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Um player global do Sul: o Jardín Zoológico de Buenos Aires e a rede transnacional de zoológicos no início do século XX

Oliver Hochadel[i]

[i] Researcher, Institució Milà i Fontanals de Investigación en Humanidades/ Consejo Superior de Investigaciones Científicas.
Barcelona – Catalonia – Spain
orcid.org/0000-0002-4983-1118
oliver.hochadel@imf.csic.es

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Abstract

Under the directorship of Clemente Onelli (1904-1924), the Jardín Zoológico de Buenos Aires became a major public attraction and gained an international reputation for its innovations in animal keeping and as a supplier of Latin American fauna. It was a hybrid institution that combined the tasks of public instruction, zoological research, and acclimatization of useful animals, and also served as a symbol of national pride. Despite its seemingly peripheral geographical location, the institution was firmly integrated in the global network of zoological gardens. This paper utilizes a transnational perspective to tease out the numerous, multidirectional exchanges of animals and knowledge between the Jardín Zoológico de Buenos Aires and Northern metropolises.

Keywords: zoological gardens; knowledge exchange; animal trade; transnational perspective; acclimatization.

Resumo

Sob a direção de Clemente Onelli (1904-1924), o Jardín Zoológico de Buenos Aires se tornou uma importante atração pública e ganhou reputação internacional por suas inovações no abrigo e fornecimento de fauna latinoamericana. Era uma instituição híbrida que combinava instrução pública, pesquisa zoológica e aclimatação de animais úteis, sendo também símbolo de orgulho nacional. Apesar da localização geográfica aparentemente periférica, a instituição estava fortemente integrada na rede global de jardins zoológicos. O artigo utiliza a perspectiva transnacional para lançar luz sobre as muitas trocas multidirecionais de animais e conhecimento entre o Jardín Zoológico de Buenos Aires e as metrópoles do Norte.

Palavras-chave: jardins zoológicos; troca de conhecimento; comércio de animais; perspectiva transnacional; aclimatação.

On June 23, 2016, the Jardín Zoológico de Buenos Aires (JZBA) ceased to exist. For years the private company that ran the zoo had been accused of mistreating the animals, and public outcry forced the municipal authorities to intervene. They revoked the company's license, closed down the zoo, and announced it would be converted into an "eco-park." The closure of the JZBA made headlines around the world, and it now serves as a reference for animal rights groups who demand the closure of other zoos, as seen in Barcelona in 2019 (Congostrina, 4 May 2019).

A century earlier, the JZBA had a different reputation: in 1909, its director Clemente Onelli (1909a, p.270) boasted that it "makes its existence felt all over the World." The zoo opened in 1888 and became a beacon of national pride for Argentines during his directorship (1904-1924). Onelli was praised for turning the zoo into a major public attraction with over one million visitors annually, as well as for transforming it into a place for innovative scientific research. The JZBA basked in growing international recognition and was cited by foreign commentators as an example to follow.

In the context of this dossier, this article attempts to reconstruct the international connections and exchanges of the JZBA around 1910. From the example of zoological gardens, it will look at the circulation of objects – in this case, living animals. In what ways did they move between Latin America and the rest of the world? How did a young bison from North America (1905), a hippopotamus from Africa (1907), a flock of 20 Karakul sheep from Central Asia (1911), and a pair of Tasmanian devils from Australia (1913) make their way to Buenos Aires? And what did the JZBA have to offer zoos in Washington, London, Hamburg, or Vienna in return?

As we discuss in this dossier, besides objects that circulate we also must look at the exchange of knowledge. Was this a case of one-directional North-South communication, or did the JZBA produce practical knowledge of interest to zoos in Europe and North America? What can be said about the network that connected the JZBA to other zoos, as well as its structure and durability? What kind of actors were involved?

This paper argues that the case of the JZBA and its transnational network before First World War provides a new viewpoint on a phenomenon we can call the "global zoo." To provide sufficient context for this case, the article includes two introductory sections that briefly summarize the historiography on this "global zoo" (namely epistemological, political, and economic asymmetries in the emerging network of zoos) and the existing literature on the history of the JZBA. In the next section, which brings together these two historiographies, we investigate how Onelli tried to internationalize the JZBA and also how the JZBA was seen by observers abroad. Two concrete examples are then used to clarify how the growing networks of the JZBA facilitated circulation of both animals and knowledge: multiple interactions between the JZBA and the German animal trader Carl Hagenbeck, and exchanges of animals between Argentina and the Austro-Hungarian Empire mediated by the Schönbrunn Menagerie in Vienna.

Natural history and the production of knowledge from a transnational perspective

The burgeoning literature on the interurban, transnational, and global circulation of knowledge cannot be easily summarized, but two theses stand out in the context of this

case study. First, the traditional view of an epistemologically productive "center" (located in Western Europe) and a passive "periphery" (more or less the rest of the world) that is merely on the receiving end has become untenable; in its place, the epistemological agency of actors in what we today call the Global South has been highlighted (as described in what is now the classic work by Raj, 2010). The production of knowledge is now understood to be a complex process characterized by multidirectional exchanges, creative appropriations, and continuous amalgamations.

Second, and seemingly contradicting this first thesis, scholars have emphasized the continuity of power relations through imperial dominance, often focusing on the nineteenth and early twentieth centuries. The hybrid character of the knowledge produced did not undo but rather enforced epistemological hierarchies and exploitative practices between metropolitan centers and colonial "peripheries" or new nation states, as in South America, for example (on the epistemological dynamics of this latter case, see Miller, 2020).

The field of natural history provides an exemplary illustration of this scenario. During the nineteenth century, the "global authorities" in zoology, botany, and geology were found in Europe and the largest natural history collections were assembled in the Western metropolises. This stark asymmetry and its impact on scientific practice has been convincingly demonstrated in the case of natural history museums (see MacKenzie, 2010) and botanical gardens (e.g. Brockway, 2002), but less so for zoological gardens, despite the considerable number of valuable studies that have appeared over the past two decades (such as Rothfels, 2002). The inclusion of the Tokyo Zoo as one of the first outside of Europe shows the interesting tensions that arise between a Western model and a nationalist agenda (Miller, 2013).

The zoological garden emerged in the first half of the nineteenth century in Western Europe and spread around the globe during the second half. Today we take the global character of the zoo as an institution for granted, but this was not always the case. Overviews in the second half of the nineteenth century focused almost exclusively on European zoos. This mental geography changed in the early years of the twentieth century. The work of two scholars, the French zoo reformer Gustave Loisel and the British zoologist Stanley Flower, most clearly embodies this shift toward a global perspective on zoos. They both visited over one hundred zoos and similar institutions (mostly between 1905 and 1910), Loisel covering most of Europe and eastern North America and Flower most of Europe, Northern Africa, and Southeast Asia. They were the first to simultaneously come up with complete lists (Flower) and more extensive descriptions (Loisel) that aimed to include "all" the zoos in the world (Loisel, 1912; Boettger, 1908; Flower, 1909). Particularly in Loisel's publications, the network character of zoos clearly emerged: through animal trade, comparisons of zoos, and exchanges between them (Hochadel, 2020).

Another treasure trove for reconstructing the global zoo is *Der Zoologische Garten* (ZG). This German journal was first published in 1859, with over four hundred pages per year. Although it focused on German zoos, by 1914 this publication had a global network of contributors. These correspondents were either German expatriates or travelers reporting on zoos in Australia, Northern Africa, the United States, and South America.

It is therefore clear that from roughly 1900, zoos around the world were very much aware of each another and also eager to learn. They faced the same fundamental challenge:

how to keep exotic animals alive. Yet the issue of power asymmetries applies to zoological gardens as well. Despite the fact highlighted by Loisel and Flower that zoos had been founded on all continents by the 1890s, their distribution was extremely uneven. While there were over twenty zoos in Germany alone, there were only a handful in Africa (all colonial institutions) and only two in South America (in Buenos Aires and Rio de Janeiro, both founded in 1888). No zoos were founded in Mexico or Chile until the 1920s (Ellis Jr., Ellis, 2001; Duarte, 2017). The global trade of exotic animals was dominated by businessmen in London and Northern Germany. Carl Hagenbeck's Hamburg-based company was crucial for the JZBA, as we shall see. Around 1900, the JZBA thus found itself apparently relegated to the periphery, geographically distant from the "original" European zoos, acknowledged metropolitan institutions of learning, and commercial hubs of the exotic animal trade.

Scholarship on the history of the JZBA

Until recently, most accounts of the history of the JZBA, which is located in the Palermo district and is part of the Parque Tres de Febrero in the north of the city, were either anecdotal (Del Pino, 1979) or institutional (for example, Díaz, Fernández, 2016). They were not guided by broader historiographical questions and did not consider the growing international literature on zoo history. This has changed over the last decade as a number of important studies have been published, in particular by Marina Vasta (2013, 2014, 2017, and most importantly 2018). She contextualizes the history of the JZBA within the urban fabric of the city, discussing its exhibition strategies and interaction with its various audiences. The first two directors of the zoo, Eduardo Ladislao Holmberg (Novoa, Levine, 2014; Bruno, 2015, 2018) and Clemente Onelli (Del Pino, 1980; Gringauz, 2013) have received a fair amount of attention, the latter even inspiring a novel (Perrone, 2012). Gringauz shows that Onelli was a master of public relations, an aspect we will expand upon below. Schávelzon (2013) looked at the early architecture of the JZBA, which is now considered cultural heritage (Díaz, Fernández, 2016). Carbone (2019, ch.3) includes the Parque Tres de Febrero and the JZBA itself in his reconstruction of how the political and social elites of Buenos Aires imagined "their city" before 1880. Duarte (2017, 2018) was among the first to point to the existing networks of zoos in Latin America and the JZBA's international connections.

Both events, the inauguration of the Parque Tres de Febrero in 1875 and the 1888 opening of the JZBA within this huge public park, were seen by contemporaries as important steps in transforming Buenos Aires into a modern metropolis. The two key personalities (who were both presidents of the country at some point) behind the creation of these urban green spaces, Domingo Faustino Sarmiento (Parque) and Carlos Pellegrini (zoo), both acquired firsthand knowledge of urban parks and zoos in the "North" as they searched for best practices in economics, education, and urban reform to be implemented and also improved upon back home.

Carbone (2019, p.158-178) has shown that the discussions preceding the inauguration of the Parque in the early 1870s, in the Congress as well as the Argentinian media, were peppered with references to European and American cities, particularly New York's Central

Park, which Sarmiento knew well. Pellegrini's journey to North America and Europe in 1883 is often mentioned in accounts of the "prehistory" of the JZBA (Schiavo, 1969, p.27-36; Del Pino, 1979, p.39-40; Ellis Jr., Ellis, 2001, p.362; see also Bruno, 2018, p.127-128; and Carbone, 2019, p.177). He visited the Hamburg Zoo and probably also those in London and Paris, sharing his impressions and ideas in letters to Torcuato de Alvear, mayor (*intendente*) of the City of Buenos Aires at the time. Pellegrini and others always justified the need for a zoo in Buenos Aires by pointing to the Northern metropolises. Yet Argentinian politicians and intellectuals did not advocate mere imitation of those foreign models: they wanted to create something new and to set examples for others, as the case of the JZBA under Onelli's directorship illustrates.

The celebrations of the centenary of the May Revolution in Buenos Aires in 1910 may be seen as the cusp of this self-confidence among Argentinian society. With the public festivities, pavilions of foreign countries, and numerous visitors, the centenary was comparable to a world fair (Boone, 2018, p.211). These celebrations were designed to heighten Argentina's international profile as a nation rising in political as well as economic terms (see Reese, Gutman, 1999; Gutman, 1999).

A series of scientific congresses in Buenos Aires were an important part of the celebrations, most notably the Congreso Científico Internacional Americano (CCIA) held in July 1910 (SCA, 1910; De Asúa, 2011). As we shall see, the JZBA benefited from the centenary to strengthen its network and project itself globally.

Onelli: internationalizing the Buenos Aires Zoo

The early years of the JZBA under its first director Eduardo Ladislao Holmberg (1888-1904) are usually described as fraught with difficulties that included struggling with the municipal authorities, having to literally shape the terrain of the zoo's grounds, setting up the enclosures, and finding the zoo's role in the public life of the city (see e.g. Bruno, 2018). In contrast, under its second director Clemente Onelli (1904-1924) the JZBA experienced its heyday according to contemporary accounts, becoming a highly popular institution among the city's residents (Gringauz, 2013). Yet Onelli's ambitions went even further: he wanted to put "his" zoo on the global map and establish relationships with the most prestigious zoos and scholarly institutions around the world. His most important tool for achieving international recognition was the *Revista del Jardín Zoológico de Buenos Aires*. Unlike natural history museums, for example, at that time it was highly unusual for a zoo to have its own journal. The *Revista* was initially only published from 1893 to 1895 under Holmberg. When Onelli took over as director, he was able to launch a second and much longer run of the journal, from 1905 to 1922. He was the sole editor of the quarterly publication (generally with four issues per year) and wrote many of the articles himself. His signature contribution was a recurrent column entitled "Idiosincrasias de los pensionistas del Jardín Zoológico" that was directed at the local public, in which he discussed the animals at JZBA in a light-hearted tone (re-edited: Onelli 1999a, 1999b).

Figure 1: Caricature of Clemente Onelli (Caras y Caretas, n.529, 1908, p.56)

But from the start of this second period of publication in 1905, Onelli also regularly included articles with scientific content, penned either by himself or by a diverse group of Argentinian naturalists. Some of these articles reflected his collaboration with these scholars, who occasionally used the animals at the JZBA for their research (see Vasta, 2018, p.119-123). Most prominent among these was the histological research conducted by Christofredo/Christfried Jakob, in which Onelli also participated. Jakob was a German-born, renowned neurobiologist who dissected the brains of many of the zoo's deceased animals. He and Onelli presented their results at the 1910 CCIA congress (SCA, 1910, p.191) and then published a book with many illustrations, first in German (Jakob, Onelli, 1911) and then in Spanish under a different title as a "Brain atlas" of the mammals of Argentina (Jakob, Onelli, 1913; also see Loisel, 1912, p.413; Orlando, 1995, p.525-528).

We shall now briefly examine two cases of Onelli's own research that stirred international interest. In an analysis of tiger and zebra pelts, he claimed there was a correspondence between fur patterns (spots and patches) and the number of vertebrae in the animal. Onelli's (1908b) article from the *Revista* was written in French and was noted in Spain (Monti, 1910), Great Britain (namely inquiries from Chalmers Mitchell, president of the Zoological Society of London) (Onelli, 1909a, p.270), and Italy. Gina Lombroso summarized Onelli's article in Italian (Onelli, 1909b) in the Archivio di Antropologia Criminale, Psichiatria e Medicina Legale. She praised him after they met in Buenos Aires during her extensive travels in South America in 1907 (Lombroso, 1908, p.188-190). Onelli was born in Rome in 1864 and only moved to Argentina in 1888; to a certain degree, he considered himself a disciple of Cesare Lombroso (RJZBA, 1905, p.352-356), the famous criminal anthropologist, founder of the Archivio, and Gina's father. Onelli's research was a zoologist's attempt to draw conclusions about the internal constitution of an animal from its physical appearance, much as Cesare Lombroso attempted to identify "born criminals" through phenotype analysis of human beings.

Another much more applied research agenda on the part of Onelli dealt with the nutrition of zoo animals. From the beginning, zoos struggled not only with the kind of food their animals needed but also suitable portions. Dissections revealed that digestive problems were often a cause of death (Loisel, 1908, p.145, 1912, p.331, 382-383), and overfeeding was sometimes the culprit. Onelli closely observed what his animal charges ingested along with what they deposited afterward to determine how well they could digest certain kinds of food. This new "cropological" approach was the result of a collaboration with Ricardo Lynch, a physician from the San Luis Gonzaga hospital in Buenos Aires. Lynch is known for introducing the study of human feces to detect parasites and investigate diarrhea and other health problems related to digestion using microscopes and chemical analysis as early as the 1890s (Lynch, 1896; Garzón Maceda, 1915, p.8, 10, 15, 38, 40, 44, 47). In 1909 Lynch contacted Onelli (RJZBA, 1910a, p.49; see also Vasta, 2018, p.119), who regularly weighed his animals and analyzed their feces. Using his own observations and medications prescribed by Lynch, Onelli was able to reduce the mortality of his animal *pensionistas* significantly. In July 1910, Lynch presented their results (in French) at the aforementioned CCIA (SCA, 1910, p.183). His paper "L'alimentation et l'instinct de l'alimentation chez l'homme et chez les animaux" was published twice during the following year, in the "original" French: as an independent booklet (Lynch, 1911a) and in the *Revista* (Lynch, 1911b, p.15-53).

The paper was read by Gustave Loisel, possibly through the subscription of the Muséum National d'Histoire Naturelle (MNHN). An incomplete copy of the issue of the *Revista* that contains Lynch's article exists in Loisel's (n.d.) private papers kept at the MNHN. Loisel (1912, p.119, 382) used this information in his *Histoire* and lauded the JZBA for what he considered an innovative approach that might be worth emulating, not least because it was not *post-mortem*. To summarize, knowledge on how to feed zoo animals that was obtained at the JZBA made its way from the 1910 congress and publications in Argentina to France, and from there into publications that targeted a learned international public.

Was Onelli's journal read by naturalists from the Northern metropolises? It is nearly impossible to say, but in principle it is possible. Some of the major European zoos (or

rather, the institutions that run them) have partial or near-complete sets of the second series of the *Revista*. The Amsterdam Zoo (whose library is part of the Amsterdam University Library) has the years 1905-1910, the Zoological Society of London (ZSL) 1905-1916, and the MNHN in Paris 1905-1921. The fact that nearly all of the journal's contents were written in Spanish might have discouraged scholars; in contrast, two of the few articles in the *Revista* written in French (by Onelli and Lynch, mentioned above) generated feedback in Europe.

Onelli made sure that Argentinian readers of the *Revista* appreciated the JZBA's international connections. In 1905 he documented negotiations with two important players in the zoo world: Frank Baker, director of the National Zoo of the United States in Washington, and Carl Hagenbeck (Onelli, 1905, p.424-445; see also Duarte, 2018, p.480). These letters provide significant information about the logistical challenges of transporting exotic animals across the ocean on large steamers, specific requirements of this transport (cages, accompanying personnel), problems with shipping companies, and price negotiations. Onelli's desires for specific animals (usually pairs of a particular species) did not always square with what Baker and Hagenbeck had available. On occasion the global circulation of humans and animals even conflicted: on November 4, 1905, Hagenbeck wrote to Onelli, saying "it is quite difficult today to get a steamer that accepts animal cargo because almost all of them are full of emigrants" (Onelli, 1905, p.444).

At that time, Hagenbeck was preparing to open his own zoo (in 1907), the Tierpark Stellingen near Hamburg. He asked Onelli specifically for animals from South America, such as "8 to 12 white ostriches, some tapirs, giant anteaters, well-developed capybaras, some large-sized jaguars from Paraguay and other strange things from there" (Onelli, 1905, p.443). Jaguars seem to have been particularly important to Hagenbeck, since he mentions this "order" in three different letters (p.441, 443, 445). The exchange of animals between Hamburg and Buenos Aires went in both directions, and the same can be said for the Washington Zoo. On 24 March 1905 Baker sent an extensive wish list of well over twenty South American animals to Onelli, including jaguars, "perfect individuals," greater grison, armadillos, and a large number of birds such as the red-legged seriema and Darwin's rhea (p.427).

Onelli's intention to insert "his zoo" into these networks also materialized in numerous exchanges and donations between the JZBA and foreign zoos. Depending on each case, Onelli negotiated directly with these zoos or with the help of diplomats. These transactions between the ZSL (which was responsible for the London Zoo) and the JZBA were mediated by the British ambassador to Argentina, Reginald Tower (RJZBA, 1911, p.353). In February 1911, for example, Onelli donated "1 King Penguin (*Aptenodytes pennanti*), from the Antarctic Seas" (Proceedings…, 21 Mar. 1911, p.558) to the ZSL, and in 1913 the JZBA received a pair of Tasmanian devils, "rare marsupials," from the ZSL (RJZBA, 1913, p.214).

In the *Revista*, Onelli highlighted the increasing number of visitors to the JZBA, and also frequently mentioned that "his" numbers eclipsed those at leading zoos such as the one in New York, especially considering the number of inhabitants in each city. There were 1,276,051 visitors in 1909 (RJZBA, 1910b, p.377, 1910a, p.47) and 1,419,679 in 1911

(RJZBA, 1911, p.357; for a chart with the numbers of paying visitors from 1903-1911 see p.358; see also Gringauz, 2013; Duarte, 2017).

To bolster his claim he quoted a foreign expert, Margaret Willis, "who has visited all the similar establishments in the world, with the alert eye of the experienced person," saying that "according to statistics [the JZBA] is the most visited in the world." Margaret Willis was the "daughter of Dr. Frank Baker," with whom Onelli had corresponded since 1905 (see above), and also the "wife of the famous North American geologist Mr. Bailey Willis" (RJZBA, 1912a, p.173), who had been to the CCIA in 1910 (SCA, 1910, p.115; Riccardi, 2020, p.65).

Time and again Onelli published testimonies from prestigious foreigners in order to convince the Argentinian public that the JZBA was esteemed internationally. Another example is his translation of the article that Albert Coutaud (1912) had recently written for the French popular science journal *La Nature* about the JZBA (RJZBA, 1912b, p.267-271). The French journalist lavished praise on Onelli's achievements, namely the precious installations in the zoo and the scientific research conducted there.

Connections with foreign zoos and scientific institutions were highly valued cultural capital for Onelli, and he did not hesitate to showcase his growing network in the *Revista*: "The Zoological Garden makes its existence felt all over the world. It receives countless inquiries on the acclimatization of various species of useful animals from South America in Europe which it hastens to answer in English, German, and French. In Belgium our observations on the raising of ostriches and partridges have already been distributed to all the farmers." Onelli also mentions the gratitude expressed by Edmond Perrier, the president of the French Société d'Acclimatation, "for the care taken in raising and dispatching a batch of rheas that the Société had requested" from José Lignieres, a well-known Argentinian veterinarian of French origin. Onelli (1909a, p.270) continues: "The Zoological Gardens of Australia ask for data and exchanges with our Garden. … an infinity of data from our *Revista* is used and cited by zoological publications." It is striking that along with the animals, much of the information exchanged between the JZBA and zoos around the world was linked to the question of acclimatization, an issue which is addressed below.

During the 1910 centenary celebrations, Onelli showed a number of distinguished guests around the JZBA. This included the Infanta Isabel de Borbón, representing the Spanish crown (Monner Sans, 11 July 1910, p.446, calling the JZBA "one of the best zoos in the world"), as well as Georges Clemenceau, former (and future) prime minister of France (for Clemenceau's visit to Buenos Aires see Bruno, 2014). A journalist himself, Clemenceau (Clemenceau 1911, p.39) published a diary of his travels in South America in which he humorously described his zoo visit guided by Onelli. This section was translated and reprinted, for example on the front page of the Austrian newspaper *Neue Freie Presse* (Clemenceau, 10 Feb. 1911, p.1-5, 20 Mar. 1911, p.1-3). In this way the European public became familiar with the colorful figure of a zoo director who "understands" his animals and vice versa. In his successful efforts to make the JZBA known around the world, Onelli also internationalized himself.

The Buenos Aires Zoo seen from outside

It is therefore no surprise that the JZBA is also featured in the surveys written by Loisel and Flower, once they expanded their view to the entire globe. Flower's entries on the JZBA (Boettger, 1908, p.251, 377; Flower, 1909, p.172) are brief, but he specifically mentions the *Revista*, "a quarterly scientific journal." Propelled by imperial networks, Flower's list was also read in Australia. Readers of the *Gippsland Times* (The zoological gardens…, 10 Apr. 1913, p.6), for example, were told that the JZBA rivaled "some of the best known Old-World Institutions in interest and importance." Loisel addresses the JZBA more extensively, and more importantly positions it within an international context, drawing connections between certain zoos in particular with respect to zoo architecture. Thanks to his first-hand knowledge and extensive correspondence, Loisel was able to identify the transfer of models for animal houses, along with adaptations made by the "recipient" zoo. For example, the lion house at the Breslau Zoo (itself inspired by the one in the Berlin Zoo) in turn became the model for the JZBA, "a lion house in Renaissance style, … on a larger and grander scale." "The main houses for the mammals are monumental constructions whose style recalls the architecture of the countries of origin of these animals, as we shall also see in the menageries of Berlin and Antwerp" (Loisel, 1912, p.117).

Loisel (1912) hails the JZBA for the studies mentioned above on animal nutrition by Lynch and Onelli. Yet he also highlights the "works of comparative anatomy, ethology and psychology" and calls the *Revista* "one of the most important publications to consult, for those who are interested in the breeding and study of wild animals in captivity" (p.119).

The ZG correspondent in Buenos Aires between 1904 and 1908 was the German Oswald Strassberger, who contributed several articles that generally depicted South American fauna. For example, he published notes on the jaguar in Argentina (Strassberger, 1904, p.191-192) and bears in Bolivia ((Strassberger, 1905a, p.51). In 1905, Strassberger (1905b, p.288-296) wrote a lengthy article on the JZBA, and implicitly followed a standard ZG template with a general description of the zoo, its architecture, installations, and "services," and an extensive listing of the animals. The article is generally quite positive, but does include some criticism: some of the aviaries were too small and lacked opportunities for the birds to rest, for instance. According to Strassberger, the "bears' palace" was very expensive but bleak and uniform in appearance, dominated by concrete and lacking rocks or trees. In his opinion it lacks a *Völkerwiese*, literally a "meadow" where spectacles featuring "exotic people" could be shown. Because these ethnographic shows were very typical around 1900, they form part of his template of what a zoo should offer. For Strassberger, the JZBA veered too strongly toward entertainment, unrestrained by any pedagogy. This is a topical criticism leveled against zoos as an institution since the mid-nineteenth century.

The birth of an Indian elephant on February 23, 1906 at the JZBA was hailed as the first birth of this species in captivity. The calf was named Phoa Victoria Porteña (*porteña* being the term for a female from Buenos Aires) and represented a real claim to fame (also see Vasta, 2018, p.152; Giudice, Esparrach, Roqué, 2018, p.12-13). The JZBA was only a few months ahead of the Schönbrunn Menagerie, where another Indian elephant calf was born

Figure 2: Map of the JZBA in the German journal *Der Zoologische Garten* (Strassberger, 1905b, p.288)

on July 14 of the same year. Strassberger (1907, p.58) published a short note about the "rare event," reporting this exciting event to his German readers.

Loisel (1912, p.118) attributed the success of the JZBA to its "intelligent and active director, Mr. Onelli," claiming that the zoo had become "an educational, one could even say a moralizing achievement, of the Argentinian people." French visitors to Buenos Aires struck a similar or even more enthusiastic tone. Writers such as Jack Walter (23 May 1911, p.4) and the journalist-globetrotter Jules Huret (2 Aug. 1911, p.4; see also Deschamps, 25 Aug. 1911, p.3) praised the layout and the architecture of the JZBA, its huge success with the public, the work of Onelli, and his *Revista*. They highlighted the scientific research undertaken at the zoo, particularly the breeding experiments.

The JZBA meant different things to different observers. For the German correspondent Strassberger, it was a zoo like any other: some shortcomings, some peculiar characteristics, and some achievements were mentioned, making it another item on the ZG's growing global list of zoological gardens. Around 1900 no other country had anywhere near as many zoos as Germany (around twenty); with this zoo universe of their own, German naturalists may have been less interested in examples of best practices abroad.

For the French commentators Loisel, Hurel, Walter, and also Coutaud, the JZBA represented more than simply another zoo: it was described as exemplary in a number of respects and served as a critical foil for the zoo in Paris run by the MNHN. Around 1900 the Jardin des Plantes (the "mother" of all zoos) was in dire need of reform, in the opinion of many contemporaries. It was "overcrowded," the cages and enclosures were old and inappropriate, and the animal mortality rate was high (Leclerc-Cassan, Pinon, Warmoes, 2014, p.20-21). When Loisel set out on his zoo travels at the behest of the French Ministry of Public Instruction, his mission was to find best practices elsewhere. Coutaud had been in Argentina in 1911 in his role as vice-president of the Society of the Friends of the MNHN. He visited not only the JZBA but also the Botanical Garden of Buenos Aires and the natural history museums in Buenos Aires and La Plata. Apart from the aforementioned article in *La Nature*, Coutaud (1912) published two articles in the *Bulletin* of the MNHN (Coutaud 1913, 1914). As described above, he extolled the virtues of the JZBA and recommended that the MNHN follow the splendid example from the South. Like Loisel, Coutaud (1913, p.156-157) praised the research of Lynch and Onelli on animal nutrition.

The remainder of this article examines two case studies that provide more details about the dynamic exchanges between the JZBA and other actors in the transnational networks of zoos in a broader sense.

Hagenbeck in Argentina: entertainment and acclimatization

No one exemplifies the global trade in exotic animals more than Carl Hagenbeck (he is also the subject of extensive literature; Rothfels, 2002). His company delivered animals to zoos not only in Europe but all over the world, including Calcutta, Tokyo, Adelaide, Rio de Janeiro, and Buenos Aires (Dittrich, Rieke-Müller, 1998, p.101; Kuenheim, 2009, p.88-89).

While in Hamburg in 1883 during his European reconnaissance mission, Carlos Pellegrini also met with Hagenbeck and was impressed with the sheer volume of animals he shipped, for example to zoos in the United States. Pellegrini, eager to move forward with the foundation of the JZBA, understood that Buenos Aires had no access to the global wildlife market and therefore depended on animal traders such as Hagenbeck (Del Pino, 1979, p.41; Carbone, 2019, p.177). He sent back a price list of animals that Hagenbeck offered to mayor Torcuato de Alvear. It included elephants, hippopotamuses, lions, tigers, camels, zebras: in a sense, the must-haves of a "modern" zoo. The commercial relations between Argentina and the "Casa Hagenbeck" were thus established and flourished for the next three decades. By 1885 and 1886, the circus owner Hermann Carlo had already purchased animals in Hamburg (Dittrich, Rieke-Müller, 1998, p.109).

When Holmberg started off in 1888, 34 out of the 53 species in the JZBA's initial collection were Argentinian fauna. He pressured the city government to procure more exotic animals. Two large shipments from Hagenbeck in the late 1880s helped substantially expand the variety of animals (Vasta, 2018, p.143). The second shipment was organized by Francisco Seeber, an Argentinian businessman and politician, a son of German immigrants who maintained close ties to Hamburg. On one of his European journeys, he placed an order with Hagenbeck. Carl Hagenbeck's half-brother Gustav and four animal keepers accompanied the animals to Buenos Aires; they arrived in July 1889 and the keepers remained at the JZBA (RJZBA, 1893, p.227; also see Del Pino, 1979, p.65).

Some of these transactions involved considerable sums. In October 1907, Hagenbeck delivered a pair of hippopotamuses and a pair African forest buffaloes for 35,650 German marks. These animals had been caught in Africa and were then shipped via Hamburg to South America (Dittrich, Rieke-Müller 1998, p.101).

In September or October of 1909, Lorenz Hagenbeck (Carl's second oldest son) had come to Buenos Aires to prepare for his company's extended visit the following year and frequently visited his "friend" Onelli (Hagenbeck, 1955, p.105). According to Onelli, Lorenz Hagenbeck said that the JZBA "could be compared with advantage to any of the most important European zoos" (Onelli, 1909a, p.270-271), using his well-tried strategy to applaud his own zoo through the words of foreign authorities.

Like many other entrepreneurs at the time, Carl Hagenbeck had set huge hopes on the growing South American market. Alberto Schneidewind, the director of Argentinian National Railways (Dirección General de Vías de Comunicaciones) and an engineer of German descent, had asked him to come to Buenos Aires with his circus, as Hagenbeck (1955, p.102) had done in 1904 at the World's Fair in St. Louis. The 1910 centenary celebrations seemed like a promising opportunity to promote his own business. He had his 1908 autobiography translated into Spanish as *Animales y hombres* (Hagenbeck, 1910a), just in time for the festivities (see the advertisement in Hagenbeck, 1910b, p.32). Hagenbeck brought his entire entertainment empire to Buenos Aires and built a huge venue as part of what was called the exhibition of agriculture and railways.

Figure 3: Cover of Hagenbeck's advertising brochure, 1910 (Courtesy Archiv Carl Hagenbeck GmbH, Hamburg)

A detailed and richly illustrated 32-page advertising brochure (Hagenbeck, 1910b) shows the varied nature of the spectacles his company offered the Argentinian public. Lorenz Hagenbeck was in charge of the circus, which then continued on a South American tour (Dittrich, Rieke-Müller, 1998, p.227). The circus featured a large number of trained animal acts that included not only lions and tigers but also brown bears, polar bears, an elephant, and seals. Judging by the attention it drew from the Argentinian media, the most popular attraction was the "ethnographic spectacle" of the "Somali" (precisely what Strassberger had found lacking in his article on the JZBA a few years earlier). In particular, the illustrated *Caras y Caretas* featured Hagenbeck's visual entertainment numerous times (En el anfiteatro…, 9 July 1910, p.46; En el circo romano…, 9 July 1910, p.50, 20 Aug. 1910, p.40; 3 Sep. 1910, p.43, 17 Sep. 1910, p.49; En el circo Hagenbeck…, 15 Oct. 1910, p.52; Circo Hagenbeck…, 29 Oct. 1910, p.53; see also Hagenbeck, 1955, p.109).

The show included the famous chimpanzee Moritz, who was able to perform astonishing tricks. An article in *Caras y Caretas* (En el circo Habegenbeck…, 15 Oct. 1910, p.52) features several photos documenting the spectacle, and also notes that Moritz was soon to be joined by "Max," presumably an orangutan that would be "interviewed" by Onelli. The sources do not tell us how this interview was conducted, yet Onelli seems to have personally participated in Hagenbeck's show.

Apart from living animals and humans, Hagenbeck also mounted an "exhibition of apes" that featured gorillas, chimpanzees, orangutans, and gibbons (stuffed and as skeletons) from the workshop of the Hamburg taxidermist Johann Umlauff, presented as part of two panoramas of Central African and Southeast Asian jungles, respectively (Hagenbeck, 1910b, p.25-31; Dittrich, Rieke-Müller, 1998, p.227). As is evident from the lengthy descriptions in the brochure, the "Exposición Carlos Hagenbeck" also was meant to be instructive. Teaching visitors about the "customs of the Somalis" and the zoology of the apes, our closest relatives, was supposed to give the show a learned appearance that distinguished it from "mere spectacle."

Given the media's focus on the spectacular features of the "Exposición Carlos Hagenbeck," it is important to stress that he saw himself as much more than just an entertainer. The official rationale for his presence at the centenary exhibition was to "personally protect the interests of the German livestock and horse breeding associations" (letter to August zu Eulenburg, 15 Jan. 1910, Hagenbeck-Archiv, quoted after Dittrich, Rieke-Müller, 1998, p.221). Right at the beginning of the brochure (Hagenbeck, 1910b, p.4), he called the "trade in domestic animals" the "latest branch of his business." In July 1910, Hagenbeck and other German traders sold many specific breeds of horses, cattle, sheep and goats at a livestock auction in Buenos Aires, for high prices. They were marketed as breeding stock, to be introduced into Argentinian husbandry (Buntes allerlei, 30 July 1910, p.4).

This kind of "transplantation" of economically useful animals was based on the idea of acclimatization. Since the mid-nineteenth century, acclimatization societies, naturalists, and politicians advocated introducing economically useful animals (in terms of meat, eggs, wool, feathers, and traction) into their own countries. The heyday of this kind of "applied natural history" occurred between 1850 and 1870, particularly in Europe; the acclimatization movement yielded few practical successes, and the

movement declined after 1870 (Osborne, 1994). Nevertheless, the idea of importing and breeding exotic species persisted into the twentieth century, particularly in colonial contexts (such as Australia), but also in consolidating nation states such as Argentina which had economies largely based on animal husbandry and huge areas of pasture land that needed to be "filled."

The zoological garden had always been an important site for acclimatization projects and breeding experiments, as a "production center" for the farms, estates, and lakes where these "foreign" animals would eventually settle. Its exact role in these ventures varied, as seen in the descriptions of the different activities at the JZBA quoted above: sharing knowledge on how to breed ostriches and partridges with Belgium farmers or raising rheas for later export to England, for example (Onelli, 1909a, p.270). The following case demonstrates yet another role played by the JZBA in an acclimatization scheme.

Karakul sheep from Austria

In all likelihood during the centenary celebrations, the Argentinian Ministry of Agriculture ordered six camels and 24 Karakul sheep of "pure race" and then another thirty Karakul sheep *mestizas* from Hagenbeck. But the German animal trader was unable to deliver because the Emirate of Bukhara in Central Asia prohibited exports of this precious animal, and the order was consequently cancelled in May 1911 (García, 1912, p.1146).

Like many other countries, in the early twentieth century Argentina attempted to introduce the Karakul sheep. This species of sheep from the Central Asian desert (roughly, what today is Uzbekistan) was not sought after for its milk, meat, or wool; the latter two were allegedly of inferior quality. The pelt of the newborn or fetal lamb is known for its black color and soft texture, known as Breitschwanz, astrakhan, or simply Karakul. Because Breitschwanz rapidly "deteriorates" and loses its smooth appearance, the lambs are slaughtered immediately after birth.

With Hagenbeck unable to deliver the sheep, the ministry had to look for an alternative. Once more, the 1910 celebrations underpinned exchanges of animals, in this case between Argentina and the Austro-Hungarian Empire. Arthur Krupp, an Austrian industrialist and "friend of the Republic of Argentina," was in Buenos Aires at the time, learned about the plan to import the sheep, and acted as a mediator. By February 1911, the Austrian Emperor Franz Joseph had received two Hackney horses as a gift from the Republic (Brand…, 21 Aug. 1910, p.10; The Austrian Emperor…, 30 Aug. 1911; García 1912, p.1147). After Krupp mentioned the wishes of the Argentinian government to the emperor, he decided to reciprocate with Karakul sheep. The court contacted Leopold Adametz, an expert in animal breeding at the Viennese Agricultural University. The zoologist had already in 1904 brought Karakul sheep from Bukhara to Austria and attempted to acclimatize them. In 1911 he was thus able to assemble a flock of twenty animals, four rams and 16 ewes. This seems to have led to some kind of continuous contact between Adametz and proponents of *zootécnica* in Argentina. There are three officials from the Ministry of Agriculture that appear recurrently in the sources: José León Suárez, head of the División de Ganadería (Department of Animal

Husbandry), Manuel Lecler, head of the Sección Zootécnica, and Tomás García of the same section. Only a few years later in 1914, Adametz published a Spanish-language booklet on Karakul sheep in Buenos Aires entitled *El carnero Karakul*, which was likely a translation of his German writings on the topic (Adametz, 1914).

The Schönbrunn Menagerie, which was still the private property of the emperor, entered the scene in late August 1911. It had to make sure that the flock of sheep arrived in good health in Argentina. Its director Alois Kraus (on Kraus, see Heindl, 2006) picked the animal keeper Josef Novacek (on Novacek, see Reinert, 2020, p.243, footnote 11) for the job because of his proven capability to escort exotic animals over long distances.

In late October 1911, Novacek arrived in Buenos Aires and delivered the flock of Karakul sheep (his voyage is amply documented: Novacek's voyage…, 1911-1912). As was common in this kind of exchange, Novacek had been commissioned to bring back animals from South America after the sheep had been safely turned over. Novacek received these animals from the JZBA and from Austrian expatriates in Argentina, and bought others. He also acquired a few in Rio de Janeiro (including a megabat from the local zoo), where his steamer stopped briefly. A final inventory of the animals Novacek brought back to Vienna in early December 1911 lists 21 mammals (13 species), 46 birds (twenty species), and 13 reptiles (three species). This substantial delivery totaled eighty animals of 36 species, worth an estimated 6982 marks. Roughly a third of the lot, 25 animals (mostly birds), came from the JZBA and were valued a total of 2368 marks. The most valuable animals included a condor, a "silver lion" (puma), two "Huanako-Lamas" (guanacos), and an ocelot.


El obsequio del emperador de Austria á la Argentina

Los ovinos Karakul

Figure 4: Austrian animal keeper Josef Novacek with Karakul sheep (Caras y Caretas, n.682, 1911, p.63).

The Argentinian media hailed the arrival of the Karakul sheep in October 1911 (e.g. El obsequio…, 28 Oct. 1911, p.63; see also Los Carneros…, 13 July 1912, p.80). But what role did the JZBA play in this transaction? In 1908, Onelli had already published a programmatic article in the *Anales de la Sociedad Rural Argentina* analyzing whether "animals of precious pelts" such as Karakul sheep or mink could be acclimatized in Argentina (Onelli, 1908a). In the context of the shipment from Austria, the *Revista* published a report the businessman and *zootécnico* Augusto Huber had drafted for the Ministry of Agriculture (Huber, 1912, p.53-59). Huber explained the history and specificities of the Karakul, particularly the Breitschwanz, analyzing where and to what extent it might be introduced in Argentina, along with its economic potential. The actual arrival of Karakul sheep to Argentina provided a long-sought opportunity.

Lecler decided to entrust the "Austrian" flock to a certain Martín M. Torino at his estate (San Nicanor) in the province of Buenos Aires. Some months later the first purebred Karakul lambs were born on Argentinian soil (García, 1912, p.1147-1156; Los Carneros…, 13 July 1912, p.80).

Earlier, when the sheep had just arrived by steamer, Onelli went to the port to examine the flock from Austria, and even asked Suárez for permission to bring his own sheep ("corner pampa" species) from the zoo to the quarantine station to breed them with the "purebred" Karakul. He was successful in two cases, and in June 1912 two "criollo" lambs were born at the JZBA (Onelli, July 1912, p.123-128). In an article published in the *Revista* that includes two photos, Onelli describes their physical appearance, especially their pelts, and how these differed from that of Karakul sheep. Three days after the birth, he invited Suárez, Lecler, and García from the Ministry of Agriculture to the zoo. The crucial question was whether the pelts from mixed lambs would be good enough for economic use.

The case of the Karakul sheep is telling about the multiple interchanges between Latin America and Europe before the First World War. Useful animals destined for Argentinian husbandry were exchanged with horses for the emperor and zoo animals destined for the Schönbrunn Menagerie. The zoos in Buenos Aires and Vienna played an important role, yet in different ways. The JZBA provided the corresponding return gift for the flock of Karakul sheep and served as a breeding station for producing mixed-breed offspring, with the *Revista* providing a platform to communicate the results. The Schönbrunn Menagerie provided expertise and manpower for transporting the animals and served as a receiving point for the large shipment of animals acquired from Latin America. Various actors enabled the complex transactions that took place in 1911: not only Onelli, Kraus, and Novacek, but also the emperor, government bureaucracy on both sides, Senator Krupp as a mediator, Austrian expatriates and experts in animal breeding such as Adametz and Huber, as well as Suárez, Lecler, and García, from the Argentinian Ministry of Agriculture.

Final considerations

The JZBA meant different things to different observers from abroad. Margaret Willis and Gina Lombroso praised Onelli's successful "outreach" activities that attracted large numbers of Buenos Aires residents. Many European scholars applauded the *Revista* for its

scientific content. For zoo reformers such as Loisel and Coutaud, the JZBA was exemplary in some aspects of zoo management and even served as a model for the Paris Zoo. Given its access to South American fauna, the JZBA was an interesting partner for zoos and animal traders like Carl Hagenbeck to trade with, sell to, or buy exotic animals from. Furthermore, the JZBA was also involved in acclimatization schemes such as importing Karakul sheep into Argentina. The exchanges with the Schönbrunn Menagerie show that the JZBA helped foster diplomatic relations between the Austro-Hungarian Empire and the Republic. To Clemenceau, the JZBA was an institution run by the curious character of Clemente Onelli, while for Strassberger it was just another zoo. This manifold perception of the JZBA was due to its specific features and Onelli's personal agenda as well as the hybrid character of the zoo itself: an institution that around 1900 combined the tasks of public instruction, basic zoological research, applied natural history, and symbolic functions as an emblem of urban modernity.

Our focus on the JZBA during the first decade of Onelli's directorship makes it possible to identify numerous instances of multidirectional and complex exchanges of zoological knowledge and living animals between Argentina and other parts of the world, mainly Europe. By 1910, the JZBA had firmly established itself in the transnational networks of zoos, animal trade and acclimatization schemes, as well as zoological research and scientific diplomacy. The JZBA was thus a global player from the South.

How was this possible, given the scientific, economic, and political dominance of the North? This article suggests some reasons: the relative wealth of Argentina and Buenos Aires in particular (financing the zoo) at that time made the necessary purchases possible, for example. The JZBA could also import expensive giraffes and hippopotamuses because it exported desirable animals from Latin America such as jaguars and Darwin's rheas to zoos around the world. The JZBA and its mouthpiece, the *Revista*, produced practical knowledge (how to feed, breed, and house exotic animals, how to attract a large public) as well as theoretical (seeking collaborations with Argentinian scientists) that was of interest to the "Old World." Onelli also proved a good networker, promoting the fame of "his" zoo within Argentina and abroad. Of the Argentinian "personnel" mentioned in this article, the large number of recent immigrants (or second- or third-generation descendants) from Germany (Seeber, Schneidewind, Jakob, Huber), Austria (Holmberg), France (Ligneres), and Italy (Onelli) is not surprising but still significant. Their presence facilitated communication with scientific communities back in Europe. The "networking effect" of the 1910 celebrations, particularly the CCIA congress, also helped turn the JZBA into a global player.

This list of specific conditions suggests that the JZBA should be considered an exception, at least in the context of Latin America (which had very few zoos, in any case; further research on transnational connections at some colonial zoos, especially those in Giza [Egypt], Calcutta, and Melbourne is needed to determine whether similar cases existed elsewhere in the Global South.) At the beginning of this article we emphasized the stark asymmetries in the global networks of natural history and zoological gardens in terms of epistemological hegemony and political dominance. For a brief period before the First World War, the JZBA could at least aspire to overcome these hierarchies. The network of the JZBA bears a distinct "imperial imprint:" Onelli wanted to sit at the table with the big

players, very much in the spirit of Sarmiento and Pellegrini. He represents the optimism of the country's elite at the time of the 1910 centenary that Argentina would become one of the world's leading countries. The JZBA interacted (visits, publications, exchanges of information and animals) almost exclusively with naturalists from and institutions in the United States, Great Britain, France, Germany, and Austria-Hungary, the most powerful states before the First World War.

This observation is underscored by the complete lack of interaction between the JZBA and the Barcelona Zoo (which was founded in 1892, just four years after the JZBA) and the Spanish public sphere in general. Despite historic and linguistic bonds, like so many other Argentinian naturalists Onelli did not look to Spain for guidance. This country was considered to be in decline and in dire need of reform; rather, he looked to the more "advanced" countries in the North (see the article by Mayoni, in this issue, for a structurally similar case related to teaching materials in natural history).

The claim that the JZBA represents an exception is additionally underscored by the fact that it was unable to maintain its role as a global player. The First World War dramatically stunted the transnational networks of zoos and the global animal trade. After 1918 Onelli again made global headlines, but only because he went on an expedition to find living plesiosaurs in Patagonia in 1922. After he died unexpectedly in 1924, the *Revista* ceased to exist. Much of the history of the JZBA in the twentieth century and its transnational networks still remains to be written, but from this juncture it does not appear that it was able to regain the same levels of status and influence it had prior to 1914 (at least not prior to June 23, 2016).

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REFERENCES

ADAMETZ, Leopold. *El carnero Karakul*. Buenos Aires: Talleres de Publicaciones de la Dirección Meteorológica, 1914.

BOETTGER, Oskar. Die zoologischen Gärten der Welt. *Der zoologische Beobachter (Der Zoologische Garten)*, n.49, p.250-252, 376-380, 1908.

BOONE, M. Elizabeth. The 1910 Centenary Exhibition in Argentina, Chile, and Uruguay: manufacturing fine art and cultural diplomacy in South America. In: Raizman, David; Robey, Ethan (ed.). *Expanding nationalisms at world's fairs: identity, diversity and exchange, 1851-1915*. New York: Routledge, 2018. p.195-213.

BRAND in der Ausstellung in Buenos Aires. *Pilsner Tagblatt*, p.10, 21 Aug. 1910.

BROCKWAY, Lucile H. *Science and colonial expansion: the role of the British Royal Botanic Garden*. New Haven: Yale University Press, 2002.

BRUNO, Paula. Un pionero cultural en el espacio científico argentino: Eduardo Ladislao Holmberg entre las décadas de 1870 y 1890. In: Caravaca, Jimena et al. (ed.). *Saberes desbordados: historias de diálogos entre conocimientos científicos y sentido común (Argentina, siglos XIX y XX)*. Buenos Aires: Instituto de Desarrollo Económico y Social, 2018. p.118-136.

BRUNO, Paula. Eduardo L. Holmberg en la escena científica Argentina: ideas y acciones entre la década de 1870 y el fin-de-siglo. *Saber y Tiempo,* v.1, n.1, p.118-140, 2015.

BRUNO, Paula. Georges Clemenceau en la Buenos Aires de 1910. In: Bruno, Paula (ed.). *Visitas culturales en la Argentina (1898-1936)*. Buenos Aires: Biblos, 2014. p.167-195.

BUNTES ALLERLEI. *Mährisch-Schlesische Presse*, p.4, 30 July 1910.

CARBONE, Antonio. *Park, tenement, slaughterhouse: elite imaginaries of Buenos Aires (1852-1880)*. Dissertation (Doctorate in History) – Technische Universität Berlin, Berlin, 2019.

CIRCO HAGENBECK: ultimos días de los espectáculos. *Caras y Caretas*, n.630, p.53, 29 Oct. 1910.

CLEMENCEAU, Georges. Reisetagebuch aus Südamerika, XV. *Neue Freie Presse*, p.1-3, 20 Mar. 1911.

CLEMENCEAU, Georges. Reisetagebuch aus Südamerika, IV. *Neue Freie Presse*, p.1-5, 10 Feb. 1911.

CLEMENCEAU, Georges. *Notes de voyage dans l'Amérique du Sud: Argentine, Uruguay, Brésil*. Paris: Hachette, 1911.

CONGOSTRINA, Alfonso L. El zoo de Barcelona se apunta al animalismo tras 127 años de historia. *El País*, 4 May 2019.

COUTAUD, Albert. Autour du Jardin Zoologique de Buenos-Ayres. *Bulletin du Muséum National d'Histoire Naturelle,* v.20, n.3, p.163-166, 1914.

COUTAUD, Albert. Les jardins botaniques y zoologiques, les musées d'histoire naturelle de Buenos-Ayres et de La Plata. *Bulletin du Muséum National d'Histoire Naturelle,* v.19, n.3, p.150-164, 1913.

COUTAUD, Albert. Le jardin zoologique de Buenos Aires, Argentine. *La Nature,* v.40, n.2039, p.55-59, 1912.

DE ASÚA, Miguel. La fiesta de la ciencia: el Congreso Científico Internacional Americano de 1910. *Ciencia Hoy,* v.21, n.125, p.18-24, 2011.

DEL PINO, Diego. *Clemente Onelli, de pionero de la Patagonia a director del Jardín Zoológico de Buenos Aires*. Buenos Aires: Asociación Dante Alighieri, 1980.

DEL PINO, Diego. *Historia del Jardín Zoológico Municipal*. Buenos Aires: Municipalidad de la Ciudad de Buenos Aires, 1979.

DESCHAMPS, Gaston. L'itinéraire de Jules Huret. *Le Temps*, p.3, 25 Aug. 1911.

DÍAZ, Marcela Liliana; FERNÁNDEZ, María Cristina. *Guía del patrimonio cultural del jardín zoológico de la Ciudad de Buenos Aires*. Buenos Aires: [s.n.], 2016.

DITTRICH, Lothar; RIEKE-MÜLLER, Annelore. *Carl Hagenbeck (1844-1913): Tierhandel und Schaustellungen im Deutschen Kaiserreich*. Frankfurt am Main: Peter Lang, 1998.

DUARTE, Regina Horta. Networks of natural history in Latin America. In: Curry, Helen Anne et al. (ed.). *Worlds of natural history*. Cambridge: Cambridge University Press, 2018. p.476-490.

DUARTE, Regina Horta. Zoos in Latin America. In: *Oxford research encyclopedia of Latin American history*, 2017. Available at: https://oxfordre.com/latinamericanhistory/view/10.1093/acrefore/9780199366439.001.0001/acrefore-9780199366439-e-439. Access on: 28 May 2021.

EL OBSEQUIO del emperador de Austria à la Argentina: los ovinos Karakul. *Caras y Caretas*, n.682, p.63, 28 Oct. 1911.

ELLIS JR., James F.; ELLIS, Georgeann A. Zoological gardens of South America. In: Kisling Jr., Vernon N. (ed.). *Zoo and aquarium history: ancient animal collections to zoological gardens*. Boca Raton, Fla.: CRC Press, 2001. p.351-368.

EN EL ANFITEATRO romano Hagenbeck: un espectáculo extraordinario. *Caras y Caretas*, n.614, p.46, 9 July 1910.

EN EL CIRCO HAGENBECK: intimidades del chimpancé Moritz. *Caras y Caretas*, n.628, p.52, 15 Oct. 1910.

EN EL CIRCO ROMANO Hagenbeck: la tribu de indígenas de Ceilán. *Caras y Caretas*, n.624, p.49, 17 Sep. 1910.

EN EL CIRCO ROMANO Hagenbeck: los famosos fakires. *Caras y Caretas*, n.622, p.43, 3 Sep. 1910.

EN EL CIRCO ROMANO Hagenbeck: la tribu de somalíes. *Caras y Caretas*, n.620, p.40, 20 Aug. 1910.

EN EL CIRCO ROMANO Hagenbeck: la tribu de somalíes. *Caras y Caretas*, n.618, p.50, 9 July 1910.

FLOWER, Stanley. A list of the zoological gardens of the world. *The Zoologist,* v.13, p.161-186, 1909.

GARCÍA, Tomás. Los ovinos Karakul: generalidades sobre el origen y la importación al país. *Boletín del Ministerio de Agricultura,* v.14, n.10, p.1145-1178, 1912.

GARZÓN MACEDA, Félix. La parasitología humana en la Argentina (Antecedentes bibliográficos). *Revista de la Universidad Nacional de Córdoba,* v.2, n.1, 1915.

GIUDICE, Aldo Mario; ESPARRACH, Eduardo; ROQUÉ, María Teresa Ferrero. Elefantes en el

Zoológico de Buenos Aires. *Boletín Biológica,* v.12, n.39, p.11-18, 2018.

GRINGAUZ, Lucrecia. Entretenimientos y multitudes: el Jardín Zoológico de Buenos Aires en sus primeras décadas. In: Jornadas Interescuelas/Departamentos de Historia, 14., 2013, Mendoza. *Anales…* Mendoza: Universidad Nacional de Cuyo, 2013. Available at: https://www.aacademica.org/000-010/981. Access on: 28 May 2021.

GUTMAN, Margarita. *Buenos Aires, 1910: memoria del porvenir.* Buenos Aires: Gobierno de la Ciudad, 1999.

HAGENBECK, Carl. *Animales y hombres: recuerdos y experiencias de Carlos Hagenbeck*. Hamburg: Hijos de Carlos Hagenbeck, 1910a.

HAGENBECK, Carl. *Exposición internacional Buenos Aires: Exposición ferroviaria, Sección Carlos Hagenbeck*. Hamburg: H. Carly, 1910b.

HAGENBECK, Lorenz. *Den Tieren gehört mein Herz*. Hamburg: Hoffmann und Campe, 1955.

HEINDL, Gerhard. *Start in die Moderne: Die Entwicklung der kaiserlichen Menagerie unter Alois Kraus*. Wien: Braumüller, 2006.

HOCHADEL, Oliver. Going east: Gustave Loisel and the networks of exchange between zoological gardens before 1914. In: Gantner, Eszter; Hein-Kircher, Heidi; Hochadel, Oliver (ed.). *Interurban knowledge exchange in Southern and Eastern Europe, 1870-1950.* London: Routledge, 2020. p.197-218.

HUBER, Augusto. El Karakul. *Revista del Jardín Zoológico de Buenos Aires,* v.8, n.29, p.53-59, 1912.

HURET, Jules. En Argentine. *Le Figaro,* p.4, 2 Aug. 1911.

JAKOB, Christfried; ONELLI, Clemente. *Atlas del cerebro de los mamíferos de la República Argentina*. Buenos Aires: Guillermo Kraft, 1913.

JAKOB, Christfried; ONELLI, Clemente. *Vom Tierhirn zum Menschenhirn: vergleichend morphologische, histologische und biologische Studien zur Entwicklung der Grosshirnhemisphaeren und ihrer Rinde*. München: J.F. Lehmann, 1911.

KUENHEIM, Haug von. *Carl Hagenbeck*. Hamburg: Ellert und Richter, 2009.

LECLERC-CASSAN, Maryvonne; PINON, Dominique; WARMOES, Isabelle. *Le Parc Zoologique de Paris: des origines à la rénovation*. Paris: Muséum National d'Histoire Naturelle, 2014.

LOISEL, Gustave. *Histoire des ménageries de l'Antiquité à nos jours, v.3: époque contemporaine (XIXe et XXe siècles)*. Paris: Doin, 1912.

LOISEL, Gustave. *Rapport sur une mission scientifique dans les jardins et établissements zoologiques publics et privés des États-Unis et du Canada, et conclusions générales sur les jardins zoologiques*. Paris: Imprimerie Nationale, 1908.

LOISEL, Gustave. Papiers Gustave Loisel, Mammifères, Ms 2153. Manuscrits de la bibliothèque du MNHN (Muséum National d'Histoire Naturelle, Paris). n.d.

LOMBROSO, Gina. *Nell'America Meridionale: Brasile-Uruguay-Argentina*. Milan: Treves, 1908.

LOS CARNEROS Karakul: su aclimatación en el país. *Caras y Caretas*, n.719, p.80, 13 July 1912.

LYNCH, Ricardo. *L'alimentation et l'instinct de l'alimentation chez l'homme et chez les animaux*. Buenos Aires: A. Etchepareborda, 1911a.

LYNCH, Ricardo. L'alimentation et l'instinct de l'alimentation chez l'homme et chez les animaux. *Revista del Jardín Zoológico de Buenos Aires*, v.7, n.25, p.15-53, 1911b.

LYNCH, Ricardo. *Coprología*. Buenos Aires: J.A. Berra, 1896.

MACKENZIE, John M. *Museums and Empire: natural history, human cultures and colonial identities*. Manchester: Manchester University Press, 2010.

MILLER, Ian Jared. *The nature of the beasts: empire and exhibition at the Tokyo Imperial Zoo.* Berkeley: University of California Press, 2013.

MILLER, Nicola. *Republics of knowledge: nations of the future in Latin America*. Princeton: Princeton University Press, 2020.

MONNER SANS, R. S.A.R. la infanta Doña Isabel de Borbón en las fiestas del centenario de la independencia argentina. *La Ilustración Artística*, n.1489, p.446-447, 11 July 1910.

MONTI, E. Las manchas cutáneas: su relación con el sistema nervioso y con el número de vértebras, en el hombre y en los animales. *El Mundo Científico,* v.12, n.559, p.795-798, 1910.

NOVACEK'S VOYAGE… HHStA, OMeA-1912-75/D/11, 30 Dec. 1911 to 31 Dec. 1912 (Haus-, Hof- und Staatsarchiv/Obersthofmeisteramt, Vienna). 1911-1912.

NOVOA, Adriana; LEVINE, Alex. Eduardo Holmberg (1852-1937). In: Novoa, Adriana; Levine, Alex (ed.). *¡Darwinistas! The construction of evolutionary thought in nineteenth century Argentina*. Leiden: Brill, 2014. p.161-194.

ONELLI, Clemente. *Idiosincrasias de los pensionistas del Jardín Zoológico (1908-1909-1910)*. Buenos Aires: Elefante Blanco, 1999a.

ONELLI, Clemente. *Idiosincrasias de los pensionistas del Jardín Zoológico (1905-1906-1907)*. Buenos Aires: Elefante Blanco, 1999b.

ONELLI, Clemente. El Karakul criollo. *Revista del Jardín Zoológico de Buenos Aires*, v.8, n.30, p.123-128, July 1912.

ONELLI, Clemente. El Jardín Zoológico en el extranjero. *Revista del Jardín Zoológico de Buenos Aires*, v.5, n.19, p.270-271, 1909a.

ONELLI, Clemente. Note preliminari sopra la relazione che esiste fra il numero delle vertebre e le macchie della pelle di alcuni animali. *Archivio di Antropologia Criminale, Psichiatria e Medicina Legale,* v.30, n.3, 1909b.

ONELLI, Clemente. Animales de piel cara, exótica e indígenas: astrakan, skung, visón, etc. ¿Es posible su aclimatación en el país? *Anales de la Sociedad Rural Argentina,* v.63, n.4, 1908a.

ONELLI, Clemente. Notes préliminaires sur la relation qui existe entre le nombre des vertébres et celui des taches dans la peau de quelques animaux. *Revista del Jardín Zoológico de Buenos Aires*, v.4, n.13, p.227-239, 1908b.

ONELLI, Clemente. Las últimas adquisiciones por compras y por canje. *Revista del Jardín Zoológico de Buenos Aires,* v.1, n.4, p.424-445, 1905.

ORLANDO, Jacinto Carlos. La vida y obra de Christofredo Jakob. *Electroneurobiología,* v.2, n.1, p.499-607, 1995.

OSBORNE, Michael A. *Nature, the Exotic, and the Science of French Colonialism*. Bloomington, IN: Indiana University Press, 1994.

PERRONE, Alberto Mario. *La jirafa de Clemente Onelli*. Buenos Aires: Sudamericana, 2012.

PROCEEDINGS of the General Meetings for Scientific Business of the Zoological Society of London. *Proceedings of the Zoological Society of London,* p.558, 21 Mar. 1911.

RAJ, Kapil. *Relocating modern science: circulation and the construction of knowledge in South Asia and Europe, 1650-1900*. London: Palgrave Macmillan, 2010.

REESE, Thomas; GUTMAN, Margarita (ed.). *Buenos Aires, 1910: el imaginario para una gran capital*. Buenos Aires: Eudeba, 1999.

REINERT, Wiebke. *Applaus der Robbe: Arbeit und Vergnügen im Zoo, 1850-1970*. Bielefeld: [s.n.], 2020.

RICCARDI, Alberto C. Bailey Willis: un geólogo yanqui y el desarrollo del norte de la Patagonia. *Revista Facultad de Ciencias Exactas, Físicas y Naturales,* v.7, supl.1, p.63-83, 2020.

RJZBA, *Revista del Jardín Zoológico de Buenos Aires*, v.9, n.34-36, p.214, 1913.

RJZBA, *Revista del Jardín Zoológico de Buenos Aires*, v.8, n.30, p.173, 1912a.

RJZBA, *Revista del Jardín Zoológico de Buenos Aires*, v.8, n.31, p.267-271, 1912b.

RJZBA, *Revista del Jardín Zoológico de Buenos Aires*, v.7, n.28, p.353, 357, 358, 1911.

RJZBA, *Revista del Jardín Zoológico de Buenos Aires*, v.6, n.21, p.47, 49, 1910a.

RJZBA, *Revista del Jardín Zoológico de Buenos Aires*, v.6, n.20, p.377, 1910b.

RJZBA, *Revista del Jardín Zoológico de Buenos Aires*, v.1, n.4, p.352-356, 427-445, 1905.

RJZBA, *Revista del Jardín Zoológico de Buenos Aires*, v.1, n.8, p.227, 1893.

ROTHFELS, Nigel. *Savages and beasts: the birth of the modern zoo*. Baltimore: Johns Hopkins University Press, 2002.

SCA, Sociedad Científica Argentina. Congreso Científico Internacional Americano. *Anales de la Sociedad Científica Argentina,* v.70, p.5-208, 1910.

SCHÁVELZON, Daniel. El Pórtico Bizantino del Jardín Zoológico de Buenos Aires: una reflexión sobre nosotros mismos. In: Corsani, Patricia; Schávelzon, Daniel; Vasta, Marina (ed.). *El Pórtico Bizantino del Jardín Zoológico de Buenos Aires: una reflexión sobre nosotros mismos*. Buenos Aires: Editorial Dirección General de Patrimonio e Instituto Histórico, 2013. p.17-81.

SCHIAVO, Horacio. *Palermo de San Benito*. Buenos Aires: Municipalidad de la Ciudad de Buenos Aires, 1969.

STRASSBERGER, Oswald. Geburt eines Indischen Elefanten im Zool. Garten von Buenos Aires. *Der Zoologische Garten*, n.48, p.58, 1907.

STRASSBERGER, Oswald. Bären in Bolivien. *Der Zoologische Garten*, n.46, p.51, 1905a.

STRASSBERGER, Oswald. Der städtische Zoologische Garten in Buenos Aires. *Der Zoologische Garten*, n.46, p.288-296, 1905b.

STRASSBERGER, Oswald. Der Jaguar in der Argentina. *Der Zoologische Garten*, n.45, p.191-192, 1904.

THE AUSTRIAN EMPEROR… HHStA, OMeA-1911-75/D/29 (Haus-, Hof- und Staatsarchiv/ Obersthofmeisteramt, Vienna). 30 Aug. 1911.

THE ZOOLOGICAL GARDENS of the World. *Gippsland Times*, p.6, 10 Apr. 1913.

VASTA, Marina. *Viaje pintoresco y excursión científica: el Jardín Zoológico de Buenos Aires, 1888-1924*. Buenos Aires: Instituto de Arte Americano/Universidad de Buenos Aires, 2018.

VASTA, Marina. De "adorno utilísimo" a "paraíso de los niños": la especie Jardín Zoológico a través de la evolución del ejemplar en Buenos Aires. *Registros,* v.13, n.2, p.46-62, 2017.

VASTA, Marina. Arquitecturas para el encierro y la exhibición. *Seminario de Crítica del Instituto de Arte Americano e Investigaciones Estéticas Mario J. Buschiazzo,* v.196, 2014. Available at: www.iaa.fadu.uba.ar/publicaciones/critica/0196.pdf. Access on: 28 May 2021.

VASTA, Marina. Breve historia del Jardín Zoológico de Buenos Aires. In: Corsani, Patricia; Schávelzon, Daniel; Vasta, Marina (ed.). *El pórtico bizantino del Jardín Zoológico de Buenos Aires: una reflexión sobre nosotros mismos*. Buenos Aires: Editorial Dirección General de Patrimonio e Instituto Histórico, 2013. p.105-126.

WALTER, Jack. Lettre de la République Argentine. *Le Gaulois*, p.4, 23 May 1911.