

ORIGINAL RESEARCH ARTICLE

Nature, culture and well-being: Exploring the historical significance of Rosario de la Frontera thermal baths

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ABSTRACT

The fall of the Berlin Wall in 1989 marked a significant turning point in global politics and the recognition of pressing environmental issues. This period witnessed the emergence of conferences addressing climate change and the adoption of measures to promote sustainable development. Bruno Latour's book "We have never been modern" (1991) reflects on this historical moment, questioning the prevailing capitalist system and emphasizing the urgent need for a paradigm shift towards ecological principles. In the present context, there is a growing consensus on the need for immediate action to protect the environment. Rising sea levels, soil degradation, melting ice caps, and the impending extinction of species highlight the gravity of the ecological crisis we face. Latour's concept of "living in times of ecological crisis" underscores the role of culture and its pursuit of abundance and comfort in contributing to this crisis. This study focuses on the thermal baths of Rosario de la Frontera in Salta, Argentina, during two distinct periods, 1826 and 1888. By examining this specific geographical location, the research aims to explore the complex relationship between culture and nature and uncover the motivations that shaped the societal mindset of the time. The study seeks to gain insights into the perceptions of well-being that influenced the development of certain inventions and the transformation of collective lifestyles, with enduring implications for the present day.

Keywords: ecological crisis; culture and nature; sustainable development; thermal baths; perceptions of well-being

1. Introduction

The fall of the Berlin Wall in 1989 was widely seen as a victory for liberalism, capitalism, and Western democracies over Marxism. However, this triumph also had its drawbacks. That same year, significant global conferences on climate change were held in Europe, marking the beginning of concerted efforts to address the environmental impacts of human activities. The United Nations Environment Programme and the World Meteorological Organization collaborated on a framework convention on climate change, alongside regional measures. These initiatives built upon the concept of "sustainable development" introduced in the Brundtland Report of 1987, which criticized the prevailing economic model driven by excessive consumption and urged greater use of renewable energies.

This period challenged existing economic development policies and called for a paradigm shift towards ecological principles. Some observers, like French author Bruno Latour in his book "We have never been modern"^[1] viewed the fall of the Berlin Wall and the recognition of climate change as the end of capitalism's

ARTICLE INFO

Received: 6 July 2023 | Accepted: 15 August 2023 | Available online: 8 October 2023

CITATION

Mg.Arq. Eleonora Menéndez. Nature, culture and well-being: Exploring the historical significance of Rosario de la Frontera thermal baths. *Eco Cities* 2023; 4(1): 2230. doi: 10.54517/ec.v4i1.2230

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aspirations for unlimited dominance and control over nature.

Today, there is a widespread consensus on the urgent need to preserve nature. Rising waters, soil degradation, melting ice caps, and the threat of species extinction are constant reminders of the environmental crisis. Latour refers to the present era as “living in times of ecological crisis,” attributing it paradoxically to a culture that prioritized abundance and comfort through a production system. However, it is increasingly evident that this way of life is no longer aligned with the contemporary “world,” leading to intense debates about the need for change.

This study takes on the role of a scientist in a laboratory, focusing on a specific geographical location—the thermal baths of Rosario de la Frontera in the province of Salta, Argentina. It examines two distinct periods, 1826 and 1888, to explore the interplay between *culture and nature* and understand the motivations that shaped the inventions and transformations of collective lifestyles. By doing so, it aims to provide insights into the historical context and ongoing implications of these perceptions of well-being.

2. The Rosario de la Frontera thermal baths and the “industry of man” in 1826

The thermal source is located in the midst of a beautifully romantic region; the soil is so fertile that, with ordinary industry, it can produce anything and everything necessary not only for survival but also for enjoying existence^[2].

Rosario de la Frontera is a locality situated 180 km south of the provincial capital of Salta in Argentina. The area possesses distinct physical characteristics that define it as a natural region, setting it apart from its neighboring zones. The thermal baths are located within the San Andrés fault, which extends from the United States to southern Argentina. In 1975, geologists Elpelta, Viramonte, and Arias indicated that the thermal nature of the waters is not associated with volcanic phenomena but rather with the presence of a heat dome situated to the west of the thermal baths. This heat dome is a result of the continuous friction between tectonic plates, leading to earthquakes in the area. The friction allows the waters to reach boiling point, with temperatures reaching up to 99 °C.

Over fifteen hundred years ago, the Candelaria indigenous culture inhabited these areas, and later, other indigenous groups such as the Lules and the Tonocotés settled there. Historical records indicate that the Incas also utilized the thermal baths for therapeutic purposes and referred to them as Inti Yacu or Yacu Rupaj, which translates to “waters of the sun” or “hot waters” in the Quechua language. Tupac Yupanqui, the tenth ruler of the Inca Empire, explored the Northwest of Argentina in the 16th century, starting from Cuzco and following a route that included mineral quarries and thermal waters. This route later became known as the Carretas or Troperos Road, which was used by the independence armies during the struggles for emancipation in the early 19th century (**Figure 1**).

Due to their medicinal properties, the thermal baths attracted numerous foreign visitors. A notable written reference can be found in Temple’s book^[2]. Temple, an English gentleman from the court of Charles III, was a member of an exploratory commission sent by the Potosí, La Paz, and Peruvian Mining Association in London in 1826. His journey and experiences in South America were recorded in this publication. In his account, Temple expressed great enthusiasm for the “wild” landscapes and highlighted the enjoyable aspects of his visit. However, he felt that something was lacking in this place, from his perspective, and that was the “industry of man.”

“The only missing element to enhance the landscape was the industry of man, and man himself: his physical presence is essential in this country to fully realize the charms that nature has generously

bestowed. Often, these gifts seem to exist solely for the fleeting pleasure of a few passing travelers like ourselves. Yet, it is impossible not to lament that these inherently valuable fields remain neglected and virtually unknown”^[2].



Figure 1. Map of South America. The arrow indicates the location of Rosario de la Frontera.

Bernardino Rivadavia’s ascent to power as the Minister of Government in the province of Buenos Aires in 1821 profoundly shaped a broader space for deliberation beyond the realm of religion. This period witnessed the consolidation of a representative republican regime and the implementation of reforms aimed at modifying and “modernizing” the inherited practices, foundations, and ways of life from Spanish colonialism. Rivadavia, significantly impacted by his experiences in England and France, sought to introduce, disseminate, and utilize these new principles and knowledge to support his ambitious political project. The republican form of government emerged as a dominant alternative and worldview^[3]. In this context, the presence of the English group in Salta, associated with both mining exploitation and enlightened ideas, was not coincidental. As evident in the following quote, the Enlightenment perspectives on geography, economy, and natural sciences, along with the potential for societal reform they embodied, had profound implications for the Río de la Plata region.

“Feb. 14. A delightful morning: we rose with the sun and continued our journey towards the town of Rosario. [...] Having heard about the beneficial qualities of a thermal spring in the vicinity, we mounted

our horses and set out to visit it. After riding for about two leagues through a densely wooded region, every step brightened by the presence of insects, birds, animals, and plants that were all unfamiliar to us, we arrived at the base of a mountain completely covered in trees from its foot to its summit. [...] As we approached the spring, we could visibly see steam rising from the waters and detect a sulfurous odor. Several men and women, without any distinction, were seen bathing in holes dug in the stream bed. Upon reaching this point, I was initially taken aback by the absence of a bath, a house, a hut, or any kind of comfort for the bathers. [...] However, a moment of reflection dispelled my surprise and led me to attribute this neglect to the exasperating carelessness of the inhabitants of this region and their complete disregard for any kind of improvement that has persisted among them for so long. But this must be added to the extensive catalog of damages and neglect that exist and will continue to exist for a long time in South America, chronicling three centuries of Spanish rule”^[2]...

Despite Temple’s numerous criticisms in 1826, the thermal baths of Rosario de la Frontera would remain “neglected” for several decades. However, Aliata^[4] argues that during this particular period, a growing comprehension, shaped by a nuanced scientific discourse, resulted in diverse interpretations of the relationship between public health and the natural world. These interpretations laid the foundation for the significance of the “hygienist project” as a fundamental framework for a significant portion of urban management practices in the late 19th century.

The concept of “nature” as a collective resource accessible to all individuals, which had been prevalent in scientific thought leading up to the French Revolution, undergoes a significant transformation. New perspectives on the concept of “nature,” previously seen as unchanging for centuries, emerge, accompanied by the necessity of developing assessments to account for potential transformations. Unlike the subsequent period starting from 1860, when the discipline solidifies and gives rise to actors, doctrines, and publications that position the hygienic discourse as an active component of public opinion consensus, this initial stage introduces the notion of a political organization capable of effecting change in public spaces, territories, and the *natural environment*.

3. Modernized nature (1888)

Rarely has nature coincided so completely in usefulness and beauty. The waters spring forth in a remarkably beautiful place, with towering hills covered in tropical vegetation that spreads serene shadows and descends, converging in a hollow filled with rugged terrain [...] where the spa establishment stands, a cluster of spacious modern buildings with wide and long galleries^[5]...

The thermal springs in Rosario de la Frontera had long been recognized for their medicinal properties, and basic accommodations were available for visitors. However, in 1878, the Spanish physician Antonio Palau leased the land where the springs emerged and laid the foundations for a facility that aimed to provide a contrasting experience to the urban living conditions. This establishment offered access to a “natural” therapeutic agent, resembling popular European spas. Palau’s initial constructions consisted of simple wooden huts near the water sources, emphasizing the untouched natural environment^[5].

Antonio Palau, originally from Catalonia, founded and directed the spa from 1880 to 1887. He completed his medical studies at the Faculty of Medical Sciences of the University of Valencia and obtained his official degree in 1868 from the University of Barcelona. By the time he settled in Tucumán in 1875 and encountered the landowner who facilitated the establishment of the spa, Spanish universities, especially the University of Barcelona, were already involved in medical studies on hydrotherapy’s therapeutic effects, commonly known as medical hydrology. Numerous instances of balneotherapy were observed throughout Spain and the continent,

with notable destinations such as Vichy and Luchon in France, as detailed in Dr. Alfredo Nadal's book "Compendio de hidrología médica. Balneoterapia e hidroterapia"^[6].

Palau's efforts played a significant role in establishing the reputation of the spa, leading to its increasing popularity. The demand became so substantial that in 1886, a railway line was built to provide convenient access for visitors from Buenos Aires. In the following years, architectural and urban developments transformed the surrounding landscape, redefining the notion of "nature" associated with the Rosario de la Frontera spa.

However, amid the spa's flourishing, hydrotherapy practices faced scrutiny. Dr. José María Ramos Mejía, a physician and influential figure in the scientific community, advocated for a strict alliance between science and progress and played a significant role in the debates regarding the legitimacy of these practices for health. He sought to address this matter through scientific experimentation. In 1894, he initiated a comprehensive scientific study on the various mineral waters across the nation, believing that understanding them would bring "significant benefits to both the country and science as a whole." Aligned with the prevalent perspective of the era, which criticized the excesses of civilization as detrimental, Ramos Mejía emphasized the necessity of applying "revitalizing stimuli" to the population, seeking a solution to the adverse effects of modern life by reconnecting with nature and distancing oneself from urban environments^[7].

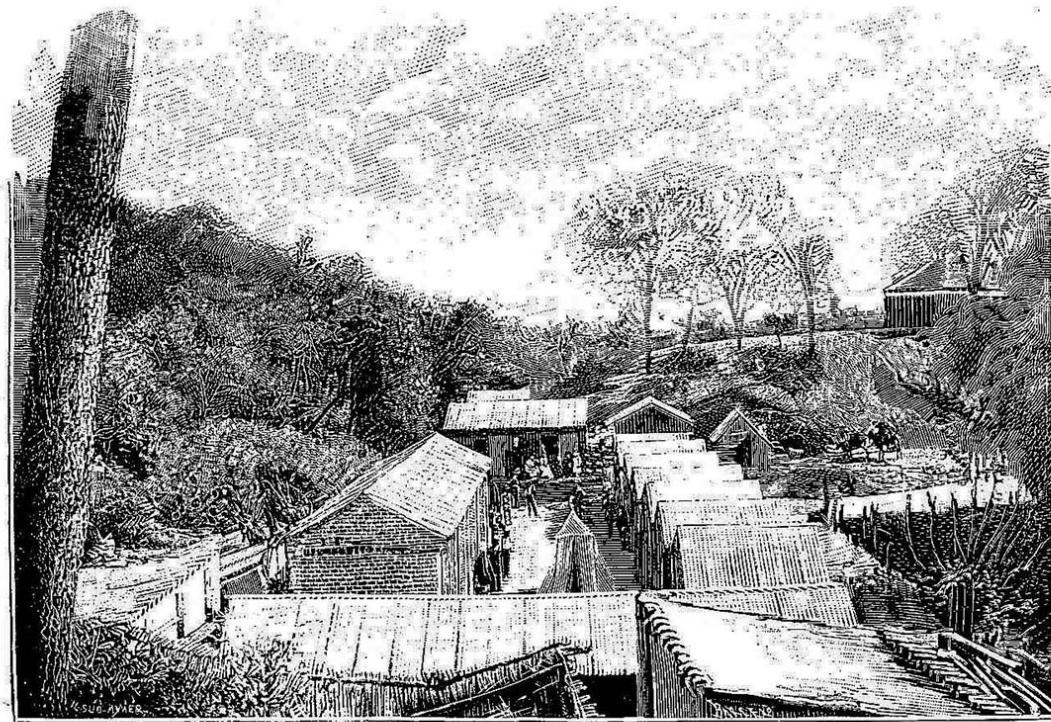
In response to this commission, Eliseo Cantón, a physician and deputy from Tucumán, published the report of his scientific journey to Salta, Jujuy, Santiago del Estero, and Tucumán in 1896. The report, titled "Estudios de las aguas minerales del norte de la República Argentina" (Studies of the Mineral Waters of Northern Argentina), was released in Buenos Aires. Cantón was selected for this task based on the trust placed in his scientific expertise. Having served as a physician during the cholera epidemic in Tucumán between 1886 and 1887, he was subsequently appointed as the director of the first spa established in the Argentine Republic, the thermal baths of Rosario de la Frontera in the province of Salta. The objective of Cantón's studies was to establish a "scientific criterion" for the sanitary application of the thermal-mineral waters through comprehensive research and analysis. Cantón initiated his medical studies in the city of Córdoba but decided to complete his degree at the Faculty of Medical Sciences in Buenos Aires. In his thesis, he advocated for the use of hydrotherapy as a means to combat malarial intoxication. It is possible that he was acquainted with the research of physician Juan A. Lacroze, who had obtained his medical diploma from the Faculty of Medical Sciences in Buenos Aires. Lacroze's thesis, titled "De la hidroterapia"^[8], explored the various historical stages of this practice, with a particular emphasis on the year 1825 as a pivotal moment due to the contributions made by Vincent Priesnitz.

Cantón, in his historical account of the place in his book, also recounted his own experiences in the hot springs during his childhood in 1875, with a discourse about "untamed nature" and the necessity of transforming this site with buildings.

"We knew them as children in the year 1875, in their truly untamed state. However, even back then, a few families had the audacity to brave the harsh conditions of the jungle and spend the winter near the hot springs, just like ours. We resided in tents surrounded by nearly impenetrable forests, defying the dangers that lurked in every corner: ticks, mosquitoes, treacherous pits, and even the majestic tiger itself, the undisputed ruler of the mountains. The bathers of that era would bring their own tents, which they set up in a small clearing close to the springs. They also carried provisions and essential tools for their extended stay in this vulnerable place"^[5].

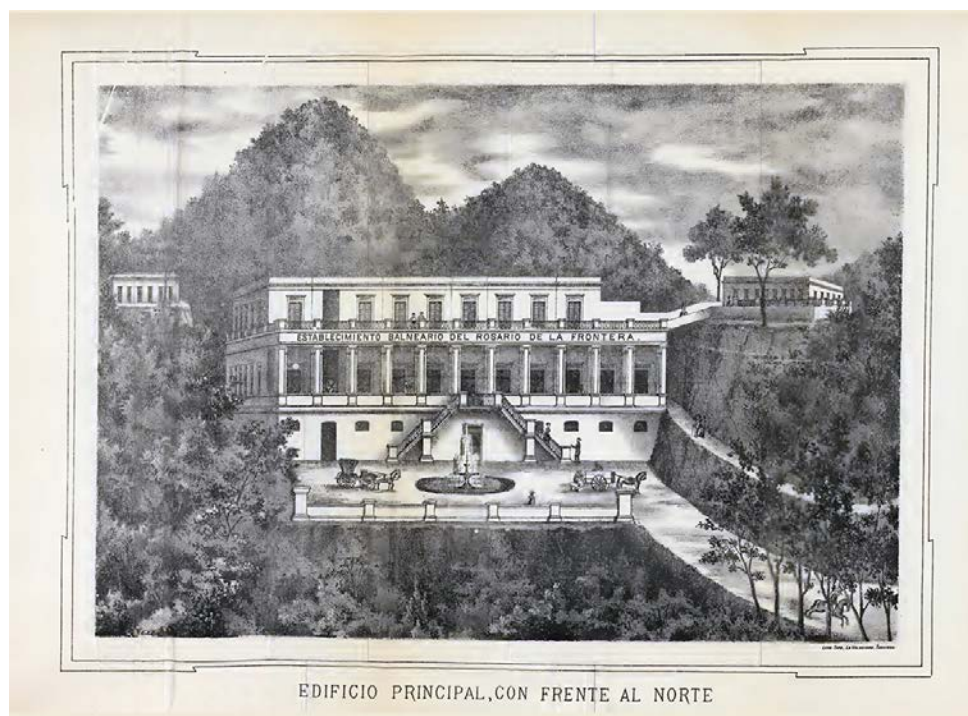
Under Cantón's expert guidance as the medical director, the spa establishment began its modernization process in 1888. The most commonly treated ailments at the facility were syphilis, rheumatism, and skin

diseases. Cantón's initiatives began with conducting scientific studies to investigate the properties of various mineral waters and improving the infrastructure of the buildings (**Figures 2–4**).



Vista general de los Baños del Rosario de la Frontera
en 1883

Figure 2. Baths of Rosario de la Frontera, 1883^[5].



EDIFICIO PRINCIPAL, CON FRENTE AL NORTE

Figure 3. General view of the main building, north facade, new construction project, 1888^[9].



Figure 4. General view of the south facade, new construction project, 1888^[9].

Prior to Cantón's arrival, the establishment relied solely on analyses conducted by Dr. Siewert, which were considered incomplete under the new management. Consequently, another renowned chemist residing in Córdoba, Dr. Doering, was recruited to perform sample analyses. However, by late 1888, the task was entrusted to chemist Federico Schikendantz, and subsequently, in 1894, to Federico Tagliabue. In terms of the hydrotherapy system's management, a mandatory medical examination was implemented for individuals desiring bathing treatments. The construction of the buildings, which had commenced in 1887, was successfully finalized in 1888 (**Figures 5 and 6**).

Additionally, new structures were erected to accommodate up to three hundred individuals in rooms featuring "wooden floors, dry, and well-ventilated" conditions, as described by Cantón^[9] (**Figure 7**).

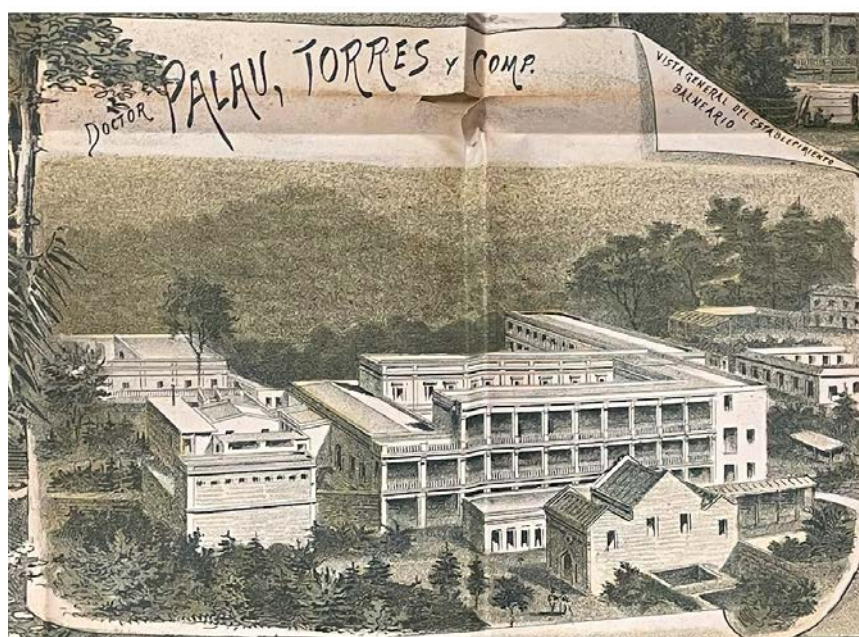


Figure 5. General view of the establishment, 1893^[10].



Figure 6. View of the access under construction, date unknown^[11].



Figure 7. General view of the access, 1893^[10].

A pavilion divided into three compartments was constructed to serve as the shower department. The central area, spanning 42 m², was equipped with “all the apparatus that modern hydrotherapy provides to the physician” (**Figure 8**), allowing tailored treatments for various ailments. The showers were equipped with double pipes, enabling the use of either hot or cold water (**Figure 8–14**).

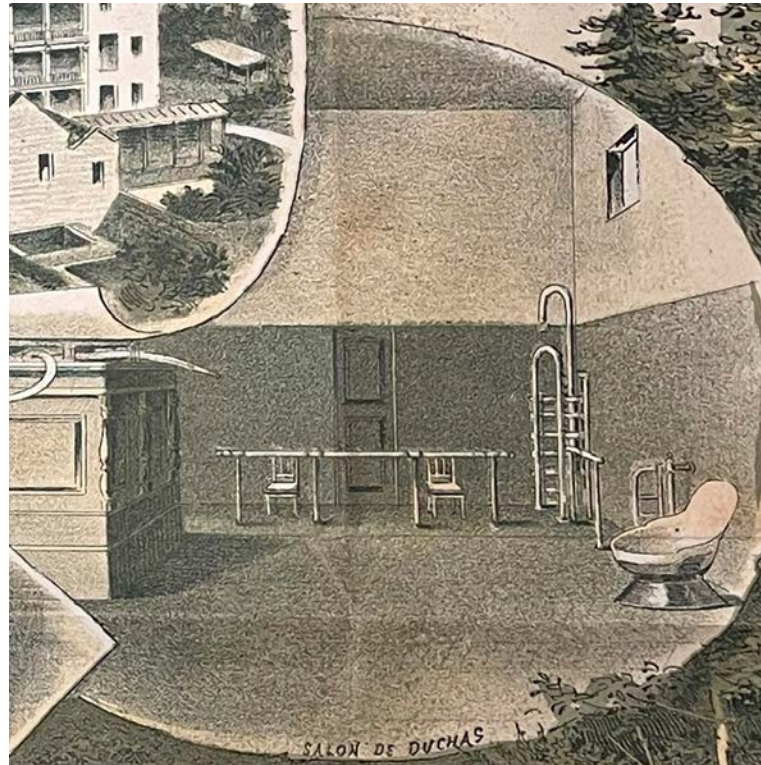


Figure 8. Shower room, 1892^[10].

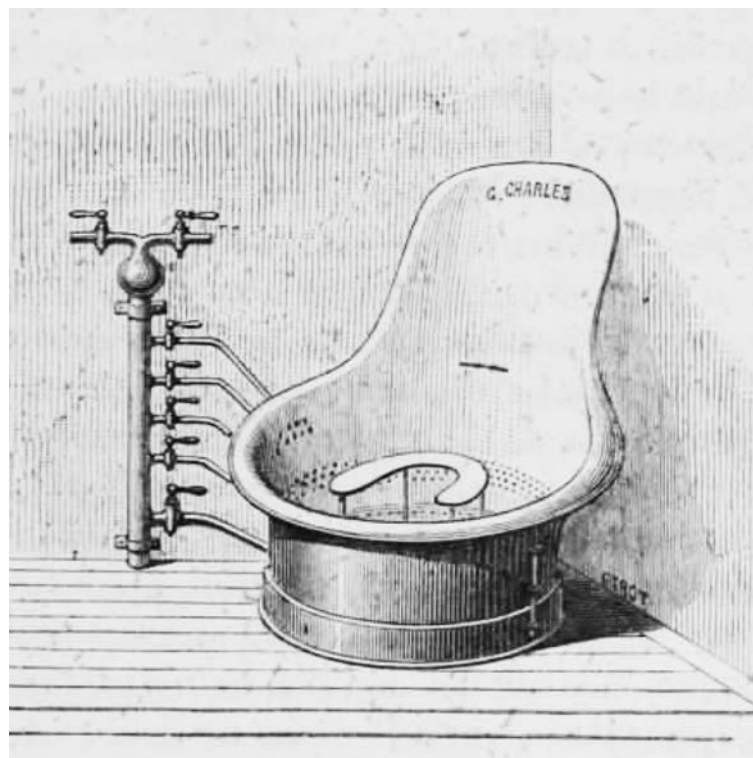


Figure 9. Shower room, 1892^[6].

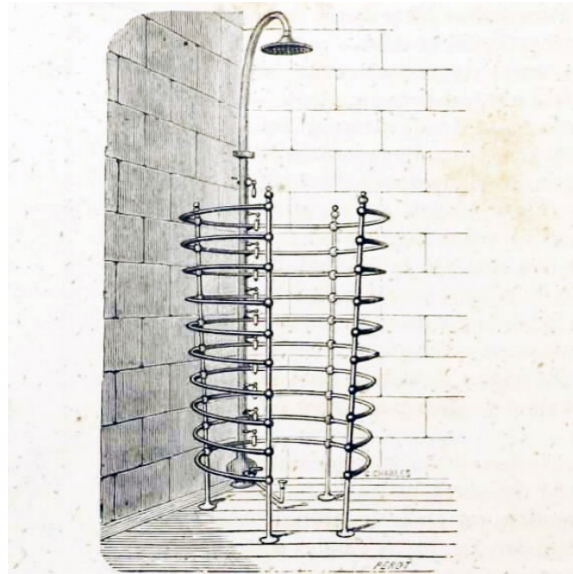


Figure 10. Model of a slender shower with water mixer^[6].



Figure 11. Dorsal and lumbar shower^[6].



Figure 12. Shower models^[6].



Figure 13. Shower with mixers^[6].

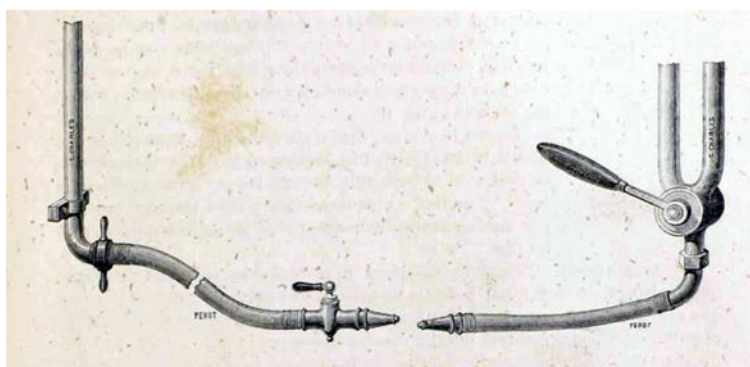


Figure 14. Models of movable showers^[6].

For immersion baths, the establishment featured thirty pools, each equipped with five taps supplying different types of water: four for various waters, four for hot water, and one for cold siliceous water. The latter was obtained from large, specially constructed reservoirs. The lateral spaces of the pavilion were designated as dressing rooms. The facility included six sets of buildings to accommodate bathers: three single-story buildings, one two-story building, and two three-story buildings. These buildings were connected by covered galleries extending for a total of sixty-five meters. Additionally, there was a dining room spanning 320 m² and separate toilet facilities for women and men.

For the convenience of visitors, primarily from Buenos Aires, permission was granted for the construction of a railway line connecting the town of Rosario de la Frontera to the establishment. Expansive English-style gardens were meticulously planned, offering opportunities for leisurely walks and exercise. Additionally, recreational game rooms and a casino, scheduled for inauguration in 1893, were incorporated into the design.

To enhance the allure of the destination, individuals adorned in traditional indigenous or gaucho attire were engaged to unexpectedly emerge from the surrounding woods and ride alongside carriages, evoking a nostalgic sensation of “retracing the past.” This captivating spectacle further captivated passengers as they made their way to the hotel.

In 1880, the Rosario de la Frontera spa resort began marketing bottled Palau mineral water (**Figure 15**). In 1893, samples were presented at the Universal Exposition in Chicago, and a publication produced for this exhibition stated:

“The establishment, as depicted in the exquisite engraving, comprises a collection of contemporary two and three-story buildings housing comfortable and inviting rooms. [...] Recognizing the significant growth in attendance each year and firmly believing in the potential of hydrology to rival hygiene in its crucial role of preventing and treating the ailments that afflict humanity, the company has undertaken substantial enhancements. These improvements aim to offer the utmost comfort to both the sick and the healthy”^[10].

4. Neither were we ever modern

We have provided the analyses to satisfy the curiosity of some knowledgeable individuals who have asked us primarily about the composition, attributing special virtues and direct, specific influences on the functions of the body to the proportion of mineral substances. What a disappointment they face! Nature cannot be easily deceived in these matters, and mysterious actions and reactions operate at the Rosario Hot Springs. We are so in the dark about these things that it is better to stick to the effects that the waters undeniably produce^[12]...

In his aforementioned book, “We were never modern”, Latour^[1] prompts us to contemplate the present state of the world. With the progress made in earth sciences, the examination of living organisms and biodiversity increasingly reveals that the world we inhabit—the world of the living—now emerges as the “metaphysical background.” Latour argues that this new understanding of the world coexists and clashes with the prevailing appreciation of the “world of before,” the “modern world,” wherein objects were considered controllable through calculation and scientific principles. This worldview was shaped by a production system that pursued abundance and comfort. However, according to Latour, this “modern world” no longer aligns with the current reality.

The current context makes it no longer tenable to engage in discussions about subjects detached from the world they inhabit, particularly when confronting phenomena like the COVID-19 pandemic or climate change. The consequences of human actions have unmistakably rendered living conditions inhospitable for humanity. It has become evident that human actions have created living conditions that are now inhospitable for humans. The cosmology that once allowed subjective humans to position themselves in a distant world is no longer tenable. The metaphor proposed in the title “We were never modern” accurately captures the failure of modern society, which never truly functioned in accordance with the grand division it posited as a premise. This division sharply separated nature from culture. Today, this paradigm is the one that must be critically examined in order to comprehend our world.

As observed in the progression of this work, a notable transformation in the perceptions of nature in Rosario de la Frontera can be observed throughout the 19th century. The processes of modernization are depicted as a distinct “culture” set against “nature,” as indicated in Cantón’s quote. In his statement, he discusses the studies conducted in Rosario de la Frontera, emphasizing the contrast between the notion of the “scientific” and the “real.”

“Convinced that thermal-mineral waters, if prescribed timely and competently, are an inexhaustible source of health and well-being, and that if left to inexperience or charlatanism, they can cause serious accidents, we have studied with the utmost impartiality the physiological and therapeutic properties of each type of water. Our aim is to conscientiously enumerate their indications and contraindications, thus distinguishing the routine from the scientific and the fabulous from the real in the field of hydrotherapy”^[5].

The history of Rosario de la Frontera provides an opportunity to explore the interplay between science and politics, illustrating how scientific practices were affected by political will, negotiations, loyalty shifts, and the transformative impact of architecture on territory and urban lifestyles. In the late 19th and early 20th century Argentina, marked by the concept of “modernity,” a variety of ideas and visions catalyzed transformative shifts in collective, urban, and individual ways of living.

From July 1913 to the mid-20th century, the Rosario de la Frontera spa, hotel, and Palau thermal waters were under the concession of the Seguí-Tornquist Society. This period is often considered the peak of the establishment, characterized by architectural renovations, the installation of an exclusive elevator, telephone lines, and the establishment of a golf course. The Seguí-Tornquist Society, which owned the Ferrum company since 1898, expanded its ventures into the manufacturing of sanitary articles after acquiring the Hotel Termas. Termas Rosario de la Frontera Sociedad Anónima presented itself as a company dedicated to the “exploitation of natural sources of mineral waters, as well as the establishments and enterprises required for their various applications.” By 1930, the company had two hundred employees (**Figure 16**).



Figure 15. Agua Palau advertisement^[13].



Figure 16. Promotion catalog. Date unknown^[10].

However, Cantón himself argued in his book's conclusion that the experiments failed to provide specific evidence regarding the healing qualities of the thermal baths. He speculated that it was a combination of factors (chemistry, climate, vegetation, temperature, altitude) that were difficult to reproduce artificially. A traveler who visited the place in 1896 expressed disappointment, noting that nature cannot be easily understood or replicated.

"What a disappointment they experience! Nature cannot be easily surprised; these mysterious actions and reactions operate in the Rosario de la Frontera Thermal Baths," mentioned a traveler of the time who visited the place in 1896.

Humanity does not shape nature; rather, its only possibility is to attempt to uncover the secrets of nature.

Conflict of interest

The author declares no conflicts of interest.

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