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Science and Horse Experts: the Lisbon Sociedade Hípica (1910–1974)

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Abstract: This article examines the role of the Sociedade Hípica Portuguesa (SHP) and associated networks in shaping horse breeding practices in Portugal between 1910 and 1974. It argues that horse arenas functioned as hybrid institutions, combining leisure, economic activity, and scientific inquiry, and therefore constituted significant sites of knowledge production beyond formal laboratories. Methodologically, the study draws on a combination of archival sources, including studbooks, correspondence, parliamentary debates, and the sporting press, in order to reconstruct the practices and epistemic cultures of breeders, veterinarians, and agronomists. By analysing the circulation of horses and expertise between Portugal and Spain, the article shows how animals operated as “commodities in motion,” enabling the transfer and transformation of breeding knowledge across borders. At the same time, it demonstrates that, unlike other domains of agriculture, Portuguese horse breeding only partially incorporated Mendelian genetics, revealing the limits of scientific diffusion in elite-controlled environments. The article contributes to the historiography of the “animal turn,” the history of breeding and heredity, and the study of hybrid scientific institutions, by highlighting the Iberian context as a key but overlooked space of

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transnational exchange. It shows that elite equestrian institutions were not peripheral but central to the production, circulation, and negotiation of biological knowledge in the twentieth century.

Keywords: horse breeding; animal studies; hybrid institutions; Portugal; Iberian Peninsula; equestrian culture.

Introduction

Conceptually, this article approaches horse arenas and breeding networks as hybrid institutions combining leisure, sport, commerce, and scientific inquiry.¹ Rather than treating science as confined to laboratories or universities, it adopts a broader understanding of sites of knowledge production, encompassing farms, competitions, and exhibitions where practical and experimental knowledge intersected. Drawing on the notion of “commodities in motion,”² it interprets horses not only as economic goods but also as carriers of knowledge, whose circulation enabled the transfer and transformation of breeding practices across borders. In doing so, the article also aligns with recent calls to recognize animals not simply as objects of knowledge, but as participants in historical processes, whose bodies and behaviours influenced scientific practices.³

This study examines the international interrelations revealed by horse breeding practices in Portugal,⁴ focusing on the circulation of Spanish bloodstock, the formation of equestrian institutions, and the exchanges between breeders and scientists. It argues that horse arenas functioned as hybrid institutions and sites of knowledge production, while also showing that, unlike other domains of agriculture, Portuguese horse breeding only partially incorporated Mendelian genetics.

The analysis draws on archival and printed sources, including studbooks, correspondence, parliamentary debates, and the sporting press.⁵ To situate

¹ Oliver Hochadel, “Science at the Zoo. An Introduction,” *Centaurus*, no. 64 (2022): 561–90.

² María Jesús Santesmases, *The Circulation of Penicillin in Spain: Health, Wealth and Authority* (London, 2019: Palgrave Macmillan): 188.

³ Amanda Rees, “Animal Agents? Historiography, Theory and the History of Science in the Anthropocene,” *BJHS Themes* 2 (2017): 1–10.

⁴ Maria do Mar Gago, *The Emergence of Genetics in Portugal: J. A. Serra at the Crossroads of Politics and Biological Communities (1936–1952)* (Universidade de Lisboa, 2009); Tiago Saraiva, *Porcos fascistas. Organismos tecnocientíficos e a história do fascismo* (Porto: Dafne Editora, 2022).

⁵ Mike Huggins, “The Proto-globalisation of Horseracing 1730–1900: Anglo–American Interconnections,” *Sport in History*, 29 no. (3) (2009), 367–91. For the period between 1900–1970, few land-

these questions within existing scholarship, it is necessary to consider recent developments in the historiography of animals and science.⁶ This “animal turn” has suggested new understandings of the role of animals in the past.

This article thus contributes to three strands of historiography. First, it builds on the “animal turn” in history, which has emphasized animals as active agents in social, cultural, and scientific processes.⁷ Second, it engages with the history of breeding and heredity, where recent scholarship has highlighted the interplay between practical knowledge and emerging genetic science.⁸ Third, it speaks to a growing work on hybrid scientific institutions such as zoos, farms, and exhibitions as sites of knowledge production.⁹

Regarding the first strand, this study is informed by debates on animal agency, which have sought to write animals into history as actors rather than passive objects.¹⁰ While horses in this context were not autonomous agents in a strict sense, their biological characteristics, behaviour, and reproductive capacities shaped breeding practices and knowledge-making processes.

Despite these advances, important gaps remain. These literatures have largely overlooked the Iberian context, and particularly the role of equestrian institutions in mediating between elite culture, agricultural practice, and biological knowledge. Histories of horse breeding have tended to focus on Britain, France, or Germany, while Portugal and Spain remain marginal. The Iberian case also highlights forms of exchange and rivalry between Portugal and Spain that complicate national histories of breeding, revealing a transnational space of circulation rather than isolated traditions.

lords’ studbooks survive in Portugal.

⁶ Cristina Brito, “Medieval and Early Modern Whaling in Portugal,” *Anthrozoös*, 3/24. (2011): 287–300; Harriet Ritvo, “On the Animal Turn,” *Daedalus*, no. 136 (2007): 118–22.

⁷ Margaret Derry, Donna Haraway, Donna Landry, Harriet Ritvo & Sandra Swart, “Humanimalia Roundtable on Breed,” *Humanimalia* 10, no. 1 (2018): 5–26, 13; Amanda Rees, “Animal Agents? Historiography, Theory and the History of Science in the Anthropocene,” *BJHS Themes* 2 (2017): 1–10.

⁸ Margaret Derry, *Bred for Perfection: Shorthorn Cattle, Collies, and Arabian Horses Since 1800*. (Baltimore: Johns Hopkins University Press, 2003); Margaret E. Derry, “Theory and Method: An Analysis of European and American Animal Breeding Practices, from the Eighteenth to the Twenty-First Century,” *Agricultural History* 94, no. 3 (2020): 324–61.

⁹ Matthew Chrulew, “Abnormal Animals,” *New Literary History* 51, no. 4 (2020): 729–50.

¹⁰ Jason C. Hribal, “Animals, Agency, and Class: Writing the History of Animals from Below,” *Human Ecology Review* 14, no. 1 (2007): 101–12.

By examining the Sociedade Hípica Portuguesa (Portuguese Equestrian Society, hereafter SHP) and associated networks (1900–1974), this article shows how horse arenas, breeders, and competitions functioned as sites of knowledge production, where lay expertise, state science, and international exchanges intersected. It argues that these spaces complicate distinctions between amateur and expert knowledge and reveal alternative pathways for the circulation of genetic and breeding concepts.

Nearly everyone among the rich landlords, with the exception of a few agronomists and veterinarians, was a “lay person,” in the sense that most had no university diploma in animal breeding. How did they engage with horses in their professional life, and what were their drives? What kind of knowledge, if any, did they manage?

To explore these dynamics empirically, the paper proceeds through three sections: the social and economic activities of the breeders; the Portuguese experts that participated in horse breeding from 1900 to 1960; and the showcase of special horses, in the press and the fairs, down to 1974. Taken together, the article argues that horse arenas were not peripheral to the history of science, but key sites where biological knowledge was produced, negotiated, and selectively adopted.

Social and Economic Activities of Horse Breeders

This section shows how elite engagement with horse breeding transformed arenas into hybrid institutions, where social distinction and knowledge production were closely intertwined. In the late nineteenth century and the first decades of the twentieth century, engagement in horse breeding and competitions bolstered a landlord’s standing. It is not surprising, then, that among upper-class families, interest in breeding, and the husbandry and cultivation of other bioproducts (such as flowers), was widespread.¹¹ Owners of horses often kept their own studs, and in the early 1900s an increasing number of Portuguese towns organized annual horse competitions. During the same

¹¹ Ana Duarte Rodrigues and Ignacio García-Pereda, “Flower Exhibitions for a Nationalistic Regime: The Propaganda and the Press in the 1940s Portuguese Dictatorship,” *Media History*, 29, no. 1 (2023): 95–115.

period, training and horse breeding farms were established not only in Lisbon, but in other locations such as Lagos, Évora, and Elvas.¹²

Appearances were important, but they also reveal how horse arenas operated as hybrid institutions, where social distinction and epistemic practices were closely intertwined. This dynamic becomes even clearer when we move from symbolic practices to the growing commercialization of horse breeding. Both domestic architecture and horse ownership reflected this culture of elite display, in which investment in carefully selected bloodlines reinforced social distinction and continuity.¹³

Among elite families, such investments reinforced social exclusivity and continuity.¹⁴ Beyond their symbolic value, horses were also increasingly treated as economic assets, linking breeding practices to wider markets. This economy boom turned horses into a treasured commercial commodity. Horse arenas functioned as hybrid institutions, where economic, social, and epistemic functions overlapped. The study of horses as commodities allows us “to analyse the economical, scientific, political, and geographical issues” involved in the transport of horses themselves, but “also the circulation of the knowledge and practices around them and the construction of their cultural perception.”¹⁵ As historian of science María José Santesmases has argued regarding the circulation of penicillin, the arrival of this “commodity in motion” in Spain was attached to a “process of selection, transfer and transformation” of the associated knowledge, which was “created and recreated in these transits.”¹⁶

¹² Public-financed wheat breeding farms were established since the 1860s. See Carlos Faisca, “Before the Fascist Labscapes: Origin and Development of Plant Breeding in Portugal, 1862–1926.” *HoST – Journal of History of Science and Technology* 19, no. 2 (2025): 91–117.

¹³ Margarida Sérvulo Correia, *O caso de Barbacena: um pároco de aldeia entre a Monarquia e a República* (Lisboa: Centro de Estudos de História Religiosa, 2013). Alfredo Andrade possessed more than 4000 hectares in Elvas district. The Andrade family maintained in Elvas and Coruche two of the most important horse collections on the national scene (Atahyde, 1958), only surpassed by the Fonte Boa research station. Berit Bohlin, “Lusitanos estais en casa,” *ABC*, 30 April 1970.

¹⁴ In 1932 was created the genealogical chart (*Livro Português de Origens*) of the Estrela Mountain dog. This breed was being protected by means of registries and dedicated organizations (Secção de Canicultura, Clube dos Caçadores Portugueses). Manuel Fernandes Marques, *O cão da serra de Estrela* (Lisboa: Typographia Torres, 1934).

¹⁵ Miquel Carandell, “Mediterranean Dolphins from Miami: Knowledge and Practices in Barcelona Zoo’s Aquarama (1962–1970),” *Centaurus* 64, no. 3 (2022): 751–72.

¹⁶ María Jesús Santesmases, *The Circulation of Penicillin in Spain: Health, Wealth and Authority* (London: Palgrave Macmillan, 2019), 188.

This growing commodification of horses not only reshaped markets, but also required new institutional frameworks, leading to the emergence of institutions such as jockey clubs. Clubs and competitions involved personal honour, entailed betting, and gained widespread attention. As historian Mike Huggins has emphasised, horse competitions, including racing, were a symbol of “refinement,” and thus extremely attractive to individuals from rich families lacking aristocratic titles. Sensitive to this context, the Lisbon Turf Club, for example, strove to create a market for horses with pedigrees.¹⁷ This market was international, opening up positions among the European elite. Pedigrees were important, because “they regulated who could participate in the show system.”¹⁸

The end of the Portuguese monarchy in 1910 meant breeding and horse imports, so closely linked with the aristocracy, came to be neglected, and the activities of most of the Turf Clubs only revived after several years.¹⁹ Within this evolving institutional landscape, new organizations emerged that embodied these hybrid functions, such as the SHP, which holds a place in the history of the city of Lisbon and of national equestrianism more generally. In March 1910, several months before the Portuguese Republican Revolution, a group of riders founded the SHP and organized its first international competition. The founders (among them, Ruy de Andrade (1880–1967), member of the board from 1913) put in place a mission for the SHP that has since been passed down from generation to generation of members.²⁰

¹⁷ Pedro Girão, *Turfing um grupo de sócios: 140 anos do Turf Club (1883–2023)* (Lisboa, Turf Club, 2025).

¹⁸ Margaret Derry, Donna Haraway, Donna Landry, Harriet Ritvo and Sandra Swart, “Humanimalia Roundtable on Breed,” *Humanimalia* 10, no. 1 (2018): 5–26, on 13.

¹⁹ José Mendes Aleixo, *O Turf Club e a sua história* (Lisboa, 1973). As king, few could compete with Carlos I (1873–1908) as a horse buyer. He benefited from family ties with Spain to acquire special horses. Beside horses, the Madrid and Lisbon courts also collected hunting dogs. For reasons of prestige and representation the king, murdered in the streets of Lisbon in 1908, went to great expense to procure horses. After the regicide, his son Manuel, then eighteen years old, became king. Manuel reigned as constitutional monarch through an extremely volatile political time which culminated with the end of the monarchy in 1910.

²⁰ The grandson of Ruy de Andrade, José Luís Sommer de Andrade (1945–2020), also an SHP member, was the author of numerous works on equestrian bullfighting and kept the Elvas farm where he raised horses and fighting bulls.



Figure 1: Os Sports Illustrados, 18 de Março (1911): 1. Euronatura collection

In the first years of the twentieth century, horse jumping and racing were two of Lisbon's favourite sports.²¹ Between 1910 and 1917, the headquarters of the SHP were situated in the urban estate of the Eugénio de Almeida family, in the Parque de Santa Gertrudes. In 1917, these facilities were relocated to Sete Rios. Competitions were held in Estoril in the 1920s,²² and from 1931 onward, in the jockey ring of Campo Grande. To qualify, jumping horses needed to meet a minimum pace of 250 meters per minute (*galope mínimo de 250 metros por minuto*).²³ While time measured on race courses could be a marker of the success of breeding programs, blood remained the “preferred metonym for the entire hereditary complex.”²⁴

Most of Europe's horse competition arenas were founded by dedicated (and wealthy) individuals.²⁵ Starting from 1931, the horse meetings held at

²¹ Henrique Salles Fonseca, *Hipismo em Lisboa* (Lisboa: Iconom, 2005). Today, the SHP hosts one of the oldest riding schools and horse arenas in Portugal.

²² The first Portuguese medal at the Olympic Games was won in Paris in 1924, when the national equestrian team won the bronze in the “Nations Cup,” a team show jumping event. <https://www.arquivo.comiteolimpicoportugal.pt/viewer?id=11&FileID=49733>

²³ SHP, *Grande Concurso Hípico Internacional de 1932* (Lisboa: Tipographia Colonial, 1932); SHP, *Concurso Hípico Oficial Estoril 1920* (Lisboa: Centro Tipográfico Colonial, 1920).

²⁴ Brian Tyrell, “Bred for the Race: Thoroughbred Breeding and Racial Science in the United States, 1900–1940.” *Historical Studies in the Natural Sciences* 45, no. 1 (2015): 549–76.

²⁵ The Iberian Peninsula did not have a single Jockey Club in the 1840s (Buenos Aires' was created in 1882; the United States had one in 1734).

Campo Grande lasted for a week, attracting wives and daughters to the tracks (just as such events did in the small towns of the south of the country, such as Estremoz or Elvas).²⁶ The arenas were military or bourgeois institutions—urban representations of a middle class that was devoted to learning and refined pleasure, sport and competition. The mission statements (“estatutos”) of horse societies were framed in highly distinctive language;²⁷ rarely was the pursuit of science overtly mentioned, but the importance of reading and education are emphasised. Indeed, most of the groups behind the founding of horse arenas stressed the potential benefit the new institutions could have for animal culture and society as a whole. Was the early twentieth-century horse society, then, a place for innovative research in zoology and animal breeding? In order to answer this question, it is first required to discriminate between the rhetoric of the mission statements and the actual practices taking place at horse arenas and clubs. It is likewise to be recalled that horse breeding supported two separate groups—the military and the landlords—which represented two different cultures.

While the mechanisms through which stock imports were organized remain poorly documented, the available evidence offers valuable insights into their underlying logic. Horse experts, for instance, actively pursued new outcrosses, alongside a revived preference for foreign—occasionally Spanish—bloodstock. The bodies of these horses could be considered as “living libraries of hereditary information.”²⁸ In the *Grande Enciclopedia Portuguesa e Brasileira*,²⁹ started in 1936, six pages were allotted to the horse, an entry structured by a biometrical tradition, and a series of technical terms for taxonomical categories of the horse parts (Fig. 2).

²⁶ As of 2025, the facilities of the SHP still meet the demands of top dressage riders. There are 400 horses, a Horse Spa, a Therapeutic Center of the Portuguese Association of Cerebral Palsy, a competition arena, three warm up arenas and a restaurant with terrace overlooking the main arena for spectators. For major competitions, “VIP tables” are set up (which are often sold out at lunch during the freestyle finals). Clara Silva, “O Ar Puro da Cidade: O Hipódromo do Campo Grande,” *Time Out Lisboa* 630 (2019), 20–25.

²⁷ *Estatutos de Jockey Club* (Lisboa: Lalléman, 1876). A riding school and a library (Gabinete de Leitura) were made available for the members of the club, “to facilitate the knowledge of the best publications.”

²⁸ Tyrrell, “Bred for the Race,” 549–76.

²⁹ *Grande Enciclopedia Portuguesa e Brasileira*, vol. III, 355–60.

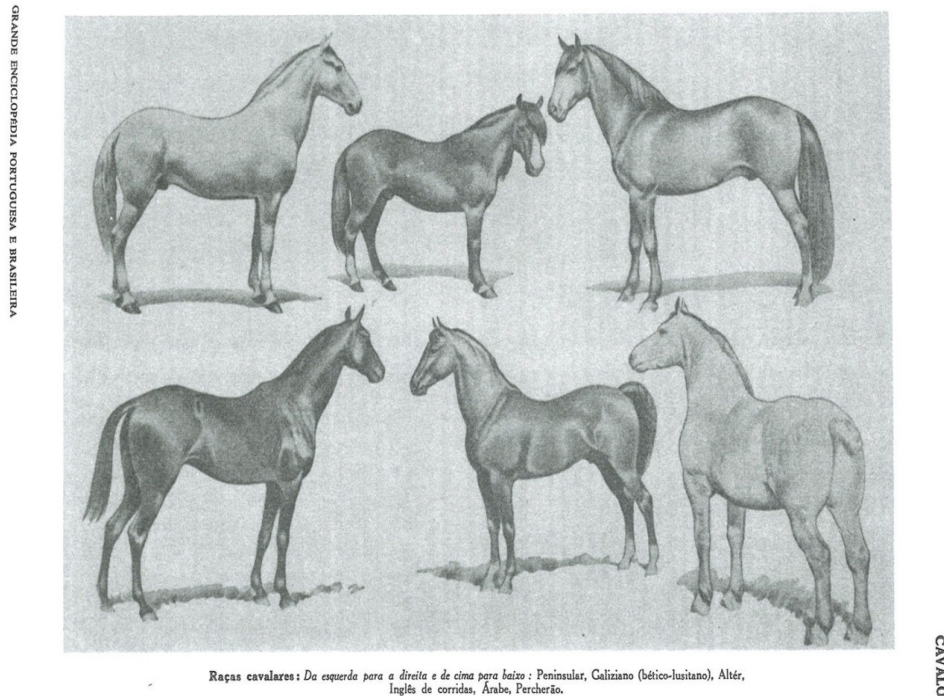


Figure 2: *Grande Enciclopedia Portuguesa e Brasileira*, vol. III, 355–60.
Euronatura collection

These exchanges were not merely social or economic, but also shaped the circulation of breeding knowledge across borders. Family connections with Spain and England were used, and when capital was coupled with know-how, men could buy horses on visits abroad. Robert Reynolds, a cork merchant living in Estremoz (Alentejo region), imported no less than five stallions from England between 1890 and 1910.³⁰ Sons of well-off landowners were frequently sent to Lisbon, Paris, and London for education, acquiring knowledge and relations in the process. The members of the Eugénio de Almeida family (who had stables and training tracks in Évora and Lisbon) attended the Lisbon Agriculture and Veterinary Institute for at least three generations,³¹ immersing themselves in equestrian culture.³²

³⁰ A. H. Reynolds, “The Reynolds family in Portugal and New Zealand,” *Annual report / The British Historical Society of Portugal* (Lisboa: Colégio dos Inglesinhos, 1975).

³¹ José Miguel Sardica, *José Maria Eugénio de Almeida. Negócios, Política e Sociedade no Século XIX* (Lisboa: Instituto de Cultura Vasco Vill’Alva, 2005).

³² Carlos Maria Eugénio de Almeida (1845–1914) graduated in 1870, with a final work on viticulture; Jose Maria Eugénio de Almeida (1873–1917), his son, graduated in 1898 with a paper on horse improvement. In the Eugénio de Almeida Foundation Archives, in Évora, there is a 1896

Buyers were fanatically competitive—they wanted the best horse with a good fee. They provided complete instructions to their agents, and maintained close communication with them. The Lisbon Jockey Club, which involved more rich landlords than riders, was created in 1876, and had the purpose of keeping a national stud book, a genealogy of breeds born in Portugal. The resultant animals could hold a feature crucial to “Intellectual Property licensing—intergenerational reliability.”³³

Importing horses was challenging. Overheads were high, and the risks of shipping considerable—horses could die. Problems often arose with their upkeep; difficulties in funding proper food made the keeping quite hard. Horse handlers were sent along to escort them on their trips. Seen as “commodities in motion,” imported horses facilitated not only economic exchange but also the circulation of breeding knowledge and classificatory practices.

On the other hand, horses could also pass through political borders easily:

The import of horses and mares from Spain has been constant, even now, not only because the border between Spain and Portugal is a large, merely conventional extension and the cattle easily pass out of sight of the Border Police, but also because there have not been many years in which the movement of cattle between the two countries was absolutely free.³⁴

Ruy de Andrade is remembered now as a horse expert and perhaps Portugal’s foremost horse authority. More than five stallions were imported from the south of Spain to his rural estates before 1910.³⁵ A highly successful importer, Andrade was able to take on the risk inherent in shipping winning horses from England and Spain. Alfredo Andrade (1839–1915), his father, imported seven mares from Spain, Jerez de la Frontera (casa Guerrero) in 1897, and another seven in 1904 (Casa Vicente Romero), employing the Zapata family as

“Livro de Cubrições,” a sort of stud-book, signed by Carlos Maria.

³³ Daniel J. Kevles, “Patents, Protections, and Privileges: The Establishment of Intellectual Property in Animals and Plants,” *Isis* 98, no. 2 (2007), 323–31.

³⁴ Ruy de Andrade, *Pecuária Alentejana* (Lisboa: S.I.T., 1941).

³⁵ He was born in Genoa, Italy. Andrade had a PhD in agronomic science (Pisa, Italy). He was an agrarian journalist (director of the periodical *Lavoura Portuguesa*, in the 1950s and 1960s). He was president of the Associação Central de Agricultura Portuguesa, an odd cross between a private corporation and a government agency. He ran some pioneering experiments in his Elvas estate Font’Alva.

agents. In the wake of the Republican Revolution, however, they had to abandon their Elvas estates between 1915 and 1927.³⁶

The market for importations expanded towards the 1890s, in part thanks to the Belém racing ring,³⁷ inaugurated in 1874. But it declined considerably between 1910 and 1920, whether because of the end of the monarchy, antipathy towards Spain, or because of rising car use. The 1910 revolution, and the 1914–1918 war, hit horse culture and racing badly, and had a key effect on breeding, not least because many horses were taken to the war.³⁸ It bears noting that in the 1910s, horses still played a strong part in warfare. During the First World War, when military requests for horses peaked, Portuguese armies relied heavily on mounted troops and horse-drawn transport.³⁹ Horse arenas as places, and horse societies as institutions, were and are defined by their multi-purpose character, with concerns ranging from recreation to warfare.

There was much uncertainty and confusion through the 1910s and 1920s. By the 1920s, as racing expanded and new competition rings emerged, rich men such as the Andrades were paying hefty prices for English bloodstock.⁴⁰ After racing rebounded, Portuguese competition shifted to a new fashion better suited to local tastes and races, where speed sprints had been falling out of style in favour of “jumping” (which was more attractive to the betting public). Stamina (rather than pure speed) was in demand, consequently reducing English imports and bolstering those from Spain.

Throughout this period, Portuguese families of means, preoccupied with projecting legitimacy, emulated the lifestyles of wealthy Spanish and British aristocrats by buying expensive horses and forming new associations, such as the SHP. Horses had an iconic appeal and a special symbolism, stronger than

³⁶ José Athayde, *Relatório*.

³⁷ Salvador José da Costa, *Palestras hípias* (Lisboa: Bayard, 1913). The Belém Hippodrome was the first hippodrome in Lisbon, inaugurated on June 29, 1874. The atmosphere of the Belém Hippodrome was immortalized and satirized by Eça de Queirós in the famous race scene from his work *Os Maias*, portraying the desire of Lisbon society to imitate foreign cosmopolitanism.

³⁸ Paulo de Lima Correa, *Criação do Cavallo* (São Paulo: Secretaria de Agricultura, 1935).

³⁹ Gavin Robinson, “The Military Value of Horses and the Social Value of the Horse in Early Modern England.” In: *The horse as Cultural Icon: The Real and the Symbolic Horse in the Early Modern World* (Leiden: Brill, 2012), 357–75.

⁴⁰ Berit Bohlin, “Lusitanos estais en casa,” *ABC*, 30 April 1970.

that of hunting dogs or pigeons.⁴¹ They were symbols of “aristocratic supremacy.”⁴² To facilitate buying choices, horse owners could read the sporting press, which discussed the qualities of the animals and the dynastic associations.⁴³

On a symbolic level, the horses were gradually chosen on the basis of “blood” and parentage. Members of this economic elite shared an identity which “featured a certain lifestyle,” the use of certain *loci* for distinction, and the formation of kinship ties.⁴⁴ In practical terms, “as the elite were a caste of horse-riders, whether for transport, warfare, public display, sport or merely for pleasure, they spent much time in the saddle.”⁴⁵

Even if a part of the Portuguese society suffered of hispanophobia,⁴⁶ contacts with Spanish Jockey Clubs were close between 1900 and 1974. Portuguese competitions frequently hosted visitors from Spain, and Spanish racing men could be found at the Lisbon Jockey Club and other prestigious arenas.⁴⁷ The Lisbon club enforced rules of racing, selected officials, and published a racing calendar.

Invisible Horse Experts in the City and the Province

Beyond their social and economic functions, these institutions also played an important role in the production of scientific knowledge. Beginning in the 1910s, the Fonte Boa research station⁴⁸ (a public stud farm founded in 1891

⁴¹ In the 1920s there was an increase in the number of pigeon competitions in Portugal, and the proliferation of fancy breeds. This breeding was institutionalised in clubs and societies. See João Rodrigues Simões Afra, *Columbofilia: descrição das mais importantes raças de pombos* (Lisboa: Centro Tipográfico Colonial, 1927).

⁴² Amir Zelinger, “Race and Animal-Breeding: A Hybridized Historiography,” *History & Theory*, 58, no. 3, pp. 360–84, (2019).

⁴³ Peter Edwards and Elspeth Graham, “Introduction: The Horse as a Cultural Icon,” in *The Horse as a Cultural Icon: The Real and the Symbolic Horse in the Early Modern World* (Leiden: Brill, 2012).

⁴⁴ Helder A. Fonseca, “Agrarian Elites and Economic Growth in Nineteenth-century Portugal: The Example of the Alentejo in the Liberal Era (1850–1910),” *Social History* 28, no. 2 (2003).

⁴⁵ Edwards and Graham, “Introduction.”

⁴⁶ José Maria Sardica, “Fronteira Inexpugnável: a hispanofobia de Franco Nogueira entre o Estado Novo e a Democracia,” *Revista de História das Ideias*, 35 (2017), 117–37.

⁴⁷ “O Turf em Espanha,” *Revista Diana*, Feb. 1965. There were 300 race horses in Spain in that year, with a price between 40,000 to 300,000 pesetas. The “Hipódromo de Zarzuela,” inaugurated in Madrid in 1941, was a modernist construction of the engineer Eduardo Torroja.

⁴⁸ “The use of industrial crossbreeding actually allows for an easier and faster improvement in production. And artificial insemination itself, now widely practiced in many countries, makes

and managed by the Agriculture ministry) and the members of the SHP were in constant contact. Through such connections, SHP members could gain access to external laboratories, which allowed them to conduct the experiments needed to procure for themselves the scientific legitimacy that their “bio-political modernisation” required.⁴⁹

Horse racing popularization could contribute to the dissemination of the concept of biological race. Along with the rediscovery of Mendelism, appeared the possibility that modern breeding of horses could have as outcome new champions. Scientists investigating plant and animal genetics could look to horses, to comprehend the challenges of heredity.⁵⁰ This was reflected in the descriptions of champions in horse competitions, which included a discussion of their races, sometimes couched in the language of biological innovations. Thanks to the newly-forged relationship between Mendelism and horse pedigree, people could conceptualise sites such as Fonte Boa as *loci* of scientific production,⁵¹ and the SHP competitions (or even the Olympic Games) as places to exhibit the success of this new science. But as Margaret Derry has shown, breeding practices across Europe and North America often relied more on accumulated experience and local knowledge than on formal genetic theory, a pattern that is clearly reflected in the Portuguese equestrian context.

The possibility that Mendelian theory could yield new methods that would put an end to centuries of practical knowledge was quickly appreciated. Agronomists who studied the Mendelian breeding of plants, such as Vieira Natividade (cork oak), Aurélio Quintanilha (cotton), and Domingos Victória Pires (wheat), looked at what the animal world could reveal on variability.⁵²

solving this problem even simpler. However, in any of these cases it will always be essential to carry out the necessary experimental work on State farms. It will also not be possible to achieve appreciable results in the promotion of livestock production if we do not continue to encourage, by all means, the commendable work of the General Directorate of Livestock Services” (Navarro, *Debates Parlamentares*, 1956).

⁴⁹ Matthew Chrulew, “Abnormal Animals,” *New Literary History* 51, no. 4 (2020): 729–50.

⁵⁰ Tyrrell, “Bred for the race,” 549–76.

⁵¹ In the 1960s the Fonte Boa station was celebrating horse auctions (*Vida Rural*, 4 July 1965).

⁵² Natividade knew the importance of geographical biological variation was for the mapping of economically significant cork oaks. He was an admirer of Vavilov, and a good user of the “vernacular knowledge” of several important landowners (García-Pereda, 2017); Domingos Victória Pires, *Técnica do Melhoramento de Plantas* (Lisboa: Sá da Costa, 1953); Joaquim Vieira Natividade, *Subericulture* (Nancy: ENGREF, 1956); Aurélio Quintanilha, “The Problem of Cotton Production

Not all of the resulting studies reached the wider public. António Câmara, for example, studied fruit flies (*Drosophila*), ideal for academic research because of their size and rate of reproduction (a single pair could produce 400 offspring in ten days).⁵³ In contrast, information about equine genetics found an eager audience.

A difficulty to be contended with in any endeavour to breed better Portuguese horses was the undersized stallion typical of the Portuguese rural estates. Moreover, the ideal physical criteria of horses shifted according to the demands of war or recreation. A 1919 regulation, for example, led to the replacement of light horses by larger ones.⁵⁴ Riding horses, whether on the competition arena or on the battlefield, metamorphosed with the introduction of English or Spanish breeds.

On both the public stud farm and the private estate, the difficulties of keeping foals and mothers alive and healthy ultimately generated practical—and theoretical—knowledge about issues such as animal care. The farms, such as the SHP, provided sometimes unexpected opportunities for zoological research. In Alentejo, keepers had as duties:

to pay attention to the mares' addiction ("viciação") so that when they are excited (with "genesic" excitement), they can be taken to the launch, regulating their jumps, according to the hours and intervals in use; watch and direct this act, first restraining the mare and holding her by the halter during copulation; supervise the lancing ("lançarote"), reprimanding him when he notices abuse or neglect; use all possible precautions to ensure that the mares' births take place without causing disaster to the offspring.⁵⁵

The emerging knowledge was communicated and published among keepers, horse owners, veterinarians, agronomists, and other experts, sometimes in professional journals such as *Lavoura Portuguesa*, managed for several years by Ruy de Andrade, or even in parliamentary debates, where the landlord

in Portuguese Africa," *South Africa Journal of Science*, no. 44 (1948): 44–49.

⁵³ António Câmara, *ABC da Genética* (Lisboa: Cosmos, 1942).

⁵⁴ *Regulamento para o Serviço de Remonta Geral do Exército* (Lisboa: Imprensa Nacional, 1919).

⁵⁵ José da Silva Picão, *Através dos Campos. Usos e Costumes Agrícola-Alentejanos (Concelho de Elvas)* (Lisboa: Neogravura, 1947).

and member of the parliament Carlos Amaral Netto commented, on the topic of foreign horses' diets,

whether they come from Argentina, Normandy or wherever else they have been reassembled, the horses all arrive accustomed to pastures more substantial than our poor straw; neither the palates nor the systems are well-adapted to these, and so foreign horses end up being, apparently, around 20 percent more expensive to feed than national ones. Also we know that they have a shorter life.⁵⁶

As we see, Amaral Netto did not believe in “the near-absolute power of heredity,”⁵⁷ regarding the influence of diet or climatic conditions. In time, such experiences were integrated into new disciplines, like veterinary medicine, and supported innovations in pasture production and reproductive technologies. Knowledge about horses pertaining to fields like veterinary care, agronomy, and, since the 1910s, biology, could transcend its scope of useful science and contribute to bigger issues in biology, and even to human problems. A clear example is in reproductive matters, which triggered developments like artificial insemination (AI)⁵⁸ (appearing for the first time in the national technical reports in the 1940s).⁵⁹ As the historian of science Staffan Müller-Wille has observed, the “need to reproduce their objects may be seen as one of the primary demands of living collections.”⁶⁰ Indeed, since the discovery of artificial insemination, the control of animal bodies required the development of knowledge regarding both the cooling of semen, and the impact of sophisticated transport devices.⁶¹

⁵⁶ Carlos Amaral Netto, *Debates Parlamentares*, 5 March 1952.

⁵⁷ Zelinger, “Race,” 368.

⁵⁸ Sarah Wilmot, “From ‘public service’ to artificial insemination: animal breeding science and reproductive research in early twentieth-century Britain,” *Studies in History of Philosophy of Biological and Biomedical Science* no. 38 (2007): 411–41.

⁵⁹ Rui Costa Guerreiro. *Reprodução dos animais domésticos* (Lisboa: Livraria Sá da Costa, 1946). Costa Guerreiro studied in Italy.

⁶⁰ Müller-Wille, Staffan, and Christina Brandt, eds. *Heredity Explored: Between Public Domain and Experimental Science, 1850–1930* (Cambridge: MIT Press, 206).

⁶¹ In the late 1930s, techniques for cooled semen AI as used today were in principle available. However, AI was used commercially only in the Soviet Union, where also more than 140,000 mares were inseminated in 1938. Countries with emerging equine AI programs at that time were the United States, United Kingdom, Italy and Germany. Freezing semen would allow the global dissemination of an individual heredity. Joerg Aurich, “Artificial Insemination in Horses—More than a Century of Practice,” *Journal of Equine Veterinary Science* 32 (2012): 458–63. Neil Pemberton, Julie-Marie Strange, and Michael Worboys. *Breeding and Breed*, in *The Routledge Companion to Animal-Human History*, eds. Hilda Kean and Philip Howell, 393–421. London: Routledge, 2018).

In 1957, José Carlos Franco da Silva Athaide (1934–2017), at the time a student, published an internship report for the Santarém agriculture school based on his firsthand practices as a manager of the estates of the Andrade family.⁶² In one chapter, Athaide deals extensively with horse feeding, and gives counsel about which foods to use with mares before and after giving birth. He accumulated a large quantity of tacit knowledge about how to take care of several species of animals, from bulls and pigs to horses. His recommendations also include traditional and regional foods suitable for horses (e.g., germinated barley and cod liver oil), and he provides instruction on how grass should be dried.⁶³ He likewise mentions the maintenance of grasslands to harvest higher-quality grass, an issue important to the Portuguese agrarian policy in the 1960s.⁶⁴

Athaide was the expert in charge of animal care and executing the procedures needed to copy down the feeding records of the horses. Athaide exemplifies what Shapin has called an “invisible technician,” whose practical expertise underpinned knowledge production without being fully recognized as a scientific authority.⁶⁵ Was he recognized as a professional scientist, and did he make an “intellectually-original contribution”⁶⁶ to the Andrade living collections? The case study of Ruy de Andrade reveals how internationally recognized experts became invisible historiographically, in keeping with the ideas of Shapin, reformulated by Lopes and Pereira. As Andrade was not persecuted politically during the dictatorship, his “memory was consigned to oblivion,”⁶⁷ after the 1974 revolution.

⁶² José Athayde, *Relatório do Aluno* (Santarém: Escola de Regentes Agrícolas, 1958).

⁶³ Athayde, *Relatório*.

⁶⁴ David Gomes Crespo, *Melhoramento e experimentação de forragens: relatório de estágio efectuado na Grã-Bretanha na Welsh Plant Breeding Station* (Elvas: ENMP, 1964); David Gomes Crespo, *As pastagens de Cabo Verde e a problemática do seu melhoramento* (Elvas: EMP, 1971).

⁶⁵ Steven Shapin, “The Invisible Technician,” *American Scientist*, no. 77 (1989): 553–63.

⁶⁶ Naomi Oreskes, “Objectivity or Heroism? On the Invisibility of Women in Science” *Osiris* 11 (1996): 87–113.

⁶⁷ Quintino Lopes and Elisabete Pereira, “Science Funding under an Authoritarian Regime: Portugal’s National Education Board and the European ‘Academic Landscape’ in the Interwar Period,” *Notes and Records of The Royal Society* 76 (2022): 463–83. Experts such as Andrade, deputy in the Assembleia Nacional from 1945 to 1957, played an enthusiastic role in the consolidation of the Estado Novo. A similar case could be Fernando Frade, biology professor in Lisbon University and counselor of the Lisbon municipality in the 1940s.

In Europe, the conservation of threatened species gained importance over the course of the twentieth century. Already by the 1930s, some foresters, such as Francisco Mimoso Flores (1905–1988),⁶⁸ who studied in the United States of America,⁶⁹ realized that numerous animal and plant species were in danger of extinction due to excessive hunting and other human activities.

A distinguished European example is the Przewalski horse, which was considered extinct in nature in 1945 but survived in zoos and farms.⁷⁰ Andrade was involved in a related series of events, which began in 1920, when he was visiting a hunting ground near Coruche and happened upon a herd of wild horses.⁷¹ Over the next years, he recognized similar traits to theirs in many Andalusian and Lusitano horses, which persuaded him that what he had come across on that hunting trip had been the last leftovers of the wild ancestor of those horses.

In the 1920s Andrade started to look for individuals with “evident primitive characteristics”: for example, the short stature. Although he could not find the wild herd again, he did find horses with these features on the properties of the landlords in the area. He selected such horses for his preservation programme, which he named “Sorraia,” after a local river. The programme, initiated in 1937, began with 12 founders (5 males and 7 females).⁷² The rhetoric used by Andrade to try to preserve the Sorraia horse was “awash with racist notions of purity and primordialism.”⁷³ He spoke of a race even purer than those created with the modern technologies of Mendelian breeding.

⁶⁸ Francisco Flores, *A protecção da Natureza. Directrizes actuais* (Lisboa: Instituto Superior de Agronomia, 1937).

⁶⁹ He was a fellow at the Institute for High Culture in the United States, where he worked in Ecology at the Universities of Columbia (New York State), Minneapolis (Minnesota) and Berkeley (California). He married Virginia Lee Malone on September 19, 1947, in Dallas County, Texas. <https://arquivo.instituto-camoes.pt/details?id=83097&detailsType=Description>

⁷⁰ Marianna Szczygielska, “Undoing Extinction: the Role of Zoos in Breeding Back the Tarpan Wild Horse, 1922–1945,” *Centaurus* 64, no. 3 (2022), 729–50. In the 1990s the Przewalski horse was re-introduced in Mongolia.

⁷¹ Ruy de Andrade, “Les chevaux du Sorraia”. *Comptes rendus, XII Congress International de Zoologie*, 2368–2370 (Lisboa: Casa Portuguesa, 1937).

⁷² Cristina Luís, *The Sorraia Horse, A Case Study of a Small and Closed Population* (Lisboa: University of Lisbon, 2006). The official studbook was published in 2004. From the 2020s, horses bred within the scope of Andrade’s project have been re-introduced in the Portuguese region of Alentejo. Due to the extremely reduced effective size of the population (less than 200 animals) it is currently considered as a breed in critical maintained risk status, according to FAO.

⁷³ Zelinger, *Race*, 380.

Despite the troubling ideological underpinnings of Andrade's project, the memory of his work has not been lost, as it continues to shape both contemporary understandings of the Sorraia horse and ongoing efforts toward its conservation.

Horses in the Media: Journals and National Fairs

If horse arenas functioned as local sites of knowledge production, the sporting press and agricultural exhibitions extended and amplified the circulation of this knowledge. From the 1890s, it was the national sporting press, through such publications as *O Tiro Civil* (1895–1903) and *Tiro & Sport* (1904–1910) that above all stimulated wider interest in the breeding of horses. The diverse sport magazines available to Portuguese readers often relied on British and Spanish sources for information about breeding, prized stallions, and Europe's competitions and champion horses.

Tiro & Sport, a monthly periodical, provides a good example. It was first published in 1904, delivering information on hunting, horseracing, and breeding history, with illustrations and photographs, to show the size and appearance of animals. These journals allowed top sportsmen and horses to be widely recognized by those who had never seen them in the flesh. This availability of iconographical material helped “educate the sporting imagination and create the mass audience”⁷⁴ for Portuguese sport. The best photographers were contacted to take horse portraits, as visual records not only of favourite animals, but also as accounts of the heavy monetary investments. The visual record reflected an admiration for the horses' appearance. Prize horses were a reflection of their prosperous owners. They were valued for some qualities that distinguished the human elite: dignity and breed.⁷⁵

Since the 1850s, Portugal joined an international wave, both participating in exhibitions abroad and organizing some domestically. Portuguese agronomists were present at international meetings in Paris (1855), Philadelphia (1876), and Paris (1879).⁷⁶ The agricultural exhibition, designed to showcase

⁷⁴ Mike Huggins, “The Sporting Gaze: Towards a Visual Turn in Sports History—Documenting Art and Sport,” *Journal of Sport History* 35, no. 2 (2008): 311–29.

⁷⁵ Harriet Ritvo, *The Animal Estate: The English and Other Creatures in Victorian England*. (Cambridge, MA: Harvard University Press, 1989): 60.

⁷⁶ João de Andrade Corvo, *Relatório sobre a Exposição Universal de Paris. Agricultura* (Lisboa: Imprensa Nacional, 1857); Ana Cardoso de Matos, “World exhibitions of the second half of the 19th

the natural and industrial resources of the power that organized it, can be viewed as a subtype of such international fairs. One such gathering was held in 1884, in Lisbon.⁷⁷

A pioneering Portuguese horse exhibition was held in 1904, in the royal estate of the Tapada da Ajuda. For several days, the Tapada, normally a royal family hunting ground, became a place of popular entertainment akin to the



Figure 3: 1904 *Tiro & Sport* Cover.
<https://hemerotecadigital.cm-lisboa.pt/>

Estrela Garden or the Escola Politécnica,⁷⁸ all of them stages for the display of vegetal and animal diversity. This fair was an important social occasion, in which the skill of looking at animals was showcased by members of the

century: A means of updating engineering and highlighting its importance,” *Quaderns d’història de l’enginyeria*, no. 6 (2004): 225–35.

⁷⁷ Ana Duarte Rodrigues and Ignacio García-Pereda, “Blooming Ambitions: Nineteenth-Century Flower Exhibitions, Science, and the Cultivation of Urban Life in Portugal,” *Notes and Records* (2026), doi: 10.1098/rsnr.2025.0062

⁷⁸ Ana Duarte Rodrigues and Ana Simões, “Horticulture in Portugal 1850–1900: The role of science and public utility in shaping knowledge,” *Annals of Science* 74, no. 3 (2017), 192–213.

breeding community. It was organised by the ministry of the Armed Forces under General Carlos Damasceno Rosado, in collaboration with the Public Works ministry.⁷⁹

In the pages of *Tiro Civil* and *Tiro & Sport* we can also track the feminisation of equestrianism. Since riding and horses were seen as linked to rural



Figure 4: 1903 *O Tiro Civil* cover.
<https://hemerotecadigital.cm-lisboa.pt/>

tasks, military schools, and war,⁸⁰ they had long been tied to masculinity. Yet in the 1910s, horse-related activities were increasingly associated with wo-

⁷⁹ Rosado, as the Horses Superintendent of the military, had among his duties: the care of the stallions; the registration of all coverings, and of all promising young stock; and the management of a small staff of trained experts in charge of the stallions, who required very careful handling.

⁸⁰ Daniel Roche, *La culture équestre de l'Occident XVI-XIXe: Connaissance et passion* (Paris: Fayard, 2015).

men. This phenomenon is related to the women's emancipation, solidified by social changes linked to Portuguese male participation in the war of 1914–1918,⁸¹ and the acknowledgement of women's capacities both at work and in sporting activities. Portuguese equestrian competitions, which encouraged female participation, also facilitated this shift. The early transition towards a first form of gender equality in this environment probably emanated from the social root of its members, who typically were part of rich families, where women were better positioned to challenge normative confinements than within the poor classes.⁸²

Variability between generations was a leading interest among national breeders.⁸³ Similarly, deterioration of species or races across generations of animals or plants was a common anxiety among these scientists.⁸⁴ Animal studies attracted a number of Portuguese experts, such as José Antunes Serra (1914–1990), the foremost national livestock breeder,⁸⁵ researching experimental heredity principally for fine wool Portuguese sheep. Plant breeders were a key community in his expansive network, informing his work with findings from the botanical world. Curiously, there is little evidence that this generation of breeders had much influence on the horse community. It may be that members of the SHP felt that scientists like Serra and Câmara were more interested in general biological problems. Alternatively, they may have anticipated the general opinion that coalesced among European scientists by

⁸¹ Natividade Monteiro, "Mulheres portuguesas em tempo de guerra (1914–1918). Leituras da Grande Guerra," *IDN Nação e Defesa*, 145 (2016), 109–21; Miguel J. M. R. Dias, *O Emprego de Solípedes nas Forças Militares Portuguesas durante a 1.ª Guerra Mundial em França* (Amadora: Academia Militar, 2016).

⁸² Jacques Defrance, *Sociologie du sport* (Paris: La découverte, 2011).

⁸³ Jonathan Harwood, "Did Mendelism Transform Plant Breeding? Genetic Theory and Breeding Practice, 1900–1945, in eds. Denise Phillips and Sharon Kingsland, *New Perspectives on the History of Life Sciences and Agriculture*, 345–70 (Springer, 2015).

⁸⁴ António Câmara, "Conceito Atual de Degenerescência dos Trigos," *Revista Agrícola* 25 (2), 27 January 1937: 81–95.

⁸⁵ Serra was an animal biology professor at the Lisbon Science Faculty. In Portugal, livestock had been the object of inbreeding methodology and selection on the basis of pedigree. The term purity had different connotations for scientists and practical workers. For "the former, it referred to homozygosity; for the latter, it rather buttressed the constancy of a distinct commercial 'brand.'" José Serra, *Os Caminhos da Melhoria Pecuária* (Lisboa: Junta Nacional dos Produtos Pecuários, 1958).

the 1940s: that “genetic theory was of little practical use to breeders of livestock.”⁸⁶

There were other issues, however. From 1911, the education of agronomists and veterinarians was separated in the national educational system. Prior to that (between 1855 and 1910), such rural experts had studied in the same institute and under the same professors, such as Silvestre Bernardo Lima (1824–1893), Portugal’s authority on horses in the 19th century.⁸⁷ The 1911 change could have played a role in creating more distance between the plant breeders and the technicians hired by horse owners, and reducing opportunities for communication and knowledge exchange.

Up to the 1960s at least, Portugal horse breeders still saw England and Spain as a source of better-quality horse breeds, and as models for admiration and emulation. Most Alentejan landlords assumed that Spanish breeds were superior.⁸⁸ But breeders such as Ruy de Andrade resisted adopting the language and methods of Mendelian genetics, despite close contact with agronomists like Natividade and Victória Pires.⁸⁹ Through their research, these agronomists were disproving the theory of telegony, “which dictated that traits from previous matings contributed to the characteristics of any progeny a female bore.”⁹⁰ Their work would also contribute to highlight the problems of inbreeding⁹¹ and infertility.⁹²

⁸⁶ Bert Theunissen, “Breeding Without Mendelism: Theory and Practice of Dairy Cattle Breeding in the Netherlands 1900–1950,” *Journal of the History of Biology*, 41, no. 4 (2008), 637–76.

⁸⁷ Silvestre Bernardo Lima, *Os escriptos de SBL: Os Equinos* (Coimbra: Imprensa da Universidade, 1913).

⁸⁸ Ruy de Andrade, *Pecuaria Alentejana* (Lisboa: SIT, 1940).

⁸⁹ Joaquim Vieira Natividade, “No Centenário da Associação Central da Agricultura Portuguesa,” *Lavoura Portuguesa*, 7 (1960): 20–22. On 5 July 1960, for the celebrations of the centenary of the Associação Central de Agricultura Portuguesa, Fernando Sommer de Andrade (1920–1991), Ruy’s son, offered the Agolada family (Coruche) estate for a celebration with more than 2,000 guests. Natividade was one of the guest speakers. Natividade understood the need to cultivate the wealthy amateurs who patronized agrarian and livestock breeding.

⁹⁰ Tyrrell, “Bred for the Race,” 549–76.

⁹¹ Ignacio García-Pereda, “The Emergence of Forest Genetics in Portugal, The Works of Joaquim Vieira Natividade (1899–1968) in the Alcobaça Cork Oak Station,” *Historical Studies in the Natural Sciences* 47, no. 1 (2017): 76–106.

⁹² In 1963 the new “Estação de Estudos de Reprodução Animal,” directed by the veterinarian Manuel Joaquim Freire, was developing the first national progeny-tests, in Lisbon (Venda Nova, Benfica). In 1946 Freire had travelled to Cambridge to study Artificial Insemination. Manuel Joaquim Freire, “A Fertilidade na Economia Pecuária,” in *A Agricultura e o II Plano de Fomento* (1963): 137–60.

But gradually, as standards rose and commercial rivalries between Spain and Portugal augmented, some rich Portuguese started to contemplate testing their horses against their Spanish counterparts as a way of improvement. Portuguese debate on the racial aspects of horses, in the rural press, was intense during the 1950s. The studies emerging from this discourse were infused with notions of national affirmation, with rhetoric around horses tacitly employed as a means of arguing the purity of the national human race.⁹³ Horse experts tried to underline the differences between Spanish and Portuguese breeds,⁹⁴ justifying their observation in the language of biology. The nationalist ambitions of the regime went hand-in-hand with these narratives. For his part, Andrade maintained a moderate stance,⁹⁵ giving prominence to the effects of the environment and climate and food on breed improvement. He claimed that national grazing centres were suboptimal.

The popularity of horse, flower, and agricultural exhibitions persisted until the 1960s. In June of 1964, the first National Agriculture Exhibition (NAE) of the Estado Novo was run by the Santarém municipality, with help of the agronomists of the Ministry of Economy. As in the exhibition of 1904, the 1964 fair served as a didactic exercise “in which breeders [could] learn how to distinguish the relevant traits of selected breeds and develop a sense of their beauty.”⁹⁶

For the preparation of the fair’s second edition under the Estado Novo, in 1965, the agronomist Victória Pires (the agriculture Secretary of State), and the “regente” (agriculture technician) Celestino Graça, who was the local organizer, appointed a committee of experts which congregated researchers,

⁹³ Alexandra Cabrita, “On Race and Miscegenation: Portuguese Racial Studies During the 1930s and 1940s,” *HoST – Journal of History of Science and Technology*, 18, no. 2 (2024): 100–123.

⁹⁴ Portuguese owners were frequently ambiguous in their feelings about Spain. Newspapers and scientific texts would often talk of Spanish fairs (like Sevilla) in terms of “our cousins,” as if they were the same family. Others referred to Spain as an imperial menace, always ready for another invasion.

⁹⁵ Ruy de Andrada, “Cavalos, Turismo e Folclore,” *Lavoura Portuguesa*, 2 (1965), 2. “Our Portuguese-style bullfights are all the more beautiful and appealing than the Spanish ones, where the death of the bull and the mistreatment of the horses horrify many foreigners... Without Andalusian horses, there is no good bullfighting, so the Domecq, Peraltas, Mier and others use, alongside crossbred horses (but “andaluzantes”), many Portuguese horses, which they buy in Portugal at good prices.”

⁹⁶ Cristina Grasseni, “Designer Cows: The Practice of Cattle Breeding between Skill and Standardisation,” *Society & Animals*, 13/1 (2005): 33–49.

professors of the local agriculture school, researchers, nursery workers, farmers, bullfighters and even folklore experts. One of the members was Vieira Natividade.

These fairs acted as an outlet of the Estado Novo's propaganda in a modern way; an objective was to display biological novelties. In general, the NAEs were well-attended, as showed by the quantity of animals shown in the competitions of the 1965 edition: 1,000 animals, including 150 Lusitano horses and 100 from other races (English, Arab, and "derivados").⁹⁷ At the NAE, the owners of the 150 horses involved could better learn the equine subcultural and regulatory norms and "become embroiled into the "community of practice".⁹⁸ As in pet fairs,⁹⁹ substantial investment was required from participants, particularly in terms of time, money, and personal relationships.

The 1965 edition included a livestock pavilion, and national pavilions from France, Brazil, Italy, and Germany (whose Parliamentary vice president was in attendance). Germany showed merino sheep with a certified pedigree of three generations, and herdbooks controlled by the German government. Taken together, the Santarém meetings offered a setting in which actors established a "diplomacy of experts."¹⁰⁰ Lusitano horses, merino sheep, and national and international exhibitions functioned as a national barometer for best practices.

Some of the most important actors of the Estado Novo, such as the former minister Rafael Duque (1893–1969), and the president Américo Thomás, played a part in the NAE and similar initiatives.¹⁰¹ The participation of politicians, such as Thomás, contributed to the general success of the NAE. The fair celebrated the position of the well-to-do, by parading the symbols of their richness in the form of elegant horses. At such exhibitions, politics were mixed with science, and patriotism with internationalism. For Pires and his

⁹⁷ Alvaro Apolinario, *Vida Rural*, 5 June 1965, Feira de Santarém; Celestino Graça, *Principais aspectos da Feira*, 12 June 1965.

⁹⁸ Grasseni, 2005.

⁹⁹ Emily Stone, "What's in it for the cats? Cat shows as serious leisure from a multispecies perspective," *Leisure Studies*, 38, no. 3 (2019): 381–93.

¹⁰⁰ David Aubin, "Congress Mania in Brussels, 1846–1856: Soft Power, Transnational Experts, and Diplomatic Practices," *Historical Studies in the Natural Sciences* 50, no. 4 (2020): 340–63.

¹⁰¹ *Diário de Lisboa*, 30 May 1965.

profession colleagues, international cooperation was not in inherent conflict with national interests, and they were all proud when Vieira Natividade received a PhD Honoris Causa from Toulouse University, in France, on April 1967.¹⁰²



Figure 5: 1964 Santarém Fair catalogue cover.
Euronatura collection

Exhibitions of this kind improved Portugal's standing at international debates and negotiations in sectors crucial for its economic development. In the pro-

¹⁰² *La Dépêche du Midi*, 28 April 1967.

cess, the small town of Santarém was transformed into a globally-renowned centre for the study of rural innovations. The press extensively attended the agriculture fairs, printing descriptions of the facilities where the parades and activities were celebrated and giving transcriptions of extracts of the speeches made by experts and politicians. The visual records, expressed through the design of exhibitions' posters, catalogues, and other printed materials (Fig. 5), reveal the adoption of graphic art to appeal to nationalism and regionalism.¹⁰³

Farming periodicals such as *Vida Rural*,¹⁰⁴ the *Gazeta das Aldeias*,¹⁰⁵ *Lavoura Portuguesa*, and the *Revista de Agricultura* (published by the Ministry of Economy) promoted the first NAE in 1964 according to the regime's propagandistic diktats. Consumers of these texts made a diverse group. Although magazine buyers were restricted to the rather wealthy, many more readers had access to the periodicals through the libraries of the rural Corporative System (the Casas do Povo), or the agrarian libraries of the research stations (Oeiras, Elvas, Tavira, for exemple) and the public education system (including the agrarian schools of Lisboa, Santarém, Évora...). The readers, then, included the rich and the modest, men and women, adults and children (Évora and Santarém schools were for teenagers between thirteen and nineteen years old). In these periodicals, science was also considered appropriate to be part of them.¹⁰⁶ Topics like electricity or chromosomes were subjects that captivated the readers. The relationship between the publications and the readers were not limited to passive reading: readers would send letters questioning about many rural problems. Another example of this kind is the TV program TV Rural, directed since 1960 by the agronomist José Carlos Sousa Veloso (1926–2014).¹⁰⁷

¹⁰³ Silvia Caramella, "Ribatejo como nación: cine tauro-western y nacionalismo durante el Estado Novo," *Quiroga: Revista de Patrimonio Iberoamericano*, 10 (2016): 10–19.

¹⁰⁴ *Vida Rural*, 5 June 1965.

¹⁰⁵ *Gazeta das Aldeias*, 16 June 1964.

¹⁰⁶ Clara Florensa and Agustí Nieto-Galan, "Introduction: Science Popularization, Dictatorships, and Democracies," *History of Science* 60, no. 3 (2022): 329–47; Santiago Gorostiza, "Televising the Space Race in Francoist Spain: Sebastià Estradé and the "Friends of Outer Space" (1967–1969)," *HoST – Journal of History of Science and Technology*, no. 18 (2024): 33–53.

¹⁰⁷ Some episodes are available online. <https://arquivos.rtp.pt/conteudos/dia-da-gra-bretanha-na-feira-nacional-de-agricultura-de-santarem/>

The improvements to Portuguese horses' stamina led to new debates about standards. From 1910 to around 1974, many Portuguese horse experts imported many Spanish mares and stallions.¹⁰⁸ “Rejoneadores” and keepers came from Spain and contributed to the national knowledge,¹⁰⁹ and the sporting periodicals reprinted a lot of Spanish information. In the 1960s fashion started to change, as more Portuguese horses, owners, or “rejoneadores” competed in the Spanish “corridas.”



Figure 6: Ruy de Andrade in the Santarém fair. Euronatura collection

If Portugal was still buying Spanish horses in the 1960s, Portuguese standards were such that some Spanish owners and breeders began to import Portuguese horses, and Portuguese owners and jockeys began to be seen in large numbers in fairs such as Madrid (Feria del Campo),¹¹⁰ Seville, and Jerez. This

¹⁰⁸ “No Concurso Hípico Internacional Oficial (CHIO) de Madrid havia 104 cavalos, dos quais 57 espanhóis, 12 de Portugal,” Jorge Mathias, *Revista Diana*, Madrid: July 1965.

¹⁰⁹ “Rejoneo” is the act of bullfighting from horseback. Kirrilly Thompson, “Narratives of Tradition: The Invention of Mounted Bullfighting as ‘the Newest but Also the Oldest’,” *Social Science History*, 34, no. 4 (2010), 523–62.

¹¹⁰ *Vida Rural*, 14 August 1965. J Coca Lercher, *El recinto ferial de la Casa de Campo de Madrid (1950–75)* (Madrid: Universidad Politécnica de Madrid, 2013).

is an area that foreign journalists discovered in the press, for example the Spanish journal ABC.¹¹¹ In the 1970s, while Spanish horses were still being imported to Lisbon, the trans-Iberic exchanges in equestrian matters had acquired a great degree of reciprocity. Portuguese owners saw the potential profit, moreover, in selling good horses to Spanish buyers.

Conclusions

Taken together, the preceding analysis allows us to draw several broader conclusions. This case study challenges dominant historiography that centers formal laboratories and professional scientists as the primary sites of genetic knowledge production. It instead highlights the importance of hybrid, socially elite institutions in shaping how such knowledge was interpreted, adapted, or resisted.

Building on this reinterpretation, this study has argued for the mutual historical interrelations between horse breeding, the importation of Spanish horses, the SHP competitions, the Santarém fair, and the emerging disciplines of Mendelian genetics and animal care. This paper, considering the development of animal breeding knowledge, creates the space for a history of horse care that captures the dynamic interaction between varied and interconnected epistemic sites: The Lisbon horse arena, the Venda Nova station, the Fonte Boa station, the Santarem agriculture school and so on. Experts such as Andrade thought carefully about breeding terms, but we find him, sometimes, using the terms inconsistently, reflecting the hybrid and negotiated nature of knowledge in these contexts.

In this respect, the case examined here supports recent historiography arguing that animal breeding practices cannot be reduced to the application of genetic theory, but must be understood as hybrid fields shaped by practice, expertise, and the agency of animals themselves. This perspective helps explain why, between 1900 and 1970, Portuguese horse breeding did not un-

¹¹¹ Berit Bohlin, “Lusitanos estais en casa,” *ABC*, 30 April 1970. In 1977 Bohlin was the first woman appointed as equestrian speaker in Jerez. The Executive Committee of the Jerez Horse Fair agreed to appoint Miss Berit Bohlin, based in Estepona, a Swedish rider, journalist and photographer, specialising in horses and equestrian subjects, as a member of the “Information, Press and Propaganda” Commission [...] for her valuable collaboration with Spanish equestrianism in the national and foreign press and publications, for her great passion for horse riding, and for her ambition to promote horses and dressage competitions in the Costa del Sol.

dergo deep changes. Unlike flies, cork oaks, and wheat—the experimental organisms chosen by Câmara, Vieira Natividade, and Victória Pires—equine science could have helped much more, to circulate new concepts such as genetic race, but in Portugal it did not. Well-bred horses reflected the racialized discourse of the time, but the rediscovery of Mendelism went largely unnoticed in these arenas.

At the same time, the analysis has shown that horse breeding cannot be understood solely in scientific terms. The origin of the horses of the Andrade family, and other members of the SHP, tie together strains from the history of nationalism and the history of science. The “aristocratic supremacy” is one of the key features of this history. Economic interests and the public competitions shaped the knowledge built up around Portuguese horses. Understanding horses as “commodities in motion” reveals how, despite all the problems that keeping living and in shape these Olympic Games winners entailed, the Lisbon horse arena’s original purpose was accomplished with a consistent number of visitors, earning enough profit to survive as an institution.

Finally, returning to the central argument of this article, the SHP demonstrates that—despite, or even because of, its hybrid character—such institutions could be scientifically productive in multiple ways. Horse experts working in the SHP and in other farms, such as the Andrade one in Elvas, contributed valuable information about horse habits, behaviour, feeding and reproduction requirements—details that contributed directly to animal knowledge. SHP horses were, at the same time, a symbol of traditionalism and icons of scientific progress, becoming key assets in both international competitions and the Estado Novo’s propaganda.

By repositioning horse arenas as sites of knowledge production, this study expands the geography and sociology of modern science, showing that elite leisure spaces were not peripheral but central to the making—and limits—of biological knowledge in the twentieth century.

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