

# Science to create a nation

The little-known presence of naturalists  
on the Rondon Commission helped to  
formalize scientific research

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PUBLISHED IN MAY 2012

Rondon  
with Paresi  
Indians in a  
documentary  
image by  
Major Thomaz.  
(undated)



Film production in Brazil began in 1908, and by 1912, at most a half dozen films were produced per year. In 1907, first lieutenant Cândido Rondon (1865-1958) was appointed by President Afonso Pena as head of the Strategic Telegraph Line Commission from the State of Mato Grosso to the State of Amazonas (CLTEMTA), which was formed to build a telegraph line between Cuiabá and Santo Antonio do Madeira (Porto Velho). Exactly 100 years ago, in 1912, Rondon established the Cinematography and Photography Section and assigned Major Thomaz Reis to be responsible for this section. That the cinema was still in its infancy in the country's capital provides us a clear idea of how bold it was to establish a specialized section to document the telegraph line expedition. The photosensitive material and the appropriation and use of a technology that did not yet exist in Brazil required large investments. Furthermore, the equipment was used in appalling environmental conditions with high humidity and transportation problems through jungle regions full of Indians and diseases.

The reason for this effort by the famous Brazilian indigenous expert becomes clear only when we reveal an unknown aspect of the Rondon Commission (1907-1915), namely, its close links with science. In the words of anthropologist Roquette-Pinto, who accompanied Rondon in 1912, “[t]he construction of the telegraph line was the pretext. The real purpose was scientific exploration.” According to historian Dominichi Miranda de Sá, a researcher at the Casa de Oswaldo Cruz/Fiocruz, “[t]he Commission’s function in terms of the defense of the frontiers and its ‘civilizing mission’ have already been analyzed, but almost no work has been done regarding the group of naturalists, most of whom were from the National Museum, or in relation to the scientific research carried out during the expedition, which opened up a new field for science and for Brazilian researchers.” Dominichi is responsible for the project *Inventário da Natureza do Brasil: as atividades científicas da*





Rondon seated at a campsite, a documentary frame of the commission (undated)

*Comissão Rondon* [Inventory of Brazil's Nature: the scientific activities of the Rondon Commission].

According to Dominichi, “[f]rom the time of the expedition onwards, science began to be seen as a key element in the construction of the Brazilian National State, which was the Republic’s main objective.” His study concluded that the purpose of the Rondon Commission was not only to expand Brazil’s telegraph network but also to determine the various prospects for the northern part of the country’s territory and divide them into areas intended for exploration and those intended for the conservation of human and natural resources. In this context, the project provides insight into the importance of the commission in the institutionalization of the sciences in Brazil and in the state’s growing role in the promotion of scientific research, particularly regarding applied science, which is considered a tool for the modernization of the country.

“While they were putting up the telegraph wires in order to enable communication with northern Brazil, the border areas with other countries were defined and indigenous lands were marked out, as well as the areas that were suitable for colonization, for planting crops and for the expansion of cattle breeding,” explained Dominichi. “Additionally, scientific exploration forays were undertaken to learn about and to discover rivers, viewed as routes for the transport of agricultural production, natural demarcation points for borders and a source of geographic orientation, as well as obstacles to colonization because they supposedly made circulation more

difficult and increased the incidence of diseases, in particular, of malaria,” he noted. This last aspect has not yet been studied by the historiography of the commission, although it is a starting point for

discussing the history of the appropriation of natural objects (in this case, rivers) for state projects of territorial discovery and occupation.

Therefore, science was as strategic as the telegraph poles, as described by engineer Francisco Bhering, the author of the telegraphic project that was implemented by the commission. Bhering considered the project to be a “forerunner of the progress” that should reach the Amazon region, which was viewed as a priority for the republic, in addition to the States of Mato Grosso and Goiás. The project served to address fears that this northern area and its populations could “end up standing out and distancing themselves from Brazilian territory.”

The “intellectual atmosphere” among the officers at the time, who were indoctrinated by positivism, did not advocate the creation of a military focused on war but argued in favor of technical and scientific training to produce “agents of progress” rather than soldiers. For this group, the duality between the hinterland (“backward” area) and the coastal region (civilization), as argued by the new regime, was a fallacy. According to these officers, the hinterland was defined by its distance in relation to central authority and to modernizing projects. As the intellectual Afrânio Peixoto explained, “in Brazil, the hinterland begins where the Avenida Central Avenue ends.”

“The Amazon region rated as ‘hinterland’ because it had been abandoned by the central authorities and its ‘landscape’ was destined to disappear. It was necessary to occupy, to colonize and to modernize this ‘empty territory,’ to mark the ‘frontier’ and to tame the ‘forest’ with its animals, diseases and rivers. Civilization, in the opinion of the commission’s members, was a possible outcome,” observed sociologist Nísia Trindade, who is from Fiocruz and is a member of the project. After all, according to Rondon, “opening up these hinterlands, making them productive, submitting them to our activities and taking advantage of their fertility and their riches is the same thing as extending the civilizing action of man to the borders of this huge land.” Thus, the problem of duality would be resolved with the inclusion of the hinterlands in the construction of Brazil’s nationality.

When the Ministry of Agriculture, Industry and Commerce (MAIC) was established in 1906, activities and scientific institutions (including the National Museum and the Botanical Gardens) were placed under this new entity. The groups began to participate in integrated expeditions, such as the Rondon Commission, which was also below the positivist and pro-science Ministry of War. The scientific surveys of the territory, including the study of climate, the incidence of diseases, rivers, plants, animals and the capacity of the lands for agricul-

## The commission assisted in institutionalizing the sciences in Brazil and convinced the state to promote research

ture, mining and cattle breeding, were inseparable from the projects of productive diversification, the modernization of agriculture, the construction of routes for transporting production and the settling of labor in the inner areas of the country.

Emphasis on applied science was an imperative because there was a risk of exploiting nature (viewed as a natural resource), particularly agriculture, at the service of man. With control over the expeditions and the telegraph wires in the hands of MAIC, the naturalists and the military engineers were responsible for identifying lands that were suitable for crops and the health conditions that were necessary for colonization by workers to integrate the isolated areas with the central authority. Above all else, it was necessary to discover the rivers to enable communication with the consumer markets.

In addition, there were requirements of the National Museum, which was in the midst of a full-blown crisis and being derided by Olavo Bilac as a paralyzed and “rigid institution.” The museum’s director, João Batista Lacerda, was enraged. Since 1905, Lacerda had been attempting to convince the authorities that “if we wish to make Brazil’s supremacy in Latin America undeniable, we have to consider this policy from the point of view of the superiority of our intellectual resources and of our teaching and scientific institutions.” He continues by noting that as a “vital prerequisite to the Museum’s scientific progress and development, we need to reestablish the former jobs of the travelling naturalist” that were created during the days of the Empire and extinguished in the Republic. It was necessary to “produce knowledge by Brazilians about Brazilian nature,” which thus far had been an activity monopolized by foreign naturalists, as satirized by Machado de Assis in his short story *Lição de Botânica* [Botany Lesson] (1906).



A man working in a laboratory; below, Rondon with Paresi Indians, an image by Major Thomaz (undated)

In addition to classifying and cataloging the collected material, the naturalists who accompanied Rondon wrote detailed scientific reports, presented at conferences and published texts providing details of their travels. Some of the most prominent naturalists were Alípio de Miranda, Arnaldo Blake Santana and José Geraldo Kuhlmann in zoology; Cícero de Campos and Euzébio de Oliveira in geology; Roquette-Pinto in anthropology; and Frederico Carlos Hoehne and João Geraldo Kuhlmann in botany. In the future, most of these individuals would earn a place in the pantheon of Brazilian science. The National Museum grew dramatically, and between 1908 and 1916, the institution received 8,837 botanical specimens, 5,637 zoological specimens, 42 geological, mineralogical and paleontological examples and 3,380 anthropological pieces, all of which were obtained from the Rondon Commission, as emphasized by Magali Romero Sá, a researcher from Fiocruz who was also a member of the project.

Miranda Ribeiro even stated that “the collections that were brought together during the Rondon Commission did more in eight years for the National Museum than everything that had been done during the institution’s 100-year existence.” The zoologist did not act merely as a collector; in fact, his integration of evolutionary theories, which were still a matter of controversy in Brazil at that time, led him to pose questions, observe the interrelations between animals and their environment and offer other observations regarding the specimens that were collected. Adolpho Lutz was honored with a collection of *diptera* from the Rondon group, and in 1912, he published a paper regarding the 70 examples of horseflies that had been collected. The botanist Hoehne covered 7,350 kilometers of the countryside and forests of Mato Grosso and subsequently commented that mapping the region with Rondon would be the equivalent of developing the entire Brazilian economy.





“Because, in addition to scientific research, the members of the commission marked out indigenous lands, and differentiated, in medical surveys, the ‘jungle,’ where malaria would be widespread, from the ‘forest,’ an object that began to be discussed as an area of ‘rational utilization,’” observed Dominichi. The Amazon Rainforest became the focus of the commission between 1915 and 1920. River surveys were a particular focus as possible routes for the penetration, mapping, stocktaking, modernization and occupation of the country’s northwestern frontier. Maps were corrected, and new rivers were discovered, such as the Juruena or Duvida rivers, the latter a tributary of the Madeira River, which were “discovered” during the greatly commemorated voyage of Rondon with former US president Theodore Roosevelt between 1913 and 1914. A new “myth of the Amazon” began to emerge.

The term “Amazonia” was the designation for a region that was first associated with abundance in the book *O País das Amazonas* (The Land of the Amazons), which was written in 1883 by Baron Santa-Anna Nery. Its title, which converted the province of the Amazons into Amazonia, the Amazon region, was aimed at attracting immigrants. “The Amazon region,” wrote Nery, “would confirm its destiny as the ‘promised land’ cited by chroniclers and naturalists, if it were populated in such as way

Apalaí Indians from the Jari River dancing in an image taken by photographer Harald Schultz; below, Paresi Indian women in hammocks, a photograph taken by Major Thomaz (undated)

as to increase agriculture and mining; if the negative ideas about the harmful effects of the hot climate were disavowed; if the Forest and the raw materials that could be obtained were used rationally, to the detriment of only extracting rubber; especially if the natural elements were known in their ‘harmonious unity;’” explained researcher Nisia Trindade.

The Republic more intensely renewed its monarchical interest in the region. This renewed interest explains the state’s investment in financing a regular policy of acquiring scientific knowledge of Brazil’s natural and regional diversity, in which the Amazon region held the place of honor as an object of analysis by the national scientific institutions. This focus became especially apparent after the creation of MAIC, which sent groups of naturalists to study the region, and upon their return, disclosed their views in popular publications. A large percentage of these papers were written by members of the Rondon Commission. Even the mapping of the rivers assisted in creating a new modern myth. “Based on the polysemy of the rivers in the country’s northern region, the image of the Amazon Forest was constructed by the commission: a region of intermittent rains and hot climate; great stretches of opulent, fertile, abundant lands to be planted with crops; perfect soils for agriculture and an alternative to rubber extraction, the growth of the latter merely depending on the ‘rational clearing of forest’; occupation and colonization by ‘hard-working farm workers’; and the creation of means of transporting production,” explained Dominichi.

The land actually was the “country of the Amazons.” Miranda Ribeiro was correct when he praised the commission for eliminating the word “unknown” from the Brazilian maps; in the future, this commission would transform this “country of the Amazons” into Brazil. “The commission provided material and imagination for the ‘Amazon region’s’ consolidation: object of science, imagination, tourism, political arguments, curiosity and the central theme of the debates about the sustainable use of natural resources and ecosystem preservation.” However, the vision of a geographical utopia that regarded the country as an immense frontier that only needed to begin the process of clearing the path ahead, in which progress would advance the area nearly effortlessly, did not manifest itself.

Rondon was concerned about registering everything in images and prepared a number of photo albums to document the commission’s activities. These photo albums were sent to the most important authorities in the Brazilian government. “The albums, the articles published in the country’s main newspapers and especially the presentations of the films followed by conferences worked like a type of personal marketing and a form of persuasion in favor of the continuation of the commission’s





Indians listening to music from a gramophone (undated)

**Rondon was an optimist who regarded everyone as part of a single Brazil that he believed was capable of uniting and modernizing**

activities. They mainly aimed at the urban elite, which hungered for images and information about Brazil's hinterlands and was the main group of opinion-makers," noted historian Fernando Tacca, a professor at the State University of Campinas (UNICAMP) and author of *A Imagética da Comissão Rondon* [The Imagery of the Rondon Commission] (1996). Thus, Rondon fueled the nationalist spirit by constructing ethnographies from a strategic and symbolic perspective: the occupation of the Brazilian West via communication by means of the telegraph and by the visual nature of photography and of silent movies, with films by Major Thomaz, especially *Ao Redor do Brasil* [Around Brazil] (1932). According to Tacca, "[t]his entire period of producing images can be seen as an extension of the commission's activities."

"The crossover between films and photographs was one of the innovative practices of the Rondon Commission's production. The second categorization occurs in the field of pacification, when images show docile Indians subject to changes thanks to civilizing progress. Thus, an image of subjection is constructed, rather than of an impediment to the territorial occupation of the nation," observed Tacca. There is a scientific imagerial construction of the existence of traditional groups that accept the nationality of the flag and other symbols of the nation that recognize, in some cases, the national borders. An example of the process of the Indian integration by means of the civilizing actions of the States is the symbolic image of an Indian on the frontier alongside Brazil's flag, denoting that the Indian is a Brazilian Indian rather than simply "an Indian."

By 1915, Mato Grosso had 4,502 kilometers of telegraph lines, and the members of the expedi-

tion had achieved what they considered to be an "epic saga" at the cost of many lives and terrible sacrifices while surveying an area of 50 thousand square kilometers between the Jurueña and Madeira Rivers. Despite numerous mistakes, Rondon strived to integrate the Indians into Brazil peacefully. As a positivist, he did not scorn the Indians; he simply believed that they lived in a more primitive stage of social evolution at a time when urban intellectuals such as Silvio Romero wrote about the racial inferiority of the natives. Rondon was an optimist who regarded everyone as being part of a single Brazil, which he would succeed in bringing together and modernizing.

"However, in just a short time, the enthusiasm with the notion that one would be able to overcome nature and turn it into the 'earth's cellar,' as Rondon used to say, with a relatively trouble-free colonization, a lot of roads and telegraph lines, ran into insurmountable nosological barriers, diseases that decimated the expeditions. The difficulty of eradicating them increasingly stood out in the reports of the commission's doctors," observed Arthur Torres, who has a master's degree in history from the Casa de Oswaldo Cruz/Fiocruz. "People realized that it was essential to come up with strategies for controlling contagions with diseases such as malaria in order for the commission to be able to conclude the telegraph line in the country's northwestern region and to install the greatly desired civilization. This did not happen, and the costly and lengthy transformation put Rondon's objectives at a great distance from the plans of his commission."

While Rondon was struggling to install his telegraph wires, Oswaldo Cruz, at the request of the Mamoré Railway Company, was attempting to prevent the malaria that was killing railway workers. The expeditions conducted by Cruz and his colleagues from Manguinhos prompted the emergence of a new health-oriented portrait of Brazil. Contrasting with the positivist optimism of the state and of Rondon, Cruz's view emphasized that disease rather than climate was the main cause of the country's backwardness. A number of the commission's members, including the head of the commission himself, were already among the ranks of those demanding that the hinterlands be cleaned up, and the health-oriented movement made the debate public. "The discussion of national identity in Brazil began to take place by means of the disease metaphor. The hinterland is not just a long way away from the central authority, but it is a region that, as from then, was characterized by its abandonment and by contagion," noted Nísia, who analyzed this theme with Gilberto Hochman in the survey *Brasil Imenso Hospital* (Brazil an Enormous Hospital) (Fiocruz). ■