

The construction of a tropical country: a review of environmental historiography on Brazil

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Abstract

This article provides an overview of books published on Brazilian environmental history. Among the large variety of environmental themes seen in Brazilian historiography, we selected the authors who in some way identify themselves as explicitly related to the academic environmental history community. Although the emphasis was on authored books, we sought to at least mention the principal edited books produced in the field. With this mapping, we demonstrate the themes and spatial-temporal foci prioritized by environmental historians in their studies on Brazil. Additionally, we sought to show how the gaps still existing in the literature provide promising paths for future expansion of this field.

Keywords: environmental history; Brazil; authored books.



Despite there being no canonical definition of environmental history, it is an academic field that slowly began to be established in the 1970s. One could say that the development of this field of investigation grew out the concern regarding and theoretical criticism of the “floating” reading of human history, or in other words, of the idea that society can be isolated from the biophysical world in which and through which it occurs. Today, environmental history, in its diversity of approaches and experiments, is a consolidated field of knowledge, with scientific associations, conferences and journals discussing and publishing specific historiographic production, and is constantly expanding.

Clearly, the perspective of including the world in history – analyzing the human trajectory in its interaction with a variety of beings, elements and dynamics that interact with it – is seen in the work of a great many historians, anthropologists, geographers, etc. We prefer a wide, open and liberal reading of environmental history with respect to authors of the past or present. However, for this article, we chose a stricter interpretation of existing bibliographic production. In other words, we will comment only on the works of authors who define themselves in some way as being connected to the academic community studying environmental history, mapping their participation in events and publications in the field.

The reason for this restriction is, principally, pragmatic. It would be impossible, within the scope of a single article, to mention all work that could formally or informally be included in this field. On the other hand, the stricter approach also has a positive aspect. It allows us to better evaluate the state of this specific area of the environmental historiography about Brazil, in terms of its strong and weak points, its successes and gaps.¹ We will consider only authored books on the subject of Brazilian environmental history. This choice was also essentially pragmatic. The literature has grown significantly, mainly due to journal articles, and it would be impossible to include all this material in an initial account. Still, limiting our selection to authored books allows us to discuss research that has reached a certain level of development and maturity, justifying publication in a longer work. This restriction also makes clear that our article does not intend to be exhaustive. It is only a first approximation, which needs to be supplemented by other works exploring aspects and sources not discussed here. Despite the selection criteria we have chosen, clearly we were not able to identify and comment on all books published on Brazilian environmental history. This does not mean that the books not mentioned were of lesser quality. The works that will be discussed, however, allow us to build an initial framework, an approximation in terms of the current status of this field of research. In turn, edited books, which have become an important vehicle for dissemination of research in the field, will be mentioned only for the reader’s information, with an attempt to locate them in the sections into which this article is divided.

In order to organize the material gathered, we chose to establish a limited number of sections, based on the themes, locations and time periods that the environmental historians have been using when writing about Brazil. They represent just one set of many possible divisions. In the end, we chose to discuss the resources selected based on the following themes: “Forests;” “Agriculture and livestock raising;” “Biodiversity and extraction of flora and fauna;” “Urban and industrial dynamics;” “Regions, territories and sociodiversity;” “Environmental thinking and environmentalism.”

In the field of bibliographic production that we are analyzing, no one has yet tried to write a general environmental history of Brazil. However, several books have begun to make an effort to address the different aspects, or essential traits, of the environmental history of Brazilian states or regions.² In the field of Brazilian environmental history as a whole, however, it is worth mentioning here two edited books that had considerable impact because they made an effort to mirror recent researches, bringing together articles on different themes and regions. We are referring to the books edited by José Luiz Franco et al. (2012, 2016) *História ambiental: fronteiras, recursos naturais e conservação da natureza* and *História ambiental, volume 2: territórios, fronteiras e biodiversidade*. Lastly, it is important to cite other two recent collective efforts that, while international in scope, include Brazil in a relevant way in the broader context of Latin America and the BRICS: *A living past: environmental histories of modern Latin America*, edited by John Soluri, Claudia Leal and José Augusto Pádua (2018), and *The great convergence: environmental histories of BRICS*, edited by S. Ravi Rajan and Lise Sedrez (2018).

Forests

The outstanding presence of what we now call the Atlantic Forest and the Amazon Forest in the construction of Brazil ensured that these forests would not be absent from the historiography of Brazil. However, in general, they appear indirectly, for example while historians address burning land for agriculture or images of flora in art. With his book *With broadax and firebrand: the destruction of the Brazilian Atlantic Forest*, Warren Dean (1997) innovated by placing the forest, the Atlantic Forest, at the center of a historical narrative. Today, almost 25 years after its publication, one can see with more clarity its positive and negative aspects. The book adopted an extremely long perspective, which was rare in Brazilian historiography, breaking down the barriers that had separated the fields of forest ecology, the anthropology of indigenous people, and history after European colonization. The Atlantic Forest itself is understood as a long history of biophysical transformations that go back tens of millions of years. The paleo-indigenous and indigenous presence, in turn, is seen as a first wave of human invaders in that forest biome, blurring any artificial distinction between “pre-history” and “history.” A series of chapters then discuss the large transformations resulting from the arrival of Europeans, the second wave of human invaders, through the start of the 1990s, in the country already established as “Brazil.” Throughout this very long temporal framework, elements of knowledge of ecology and of the natural sciences combined with economic, social, political and cultural history to build a grand narrative. One could say, however, that it was a classical narrative, evolving over time in a rather linear manner. The principal novelty is this interaction between the natural and the social. In a certain sense – given the large concentration of the Brazilian economy and society in the region of this biome until the late twentieth century – Dean described a history of Brazil through the destruction of the Atlantic Forest.

The book represented an invaluable contribution to the development of environmental history in Brazil. The researchers in the area were able to use its grand narrative as a starting

point, commenting on its limits and possibilities. As to be expected, some criticized the precision of some of his analyses (Brannstrom, 2016). One could also mention the book's structural imbalance, with the second half of the twentieth century and certain regions, such as southern Brazil, receiving less attention from the author. An important criticism was that Dean wrote a declensional narrative, in some ways colored by his political leanings. In other words, the book can be read as a long protest against the destruction of an ecological treasure, characterized by the development of Brazilian society as being especially destructive in environmental terms. This view is a bit biased, since the history of forest destruction in Brazil was not that different from other significant deforestation processes taking place during the same time period.

Further research on the topic has been marked by efforts to address specific regions and/or time periods more closely, adding greater depth and some innovative approaches to the overall structure that Dean had developed. José Augusto Drummond (1997), for example, published a book defined by a more restricted geographical scope: *Devastação e preservação ambiental no Rio de Janeiro*.³ In addition to the regional focus, an important innovation of the work was the joint emphasis on devastation and conservation, producing a more nuanced, less degenerative reading of the history of the forest. However, the extremely long time frame also appears here, with an analysis of the interactions between man and the forests in the region over millennia. A high point of the research is the analysis of the nineteenth century, when coffee plantations occupied the Paraíba do Sul river valley, in a process that is narrated using a suggestive analogy with an occupying army, with its vanguard and rearguard movements, military formation, and looting. However, when undertaking a thorough analysis of the territory, one must explain the existence of important areas that, in the heart of the battlefield, were preserved as forested areas large enough to become, in the twentieth century, some of the principal Brazilian national parks (beginning with the oldest of all, Itatiaia, established in 1937). An analysis of the specific conditions that led to these "omissions by the invader" must be carried out, investigating the institutional and territorial history of these conservation regions.

Furthermore, on the spatial aspect, the book *O manguezal na história e na cultura do Brasil*, by Arthur Soffiati (2006), focused on a specific type of ecosystem that, despite having very distinctive characteristics, tends to be labeled as part of the Atlantic Forest biome. In a scholarly work with a broad scope, the author discusses several aspects of the presence of this ecosystem in the development of Brazil, including its uses and representations by the indigenous tribes, the poor, in artistic manifestations, traveler's books, scientific production, public policy, etc. The stereotypes associating the world of the mangrove with an ugly, muddy place are dismantled through a historic analysis in productive dialog with the natural sciences. A central methodological point was to envision the mangrove as an actor, not a stage. Or in other words, its characteristics and dynamics were important in molding its interaction with social life, going beyond a passive, fixed reading of the natural world.

Another focus chosen was temporal, and more specifically the colonial period. Shawn Miller (2000) published an important book on the subject, little explored, of the timber industry in Portuguese America: *Fruitless trees: Portuguese conservation and Brazil's colonial timber*. Despite wood being a critical material for infrastructure and energy production,

especially up until the mid twentieth century, economic history of Brazil had almost ignored the timber industry as an object of study. Miller's book includes a good documentary survey, discussing the ecological conditions and social and technical processes for extracting and using timber. The analysis was negatively affected, though, by its relatively rigid interpretative focus. Basically, the intervention of the Portuguese government in an attempt to preserve precious woods for ship building, prohibiting their extraction in some regions of the country, as well as their efforts to regulate extraction, supposedly contributed in the end to encouraging destruction of the forest. Or in other words, by curbing free enterprise by owners wishing to establish private timber companies, the government devalued forests, making forest burning more likely. The author does not show, however, that the owners would stop burning the forest after freely commercializing the best wood, especially in the context of an open frontier.

An important additional point was raised by a wide-ranging work on the topic of the forests of Portuguese America: *Na presença da floresta: Mata Atlântica e história colonial*, by Diogo de Carvalho Cabral (2014). Felling trees was not separate from crop and livestock farming. Despite the absence of a strong, specific lumber industry, felling trees occurred daily and was almost invisible among the processes related to occupation. According to Cabral, whose research touched on many topics organized into three principal sections (techniques, policies and economics), during the colonial period forests were not a secondary space with which one could decide whether or not to establish interactions. Daily life took place, for the most part, in the presence of enormous forests. This observation, if well understood, could change our perception of forest landscapes in Portuguese America. On the other hand, these forests should not be seen only as barriers, but rather as an integral part of the production system. The ashes obtained from burning was a way to enrich the soil, despite having only short-term effects, and was essential to the consolidation of the colonial endeavor and its expansion.

A last authored book on the Atlantic Forest must be presented, in addition to three edited books. The book by Dora Shellard Corrêa (2013) *Paisagens sobrepostas: índios, posseiros e fazendeiros nas matas de Itapeva (1723-1930)* has a different focus than the works discussed above, as it studies a well-defined microregion in the southeast of what is now the state of São Paulo. It covers a period ranging from the eighteenth century to the first decades of the twentieth. Its most important theoretical contribution, when compared to Dean's perspective of a succession of occupations, was to see the landscapes of the region as overlapping. In other words, they received different humanizing dynamics that have not completely disappeared, combining in hybrid spacial realities. The colonial *sertões* (hinterlands) were not "virgin," as they were humanized by the presence of the indigenous peoples. Later, indigenous tribes living in villages, poor laborers, farm owners, directed colonization settlements and state planning interventions in local development led to new transformations in the landscapes. New appropriations often negated prior landscapes, classifying them as deteriorated or exhausted, when in actuality they overlapped, with forest burning as a common denominator, even though at different scales.

The first of the three edited books to be mentioned returns to the broad perspective of the history of the Atlantic Forest, exploring its different facets: *Metamorfozes florestais:*

culturas, ecologias e as transformações históricas da Mata Atlântica, edited by Diogo de Carvalho Cabral and Ana Goulart Bustamante (2016). The second follows a stricter geographic demarcation line, innovating by focusing on the history of forests in an urban context: *As marcas do homem na floresta: história ambiental de um trecho da Mata Atlântica*, edited by Rogério Ribeiro de Oliveira (2005). The articles address the Pedra Branca massif, on the East side of the city of Rio de Janeiro, exploring different aspects of its history in deep symbiosis with the metropolis. The third book adopted an intermediate scale, discussing a singular, charismatic set of forests located in southern Brazil and now integrated into the universe of the Atlantic Forest. The book *Fronteiras fluidas: florestas com araucárias na América Meridional*, edited by Eunice Nodari, Miguel M.X. de Carvalho and Paulo Afonso Zarth (2018), reflects the progress of environmental history in the universities in the south of Brazil, since it places two generations of historians side-by-side so that they could narrate different aspects of the history of those forests.

On the topic of forests, one surprising aspect is the relatively small number of authored books and edited books on the Amazon, a much bigger forest complex than the Atlantic Forest and much more internationally known. The book which comes closest to being a general narrative is *The fate of the forest: developers, destroyers and defenders of the Amazon*, by Susanna Hecht and Alexander Cockburn (1990). One characteristic of this work was to find connections between historical analysis and political struggles. Despite being rigorous, with correct data and sophisticated analyses, the details of the investigation of the past are placed in a supporting role, while the focus is on developing a comprehensive framework that helps illuminate the current dilemmas in the region and strengthen the progress of an “ecology of justice.” Understanding the fight of the forest peoples against deforestation and in favor of the establishment of extractive reserves, especially the movement of the rubber tappers led by Chico Mendes (assassinated in 1988), is the heart and principal objective of the book.

The other three authored books that we uncovered focus on a more restricted subset of the Amazon universe, whether in space or in time. The oldest is *Os historiadores e os rios: natureza e ruína na Amazônia brasileira*, by Victor Leonardi (1999). The author, who in addition to being a historian is a talented fiction writer, produced a beautiful, profound reflection on what he called the “social and environmental history” of the lower Rio Negro, with the ruins of the city of Airão as a starting point. This former trading post, founded in the seventeenth century, was abandoned during the twentieth century, especially when the rubber industry crises began. The image of the ruins of Airão is used to indicate the complexity and fragility of the occupation of the region, where other villages were also abandoned during the nineteenth and twentieth centuries. The problem is discussed based on the different dynamics of human occupation on the margins of those rivers, seeking to identify the multiple disruptive forces – on the environmental and cultural planes – capable of destroying communities and leading to the abandonment of settlements.

The book by Seth Garfield (2013) *In search of the Amazon: Brazil, the United States and the nature of a region* chose to focus on a very interesting period, the middle of the twentieth century. The Amazon attracted a lot of attention in the context of the rubber boom, from the mid nineteenth century to the early twentieth. The same could be said

of the period from 1970 to 2000, known as the “decades of destruction,” when a massive wave of deforestation became the icon of the worldwide environmental crisis. The period covered by Garfield is often identified as being lethargic, involving development projects that were not fully carried out, including the economic failure of the attempt to resurrect native rubber production during Second World War, although it did have important social consequences. The central thesis of the work is that the political and cultural dynamics at that time, with the strong presence of the United States as an international counterpart, helped form representations of the reality of the Amazon that affected its later history, including the conflicts during the late twentieth century. The author sought to demonstrate that the Amazonian reality was constructed at the crossroads of different confrontations, involving different actors and world views, particularly regarding the question of land rights.

Another book, by Antoine Acker (2017), *Volkswagen in the Amazon: the tragedy of global development in modern Brazil*, digs deep into the details of the decades of destruction. It discusses the political panorama for the advance of a strong deforestation front, and above all the geopolitical plan of the military dictatorship, in power from 1964 to 1984, in terms of integrating the Amazon Rainforest into a specific national and global model of development. The broad granting of tax incentives and subsidies through this project, without any real concern for the environmental and social consequences of the expansion of business in the region, led to the case study at the heart of the book: the rise and fall of the Cristalino farm, a risky gamble by the automobile manufacturer Volkswagen. The surprising involvement of a transnational manufacturing company in the world of forest burning and livestock raising, in an extremely complex forest region – which ended up being a huge failure in economic terms and negatively impacted the company’s image – reveals all of the arrogance, irresponsibility and ignorance of the local biocultural conditions that marked that historical process.

Agriculture and livestock raising

Without a doubt, the world of agriculture and livestock farming was among the most studied in Brazilian economic historiography. Obviously, in the vast bibliography on the topic, environmental themes appear indirectly, although on a smaller scale than one might expect. Nevertheless, there are still few authored books focusing explicitly on the environmental history of agriculture and livestock farming published.

In the case of sugar production, we know of only one book: *The deepest wounds: a labor and environmental history of sugar in Northeast Brazil*, by Thomas D. Rogers (2010). It is, however, a comprehensive, innovative book, especially because it interconnects environmental history and labor history. Some authors, such as Richard White (2013), have already criticized the lack of greater dialog between these two areas, since labor and production are always strongly related to ecological systems. Rogers discusses the socioenvironmental transformations of the Zona da Mata in the Northeast over the long term, despite focusing on the twentieth century. The complex interactions between the social, cultural and environmental dimensions appears clearly in the concept of “labor

landscapes,” referring to the manner in which the land owners understood their domain over the land and the workers as a relationship that was not based on the impersonality of formal ownership. The workers, on the other hand, sought to differentiate themselves from the land and find space for their affirmation as subjects, even in that context, which the author calls “landscapes of captivity.” The book also discusses the different dimensions of the movement to modernize sugar agro-industry, emphasizing the resistance of the workers to the proletarianization process and the way in which the government, especially the post-1964 dictatorship, interfered directly to squelch labor protests and ensure the renewal of the sector through the fuel ethanol program.

Coffee production, similarly classic in economic historiography, has not yet inspired an authored book, despite the promising perspectives published in the edited book entitled *Geografia histórica do café no vale do rio Paraíba do Sul*, edited by Rogério Oliveira and Adi Lazos Ruíz (2018). This book represents a collective research effort in which several articles had an explicit environmental history focus.

The powerful, conflicting topic of the expansion of soybean cultivation, especially in the Cerrado, has been addressed only in articles. Nevertheless, some books are beginning to discuss the emergence of agribusiness in Brazil. In *De agricultor a farmer: Nelson Rockefeller e a modernização da agricultura no Brasil*, Claiton Marcio da Silva (2015) discusses some bases of the agricultural revolution that took place in the last few decades. At the junction between the history of science and environmental history, the book demonstrates how technical cooperation from the United States in the 1940s-1960s, particularly through the American International Association for Economic and Social Development, influenced Brazilian institutions and actors, although not without conflict and friction, in an attempt to foster the U.S. model of industrial agriculture as the path to “modernization.” Another book, focusing on a geographically limited crop that is nevertheless very important in the investigation of modernization processes, is *Natureza corrigida: a história ambiental da maçã moderna no Brasil*, by Jó Klanovicz (2019). The study describes the impact that the creation of commercial apple orchards had on the social and environmental panorama of some municipalities in the south of Brazil. In order for apple orchards to prosper, behaviors, labor relations and interactions with nature had to be transformed beginning in the 1960s. Science and technology, with the support of religious institutions and public authorities, were responsible for adapting, monitoring and correcting the rural environment to make way for modern orchards.

In the field of livestock farming, we have an extremely important authored book: *Cattle in the backlands: Mato Grosso and the evolution of ranching in the Brazilian tropics*, by Robert W. Wilcox (2017). It is a significant work that helps us understand how the Cerrado has been transformed into a large international agribusiness front. By analyzing the environmental dimension of cattle farming in detail, Wilcox deconstructs the stereotype that tropical livestock farming cannot compete with that in more temperate regions, or that it is technically lacking and focused on the local market. Demarcating the specific characteristics of the Cerrado in the tropical context, he narrates the transformation of a remote region, with rudimentary breeding practices, into an international industrial hub through the interaction between local farms and world demand. Throughout the narrative,

factors such as changes in land ownership and labor relations are combined with refined environmental discussions, including the introduction of breeds from the eastern tropics and the importance of the herd density factor in the resilience of the sector as a whole.

Lastly, some books have been published in the field of family farming and small producers. An outstanding book is *To inherit the Earth: the landless movement and the struggle for a new Brazil*, by Angus Wright and Wendy Wolford (2003). The analysis method employed by the authors was to bring together environmental history and biographical history, discussing social and environmental transformations through the experiences of ordinary people and their collective life and work environments. In an earlier book published in 1990 that received wide recognition, *The death of Ramón Gonzalez: the modern agricultural dilemma*, Wright (2005) sought to reconstruct the history of the complex technological and socioeconomic chains linked to the use of pesticides in Mexico through the poisoning death of a young rural worker from Culiacán. A similar strategy was adopted in the book on the history of the Landless Worker's Movement (Movimento dos Trabalhadores Rurais Sem Terra, or MST). Thus, although documentary research was important, a fascinating aspect of the work is the constant presence of narratives of the lives and thinking of people who actively participated in the history of the MST, including its family, religious, and political subjectivity, among others. A historical analysis that goes beyond sociological discussions about social movements to reveal, as Lucien Febvre (1995, p.65) has said, the lifeblood of history.

The other two books that we reviewed have a sharper geographical focus and discuss the history of family farms that were part of two of the many targeted colonization programs implemented in Brazil beginning in the nineteenth century. The first one, *História ambiental da colônia Ijuhy*, by Marcos Gerhardt (2009), deals with an older program, which transpired from 1890 to 1930 in the northwest of the state of Rio Grande do Sul, basically involving caboclos (indigenous-white mixed-race people), ranchers and foreign colonists. As an example of the broad process of establishing colonization centers in the South of Brazil, the story of Ijuí exemplifies the perspective of progress so characteristic during that period: the imperative to replace the “bush” with crops. The bushsettler was an agent of civilization. Over a short period, transformation of the landscape was accelerated, changing the composition of the environment with the introduction of animal and plant species considered to be more useful, and the elimination of others felt to contribute little to the intended model. The second book, *Inspirar amor à terra: uma história ambiental da colonização moderna no Brasil, o caso de Campo Mourão, Paraná, 1939-1964*, by Eli Berço de Carvalho (2017), provides an interesting contrast. Despite also taking place in the western part of southern Brazil, it analyzes a later type of targeted colonization, focusing on Brazilian family farmers and imbued with the idea of rationalizing Brazilian agriculture. An important point of the study is to show that the *sertões* to be occupied by the colonists, which also applies to the old colonization projects with foreigners, were not as “empty” as claimed. On the contrary, it was a “vibrant landscape” where indigenous peoples and caboclos extracted forest products, and was the home of small agricultural and livestock farmers. State colonization departments, on the other hand, while using an Enlightenment language of rationalization, intended that the projects would instill a

“love of the land” in the colonists. They largely ignored the cultural and economic logic of the farmers converted into settlers, as well as the mechanisms they adopted to actively interact with the logic of the government agents, generating unanticipated consequences, such as land ownership through very smallholdings and the degradation of soils caused by the obligation to “completely use” the lots.

Biodiversity and extraction of flora and fauna

One of the main characteristics of the continent on which Brazil was established is its enormous biodiversity, in terms of biomes, ecosystems and species. This biodiversity is not evenly distributed, with several ecological components being specific to different regions. The human populations that have been occupying these regions since the first paleo-indigenous immigrants arrived learned to use many species of flora and fauna for their material and spiritual culture. Some of these uses were incorporated into and reframed within the regional complexes created after the arrival of European colonists. A typical example is the act of drinking yerba mate tea in the South of Brazil, a practice whose indigenous origins are often not recognized.

Despite the great potential for exploring the theme from a historical-environmental perspective, the publication of authored books is still limited. However, some good edited books have been published recently, clearing a path for future growth of this line of research. This is the case of *Usos e circulação das plantas no Brasil* and *Representações da fauna no Brasil, séculos XVI-XX*, both edited by Lorelai Kury (2013, 2015). Another important and innovative edited book is *Bioses africanas no Brasil: notas de história ambiental*, edited by Sílvio Correa (2012), which seeks to revisit the classic theme of transatlantic ecological exchanges focusing on the flows from Africa to Brazil.

In any event, the Amazon region has been a privileged space for the beginning of authored book production on the subject. The book by Warren Dean (1987) *Brazil and the struggle for rubber: a study in environmental history* opened up important research horizons. The fundamental point was the observation that the plant domestication process, which we usually associate with the multi-millennial history of the emergence of agriculture, has continued in the context of the demand for inputs for the industrial world. An extraordinary case is the transition from rubber extraction from native rubber trees in the Amazon to their commercial cultivation on the other side of the planet, in southern Asia. Dean analyzed the adventures in the economic use of *Hevea brasiliensis* from the mid nineteenth century through the second half of the twentieth, placing Brazil at the center of an increasingly global dynamic. One of the highlights of the work, based on thorough documentary research, was to demystify the idea of the “theft” of rubber tree seeds by English agents. He reveals that the elites and the Amazonian governments were not careful to strictly monitor the export of the seeds, which ended up being taken out of the country as part of the normal trade flows at the time, despite the complex process that involved numerous attempts to transplant the species through a network of English and Asian botanical gardens, scientists, government agents and planters. Although the study describes the carelessness of the rubber tapping elites in their effort to domesticate the

tree in Amazon itself, with all the gains of scale that this would entail, ecological factors were also fundamental to explaining why plantations were successful only in the Asian tropics. In other words, although rubber trees were healthy within the diversity of the forest, in their region of origin, they suffered attacks from pests and other inhibitors of latex productivity in a monocultural context. In Asia, where the rubber tree was exotic, the natural enemies that had developed during the long evolution of the species in its original ecosystems did not exist.

Two other books that we located also focused on the Amazon, one on flora and the other on fauna. The book by Leila Mourão (2011) *Do açaí ao palmito: uma história ecológica das permanências, tensões e rupturas no estuário amazônico* has the virtue of combining documentary research with detailed fieldwork on the islands of the estuary. The starting point is an analysis of the history of the açaí palm and the various different ways in which it is used in local cultures, especially the consumption of açaí berry juice. The author addressed a broad range of topics, taking into account the biophysical aspects of the palm and its strong presence in the cultural manifestations of the region. An interesting discussion contrasts the traditional use of açaí berries to make açaí juice – which has been done for a long time without significantly damaging the açaí palm – with the more industrial practice of extracting hearts of palm which, by carelessly interfering in the structure of the palm trees, rather than just removing the berries, results in significant environmental damage. Next, the book *A carne, a gordura e os ovos: colonização, caça e pesca na Amazônia*, by Marlon Marcel Fiori and Christian Fausto Moraes dos Santos (2015), returns to the history of fishing for pirarucus (*Arapaima gigas*), turtles and manatees in the Amazon rivers. The text focuses on the eighteenth century, when rich documentation, including from the first naturalist travelers, indicates the growing adoption by European colonizers of food derived from the local ichthyofauna. The work discusses, in detail, the technical and socioenvironmental factors that, for example, help us understand the advantages of exploiting river fauna compared to hunting animals in the forests on land. The intensive nature of the exploitation of fish, turtles and turtle eggs, as well as the large, fatty river mammals of the region – whether for food, fuel or other uses – negatively affected the populations of what had been abundant fauna.

It is important to note that other regions, besides the Amazon, have also begun to be studied in the context of the history of biodiversity in Brazil. For example, in *Introdução de espécies exóticas no norte fluminense: apontamentos de eco-história*, by Arthur Soffiati (2019). Despite the regional focus, the book discusses a dynamic seen globally, namely the dissemination through “western globalization” of a “portable biota” of microorganisms, animals and plants. A fundamental point, which is very well summarized by the author, is that the world is present in the region discussed in such a way that the region can only be understood if seen as part of that same world. In this confluence of the local and the global, the study focuses on the strong presence of exotic herbaceous plants on the plains of northern Rio de Janeiro state, as in the case of sugar cane, which is a grass, and of the grasses used for grazing pastures. Several other examples are given, such as the importance of fighting cocks in local culture.

Based on the books cited above, we can infer the potential for historical research on the uses of biodiversity in different regions of Brazil. A dimension that should not be

overlooked is the interaction between the material and spiritual uses of plants and animals by the different ethnic groups that influenced the process of creating the Brazilian people. An important text, in this respect, is *In the shadow of slavery: Africa's botanical legacy in the Atlantic world*, by Judith A. Carney and Richard Nicholas Rosomoff (2009). Carney (2001) had already revolutionized the study of historical biogeography in the Americas by demonstrating the active, creative character of the African diaspora, even in the difficult context of slavery, in the introduction of rice farming in the region, especially in the southern United States (*Black rice: the African origins of rice cultivation in the Americas*, published in 2001). The book by Carney and Rosomoff is significantly broader, focusing on the whole of the botanical legacy of the African diaspora in the Atlantic world, with Brazil as one of its central axis. In this sense, it allows us to better understand the international dimensions of the country's environmental history. The African presence, its humanity – not just labor – was expressed in the Atlantic countries through countless material and cultural phenomena. The ecology of each country was essential, as it defined the conditions under which exotic species became acclimated, or under which local species were given new meaning, and contributed to the consolidation and affirmation of rich, new African-American cultures.

Urban and industrial dynamics

The slow establishment of techno-industrial landscapes in Brazil beginning in the nineteenth century, and the enormous expansion of these landscapes in the second half of the twentieth century, cannot be dissociated from important transformations in the country, including biophysical changes. There is a huge field to be explored by environmental history, which, like other themes, has been covered in a limited way. In addition to some research on modern cities, there are authored books on mining, railways, etc. A topic that also deserves to be addressed in the future is that of disasters caused by technical-industrial dynamics in different geographical situations. An initial contribution appears in the edited book *Desastres socioambientais em Santa Catarina*, edited by Eunice Nodari, Marcos Espíndola and Alfredo Lopes (2015).

In the case of modern cities, an edited book that explores different dimensions of the theme in the context of the state of São Paulo is *Cidades paulistas: estudos de história ambiental urbana*, edited by Janes Jorge (2015). On the other hand, the focus of the first authored books has been the always difficult interaction between the components of the biophysical space and urbanized terrain, especially with the significant expansion of concrete structures. In the book *Tietê, o rio que a cidade perdeu: São Paulo, 1890-1940*, Janes Jorge (2006) explored the metamorphoses in the relationship between the urban population and the Tietê River over time. The riparian communities, boaters, fishermen, and firewood and clay extractors, among others, who were associated with the river until the early twentieth century, were driven away by the destruction of the riparian forests, by the rectification works that inverted its flow, by urban and industrial waste discharged into the river, among other things. The same can be said of those who used the river for leisure and sports. The narrative culminates in the current situation, in which “The

residents of São Paulo no longer interact with the Tietê River” (Jorge, 2006, p.15). This story, moreover, is not unique, because the same phenomenon of erecting barriers between urban life and the banks of rivers and seas has occurred in many latitudes, with the water often hidden by urban structures. In *Manguezais aracaJuanos: convivendo com a devastação*, by Fernanda Cordeiro de Almeida (2010), the theme is similar, as it analyzes the distance between urban spaces and native ecosystems. The book narrates in detail the clearing and filling in of the large mangroves that marked and delimited the geographical borders of the capital of the state of Sergipe. An important observation is that, in addition to urban expansion and real Estate speculation, impressions of the natural world also had an effect, since mangroves had been represented throughout the twentieth century as unhealthy, swampy and unsuitable for urban areas. Another book, *Cidade das mangueiras: aclimação da mangueira e arborização dos logradouros belenenses (1616-1911)*, by Luís Otávio Airoza (2010), addresses the other side of this interaction between concrete and plants. It discusses how the municipal government in the city of Belém, especially in the “belle époque era,” with the income generated by the rubber trade, decided to plant large mango trees throughout the city. The aim, according to the documents analyzed, was basically to produce shade. The analysis, however, makes a remarkable connection between the local and the global based on an “exchange of biodiversity.” Thus, the mango trees imported from India are reinvented as an urban planning strategy in the Amazon and, simultaneously, local residents, especially the poorest, incorporated mangoes into their diet by collecting and sharing the fruit on the streets. Lastly, the book by Marluza Harres and Fabiano Ruckert (2015) *A natureza, o tempo e as marcas da ação humana: políticas públicas e ambiente em perspectiva histórica* focuses on the relationship between the city of São Leopoldo and the Sinos River. The study addresses sanitation policies and engineering works carried out by the government in an attempt to mitigate the problem of flooding. In this context, the authors also demonstrate the importance of the actions of the environmentalist movement, and how these actions influenced the municipality’s environmental guidelines.

Another possible aspect for analyzing modern cities has been much less explored. Namely, the impact of technical-industrial breakthrough on the existence of ordinary people in their personal lives and at work. The only example that we found was the recent book by Shawn Miller (2018) entitled *The street is ours: community, the car, and the nature of public space in Rio de Janeiro*. The work draws on an observation by John McNeill (2000, p.310) that cars are “a strong candidate for the title of most socially and environmentally consequential technology of the twentieth century.” Miller analyzes how the streets of downtown Rio de Janeiro, which had traditionally been characterized by vibrant street commerce and different forms of sociability, including the presence of various types of animals, have been aggressively dominated by automobiles. Throughout the twentieth century, through a history of battles and collisions, but also via multiple types of resistance from residents and institutions, cars ended up defining a large part of urban design. The oscillations of the dispute between common spaces and cars until recent times were analyzed, when different collective responses were implemented: from the legal closure of streets to cars by democratic institutions, to the elitist restriction of free movement of cars in large, closed condominiums.

The hybridity of cities as spaces of material and cultural confluence is discussed in a beautiful book by Gilmar Arruda (2000) entitled *Cidades e sertões: entre a história e a memória*. The subject of the work is the relationship between cities and nature in a geographically broader perspective than in the case of the Tietê River or the Aracaju mangroves. In the early twentieth century, the expansion of the railways favored the establishment of a network of small cities in areas previously little occupied in the states of São Paulo and Mato Grosso, creating a dynamic of contrast between the *sertões*, on the one hand, and the cities, representing a “outposts of progress.” One of the attractions of the work is precisely that of escaping the space of the big capital cities, focusing on a time when the landscapes of the *sertão*, understood as a time of nature, were occupied by the “time of technology.” This entire process manifests itself through complex social, economic and environmental dynamics, but also through cultural phenomena that can be seen in maps, in photographs and in different forms of memory and narrative.

Outside cities, the advance of the techno-industrial landscape in Brazil was studied in spaces like those related to mining. An example is *Meiaponte: história e meio ambiente em Goiás*, by Kelson Costa (2013). The book discusses a fascinating episode that occurred in 1887, when residents of the city of Meiaponte, today known as Pirenópolis, attacked the gold mines in a neighboring mountain range, making the continued work of the Companhia de Mineração Goyana unfeasible. The reason for the conflict was the contamination and silting up of the Rio das Almas, which supplied water needed by the residents of the city. This dispute between different uses of water leads the author to describe the mining processes employed in Goiás in the eighteenth and nineteenth centuries, investigating social relationships, technology and environmental impacts. On the other hand, the dynamics of the city are analyzed through its relationships with the biophysical world and its political and cultural practices. The attitudes towards the mines, and towards the natural surroundings as a whole, were not homogeneous in the local political debate. But the fundamental demand for clean water led to radicalization and the attack on the mines. The principals were important figures in the society who, as traditional of nineteenth century local elitism, were never convicted.

A different case was studied by José Augusto Drummond and Mariângela Pereira (2007) in the book *O Amapá nos tempos do manganês: um estudo sobre o desenvolvimento de um estado amazônico, 1943-2000*. The book carries out a detailed analysis of the biophysical and socioeconomic history of the Serra do Navio region, where the company ICOMI, with transnational capital, inaugurated a manganese mining project in the 1950s. The authors' conclusion is that, despite the friction and criticisms of the project over the years, the impact of deforestation was small and the contribution to the state in terms of taxes and other benefits considerable. The study seeks to rethink the place of mining in the Amazon context, given that it is a relatively short-term activity whose pros and cons need to be assessed objectively, based on its environmental and social legacy, including in terms of the degree of subsequent recovery of the landscape of the area that was mined.

With respect to the relationships between the technical-industrial world and the climate,⁴ an initial authored book is that of Eve Buckley (2017), *Technocrats and the politics of drought and development in twentieth-century Brazil*. The book combines environmental

history and the history of technology, reconstructing the long narrative of political demands that the socioenvironmental problems of the northeastern *sertões*, especially in relation to the recurrent droughts and chronic poverty, be solved through engineering projects. In fact, several initiatives of this type were implemented, such as the construction of water reservoirs etc. However, the self-confidence of the technocracy and its projects to fight droughts, when tested in practice, collided with many social and environmental barriers. Land and income concentration, political disputes among local and national elites and the unanticipated environmental consequences of public works are some of the factors analyzed. The overall intention is to demonstrate the limits on the effectiveness of technological imagination when facing regional problems, as well as to highlight its effects on the daily life of residents.

The same Northeastern region serves as the setting for another recent analysis on the interactions between territories, societies and technological proposals. In the book *A corrida pelo rio: projetos de canais para o rio São Francisco e as disputas territoriais no Império brasileiro (1846-1886)*, Gabriel Pereira de Oliveira (2019) carried out a detailed evaluation of the disputes between the different provinces regarding the plans to build canals on that large river. The documentation reveals that what motivated provincial elites most was not bringing water to regions affected by droughts, but rather the goal of ensuring the expansion of regular commercial navigability along the river, bypassing the steep slopes in some of its stretches. The dispute, moreover, involved the construction of railways that could cross areas where river navigability proved impossible. What was at stake was the role of the provinces in the territorial flows of the Brazilian Empire. In this dispute, political and economic arguments were mixed with a war of maps and projects. In other words, several engineering options were designed for the biophysical world, all claiming to offer the real solution to the problems under debate. The different proposals, however, shared the same rationality, insofar as they saw the geological configuration of the region as a challenge for modernity and for the technical and industrial conquest of the land.

The last work to be discussed in this section adopted an innovative perspective, as it did not focus on the concrete advancement of the technical and industrial landscape in Brazil in the nineteenth century, but rather on the imaginary that was created around this possibility, including the critical debates on which technologies would be best suited to the tropical reality. It is entitled *Industrial forests and mechanical marvels: modernization in nineteenth-century Brazil*, by Teresa Cribelli (2016). The author explored a variety of sources: scientific publications, patent registrations, articles and letters from readers in the press, public announcements and literary works to reconstruct the debate on modernization. The central argument is that the import of techniques and practices considered modern at the time, particularly from Europe, should not be seen as simple passive, inexorable reception. The theme of nature and forests was always central, since all proposals foresaw the possibility of exploring the natural strength of the land with greater intensity and rationality, avoiding continuation of destructive, backward techniques. On the other hand, as in other countries, the implementation of industrial techniques, or at least the desire to implement them, coexisted with non-capitalist, manual and organic forms of production. Slavery, however, did not impede the growth of the industrial imagination

and some concrete manifestations of its potential. Yet, the relative practical success of farming using slaves and routine techniques, as in the case of burning forests, generated fears and resistance in relation to the social risks and concrete difficulties involved in the local application of modern innovations.

Regions, territories and sociodiversity

Another field of investigation that has provided room for the development of environmental history is the study of the ecological and cultural diversity of Brazil and its regions. An additional aspect is the diversity of Brazilian society itself, with the different population and sociocultural flows as its foundation, whether from the indigenous world, Africa, Europe or other parts of the planet. The examination of regional history and the advance of the frontiers of occupation is present in the origins of environmental history, and has huge potential in the context of the vastness and heterogeneity of Brazil (Pádua, 2010).

The Brazilian Northeast, with its biophysical diversity that includes both the Atlantic forest on the coast and the Caatinga in the inland *sertões*, has been the foundation for a growing literature on environmental history, although still published mostly in edited books. Some examples are *Sertões adentro: viagens nas caatingas, séculos XVI a XIX*, edited by Lorelai Kury (2012); *História ambiental: recursos naturais e povos tradicionais no semiárido nordestino*, edited by Edson Hely Silva, Carlos Alberto Santos and Edivania Granja Oliveira (2017); *Poder, sociabilidades e ambiente*, edited by Suzana Cavani Rosas and Patrícia Pinheiro de Melo (2012); *Natureza e cultura: capítulos de história social*, edited by Eurípides Funes et al. (2013); *Natureza e cultura nos domínios de Clio: história, meio ambiente e questões étnicas*, edited by André Figueiredo Rodrigues, Edson Silva and José Otávio Aguiar (2012); and *História ambiental: debates interdisciplinares*, edited by Patrícia Pinheiro de Melo (2014). Some of these edited books, despite being focused on themes from the Northeast, also address topics related to other regions.

The Central-West region, with its vast land covered by the Cerrado biome or, on a much smaller geographical scale, by the charismatic landscapes of the Pantanal, has also motivated the publication of edited books and some authored books. Among the edited books are *Fronteira Cerrado: sociedade e natureza no Oeste do Brasil*, edited by Sandro Dutra e Silva et al. (2013), and *Transformações no Cerrado: progresso, consumo e natureza*, edited by José Paulo Pietrafesa and Sandro Dutra e Silva (2011).

The universe of the Cerrado also motivated three important authored books. The oldest was published back in 1994 by Paulo Bertran, one of the pioneers in the field of environmental history in Brazil.⁵ It is entitled *História da terra e do homem no Planalto Central: eco-história do Distrito Federal, do indígena ao colonizador*. A central objective of the text was to reveal that the plateau was not “empty” land when Brazil’s futuristic capital city was built there. The image of the unoccupied *sertão*, both here and in many other cases, was constructed through the simple distance between it and the more populated regions along the coast. Or, more substantially, through ideologies that made the subaltern residents who lived in those spaces invisible, by always characterizing the land as “nature.” Nevertheless,

a closer look recognizes the ancient marks of its occupation. Bertran's book (1994) narrates the history of the region in detail, describing the metamorphoses that occurred in the area, from the presence of paleo-indigenous peoples to a series of topics such as the mythopoetics of the region in the Bandeirante culture, colonial forms of settlement and their dietary traditions, the environmental impacts of mining and the rich observations of nineteenth-century travelers. The work does not address the construction of Brasília, but ends with the first proposals to move the capital inland during the nineteenth century, when central Brazil was already envisioned as a geopolitical horizon that ended up being consummated at the end of the twentieth century.

Another, much more recent study, *No oeste, a terra e o céu: a expansão da fronteira agrícola no Brasil central*, by Sandro Dutra e Silva (2017), revisited the "march towards the west" theme that was always behind the construction of Brasília. The author reveals that the "pioneer fronts" policy from the 1930s to the 1950s focused not only on southern Brazil, but also on the state of Goiás, through experiences such as that of the National Agricultural Colony of Goiás (Colônia Agrícola Nacional de Goiás, CANG), in the municipality of Ceres. A local ecological phenomenon appears as central to the research as a whole: Mato Grosso de Goiás, a sort of Atlantic Forest enclave in the middle of the Cerrado that was heavily occupied and deforested in that context. A striking aspect of the text is the unveiling of the symbolic dimensions of this whole movement of creating "modern" landscapes in opposition to the *sertão*. In this sense, he revisits and discusses the career of one of the most mythologized characters in the "march towards the west:" Bernardo Sayão, the first director of CANG and, later, the iconic engineer of the construction of Brasília and the Belém-Brasília highway (where, significantly, he died, crushed under a large, falling tree, reinforcing the image of a hero struggling to conquer the "wild nature" of the country).

In *As florestas anãs do sertão: o Cerrado na história de Minas Gerais*, by Ricardo Ferreira Ribeiro (2005), the starting point is another subregional focus within central Brazil. In this case, the part of the Cerrado biome within the state of Minas Gerais. The temporal focus, however, went far beyond the occupation processes observed in the twentieth century. It is an inclusive, thorough book, almost encyclopedic in its scope. The book attempts to combine environmental history and ethnoecology, examining human uses and representations of the local ecosystems over the long term. Paleo-indigenous and indigenous traditions are studied in their cultural and linguistic diversity, and then the ways in which these native peoples were incorporated into the historical complex arising from the expansion led by the so called "bandeirantes" pioneers and eighteenth century mining. The articulation of mining and agricultural and grazing practices created its own countryside cultures, continually interacting with the world of the Cerrado. The conflicts and rebellions in local society in the nineteenth century – substantially autonomous with respect to formal political institutions – were tensely incorporated into the new social and environmental dynamics produced by the arrival of "progress" in that *sertão*. This is the case, for example, of the presence of scientific discourse, the expansion of the technical-industrial landscape (through mines, railways and factories) or the adoption of new agricultural business practices.⁶

And finally, two other authored books discuss a region of central Brazil with a specific, widely recognized ecological identity: the Pantanal. The first book, *Biodiversidade e ocupação*

humana do Pantanal mato-grossense: conflitos e oportunidades, by José Luiz Franco et al. (2013), is a far-reaching interdisciplinary work that combines ecology, history and sociology. After characterizing the specific characteristics of the biome, it provides a very detailed analysis of the processes of long-term human occupation, emphasizing the establishment of Pantanal cattle breeding, with its unique rhythms and practices, and the threats to its continuation from recent deforestation and river silting processes. To close, it discusses the current situation based on extensive field research and a critical assessment of the concept of “traditional communities.” A related topic is tourist fishing, which is becoming a clear model for generating jobs and income while preserving ecosystems, despite its potential problems and risks. Next, the book *Nas margens da história: meio ambiente e ruralidade em comunidades “ribeirinhas” do Pantanal norte, 1870-1930*, by Ana Carolina da Silva Borges (2010), focuses on the historical background and daily socioenvironmental practices of the poor – mostly consisting of the indigenous people who have been pushed off their land – who had a direct, intense relationship with the many rivers that traverse the biome. The book also discusses the frictions between this population and the “modern” economic practices that expanded with the reopening of navigation in the River Plate basin in the nineteenth century. Even though the residents of the riparian communities partially participated in this new economy, the simple fact of their continuing their way of life was understood as an obstacle to progress, reinforcing the contempt of the local elite towards these people.

In the case of the South, with the Pampas and Atlantic Forest biomes, in addition to the books mentioned in the section on forests, we would like to mention some edited books that have been published: *História ambiental no Sul do Brasil: apropriações do mundo natural*, edited by Jó Klanovicz, Gilmar Arruda and Ely Bergo de Carvalho (2012); *História ambiental no Rio Grande do Sul*, edited by Elenita Pereira, Fabiano Ruckert and Neli Machado (2014); *Oeste de Santa Catarina: território, ambiente e paisagem*, edited by Marlon Brandt and Ederson Nascimento (2015), and *História, natureza e território: imagens e narrativas*, edited by Gilmar Arruda and Haruf Espíndola (2007). As in the case of the Northeast, some of these edited books address themes from other regions.

An authored book on southern Brazil was published by Silvio Correa and Juliana Bublitz (2006), entitled *Terra de promessa: uma introdução à eco-história da colonização do Rio Grande do Sul*. One of the strengths of the text is its emphasis on the importance of the geographical and ecological heterogeneity of the land when combined with different social and economic dynamics. In a superficial image, the lower elevations, with their cattle ranches, define the state’s common image, the home of gaucho culture. The higher elevations, however, with their plateaus, mountains and valleys, have an intricate history that also included dairy farms, but was particularly noted for being the preferred location of different European colonies. The objective of the oligarchies that controlled livestock farming in the lowlands was precisely that of sending the colonists to the highest, forested elevations, where the indigenous people and caboclos lived, so that the land could be “civilized” by the work of the European settlers. Based on rich documentation, the book analyzes the socioenvironmental changes that have taken place in the context of these different spaces, generating a comprehensive, diverse view of the extreme south of Brazil.

In the case of the Southeast, the bibliographic production specific to the region is smaller, although the history of the region has been much discussed, indirectly, in books on the Atlantic Forest. On the state of São Paulo, the most industrialized in Brazil, an important edited book was published with the title *História ambiental paulista: temas, fontes, métodos*, edited by Paulo Henrique Martinez (2007). However, the only two authored books we located on environmental history in the Southeast refer to other states. The first covers a sub-region of the state of Minas Gerais, combining regional, forest and river history in a thought-provoking way. It is *Sertão do Rio Doce*, by Haruf Salmen Espíndola (2005). An important topic in the book is the concept of the *sertão*, where the author argues that “there are many *sertões*,” and that one of their principal characteristics is not that they are “uninhabited,” but rather that “activities that produce goods for the market” are absent. The author analyzed several aspects of the progression of the front of occupation in the *sertão*: the wars against the indigenous people, the problems of river navigation, the epidemiological situation, the role of the military, the types of frontier economy and their relationships with the local natural environment etc. The second book is *A planície do norte do estado do Rio de Janeiro antes e durante a ocidentalização do mundo*, by Arthur Soffiati (2018). The author chose to approach the subject with a very long-term view, defining three large characteristics. The first is the transformation of the region’s eco-physiognomies before the arrival of Europeans and from the sixteenth century onwards (demonstrating that the chronology of local environmental history differs greatly from traditional political-based periodizations). The second is the question of the opposition between humidity and dryness, essential to the regional historical process, demonstrating that the demand for “sanitation works” beginning in the late nineteenth century, more than a concern about disease, was in actuality a desire to drain swamps and lagoons to satisfy the hunger for more dry land for agriculture. The third and last was a critical analysis of the performance of the National Department of Sanitation Works (Departamento Nacional de Obras de Saneamento, DNOS) from 1940 onwards, deconstructing the myth that the institution acted as a “savior of the region” by correcting the “unhealthiness” of its natural landscapes.

Instead of choosing a regional focus, some edited books chose to highlight significant components of the land, making use of a transversal reading in regard to the different regions. This is the case with the relationship between rivers and societies in *A natureza dos rios: história, memória e territórios*, edited by Gilmar Arruda (2008); *Cidades, rios e patrimônio: memórias e identidades beiradeiras*, edited by Vanessa Brasil and Gercinair Gandara (2010); and *Natureza e cidades: o viver entre águas doces e salgadas*, edited by Gercinair Gandara (2012). The theme of the use of water in different contexts and geographical settings was the basis for the edited book *A água no Brasil: conflitos, atores, práticas*, edited by Hanna Sonkajarvi and André Vital (2019). Another option was to encourage rereading of the traditional theme of the *sertões* through the lens of environmental history, as in *Vastos sertões: história e natureza na ciência e na literatura*, edited by Sandro Dutra e Silva, Dominichi Miranda de Sá and Magali Romero Sá (2015).

With regard to the environmental dimensions of the Brazilian population’s sociodiversity, the great potential for research is being implemented gradually. The African presence in Brazilian sociodiversity has not yet generated authored works on a topic that is

key in environmental history, despite the horizons broadened by the work of Carney and Rosomoff (2009), mentioned earlier. The Northeast has become the center of historiographic production on indigenous populations, partly due to the efforts of Edson Hely Silva to find interconnections between indigenous history and environmental history. This is the case with the edited books *História ambiental, história indígena e relações socioambientais no semiárido brasileiro*, edited by Carlos Santos, Edson Hely Silva and Edivania Granja Oliveira (2018), and *História ambiental e história indígena no semiárido brasileiro*, edited by Edson Hely Silva et al. (2016). In terms of authored books, however, the only title we found covers a very diverse geographical context: *Entre as matas de araucárias: cultura e história Xokleng em Santa Catarina (1850-1914)*, by Jackson Alexsandro Peres (2014). Focusing on studying the cultural habits of the Xokleng, the book investigates how the nomadism characteristic of the group led to the different ways in which it related to the araucaria pine forests and, in particular, how it influenced its araucaria nut harvesting practices. Note that the incorporation of the araucaria nut as a fundamental food in their diet was not restricted to the Xokleng. The Kaingangs, who also inhabited the region and tended to have a degree of nomadism, also consumed the araucaria nuts. This resulted in violent ethnic disputes for dominance of the araucaria forests in the months during which the araucaria nuts matured. The relationship between land and indigenous people is, in fact, the transversal axis of the book, which looks at how interethnic contacts took place in the midst of subsistence practices and, later, with non-indigenous groups – which, after the 1850 Land Law, began to appear increasingly in the Santa Catarina region. Although the Xokleng started to have intermittent contact with non-indigenous people later than other ethnic groups, Xokleng culture changed significantly from the beginning of the twentieth century and the food supply previously found in the biodiversity of the pine forests became increasingly replaced by agriculture.

Finally, the general theme of spontaneous or targeted immigration, especially from Europe, has inspired many edited books, notably due to the collective effort of the Immigration, Migration and Environmental History Laboratory of the Federal University of Santa Catarina (Universidade Federal de Santa Catarina). This endeavor has already produced three important books: *História ambiental e migrações*, edited by Eunice Nodari and João Klug (2012); *Migrações e natureza*, edited by Eunice Nodari and Silvio Correa (2013); and *História ambiental e migrações: diálogos*, edited by Marcos Gerhardt, Eunice Nodari and Samira Moretto (2017).

Environmental thinking and environmentalism

The last theme that we saw explored in the material cataloged concerns the history of ideas on nature and, in a more specific sense, on destruction of the environment. Another important aspect is the transition from critical discourse to collective public actions – or political and legislative actions – to a social dynamic that today is usually called “environmentalism.” In fact, historical research was essential to subverting the dominant understanding of the subject in the 1960s and 1970s. It was then thought that the concern with environmental problems was a late-twentieth-century phenomenon in the

context of the great industrial acceleration of the post-war period. Historians demonstrated, however, that this phenomenon is related to modernity in a much broader sense, since environmental sensitivity has been developing not just in recent decades, but rather over the last few centuries, due to processes such as European colonial expansion, industrial revolutions, and other circumstances. The presence of this concern in public opinion and in the media, or in political movements, is clearly more recent. However, in intellectual debates, we found strong expressions of concern about what we would now consider part of an “environmental agenda:” deforestation, soil degradation, species extinction, climate change, etc., at least since the eighteenth century. The word “environmentalism” was not used and this type of investigation, like any historical analysis, involves a good deal of retrospective care to avoid anachronism.

In the early 2000s, José Augusto Pádua (2002), one of the authors of the present article, published the book *Um sopro de destruição: pensamento político e crítica ambiental no Brasil escravista, 1786-1888*. The book analyzed about fifty authors from that period who wrote consistent comments on the types of problems mentioned above. The roots of this concern were found in what was called the Luso-Brazilian Enlightenment, and its most complete synthesis, in the beginning, was produced by José Bonifácio de Andrada e Silva in the 1820s. The debate continued quite intensely throughout the nineteenth century, dividing into two currents of thought. The first, in the wake of Bonifácio’s reflections, associated the destruction of soils and forests with the existence of slavery, leading to the work of abolitionists such as André Rebouças and Joaquim Nabuco. The second, which avoided establishing a direct connection between destruction of the natural world and slavery, chose to emphasize technological aspects, and was cultivated in spaces such as the National Museum (Museu Nacional) and the Brazilian Historical and Geographical Institute (Instituto Histórico e Geográfico Brasileiro). One of the central arguments of the work was that the romantic culture, which spoke so often of “nature” in a generic sense, had little influence on the development of that essentially political, scientific and anthropocentric critical tradition. The authors analyzed did not understand environmental destruction to be a “price of progress,” but rather a “price of backwardness,” that is, a consequence of the dominance of archaic technologies and production practices, inherited from the colonial past, which should be replaced with modernization of the country.

The book *Natureza e cultura no Brasil, 1870-1922*, by Luciana Murari (2009), provided a very broad reconstruction of the ideas regarding nature during the transition from the monarchy to the republican regime. Criticism of the destruction of the natural world, despite being clearly present, was not the focus of the work. One of its main contributions, in fact, was to show the opposite: condemnation of the tropical natural environment and praise for its conversion into civilized landscapes. The existence of images of nature in Brazilian culture at the time, although common, was quite ambiguous, including aspects of paradise, identity and opulence, but also of excess, hostility, savagery and barriers to progress (even more so in a context with a strong international presence of geographic determinism). Most of the formulations began with an image of “a war against nature,” of conquest, of necessary transformation of the land (even though the culture preserved, in its artistic expressions, the beauty of the wild countryside that would be concretely lost).

Another three authored books that address the history of environmental ideas focused on the first half of the twentieth century. In the first, *The scramble for the Amazon and the lost paradise of Euclides da Cunha*, by Susanna Hecht (2013), the starting point is a critical and reflective presentation of Cunha's personal and intellectual career, even before his forays into the Amazon region and, later, a narration of the misfortunes that led to his murder in 1909. His biography serves as a sort of introduction to the dilemmas of Brazilian intellectuals at the beginning of the twentieth century. The heart of the analysis, however, is the discussion of Cunha's writings on the Amazon. The richness of this material serves as a foundation for Hecht to reflect on the presence of the Amazon in contemporary global history, including a fine rereading of the theme of imperialism and international greed with respect to the region. At the same time, she follows Cunha in the discussion about social dynamics and human suffering in the jungle, defining the contours of what the author calls a "tropicalist ethnography" of the Amazon. The second book, *Proteção à natureza e identidade nacional no Brasil: anos 1920-1940*, by José Luiz de Andrade Franco and José Augusto Drummond (2009), revisits a debate that took place in the decades following Cunha's death and it is worthwhile comparing it to that analyzed in *Um sopro de destruição* (Pádua, 2002). In the nineteenth century, the figure of the natural scientist was not yet well formalized. The study of nature, as well as concern regarding its destruction, was less restricted by academic specializations. In the first decades of the twentieth century, however, the debate tended to be dominated by zoologists and botanists, in addition to focusing more on scientific institutions such as the National Museum or the Butantan Institute (Instituto Butantan). Another important difference is that, in the twentieth century, the ideal of "nature conservation" is more clearly defined, including on an international scale, with conferences held and entities founded for this purpose. The objectives of conservation have been shaped, at least in part, by concerns broader than the depletion of natural resources, with aesthetic, biological or similar arguments becoming more prominent. On the other hand, recognizing the centrality of scientific institutions does not mean that the debate was completely separate from the political dimension. As indicated in the title itself, scientists identified their criticism of the destruction of the natural world as part of an effort to defend Brazil's identity, integrity and progress. It is exactly this political dimension of science that was addressed by Regina Horta Duarte (2010) in *A biologia militante: o Museu Nacional, especialização científica, divulgação do conhecimento e práticas políticas no Brasil – 1926/1945*. The author even discusses some of the characters studied by Franco and Drummond (2009). However, its focus is the National Museum, Brazil's principal scientific institution before the emergence of its university system. The book reveals that several scientists at the Museum considered themselves responsible for the improvement of society, arguing that education and scientific communication, including via radio broadcasting, were essential to national progress. Furthermore, they participated in the drafting of laws, such as the Hunting and Fishing Law, and in international communities of scientists in favor of species conservation and against massive hunting of birds and other animals. The book also reveals the frictions that occurred between the type of policies cultivated by scientists, with non-partisan pretensions and for the "good of the nation," and the concrete political and governmental forces of a troubled country that was experiencing revolutions and coups d'état.

Another possible path for historical investigation is to set aside the universe of scientists and intellectuals in order to examine collective actions arising from engaged citizens, based on an ideal of environmental activism that grew significantly in the twentieth century. A fascinating case was that of Henrique Roessler, in the region of São Leopoldo (RS), who led the creation of the Nature Protection Union (União Protetora da Natureza) in 1955, one of the first non-governmental organizations focused on the subject in Brazil. Roessler's career has been discussed in two books: *A figueira e o machado: uma história das raízes do ambientalismo no sul do Brasil e a crítica ambiental de Henrique Roessler*, by Daniel Prado (2011), and *Roessler, o homem que amava a natureza*, by Elenita Malta Pereira (2013). The first draws on Roessler's career and writings to discuss the environmental history of Brazil and the state of Rio Grande do Sul, as well as the origins of environmentalism in the state, from a more general perspective. The second adopts the historiographical option of exploring the biography of the man in more detail, including his childhood, his work as a government employee (as a forest ranger) and his later activities after creation of the non-governmental entity. During this last period, Roessler's work took on a strong public dimension, including, in a broad sense, several educational activities, writing frequently for the press and confronting those who wanted to destroy the environment. The biography serves as a guiding thread when thinking about the regional history of the period, current intellectual influences and the concrete problems in the relationship with the land at a time of economic growth.

Finally, the presence of intellectual history in our survey must include some initial works that sought to reflect on the theory of environmental history and the historiographic making of this field of investigation. This is the case of *História e natureza*, by Regina Horta Duarte (2005), *História ambiental do Brasil: pesquisa e ensino*, by Paulo Henrique Martinez (2006), and *História e meio ambiente*, by Marcos Lobato Martins (2007). Regina Horta Duarte's book is an attempt to disseminate, in accessible and well-informed language, a historical look at environmental issues. She incorporates examples as far back as the ancient world, or from the formation of Brazil, through phenomena seen in the contemporary cultural industry and pop culture. Another important point is her analysis of environmental historiography, discussing the contributions of several authors, both foreign and Brazilian, always with the objective of calling readers' attention to the benefits of this historical approach. Paulo Martinez, on the other hand, looked at the potential of environmental topics in the practical work of historians, discussing theoretical themes – such as the contrast between the temporalities of the natural world and those of social phenomena – and revisiting the work of several classical historians who did not focus explicitly on the environment, in order to understand how their reflections can contribute to the development of a historical-environmental approach. A central point is the defense of an interdisciplinary dialog that does not relegate the methodologies and issues specific to history to a secondary plane. The challenges of environmental history when teaching Brazilian history are also discussed, focusing on a set of suggestive examples and calling attention to the need for innovative solutions, such as researcher-training laboratories. The third author, Marcos Lobato Martins, begins his book with scholarly theoretical reflections on the need for historical analysis to incorporate the “questions of life,” on the view that the movements of human history

and of nature are shaped mutually and that the variety of sources required for a historical-environmental approach goes beyond written documents. The second part of the book draws on case studies, all centered on Minas Gerais, in order to reveal the great potential of environmental history to illuminate specific situations in historical research, including regional history and colonial history.

Final considerations

The mapping performed for this article of books on the environmental history of Brazil demonstrates the growth of this field of research among Brazilian and foreign researchers, especially books in English. Although we have cited some books published in the prior century, the vast majority were published in the twenty-first century. In other words, bibliographic production in this specific area reflects contemporary reality, in which one can no longer understand the world without considering the breadth and strength of the environmental issues with which we have historically interacted.

In statistical terms, the bibliography commented on here, 55 authored books and thirty edited books, was categorized as follows: the “Forests” section included 11 authored books and three edited books; the “Agriculture and livestock farming” section included eight authored books and one edited book; in “Biodiversity and extraction of flora and fauna” there were five authored books and three edited books; in “Urban and industrial dynamics” there were 12 authored books and two edited books; in “Regions, territories and sociodiversity” there were nine authored books and 21 edited books; and finally, in “Environmental thinking and environmentalism” there were ten authored books. Strangely, we were unable to find any edited book on this last topic. Although the figures do not indicate a significant imbalance in production with respect to the six categories chosen, a closer look shows that there is still a lot of room for new research and/or approaches to the themes already addressed in each category. From another perspective, if we have, on the one hand, a significant number of texts on the Atlantic Forest and the Amazon Forest, on the other we have a somewhat uncomfortable *deficit* with respect to other biomes, such as the Pampas and the Caatinga. Overall, we can see that urban and industrial themes are addressed much less frequently than rural and forest themes. It is worth remembering, however, that many dissertations and research projects on a variety of topics that were or were not mentioned above are in progress, creating the concrete expectation that many new Brazilian environmental history books will be published in the near future (in addition to the works that have already been published, but which we were unable to locate).

The sources used in this survey were quite varied, including books based on several types of written documentation and some based on a considerable degree of fieldwork. However, we identified that there are sources that are still little explored by environmental historians, such as debates and documents from the legislative and the judiciary (such as criminal proceedings) and also the documentation produced by the agencies specifically responsible for managing natural resources.

At a contemporary world guided by imagistic relations, studies focusing on iconographic sources will certainly make an important contribution. In the survey, we noticed that use

of these sources was limited. The same can be said of research that seeks to interweave environmental history with the arts, analyzing representations of the natural world in paintings, sculptures, photographs, installations etc., or else with archeology, investigating how the remnants of the material culture of people who previously inhabited Brazil related to the natural world.

We also want to call attention to a type of resource that has been widely used by historians in general, but not yet to its full potential by environmental historians: oral sources. Although some of the books described here have used interviews in their research, an oral history methodology still has much to contribute to environmental history research. We believe that incorporating the narratives of *caiçaras* (coastal dwellers), *quilombolas* (descendants of runaway slaves who formed *quilombo* settlements), indigenous people, small farmers, riparian dwellers, and settlers may be one of the most promising paths for development of the field. The many people who live in direct contact with nature may be able to tell us themselves how they produce meaning in their socioenvironmental context, and many other valuable details and perspectives that we do not find in official documents.

There is also a lot to research and write about on urban environmental history by breaking away from a still-dominant interpretation that isolates cities from the dynamism of the natural world, as if the two were not interconnected via a network of interdependent phenomena of flows of energy, materials, ideas, discourse and feelings. Also in this context, oral histories can make an important contribution as they highlight urban environmental experiences that, in general, do not appear in written documentation, as in the case of community residents, solid material recycling workers etc.

One approach that we did not find explicit in the material mapped was the direct interface between environmental history and gender studies. Although the presence of women, for example, is a fundamental element in the concrete experience of people in their living environments, whether rural or urban, an emphasis on this dimension has yet to be employed.

And finally, in times of institutional insecurities and ideological obscurantisms, such as those we live in, environmental history must expand, strengthen and help create historical and ecosystemic awareness. This effort can contribute to making history, through its multiple approaches, an increasingly inclusive, open, democratic and sensitive field of investigation.

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NOTES

¹ Over the last few decades, as increasingly more researchers in the field of environmental history have entered university systems, the number of posts for professors in undergraduate and graduate programs, the number of theses undertaken, and similar measures have grown substantially. An important survey carried out by Lise Sedrez and Eunice Nodari (2018), identified 134 researchers based on thematic and quantitative criteria, who are explicitly working in this area and demonstrated that some universities have begun to stand out as the home of research laboratories and training centers. Initially, this occurred at the Universidade Federal de Santa Catarina, the Universidade Federal de Minas Gerais, the Universidade Federal

do Rio de Janeiro, the Universidade Estadual Paulista (Assis campus), the Universidade de Brasília, and the Universidade Federal do Ceará. However, now this situation has been broadening, with centers forming at the Universidade Estadual de Ponta Grossa, the Universidade Federal do Pará, the Universidade Federal de Pernambuco, the Universidade Estadual do Centro-Oeste, the Universidade Federal da Fronteira Sul, and several other university centers, as young PhDs become professors and contribute to this expansion.

² These publications will be discussed or mentioned in the section “Regions, territories and sociodiversity.”

³ It is important to stress that, before this, Drummond (1991) had published an important article entitled “A história ambiental: temas, fontes e linhas de pesquisa,” that had served as a reference during the initial establishment of this field of research in Brazil.

⁴ Although it does not specifically address Brazil, we do not want to fail to mention the book *Um clima de incertezas: as controvérsias científicas sobre mudanças climáticas nas revistas Science e Nature (1970-2005)*, by Roger Colacios (2017), which provides a historical reading of the global climate debate over the last few decades. The book demonstrates that Brazilian environmental historians can write competently on topics broader than “Brazilian” history.

⁵ Bertran (1991) wrote one of the first environmental history articles published in Brazil: “Desastres ambientais na capitania de Goiás.”

⁶ The author’s reflections continued in a second book entitled *Sertão, lugar desertado: o cerrado na cultura de Minas Gerais* (Ribeiro, 2006). The present article did not comment on in this book because environmental history is not its focus. It is based on field research on the many uses of the Cerrado by contemporary communities in the region.

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