the impact of the climatic conditions. The official medical journal *Médico-Quirúrgica* (The Medical-Surgical Journal), noted at the beginning of 1871, with concern reported rarefied climatic conditions.

The temperature changes of the fortnight have fluctuated in a sudden way, often presenting a strong heat during the day, with remarkably cool temperatures during the night. The temperature, in some days during this fortnight, has risen considerably, producing strong heat that was felt in the late hours

29 Hilda Herzer y María Di Virgilio (1996) «Buenos Aires inundable del siglo XIX a mediados del siglo XX», en *Historia y desastres en América Latina*, coord. por Virginia García Acosta (Bogotá: Red de Estudios Sociales en Prevención de Desastres en América Latina/CIESAS, 1996), 76.

30 Herzer y Di Virgilio, *Buenos Aires inundable...*, 71.

31 Herzer y Di Virgilio, *Buenos Aires inundable...*, 82.

32 El Niño (more precisely, ENSO: El Niño and Southern Oscillation) is considered by specialists as a climatic anomaly syndrome. Although ENSO originates in the tropical Pacific, it has an almost global significance. In his long-term study, geographer César Caviedes has analyzed the various effects of the phenomenon over time and space. Among its multiple effects, he highlights droughts in northern China, India and Australia; mild winters in Canada and the United States; and heavy rainfall in southern China, coastal Peru, Uruguay, Argentina, New Zealand and southwestern North America. See César Caviedes, *El Niño in history: Storming Through the Ages* (Gainesville: University Press of Florida, 2001).

33 Rey, *El Atlántico...*, 56-57.

of the night³⁴.

Towards the end of January several storms hit the city, configuring the ideal conditions for the mosquitos to flourish. Emilio Coni, in his study on mortality³⁵, details precisely the climate of Buenos Aires before, during and after the epidemic. In his study he warned of certain “climatic inconveniences”, which derived from high temperatures, high humidity, unhealthy winds and air pressure³⁶. Despite this, the hygienist, lessening the harmful effects of the environment, defined “the climate of Buenos Aires as healthy, where the inhabitants generally enjoy good health, and the foreigners (sic) easily acclimatize”³⁷.

The truth is that the metropolis had become accustomed to pathogenic episodes during the summer months and the link between these and the weather conditions were also recurrent. Even the optimistic climate that was foreshadowed from the classic Almanacs that started the new year, made reference to the close connection between climate and diseases. The almanacs destined to be received in the year 1871, provided their readers with strategies to preserve themselves from cholera and yellow fever (diseases that became epidemics in 1867, 1869 and 1870). They augured, regarding disease control, climate benevolence:

Readers, it is not strange to consider that this year will be favorable, because any year that has judgment can never be a bad year. The current year is so ordinary and healthy, and so pleasant and tender, that there will be neither cold in winter, nor heat in its summer³⁸.

To the conditions described above, it is necessary to note that the distribution area of the mosquito that transmits yellow fever is incredibly wide. It includes both tropical and temperate areas across the globe. It is also important to note that Buenos Aires “is located near the southern boundary of the dispersal area” and that, in turn, the *Aedes aegypti* “has a permanent and stable habitat in the delta of Paraná”³⁹. Furthermore, although temperatures above 25°C are typically unsurvivable for the development of the mosquito, it can adapt to regions with lower average temperatures. Additionally, it is an insect that prefers the environment of homes, and usually resides within domestic dwellings. Therefore, the combination of precipitation and an adequate temperature allowed for its propagation. However, contamination of water sources, swamps, and other stagnant waters encouraged the development of its cousin

34 *Revista Médico-Quirúrgica*, año VII, n.º 20 (1871), hemeroteca de la Biblioteca Nacional Mariano Moreno (BNMM), Buenos Aires, Argentina.

35 The miasma theory was that diseases were transmitted from gases or effluxes emanating from decomposing human, animal and vegetable bodies, as well as from stagnant water. For this reason, climate played an active role in this theory.

36 Emilio Coni, *Apuntes sobre estadística mortuoria de la ciudad de Bs. As.: desde el año 1869 hasta 1877 inclusive* (Buenos Aires: Pablo E. Coni, 1878), 82-83.

37 Coni, *Apuntes sobre...*, 83. La cursiva es nuestra.

38 *Almanaque del correo de las niñas para 1871* (Buenos Aires: imprenta La Discusión, 1871), 23-24. Sobre las recetas preventivas véase en *Almanaque de las familias para 1871* (Buenos Aires: Imprenta del Siglo, 1870), 50-51. *Almanaque popular de Orión: 1871* (Buenos Aires: Imprenta La Tribuna, 1871).

39 Scenna, *Cuando murió...*, 121.

Anopheles, but not *Aedes aegypti*.

Of course, in a period prior to the scientific contributions of modern bacteriology, theories on the etiologies of diseases were mainly based on the concept of miasma. Various theories existed, one was that the sick bodies gave off harmful effluvium or emanations while another theory was that the contamination came from the stagnant waters as a way of transmitting the diseases. The miasmatic theory focused on the influence of nature and climate as fundamental to the process of decomposition. The summer season, for example, led to the acceleration of degradation, encouraging the propagation of the dangerous particles. Contrastingly, the medical theses put forward by those who assisted the victims during the yellow fever epidemic, asserted that the disease was:

product of the countries located in the torrid zone embraced by the rays of the sun, whose coasts are low, humid and swampy, and where the vegetation is very abundant. [...] the combination of heat with humidity favors the decomposition of animal and plant substances that exhale and combine with conditions favored by variations in the atmosphere and electrical imbalances, alter the atmospheric air and make it harmful to health⁴⁰.

The influence that nature had on the development of yellow fever generated confusion. It was argued that "the disease *had no* fixed points to develop itself," because while its proliferation was clearly identified in warm and humid environments, "we also see it develop in temperate countries"⁴¹. Despite the vicissitudes, the contribution of "the telluric and atmospheric constitution" was little questioned⁴². Even day and night could exert their influence on the symptoms of the ailment:

the hope of a prompt improvement and that appears beginning in the early hours of the morning to disappear with the approach of the night, is nothing but apparent, being able to be considered as a truce, a rest that the disease grants to nature only to return immediately with more strength and clad in another character to (sic) continue its destructive march⁴³.

As the plague began to unfold its wings and darken the city, the first accusations and discussions regarding the origin of the epidemic focused on the putrid Riachuelo. The following paragraph will address the environmental discussions that unfolded around it in the time of the epidemic.

Riachuelo, epidemic and environmental debates

If a disaster is a result of processes, it is necessary to track the many influences upon the

40 Miguel Echegaray, *Fiebre amarilla del año 1871* (Buenos Aires: Pablo E. Coni, 1871), 10.

41 Echegaray, *Fiebre amarilla ...*, 9.

42 Jacobo Scherrer, *Estudios sobre la fiebre amarilla del año 1871* (Buenos Aires: Pablo E. Coni, 1872), 15-16.

43 Salvador Doncel, *La fiebre amarilla de 1871: observada en el lazareto municipal de San Roque* (Buenos Aires: Imprenta del Siglo, 1873), 28.

Riachuelo before it is possible to consider it as a point of origin during the epidemic. Its propensity to flooding was already evident in colonial times. The geological phenomenon of sediment dragging was precipitated by the deforestation of its coasts and the subsequent livestock activity that developed there. Brailovsky argues that:

... once the willows and ceibos were removed, each strong south easterly wind (*sudestada*) swept away more of the soil from the shore. To this is added the use of the Riachuelo as a water source for livestock. The hooves of the animals removed the soil and pulverized it, which made it easier to be dragged away by the rains⁴⁴.

But without doubt, the catastrophic effects that economic activity would have on the river intensified in the post-independence period, from the expansion of the meat-salting industry (and other derivations of cattle processing), which between 1820 and 1860 was concentrated around the Riachuelo. As highlighted:

...by the mid-19th century, the saladero (meat-salting) activity could be seen as a progressive industry, feeding a number of related industries. But the disadvantages regarding hygiene could not go unnoticed: The Riachuelo was red in the summer, during the period of slaughter⁴⁵.

Repeated attempts to delimit or eliminate the activity of the meat salting industry, which began as early as 1817, were ineffective until 1871. This does not imply conjecture that the terrible cholera epidemics in 1867 (which coincides with the record number of animals slaughtered) and the one studied here in 1871, motivated an awareness of the powerful sectors involved with these industries. Nor its subsequent modification with respect to the forms of production. In reality, although the epidemic disaster stimulated social awareness for a healthier environment, this type of production declined as it ceased to be profitable after the consolidation of the refrigerator. Furthermore, in an opposing way, during this time the activity from the saladero activity created ditches that were active contributors of blood, entrails and other waste that accumulated in the back waters. Thus, "the detritus formed a liquid magma, a formidable breeding ground for flies, a mosquito paradise, from which emerged a robust and persistent stench"⁴⁶.

The magnitude of the disaster caused by the epidemic, in a context where hygiene was gaining critical attention, led many eyes to examine the role of the river. As expected, the Riachuelo saladeros positioned as the cause of the disease opened arduous confrontations. On the one hand, the fierce defense of the meat industries by some politicians, influential saladero industry leaders as well as powerful national and foreign merchants working to avoid their closure, while on the other hand, an energetic resistance, based on environmental concerns. A strong position that promoted the care of the environment and public health was advocated

44 Antonio Brailovsky, *Historia ecológica de la ciudad de Buenos Aires* (Buenos Aires: Kaicron, 2012), 68.

45 Graciela Silvestri. *El color del río. Historia cultural del paisaje del Riachuelo* (Bernal: Universidad Nacional de Quilmes, 2012), 158-161.

46 Scenna, *Cuando murió...*, 70.

for by various local newspapers and some pamphlets that circulated during the pestilential era were proponents for either one or both interests.

Oppositions between these stances can be traced back as early as February the 6th. Even at that time there was debate on whether or not it was yellow fever, however there was no doubt that it was a miasmatic disease. *La Nación* (The Nation) reproduced in an article entitled “The Riachuelo and the Yellow Fever”, the knowledge that was stated about the disease was: “The places in which the fever reigns are the coasts of the sea more specifically the places located in the mouth of the rivers that carry a considerable amount of vegetal and animal detritus”⁴⁷. The next day the newspaper *El Nacional* (The National) expressed a similar message:

...yellow fever is caused by outbreaks of infection and only develops on the banks of rivers. The major infection focus of the city is the Riachuelo. Care should be taken as soon as possible to disinfect this source of rot⁴⁸.

In the same newspaper a news item entitled "The Saladeros" ("*Los Saladeros*") blamed the stench of the Riachuelo, the apathy of the authorities and the corruption of the industry on the Saladeros. For the newspaper, the act of prioritizing economic gains over public health that the powerful Saladerista sector decided on, demonstrated power, selfishness and greed. In turn, these actions were only possible due to the political corruption that covered up its operation.

It is truly worth noting the fact that almost all epidemics have appeared in the south of the city. [...] Evil comes from elsewhere. Its immediate origin is in these dreadful foci of infection called saladeros, which are centered on the banks of the Riachuelo, preventing any advanced progress and threatening public health with death. [...] Why don't they get removed? The saladeros are not removed because they are opposed by the powerful protagonists in the Saladero industry who for the most part are wealthy people and have enough influence with the magistrates and public officials to satisfy their petty personal interest⁴⁹.

These arguments were the cornerstone for those who assigned the origin of evil to the saladeros. But, precisely from this reasoning, there was an obstacle that the opponents of the saladeros could not demonstrate ostensibly: Why did cases of yellow fever occur far from the Riachuelo and far from the meat salting factories? Why was there no case of yellow fever at that moment in Barracas? The thesis of the defenders of the saladeros would take refuge in this question:

Why was there not a single case in Barracas if it had supposedly begun there, and only one or two of those attacked there had died in that place, transferred from the city, especially from the neighborhood

47 «El Riachuelo y la fiebre amarilla», *La Nación*, 6 de febrero de 1871, hemeroteca BNMM, Buenos Aires, Argentina.

48 «La fiebre amarilla», *El Nacional*, 7 de febrero de 1871, hemeroteca BNMM, Buenos Aires, Argentina.

49 «Los Saladeros», *El Nacional*, 7 de febrero de 1871, hemeroteca BNMM, Buenos Aires, Argentina.

of San Telmo, but without the fever being communicated to any of the inhabitants of Barracas? Well, if the focus of infection were there, the logical thing would be that the fever had its birth there, and then spread through the city. But no sir: the fever, in the first place, has been imported to Buenos Aires by an individual from Paraguay [...] (in addition) yellow fever is produced only and exclusively by the spontaneous decomposition of plant matter⁵⁰.

For the Spanish chemist Manuel Puiggari, hired by the municipal state as the authority to analyze the Riachuelo, the problem lay not in the activity of the saladeros, but in the increase of the population on the shores of the river. He even considered that the "putrid emanations are harmless, the nauseating is not unhealthy and can still possess a therapeutic value, and it is possible then, to recycle"⁵¹. Hence, the ironic response that the journalist Mardoqueo Navarro gave in his Journal of the Epidemic (*Diario de la epidemia*), and title of this article, "Putrid waters are healthy"⁵².

In another pamphlet, the Briton J. Graham listed the six elements that caused the epidemic. In it nothing was mentioned regarding the saladeros and their antiseptic characteristics; moreover, when he pointed to the Riachuelo, as the last cause of the epidemic, it was associated with its calm back waters and not with the waste thrown into it: "Sixth cause: The Riachuelo. It is the small stream, whose waters are almost completely stagnant, which receives water but does not expel it out into the river, rather it becomes a pond every year"⁵³. Meanwhile, the newspaper *La Discusión* (The Discussion) published an article with the title "El Riachuelo", which directed criticism towards local authorities and mainly the Hygiene Council. He emphasized that the sad reality of the city was the product not of one focus, but of several, because, as the editor maintains, several streams coexisted within it:

It is accurate what has been said about it (*Riachuelo*), but it is not so when one does not enter to find out how many water ways exist in Buenos Aires. Who knows if the laziness of the Hygiene Council is not a Stream? Who knows if the lack of drunkenness among citizens is not a new Riachuelo, even worse in its effects, than that of Barracas? [...] A lot of outbreaks of infection and rot surround the city and there are no signs of life to avoid them [...] have been wasting their patience with the name of Riachuelo for days, coming to make it a literary question, instead of saying at once, cleanse all such uncleanness, renounce their authority, whoever is unfit to perform them, get out of the Hygiene Council who ever doesn't want to work⁵⁴.

The complaints addressed to the government, focused on the lack of initiative, negligence or

50 Anónimo, *Los saladeros, el riachuelo y la fiebre amarilla* (Buenos Aires: Imprenta Porvenir, 1871), 5-6.

51 Manuel Puiggari, *Sobre la inocuidad de los saladeros o sea la refutación de los cargos hechos a estos establecimientos como instrumento de insalubridad y prueba de las preocupaciones que dominan sobre las condiciones sanitarias de las industrias análogas* (Buenos Aires: Imprenta La tribuna, 1871), 13.

52 Mardoqueo Navarro, *Diario de la epidemia*. Archivo General de la Nación Argentina (AGN), Colección Andrés Lamas (1849-1894), legajo 2672, colección de documentos impresos, legajo n.º 69, 1863-1881, 14 de febrero de 1871.

53 J. Graham, *La epidemia de 1871: las causas y su remoción* (Buenos Aires: Imprenta inglesa, 1871), 4.

54 (La cursiva es agregado nuestro). «El Riachuelo», *La Discusión*, 13 de febrero de 1871, hemeroteca BNMM, Buenos Aires, Argentina.

inaction in the matter, the resulting pressure prompted it to decree a suspension of its tasks. This ruling further inflamed the positions of newspapers and society.

The decree stipulated that from March the 1st all work in the saladeros was to be suspended until the epidemic ceased. Until a resolution was adopted, it was strictly forbidden for the saladeros to throw any waste, either solid and liquid, into the Riachuelo. In its Articles 2 and 3 it stated that “violators of the provisions of the previous article shall be punished with a fine of twenty thousand pesos for each infraction, and that the inspector of the Saladero is especially responsible for monitoring compliance with this provision”⁵⁵.

The newspaper *La Discusión* (The Discussion) soon went on the defensive by disapproving the decree. With a title as suggestive as “Unconstitutional measure” they argued that it was a decision devoid of convictions; with the sole purpose of eventually contributing to the tranquility of the population and doing nothing to calm the epidemic:

...there has been shouts and there have been protests, against which they respond with criminal protection for the wealthy, but no one has yet proved that the saladeros are the permanent focus of this unhealthiness [...] we believe that, if governments have not ordered removal within a given period, it is because that is not where evil is, and hence only momentarily the anxiety of the people has been calmed⁵⁶.

In contrast, the newspapers *La Nación* (The Nation) and *El Nacional* (The National) welcomed the resolution adopted by the authorities. In fact, the latter emphasized the delay of the decisions taken.

Why wait until the 1st of March and not immediately order the suspension of work? [...] And then why so much consideration and complacency on the part of the government regarding these establishments that contribute to the development and maintenance of epidemics? The government decree tries to excuse this irritating condescension with reasons that do not satisfy because they are of private interests and private interest cannot and should not be prioritized above common interests⁵⁷.

Simultaneously, *La Nación* (The Nation) highlighted with these headlines “Freedom and the saladeros” and “Industries and public health” how the resistance with respect to the saladeros responded on the one hand to the repudiation that the illicit industry generated, and on the other to a citizen demonstration, whose rights to live in a healthy environment were being trampled. In the balance of priorities, the closure of the saladeros was not unconstitutional because it supported a well-founded safeguard of health and life⁵⁸. In that sense, yellow fever can

55 Archivo General de la Nación Argentina. Sala X ordenes 1870-187, legajo 34-11-2.

56 «Medida inconstitucional», *La Discusión*, 14 de febrero de 1871, hemeroteca BNMM, Buenos Aires, Argentina.

57 «Suspensión de las faenas», *El Nacional*, 23 de febrero de 1871, hemeroteca BNMM, Buenos Aires, Argentina.

58 «La libertad y los saladeros», *La Nación*, 23 de febrero de 1871, hemeroteca BNMM, Buenos Aires, Argentina.

be considered a "watershed" in several issues. It was not only medical care and health services in general that began to be considered a legitimate issue that would be incorporated into the label of citizen but other significant issues as well. The right to a healthy environment entered the agenda of citizens. Undoubtedly, the first point on this agenda was the contamination of the Riachuelo. Contemporaries not only saw with concern the alarming state of the river, but were able to identify the causes of it. The newspaper *La Nación* (The Nation) described:

The bed of the Riachuelo is an immense layer of rotting matter. Its waters do not even have the color of water. Sometimes bloody, sometimes green and thick, it looks like a torrent of pus that escapes in deluges from an open and bleeding wound in the earth. Such a source of infection could be the cause of all scourges. How long will we continue to breathe and drink the rottenness of that great corpse lying behind our city⁵⁹.

The landscape reconstructs both the effects and the mechanisms of eutrophication. The river received for decades an excess of substances that resulted in a massive alternation of the composition of its waters. The bad smell of it is indicative of the considerable decrease in oxygen levels that consequently make it uninhabitable for animal and plant life.

On August the 7th, 1871, two months after the epidemic ended (but with the living memory of the disaster still held closely) the Chamber of Deputies (*la cámara de diputados*) of the province of Buenos Aires dealt with the urgent problem of the contamination of the Riachuelo. Two key projects were discussed: firstly to clean up the Riachuelo and secondly to eradicate the meat salting factories as well as the surrounding polluting industries. The first was considered unattainable. Although purification was possible, the lack of interest from the *Saladeros* to put into practice the recommendations, was well known. The second project was approved. It was clear that, as a result of the epidemic disaster, for the first time environmental positions in Buenos Aires were gaining strength. The deputy, Montes de Oca, emphasized and expanded upon the environmental problems of the city, when he stated:

Let us not forget that very close to the city there are floodplains, that there are piles of garbage that have not been touched; that there are underground currents in Buenos Aires of liquids in putrefaction, that this city does not have drains or town squares. We have in Buenos Aires infinite causes of producing epidemic diseases⁶⁰.

Although it would take decades for these environmental problems to be treated as urgent by political authorities, undoubtedly, since the epidemic of 1871, they began to gain greater importance in the political agenda.

59 *La Nación*, 15 de febrero de 1871, hemeroteca BNMM, Buenos Aires, Argentina.

60 Diario de Sesiones de la Cámara de Diputados de la Provincia de Buenos Aires, sesión del 7 de agosto de 1871, Biblioteca Tornquist.

Conclusions

The discussion presented here aspires to demonstrate that the epidemic of 1871 was the result of a process whose disaster became the central crisis for a critical reality, in which not only the tragic aspects were highlighted. It was the beginning of the processes to recognize important environmental issues by the authorities as well as political decisions needed to resolve them.

This study tried to show not only the socio- natural conditions that triggered the epidemic, but also to show how the health professionals focused their attention on the arising concerns. The hygienists, based on the foundations of the miasmatic theory, stressed that the etiology of the disease was due to the climatic and topographic conditions of the city. Although, they mainly stressed the significant negative impact of society's activities on nature, corrupting it and nurturing the feared miasma, it is clear that the hegemonic medical-health knowledge of the time did not suspect the mosquito as capable of transmitting the disease. For this reason, the hypothesis of the contamination of the stream as the main generator of infection is refutable; especially as the mosquito thrives in putrid waters.

However, the responsibility of the Riachuelo with respect to the development of the epidemic had its limitations. Its coastal overflows, produced by the copious rainfall, were conducive to the spread of the mosquito and it could be inferred that, although indirectly, particularly as the real etiological focus was not perceived, that the ideas and actions that were carried out on the environment to avoid epidemic outbreaks were to some extent effective. Although the Riachuelo is still considered among the ten most polluted rivers in the world (and remains an unresolved issue for the wider community, due to its sanitation), the landscape and natural recovery began from 1871. It is worth adding, that the recovery process prospered especially when from a decree in 1980 (more than 100 years after that terrible scourge), it was considered an ecological reserve⁶¹.

Finally, a brief reflection is needed on the crossroads (particularly environmental) that the planet is facing with COVID 19. Multitudes of specialists argue that since the pandemic has disrupted our lives, nature has had the possibility of a gradual recovery on a global scale. The relationship between production of goods, exploitation of resources/pollution, as well as environmental health is being reconsidered. Frank Molano Camargo in "The garbage of Covid-19"⁶² invites us to meditate on the new contaminated garbage and its possible implications in the transmission of COVID-19. As in 1871, but today more than ever, we must redesign environmental policies that work for the fundamental rights of people and reduce socio-ecological inequalities.

61 On this issue, see Mariana Schmidt, «Territorio, ambiente y patrimonio en la cuenca Matanza Riachuelo», *Avá. Revista de Antropología* 30 (2017): 184-195. Gabriela Merlinsky. *Política, derecho y justicia ambiental. El conflicto del Riachuelo* (Buenos Aires: Fondo de Cultura Económica, 2013).

62 Frank Molano, «La basura del Covid-19», *Historia Ambiental Latinoamericana y Caribeña* 10 (2020): 52-56.

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