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Pereira Antunes, Anderson; Massarani, Luisa; Castro Moreira, Ildeu de  
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# “Practical Botanists and Zoologists”: Contributions of Amazonian Natives to Natural History Expeditions (1846-1865)<sup>⌚</sup>

Anderson Pereira Antunes  
*Fundação Oswaldo Cruz/  
Fiocruz, Brazil*

Luisa Massarani  
*Fundação Oswaldo Cruz/  
Fiocruz, Brazil*

Ildeu de Castro Moreira  
*Universidade Federal do Rio  
de Janeiro, Brazil*

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**Abstract. Objective/context:** This paper analyses the relations between 19<sup>th</sup> century travelling naturalists and the indigenous inhabitants of Brazilian Amazonia. The region was a favourite among travellers during the latter half of the 19<sup>th</sup> century. On their travel books, naturalists reported not only on local Nature, but also on local inhabitants and their contributions to the expeditions, making them valuable sources for understanding the interactions between them and the natives. **Originality:** The originality of the paper rests in the use of a diverse set of primary sources, in the form of 19<sup>th</sup> century travel books. The article contributes to the current historiography on Natural History expeditions while aiming specifically at the relations between naturalists and the indigenous inhabitants of the region. **Methodology:** The analysis relies on primary sources, which consist mainly of the travel books written and published by some of the most well-known 19<sup>th</sup> century travelling naturalists that visited the Brazilian Amazonia. It is from their personal reports and observations that we aim to understand, on the one hand, how these foreign naturalists interacted with the local indigenous inhabitants and, on the other, how the natives were able contribute to the scientific expeditions led by European naturalists. **Conclusions:** It is safe to conclude that the indigenous inhabitants of Brazilian Amazonia were a constant presence during 19<sup>th</sup> century expeditions in the region. The interactions between naturalists and natives, sometimes mediated by a third party, were often essential to the success of these expeditions. The principal contribution of the indigenous inhabitants, as stated by the naturalists themselves, was the aid in the collection of specimens. The natives’ expertise on the habits and habitats of animals and plants, paired with their hunting and to navigational skills through the region’s complex river system, seem to have been a subject of admiration as well as a source of information and specimens.

**Keywords:** *Brazilian Amazonia, circulation of knowledge, Natural History, 19<sup>th</sup> century.*

## “Botánicos y zoólogos prácticos”: Aportes de los nativos amazónicos a las expediciones de historia natural (1846-1865)

**Resumen. Objetivo/contexto:** Este trabajo analiza las relaciones entre los naturalistas del siglo XIX y los habitantes indígenas de la Amazonia brasileña. La región fue un espacio predilecto entre los viajeros durante

⌚ The article presents results from our on-going research, which focuses on the circulation of knowledge between traveller naturalists and local populations in 19<sup>th</sup> century Brazilian Amazonia. We have been studying the interactions between local groups, which included indigenous inhabitants, settlers and slaves, and foreign scientific travellers, identifying how they collaborated, and how the former aided travellers in their expeditions and shared their knowledge about local nature.

la segunda mitad del siglo XIX. En sus libros de viajes, los naturalistas no sólo hablaban sobre la naturaleza, sino también sobre los habitantes locales y sus aportes a las expediciones, lo que los convierte en fuentes valiosas para comprender las interacciones entre ellos y los nativos. **Originalidad:** La originalidad del artículo se basa en el uso de un conjunto diverso de fuentes primarias, a saber, libros de viaje del siglo XIX. El artículo contribuye a la historiografía actual sobre las expediciones de Historia Natural, a la vez que apunta específicamente a las relaciones entre los naturalistas y los habitantes indígenas de la región. **Metodología:** El análisis se basa en fuentes primarias, que consisten, principalmente, en los libros de viaje escritos y publicados por algunos de los más reconocidos naturalistas viajeros del siglo que visitaron la Amazonia brasileña. A partir de sus informes y observaciones personales pretendemos comprender, por un lado, cómo estos naturalistas extranjeros interactuaron con los habitantes indígenas locales y, por el otro, cómo los nativos aportaron a las expediciones científicas dirigidas por los naturalistas europeos. **Conclusiones:** Es razonable concluir que los habitantes indígenas de la Amazonia brasileña tuvieron una presencia constante durante las expediciones del siglo XIX en la región. Las interacciones entre naturalistas y nativos, a veces mediadas por un tercero, a menudo fueron esenciales para el éxito de estas expediciones. El principal aporte de los habitantes indígenas, según lo declarado por los mismos naturalistas, fue la ayuda en la recolección de especímenes. El conocimiento experto de los nativos sobre los hábitos y hábitats de los animales y las plantas, combinado con sus habilidades de caza y navegación a través del complejo sistema fluvial de la región, parecen haber sido una fuente de admiración, así como de información y especímenes.

**Palabras clave:** *Amazonia brasileña, circulación del conocimiento, historia natural, siglo XIX.*

### **"Botânicos e zóólogos práticos": Colaborações dos nativos amazônicos para as expedições de história natural (1846-1865)**

**Resumo. Objetivo/contexto:** Este trabalho analisa as relações entre os naturalistas do século XIX e os habitantes indígenas da Amazônia brasileira. A região foi um espaço predileto entre os viajantes durante a segunda metade do século XIX. Em seus livros de viagens, os naturalistas não falavam somente sobre a natureza, mas também sobre os habitantes locais e suas colaborações para as expedições, o que os converte em fontes valiosas para compreender as interações entre eles e os nativos. **Originalidade:** A originalidade do artigo se baseia no uso de um conjunto diverso de fontes primárias, a saber, livros de viagem do século XIX. O artigo contribui para a historiografia atual sobre as expedições de História Natural, ao mesmo tempo em que aponta especificamente para as relações entre os naturalistas e os habitantes indígenas da região. **Metodologia:** A análise se baseia em fontes primárias, que consistem, principalmente, nos livros de viagem escritos e publicados por alguns dos mais reconhecidos naturalistas viajantes do século que visitaram a Amazônia brasileira. A partir de seus relatórios e observações pessoais pretendemos compreender, por um lado, como esses naturalistas estrangeiros interagiram com os habitantes indígenas locais e, por outro, como os nativos colaboraram com as expedições científicas dirigidas pelos naturalistas europeus. **Conclusões:** É razoável concluir que os habitantes indígenas da Amazônia brasileira tiveram uma presença constante durante as expedições do século XIX na região. As interações entre naturalistas e nativos, às vezes mediadas por um terceiro, foram frequentemente essenciais para o sucesso dessas expedições. A principal colaboração dos habitantes indígenas, de acordo com o que foi declarado pelos próprios naturalistas, foi a ajuda na coleta de espécies. O conhecimento especializado dos nativos sobre os hábitos e hábitats dos animais e das plantas, combinados com suas habilidades de caça e navegação através do complexo sistema fluvial da região, parecem ter sido uma fonte de admiração, bem como de informação e espécimes.

**Palavras-chave:** *Amazônia brasileira, circulação do conhecimento, história natural, século XIX.*

## Introduction

“Practical botanists and zoologists”.<sup>1</sup> That is how, in 1868, the Swiss naturalist Louis Agassiz (1807-1873) referred to the Brazilian Indians he had met, labeling the vast empirical knowledge they possessed of the local Nature as practical, acquired through years of living in those regions. At the same time, this distinction nods to a common European perception about the natives: their supposed inability for abstraction, theory and imagination. Nevertheless, naturalists who visited Brazilian Amazonia often relied heavily on the assistance of the Indians. Besides Agassiz, many other naturalists who visited Brazil reported in their travel books the encounters they had with the indigenous population. Today, these books tell us not only of Brazil, its inhabitants and its Nature, but also of the social aspect inherent to 19<sup>th</sup> century scientific expeditions.

Even though they are marked predominantly by the Eurocentric and racist conceptions of their authors, it is possible to find in these books clues that can help us put together a picture of the times, as was once suggested by historian Carlo Ginzburg.<sup>2</sup> It is possible to find information that can help us establish the history of the occupation of the territory by different native groups, commentary about their cultural and religious expressions, vocabularies that allow us to recover their languages, and narratives about innumerable situations that can help shed light on the dynamics of the relationships between natives, settlers and foreigners in Brazilian society.

These travel books allow us to accompany the naturalists who wrote them while they observed and tried to understand the natural environment and the local inhabitants that they encountered for the first time. It is noticeable, as suggested by Leite,<sup>3</sup> how the process of understanding the new surroundings relied heavily on comparisons between the new and what was already familiar. Besides their own assessments, travellers often reproduced the beliefs, sentiments and opinions of local inhabitants, including remarks made about the strangeness they sometimes felt when observing naturalists and their scientific work.

There is a particularly plentiful number of travel books written by traveller naturalists who visited Brazil in the 19<sup>th</sup> century, when scientific travelling really boomed in popularity. That is when travelling became a fundamental step in the scientific study of Nature,<sup>4</sup> as well as an early stage in the education of naturalists.<sup>5</sup> Moreover, in the broader context of European colonial expansion, there were strong political, economic and military interests that also favoured the scientific desire to study and explore Natural History around the globe.

Brazil was, in this context, one of the main destinations for traveller naturalists, especially after the Portuguese Crown started to weaken its protectionist policies after the transfer of the Royal Family to the New World. New decrees, such as the opening of the ports to friendly nations,

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1 Louis Agassiz and Elizabeth Cary Agassiz, *A Journey in Brazil* (Boston: Ticknor and Fields, 1868), 239.

2 Carlo Ginzburg, *Mitos, emblemas, sinais: morfologia e história* (São Paulo: Companhia das Letras, 1989).

3 Miriam Lifchitz Moreira Leite, *Livros de viagem (1803-1900)* (Rio de Janeiro: UFRJ, 1997).

4 Lorelai Kury, “Viajantes-naturalistas no Brasil oitocentista: experiência, relato e imagem,” *História, Ciências, Saúde – Manguinhos* 8 (2001): 863-880.

5 Hanna Hodacs, “Linnaeans Outdoors: The Transformative Role of Studying Nature ‘On The Move’ and Outside,” *British Journal of History of Science* 44, n.º 2 (2011): 1-27.

made the country more accessible not only to European commerce, but also to foreign science. In scientific terms, the latter half of the 19<sup>th</sup> century was also a period marked by the perception that the tropics were an ideal place to study the question of the origin of species, one of the main scientific controversies at that time.<sup>6</sup>

## 1. Travel Books

Not all scientific expeditions were alike and there were many differences in regard to their goals, the places they visited, their means of finance and the resources they employed. However, keeping a diary with precise notes about what was observed and experienced in the field was a common practice between travellers since, at least, the 18<sup>th</sup> century.<sup>7</sup>

From these sets of notes, travellers later edited and published books reporting on their experiences. These books quickly became a public favourite and a widely consumed genre in the 19<sup>th</sup> century literary market.<sup>8</sup> These narratives, besides being means of communicating what was observed and what species were collected during the expeditions, also supplied a curious public with lively and detailed descriptions of places, peoples and species that were still quite unknown to European and North American audiences. According to Lisboa,<sup>9</sup> when analysing these narratives, it is possible to notice that they crossed genres between chronicle, romance, adventure novel, diary and scientific report. Domingues, in turn, remarked on some of the main roles these books played:

"The reports were an effective way of transforming personal experience into public knowledge, testimonies of the world, reflecting the experience and direct observation of other environments and societies, albeit influenced in terms of organisation, development and content by the author's background, by what they had read previously, by the selection of arguments and information published, destined to answer to the public's taste and curiosity at that time."<sup>10</sup>

Today, it is possible to have free digital access to many of these books, which are in the public domain and constitute a very important documentary archive for the History of Science. They afford us unprecedented insight into some of the fundamental elements involved in the scientific fieldwork of 19<sup>th</sup> century traveller naturalists. Much in the same way as contemporary science is a collaboration between different individuals and institutions, fieldwork also depended largely on the collaboration between naturalists and the local inhabitants of the places they visited. Without interacting with the people and taking advantage of local social networks, many naturalists probably would not have achieved the same success in their expeditions, especially regarding the collection of specimens.

6 Ildeu de Castro Moreira, "O escravo do naturalista," *Ciência hoje* 31, n.º 184 (2002): 40-48.

7 Lorelai Kury, ed., *Comissão científica do Império. 1859-1861* (Rio de Janeiro: Andrea Jakobsson Estúdio Editorial Ltda, 2009).

8 Leite, *Livros de viagem*, 53.

9 Karen Macknow Lisboa, *A nova Atlântida de Spix e Martius: natureza e civilização na Viagem pelo Brasil (1817-1820)* (São Paulo: Hucitec, 1997).

10 Angela Domingues, "Oficiais, cavalheiros e concorrentes: o 'Brasil' nas viagens de circum-navegação do século das Luzes," *Revista de Indias*, LXXIII, n.º 258 (2013): 387.

Befriending the local people was such an integral part of travelling that it was already included in many of the instruction manuals for travellers, at least since the 16<sup>th</sup> century.<sup>11</sup> The same instructions also recommended keeping daily diaries or notebooks to register the information obtained from these local inhabitants. Even though the information registered is invariably marked by the social and cultural background of the foreign visitors, it still constitutes a valuable source of information on the lands and peoples they report on. It is even more relevant when taking into account the lack of information recorded by local inhabitants about their participation in scientific expeditions,<sup>12</sup> which is especially true in the case of indigenous communities that had predominantly oral cultures.

It was not unusual for travelling naturalists to rely on the contributions of local inhabitants, who often acted as field guides, woodsmen, boatmen and specimen collectors, to name just a few of the instances in which local people participated in these expeditions. On this paper we aim to look at some of these cases to observe how local indigenous people contributed to some of the most well-known scientific expeditions to have passed through Brazilian Amazonia during the 19<sup>th</sup> century. Looking at the travel books published by the naturalists who led these expeditions, we will see how natives provided essential aid, especially with transportation and the collection of specimens. In Brazilian Amazonia, a region that was then still relatively unknown to science, not as urbanized and developed as other regions in the country, rich in virgin forests and characterized by a complex mesh of rivers, resorting to the native indigenous population —then still prevalent in the region, especially in the interior— was paramount for a successful expedition. Natives, whether forced or paid to work for naturalists, shared with travellers the knowledge they possessed of the local environment, its fauna and flora. By analysing these relations it is possible to see how this knowledge was received and incorporated by travellers.

It is also interesting to compare what naturalists published in their travel books with the accounts written on more strictly scientific papers and books. The comparison reveals a clear stylistic difference between these different types of writing, especially in regard to the contribution of local inhabitants to the expeditions. While travel books present detailed narratives of the situations experienced by the naturalists, with frequent mentions of their encounters with different individuals involved with the expeditions, scientific papers and other writings more often than not suppress these encounters. According to Camerini,<sup>13</sup> this can be attributed to the specific character of scientific writing, which values neutrality, impersonality and objectivity.

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11 Frederico Tavares de Mello Abdalla, “O peregrino instruído: um estudo sobre o viajar e o viajante na literatura científica do Iluminismo,” dissertation (Master in History), Setor de Ciências Humanas, Letras e Artes, Universidade Federal do Paraná, Curitiba (2012): 153, <<http://www.humanas.ufpr.br/portal/arquivos/FredericoAbdalla.pdf>>

12 Londa Schiebinger, *Plants and Empire* (Cambridge: Harvard University Press, 2004).

13 Jane Camerini, “Wallace in the Field,” *Osiris* 11 (1996): 44-65.

The historiography of scientific expeditions has followed this trend for a very long time. It was only in the past few decades that researches such as Antunes, Massarani e Moreira,<sup>14</sup> Antunes, Camerini Fan Moreira, Raj and Turner,<sup>15</sup> among others, have begun to focus on the specific features of sociability in the field and on the circulation of ideas and knowledge between travellers and locals. According to Turner,<sup>16</sup> this new focus on the social aspects of scientific work can bring new and important contributions to the History of Science.

This new approach has spawned many important works that shed light on the way that local indigenous groups comprehended the Nature around them, and how they constantly contributed to the scientific expeditions led mainly by European naturalists. It is important, however, to be aware of the risk of substituting one myth for another, as has warned Moreira:

"It is not about substituting one myth for another: the myth of the Indian who knew it all and who was ransacked by foreign scientists. However, biases regarding the importance of the cultural context, and of knowledge that does not have the systematized form of modern science have been an obstacle to the construction of a more realistic view on Natural Historical practices."<sup>17</sup>

With these matters in mind, travel books and reports written by traveller naturalists constitute a rich source material that can still be explored. On these accounts it is possible to identify many of the individuals who contributed with traveller naturalists who visited Brazil, as well as the ways in which they were able to contribute to the expeditions. It is also possible to analyse the way in which knowledge circulated and was appropriated in the interactions between local inhabitants and foreign naturalists. Moreover, in the specific case of indigenous groups, the information found in travel books provides researchers with clues that can help in retrieving their cultural practices and contributions to scientific expeditions. They can also allow us to produce a more comprehensive history of the occupation of the Brazilian territory by the different indigenous groups, which, in turn, can provide valuable information to projects such as the *New Social*

14 See Anderson Pereira Antunes, Luisa Medeiros Massarani, and Ildeu de Castro Moreira., "Local Collaborators in Henry Walter Bates' Amazonian Expedition (1848-1859)," in *The Scientific Dialogue Linking America, Asia, and Europe Between the 12<sup>th</sup> and the 20<sup>th</sup> Century. Theories and Techniques Travelling in Space and Time*, edited by Fabio D'Angelo (Naples: Associazione culturale Viaggiatori, 2018): 382-400, <[http://www.viaggiatorijournal.com/cms/cms\\_files/20180706110008\\_avae.pdf](http://www.viaggiatorijournal.com/cms/cms_files/20180706110008_avae.pdf)> Also, Anderson Pereira Antunes, Luisa Medeiros Massarani, and Ildeu de Castro Moreira, "Uma análise da rede de auxiliares da expedição de Louis Agassiz a Brasil (1865-1866)," *Revista Brasileira de História da Ciência* 9, n.º 1 (2016): 113-125. Anderson Pereira Antunes, "A rede dos invisíveis: uma análise dos auxiliares na expedição de Louis Agassiz ao Brasil (1865-1866)," dissertation (Master in the History of Science and Medicine), Casa de Oswaldo Cruz, Fundação Oswaldo Cruz (2015), <[http://www.ppghcs.coc.fiocruz.br/images/dissertacoes/dissertacao\\_anderson\\_antunes.pdf](http://www.ppghcs.coc.fiocruz.br/images/dissertacoes/dissertacao_anderson_antunes.pdf)>

15 See Camerini, *Wallace in the Field*. And, also, Jane Camerini, "Remains of the Day: Early Victorians in the Field," in *Victorian Science in Context*, edited by Bernard Lightman (Chicago: The University of Chicago Press, 1997): 354-377. Fa-ti Fan, "Science in a Chinese Entrepôt: British Naturalists and their Chinese Associates in Old Canton," *Osiris* 18 (2003): 60-78. Moreira, "O escravo do naturalista," and Ildeu de Castro Moreira, "O escravo do naturalista: a contribuição de conhecimentos e habilidades de populações nativas para o trabalho dos naturalistas," presentation at the XXI International Conference on the History of Science, Mexico, 2001. Kapil Raj, *Relocating Modern Science. Circulation and the Construction of Knowledge in South Asia and Europe, 1605-1900* (Houndmills and New York: Palgrave Mcmillan, 2010). Frank M. Turner, "Practicing Science: An Introduction," in *Victorian Science in Context*, edited by Bernard Lightman (Chicago: The University of Chicago Press, 1997): 283-289.

16 Turner, "Practicing Science," 285.

17 Moreira, "O escravo do naturalista," 46.



*Cartography of Amazonia*<sup>18</sup> and to the very important, but much neglected issue of identifying and demarcating indigenous lands.

## 2. From William Henry Edwards to Louis Agassiz (1846-1865)

On the following pages, we will focus on the travel books published by naturalists Louis Agassiz, Henry Walter Bates (1825-1892), Alfred Russel Wallace (1823-1913), William Henry Edwards (1822-1909) and Richard Spruce (1817-1893), to examine how they can provide us with knowledge of the indigenous populations that inhabited the Amazonian territory in the 19<sup>th</sup> century, targeting specifically the ways in which travellers and natives interacted with each other, and how the latter contributed to scientific expeditions. The selection of these particular travellers is justified by the relations between their expeditions and their travel books, as well as by the proximity of the periods in which they visited the country.

American entomologist William Henry Edwards was the first of these men to step foot on Brazilian soil when, in 1846, he disembarked in Pará for a stay of nine months. In the following year he published a travel book entitled *A voyage up the Amazon including a residency at Pará*,<sup>19</sup> which gained great popularity among English-speaking readers. His book was mentioned by both Bates and Wallace as having been the main source of inspiration for the expedition they planned together. In 1848, the duo left Liverpool on a trading vessel destined to Pará, where they resided together for six months. After this short period, they went their separate ways, with Bates following the course of the Solimões River, and Wallace the Negro River. They were reunited later for a short time, and joined by the botanist Richard Spruce, who arrived in Pará in 1849. While Wallace returned to England after four years in Brazil, Bates remained for a total of eleven years. Spruce, in turn, went on to explore the Peruvian Andes in search of species of cinchona, only returning to England in 1864. On the same year, it was the turn of Louis Agassiz to arrive in Brazil, coming from the United States, where he was a professor at Harvard University and founder of the Museum of Comparative Zoology. The Swiss-born naturalist stayed in the country for a little over a year, leaving in 1865.

Despite the many contrasts among these travellers, such as their diverse goals in coming to Brazil, the fact that they visited many of the same cities and villages within a relatively short window of time is particularly interesting to the analysis of their relations with local inhabitants. They all kept diaries with notes about their experiences in the country, and later published very renowned travel books. Even Richard Spruce, who passed away before publishing his own book, had his notes compiled and edited by his friend Wallace, who had been in the country at the same time. It is possible, therefore, to find in these books accounts of many of the same local individuals, who had been involved with scientific expeditions more than once. Furthermore, the plurality of accounts not only enriches the analysis, but also makes it easier to identify the individuality of their authors which, in turn, makes personal opinions and biases more evident within their narratives.

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18 The project was founded in 2005 by the University of the State of Amazonas, with support from the Amazonia Fund of the National Bank for Economic and Social Development (abbreviated BNDES in Portuguese), with the goal of providing the means so that indigenous, *quilombola* and other traditional groups of the Amazonian region could map their own lands, creating cartographic maps that represent their identification with the lands they have historically inhabited, rather than the more usual political boundary maps.

19 William Henry Edwards, *A Voyage up the Amazon Including a Residency at Pará* (New York: D. Appleton & Company, 1847).



### 3. Interactions with the Indigenous Peoples

For most foreigners, the first impression they had of the people of Brazil was astonishment. The feeling was especially true for both Bates and Wallace who hailed from the small British towns of Leicester and Llanbadoc, respectively. The sight of the gathering of people from different ethnicities in a small urban centre in the North of Brazil caused great surprise. Bates remarked on his book about the presence, in Pará, of "people of all shades in colour of skin".<sup>20</sup> Wallace's first comment about the *paraenses* also highlighted the "most varied and interesting mixture of races."<sup>21</sup> While both Bates and Wallace self-financed their enterprises with the profit made from sending specimens to England where they were sold, Louis Agassiz could rely on the generous aid of the banker and philanthropist Nathaniel Thayer Jr. (1808-1883), as well as on the support given to him by the Brazilian government through his friendship with the Emperor Pedro II (1825-1891).

With the development of photographic cameras, Agassiz and his group were also able to surpass the limitation of written notes and take pictures of selected members of the population. Agassiz himself chose the people whom he found to be keen examples of the miscegenation of races in Brazil and took them to an improvised studio, which they called *Bureau d'Anthropologie*, where they were coerced to strip naked to have their photographs taken.<sup>22</sup> In confluence with the racial theories proposed by Joseph Arthur de Gobineau (1816-1882) and influenced by the anthropometrical studies of Samuel George Morton (1799-1851), Agassiz intended these portraits to objectively record the effects of degeneracy caused by miscegenation.<sup>23</sup> However, due to the controversial nature of the highly eroticized photographs, which seemed to cause some discomfort even among some of the members of the expedition,<sup>24</sup> and also by the fact that his ideas regarding a separate creation were rejected, Agassiz's photos were stored away at Harvard University's Peabody Museum and only recently published.<sup>25</sup>

Travellers were also attentive to the relations between the different groups of individuals who co-inhabited Brazilian cities, and their books contain valuable historical information on some of the greatest conflicts of the time. Throughout his long stay in the country, Bates noticed what he judged to be the lingering effects of the *Cabanagem* or War of the Cabanos. The five-year conflict, which ended in 1840, had caused the demise of over thirty thousand people and, according to his report, was the cause of the general appearance of negligence and decay observed in some of the villages. From conversations with many of the local inhabitants, Bates was able to record testimonies from different sides to the conflict which involved the Portuguese, Indians and African slaves.

20 Henry Walter Bates, *The Naturalist on the River Amazons. A Record of Adventures, Habits of Animals, Sketches of Brazilian and Indian Life, and Aspects of Nature under the Equator, During Eleven Years of Travel*, vol. 1 (London: John Murray, 1863).

21 Alfred Russel Wallace, *A Narrative of Travels on the Amazon and Rio Negro: With an Account of the Native Tribes, and Observations on the Climate, Geology, and Natural History of the Amazon Valley* (London: Reeve and Co., 1853).

22 Agassiz and Agassiz, *A Journey in Brazil*, 529.

23 Louis Menand, "Morton, Agassiz, and the Origins of Scientific Racism in the United States," *The Journal of Blacks in Higher Education* 34 (2001-2002): 110-113.

24 Maria Helena P. T. Machado, *Brazil Through the Eyes of William James: Letters, Diaries, and Drawings, 1865-1866* (Cambridge: Harvard University Press, 2006).

25 See Maria Helena P. T. Machado, "Retratos da segregação," *Revista de História da Biblioteca Nacional* 1, Edição especial História da Ciência (2010): 14-19, and Maria Helena P. T. Machado and Sasha Huber, eds., *Rastros e raças de Louis Agassiz: fotografia, corpo e ciência, ontem e hoje* (São Paulo: Capacete Entretenimentos, 2010).

The struggle, he said, had been “brought about by the hatred which existed between the native Brazilians and the Portuguese”<sup>26</sup> and even though almost a decade had passed since its resolution, “confidence was not yet completely restored.”<sup>27</sup> Concerning this particular conflict, travellers’ books once again provide historians with a unique set of sources. Bates, for example, recalled in his narrative the interesting story of the Indian Raimundo, “a hunter of reputation in these parts”<sup>28</sup> whom, accused by government forces of having sided with the rebels, had to flee the city and hide in the forest. Raimundo was of the opinion that the white settlers were greedy, wanting control over the land, even when they had no intention of cultivating it. Bates recorded some of his opinions directly into his book:

“Raimundo spoke of his race as the red-skins, ‘pele vermelho;’ they meant well to the whites, and only begged to be let alone. ‘God,’ he said, ‘had given room enough for us all’.”<sup>29</sup>

On Bates’ case it is interesting to notice that there is a striking difference between the first and the second editions of his travel book. Being asked by his publisher to prepare a shorter and more palatable version of his narrative for an audience not as familiar with scientific matters, Bates himself edited a second version, which was published just one year after the original. The two-volume work was cut by almost half for the single volume edition, which omits much information about Bates’ interactions with the locals. The 1863 edition of the book contains a comprehensive account of a total of 23 indigenous groups with whom he met, making it an important source for ethnic, anthropological and historical studies on the indigenous occupation of the Northern part of Brazil. It is also interesting to notice that much of the information recorded by Bates about the indigenous groups of the Amazon was later included in a paper published by Clements Markham (1830-1916) in *The Journal of the Anthropological Institute of Great Britain and Ireland*.<sup>30</sup> So, in many cases, the experiences recorded by these travellers outlived their original work and contributed to the development of a lasting and biased idea of the places and people they’d seen, just as Said<sup>31</sup> observed with his concept of orientalism.

Besides the initial astonishment caused by the multi-ethnic society encountered in Brazil, when writing about the indigenous inhabitants of the country, travellers usually shared three main impressions about the Indian’s way of life: surprise was, almost always, the first; admiration and despise then followed, as two sides of the same process of trying to comprehend such distant cultures. Elizabeth Agassiz gives us an example of how this dichotomy worked. At the same time that the Indian houses seemed both coarse and prosaic, they still inspired thoughts of the harmonious and utopian Arcadia. She writes:

“Perhaps if we were to look a little closer at these pictures of pastoral life, we should find they have a coarse and prosaic side. But let them stand. Arcadia itself would not bear a too

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26 Bates, *The Naturalist on the River Amazons*, vol. 1, 33.

27 Bates, *The Naturalist on the River Amazons*, vol. 1, 33.

28 Bates, *The Naturalist on the River Amazons*, vol. 1, 189.

29 Bates, *The Naturalist on the River Amazons*, vol. 1, 197.

30 Clements R. Markham, “A List of the Tribes in the Valley of the Amazon, Including those on the Banks of the Main Stream and of all its Tributaries,” *The Journal of the Anthropological Institute of Great Britain and Ireland* 24 (1895): 236-284.

31 Edward W. Said, *Orientalismo: o Oriente como invenção do Ocidente* (São Paulo: Companhia das Letras, 1990).

minute scrutiny, nor could it present a fairer aspect than do these Indian homes on the banks of the Amazons."<sup>32</sup>

While the apparently idyllic way of life of Amazonian Indians was frequently met with compliments, Bates criticised what he regarded as a lack of curiosity about natural phenomena. Although they were astute observers and possessed great empirical knowledge of their natural environment, Bates thought the Indians lacked imagination to inquire and theorize about Nature, at least in the same way a European naturalist was used to. Comparing his own scientific scrutiny of Nature to the Indians', Bates saw them as inferior, which is more illustrative of his own European attitude and of the different cultures from which they hailed than of the Indians' supposed fault. There is one passage which illustrates this opinion:

"Their want of curiosity is extreme. One day we had an unusually sharp thunder-shower. The crew were lying about the deck, and after each explosion all set up a loud laugh; the wag of the party exclaiming 'There's my old uncle hunting again!' an expression showing the utter emptiness of mind of the spokesman. I asked Vicente what he thought was the cause of lightning and thunder? He said, 'Timaá ichoquá' – I don't know. He had never given the subject a moment's thought! It was the same with other things. I asked him who made the sun, the stars, the trees? He didn't know, and had never heard the subject mentioned amongst his tribe. [...] None of the Indian tribes on the Upper Amazons have an idea of a Supreme Being, and consequently have no word to express it in their own languages."<sup>33</sup>

Spruce duly investigated the Indians' beliefs and even dedicated a subchapter on his book to reporting "on spirits and demons among the Indians"<sup>34</sup>. His interest in the indigenous population seemed to be matched by the Indians' own curiosity about the traveller, who seemed to be just as much a cause of surprise and admiration to the Indians, as it was the other way around. On his book, Spruce mentions:

"On this voyage, as on other subsequent ones, I had occasion to note that the indigenous inhabitants of the Amazon valley have no idea of a habitable country, save as of land bordering a navigable river. I was often asked, 'Is the river of your country large?' I once took some pains to describe the ocean to a lot of Indians, telling them of its immense extent and almost fathomless depth – how long it took to cross it, and how it had the Old World on one side of it and the New World on the other. They listened eagerly, giving vent to occasional grunts of admiration, and I thought them intelligent."<sup>35</sup>

Here we have two contrasting observations. While Bates was critic of the Indians' apparent lack of curiosity, Spruce judged them to be intelligent when confronted with an audience eager to hear his descriptions of the ocean and the different continents. It is important to keep in mind that naturalists recorded those situations which they lived, and their experiences with the local population depended as much on themselves and how they approached the natives as it depended on the

32 Agassiz and Agassiz, *A Journey in Brazil*, 170.

33 Bates, *The Naturalist on the River Amazons*, vol. 1, 162.

34 Richard Spruce, *Notes of a Botanist on the Amazon & Andes* (London: MacMillan and Co. Limited, 1908): vol. II, 437.

35 Spruce, *Notes of a Botanist*, vol. 2, 194.

people they met with. Hence the importance of comparing the narratives of different travellers, as it allows for a broader and more comprehensive understanding of a naturalist's experience in 19<sup>th</sup> century Brazilian Amazonia. When interacting with the native population, many travellers dedicated themselves to learning some basic words and phrases in the indigenous languages spoken by the Indians. According to Schiebinger,<sup>36</sup> the linguistic barrier was one of the main obstacles for travellers when interacting with the local population. Most of the indigenous groups who lived deep into the interior only spoke their indigenous' dialect, being therefore often unable to communicate with travellers who did not try to learn it. On the other hand, "civilised" or "tame" Indians who lived in the cities generally spoke either Portuguese or *Língua Geral*, a language created by Jesuit missionaries in Brazil based on the natives' *Tupi* language. It was intended to facilitate communication between settlers and natives by creating a language that would be easy to teach the Indians and, at the same time, eliminate the difficulty of understanding each group's particular dialect. Even though there were virtually no Jesuit missionaries left in the country after being expelled from Portugal and its colonies by the Marquis of Pombal (1699-1782), Bates was still able to gather some information from their work with the Indians, while at the same time criticizing the ruthlessness with which the natives were often treated by the settlers. In the first edition of his book, he made the following comment, which was cut from later editions:

"The Jesuits, as far as I could glean from tradition and history, were actuated by the same motives as our missionaries; and they seemed like them to have been, in great measure, successful in teaching the pure and elevated Christian morality to the simple natives. But the attempt was vain to protect the weaker race from the inevitable ruin which awaited it in the natural struggle with the stronger one; which, although calling itself Christian, seemed to have stood in need of missionary instruction quite as much as the natives themselves."<sup>37</sup>

Bates' diaries, which are today at the British Library, dedicate several pages to recording vocabulary in the *Tupi*, *Maué* and *Mundurucu* languages.<sup>38</sup> His notes show what a travelling naturalist considered important to say when communicating with the natives. Some of the phrases recorded are "I come from the forest", "Will you go with me", "Let us go catch insects" and "I give you a patac".<sup>39</sup> At the same time, his diary constitutes a most valuable source and a rare opportunity to recover some of these languages which, besides having barely been recorded, are no longer spoken today. According to the traveller, even though there were "seven or eight different languages being sometimes spoken on the same river, within a distance of 200 or 300 miles"<sup>40</sup> they shared many similarities which allowed for their quick learning. Bates even ventured into hypothesizing as to why these languages were so much alike and concluded:

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36 Schiebinger, *Plants and Empire*.

37 Bates, *The Naturalist on the River Amazons*, vol. 2, 81.

38 "Pocket-Book, with enclosures (ff. 169-175), of Henry Walter Bates, the naturalist, used during his travels in Brazil, of which he gave an account in *The Naturalist on the River Amazons*." Reference: Add MS 42138 A-B, Western Manuscripts, British Library, London, United Kingdom.

39 "Pocket-Book, with enclosures (ff. 169-175)."

40 Bates, *The Naturalist on the River Amazons*, vol. 1, 330.

"The ideas to be expressed in their limited sphere of life and thought are few; consequently the stock of words is extremely small; besides, all Indians have the same way of thinking, and the same objects to talk about."<sup>41</sup>

In light of more recent anthropological, ethnographic and linguistic studies, it is possible to infer that what Bates noticed was, in fact, that most of the Indian languages spoken in Brazil were part of two major linguistic families: *Tupi* and *Jê*. So, even though there were actually thousands of different languages at that time, most of them derived from these two extensive matrixes, accounting for the similarities noticed by the naturalist.

Wallace also made a comprehensive list of words in several different Indian languages. On more than one occasion, he wrote in his book about having asked members of different indigenous groups, who also spoke the *Língua Geral* learned by him, to gift him with a vocabulary of their native languages.<sup>42</sup> These vocabularies collected by Wallace were later studied by philologist and ethnologist Robert Gordon Latham (1812-1888), who wrote a few remarks about them in an appendix to the first edition of Wallace's travel book.<sup>43</sup> The subject seemed to interest him very much and part of his studies were devoted to what he called "picture-writing,"<sup>44</sup> which he had seen engraved on rocks along the Amazonian district. The carvings, also called "rock-pictures" by Spruce, are also discussed and illustrated on his book.



**Figure 1.** Some of the "picture-writings" recorded by Wallace.<sup>45</sup>

41 Bates, *The Naturalist on the River Amazons*, vol. 1, 199.

42 Wallace, *A Narrative of Travels*, 269, 362.

43 Wallace, *A Narrative of Travels*, 525.

44 Wallace, *A Narrative of Travels*, 524.

45 Wallace, *A Narrative of Travels*, Plate VIII.

Spruce's book is also particularly interesting on account of the extensive list of native names published as an appendix to the second volume. Even though it was common practice for travellers to record the native names of species of animals and plants they encountered, Spruce's glossary remains as one of the most complete ever published by a naturalist. Alongside the native names of plants, sometimes travellers also described what uses the people made of them. Wallace's book *Palm trees of the Amazon and their uses*,<sup>46</sup> published in 1853, was written with great aid from indigenous inhabitants who provided information about the native trees.

Learning the indigenous languages, however, was not the only way of communicating with the natives. While Bates and Wallace did so, Agassiz on the other hand relied on individuals who acted as brokers between himself and the natives. The most important one, according to the traveller himself,<sup>47</sup> was the military engineer Major João Martins da Silva Coutinho (1830-1889), who was ordered to accompany the naturalist by the Emperor of Brazil. According to Antunes:

"The cooperation of the population, however, particularly in the case of Indians, was only possible due to the presence of go-betweens. Many of the local politicians acted on Agassiz's behalf, which certainly favoured his relationship with the people, who often gifted the traveller with collections of specimens. Another important go-between was Major João Martins da Silva Coutinho. Due to the experience he had from previous visits to those regions, and with his knowledge of the Indians' culture, the Major was a fundamental figure in promoting friendship, respect and trust, which were key elements in guaranteeing the natives' collaboration and the unrestrained exchange of information."<sup>48</sup>

Despite the reliance on brokers to mediate the relationship with local inhabitants, Agassiz's party was constantly interacting with the Indians. Throughout his time in Brazil, Agassiz and his team, composed mainly of naturalists from the Museum of Comparative Zoology and his own students at Harvard University, met with many of the indigenous groups that inhabited the Amazon. In his book, entitled *A Journey in Brazil*,<sup>49</sup> written with the aid of his wife Elizabeth Agassiz (1822-1907) who accompanied him, there are detailed accounts of the interactions with local inhabitants and their contributions to the expedition, particularly in the collection of Amazonian fishes. On their book, Elizabeth said:

"The Indians here are very skilful in fishing, and instead of going to collect, Mr. Agassiz, immediately on arriving at any station, sends off several fishermen of the place, remaining himself on board to superintend the drawing and putting up of the specimens as they arrive."<sup>50</sup>

Although being skilful fishermen, it is interesting to notice that what Agassiz seemed to consider valuable and worthy of being collected was very different from the fish valued by the Indians. On a few occasions, the traveller commented about the difficulty of having the fishermen understand that he was interested in all fishes, not just the bigger ones which were considered of higher value by the Indians.<sup>51</sup> According to Elizabeth Agassiz:

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46 Alfred Russel Wallace, *Palm Trees of the Amazon and Their Uses* (London: John van Voorst, 1853).

47 Louis Agassiz, "Letter to Charles Sumner," Rio Negro, December 26<sup>th</sup> 1865. Louis Agassiz Correspondence and Other Papers, 1821-1877; Series I, MS Am 1419, Houghton Library, Harvard University.

48 Antunes, *A rede dos invisíveis*, 123, translated from the original.

49 Agassiz and Agassiz, *A Journey in Brazil*.

50 Agassiz and Agassiz, *A Journey in Brazil*, 160.

51 Agassiz and Agassiz, *A Journey in Brazil*, 195.



"Occasionally, however, Pedro Manuel is aroused to bear some part in the collecting; and the other day, when he brought in some specimens which seemed to him quite valueless, Mr. Agassiz rewarded him with a chicken. His surprise and delight were great, perhaps a little mingled with contempt for the man who would barter a chicken for a few worthless fishes, fit only to throw into the river."<sup>52</sup>

It is interesting to notice that, despite the many times Agassiz and his wife made reference to the aid received by the Indians in the collection of Amazonian fishes, the official tally of the collection put together in Brazil presented in the *Annual Report* of the Museum of Comparative Zoology for 1866<sup>53</sup> tells a different story. The report includes information on the number of specimens collected of each species taken to the museum, with notes on where they were taken, all separated both by order and by who collected them. On the list of collectors, we can find the names of several well-known Brazilians who contributed to the expedition, such as the aforementioned Major Coutinho, the Amazon Steamship Company Talisman officer Augusto Figueiredo de Vasconcelos, and the engineer Antônio de Lacerda (1834-1885). We cannot find, however, in the 36 pages of the report, a single reference to how many specimens were collected by Indians, or even the slightest indication that indigenous people were involved as collectors. If one only had access to this report and no other source of information on the expedition, it would be impossible to imagine that Agassiz had any contact with the indigenous peoples of the Amazon during his time in the country.

This is an example of what Camerini<sup>54</sup> pointed to as the tendency of scientific writing to produce more impersonal accounts, often effacing the help provided by local inhabitants in these scientific expeditions. The same phenomenon appears in more recent times with the work of lab technicians, engineers and artisans whose efforts are essential to the production and manipulation of scientific instruments that are crucial to research in areas such as astronomy, physics and chemistry.<sup>55</sup> In the case of 19<sup>th</sup> century scientific expeditions, travel books are especially important as sources for revealing the social aspects of these expeditions and the contributions of local inhabitants, especially natives, in the collection of specimens.

Notwithstanding the lack of credit given on other sources, travel books reveal that the indigenous inhabitants of Brazilian Amazonia were, more often than not, involved with the collection of specimens for naturalists. In all of the books here analysed, most of the references to the aid received by the Indians relate to their help in procuring specimens in the forests and to their skills in hunting. Edwards, for example, admitted his difficulty in locating birds in the forests, even though he could hear them. The same applied to monkeys, and in both instances only the "keen eye" of the Indians could successfully find the animals. In his words:

"Even when one is positive that some of them are in his immediate vicinity, none but the keen and practised eyes of an Indian can discover their retreat. For any other than an Indian, therefore, to venture upon a monkey-hunt is almost useless, and they only succeed by stripping off

52 Agassiz and Agassiz, *A Journey in Brazil*, 177.

53 Museum of Comparative Zoology, *Annual Report of the Trustees of the Museum of Comparative Zoology, at Harvard College, in Cambridge, Together with the Report of the Director, 1866* (Boston: Wright & Potter, 1867).

54 Camerini, *Wallace in the Field*.

55 See Clifford D. Conner, *A People's History of Science* (New York: Nation Books, 2005) and Steven Shapin, *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago: University of Chicago Press, 1994).



their clothes, and creeping cat-like among the bushes, or patiently waiting their opportunity in some concealment.”<sup>56</sup>

Other than their practise and empirical knowledge of the habits of animals, travellers also often attributed the Indians’ success in capturing animals to their hunting techniques. According to Edwards, some of the Indians even took advantage of travellers’ interest in rare birds, such as the cock-of-the-rock, that they habitually shot and skinned the birds to sell for a small profit. Edwards also remarked on their preferred weapon to shoot these birds, the blowpipe, saying that “an Indian will by the mere force of his breath shoot with the precision of a rifle, hitting an object at a distance of several rods”.<sup>57</sup> Wallace described the Indian’s *gravatana* as “a tube of ten to fifteen feet in length, through which they blow small arrows with such force and precision, that they will kill birds or other game as far off, and with as much certainty, as with a gun.”<sup>58</sup> Still according to him, the blowpipe was the principal weapon in the Amazon and “every Indian has one, and seldom goes into the forest, or on the rivers, without it.”<sup>59</sup> From Bates’ book we gather that he and Wallace had lessons in the use of the weapon from a Jurí Indian named Julio who was being employed at the time by the English bird-collector J. Hauxwell.<sup>60</sup> Learning the ways of the Indian hunters was an essential step for a successful collection of specimens, as relying solely on the natives could result in inconveniences, as noticed by Spruce, who said:

“Like Humboldt, I was at first disappointed in not finding agile and willing Indians ever ready to run like cats or monkeys up the trees for me, and in seeing how futile must be the attempt to reach with hooked knives fastened to poles flowers which grew at a height of a hundred or more feet [...]”<sup>61</sup>

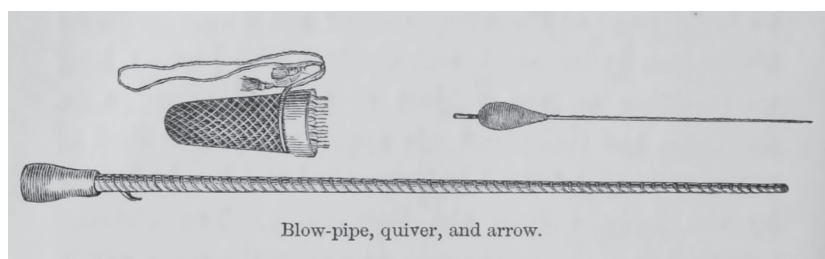


Figure 2. Blow-pipe, quiver, and arrow from Bates’ book.<sup>62</sup>

It is interesting to notice from Spruce’s comment how some naturalists found disappointment when they didn’t have natives ready and willing to do the work naturalists wished them to, such as when the work included a significant degree of danger, as in climbing trees of great height like some of the wildlife would. As we have seen from the phrases translated by Bates in his diary, sometimes the offer of payment was necessary to secure the Indians’ help. However, from the availability of information

56 Edwards, *A Voyage up the Amazon*, 117.

57 Edwards, *A Voyage up the Amazon*, 154.

58 Wallace, *A Narrative of Travels*, 145.

59 Wallace, *A Narrative of Travels*, 215.

60 Bates, *The Naturalist on the River Amazons*, vol. 2, 236.

61 Spruce, *Notes of a Botanist*, 2.

62 Bates, *The Naturalist on the River Amazons*, vol. 2, 236.

registered on travel books on indigenous inhabitants readily procuring specimens for naturalists, it might be reasonable to think that some of these travellers may have arrived in the country under the impression that native assistance would be readily available whenever needed. This could also justify why so often naturalists complained about the scarcity of Indians available to help with navigation.

Navigating small boats through the complex mesh of Amazonian rivers, avoiding obstacles such as rocks, alligators, strong currents, floods and the much-feared phenomenon of the *pororoca* or tidal bore, was another area of Indian expertise. Most travellers relied on Indian crews to command the vessels they used for travel, and were often stranded when unable to procure willing Indians to participate in such travels. According to Wallace, Indians were able to navigate through the rivers "with unerring certainty, and by slight indications of broken twigs or scraped bark, goes on day by day as if travelling on a beaten road."<sup>63</sup> Bates also made similar remarks on many occasions and credited the Indians as having been crucial in accomplishing the goals of his expedition.

Even some of the illustrations on Bates' book reveal how much the Indians were part of the expedition, particularly in the collection of specimens. On the following image, representing an excursion to collect turtle eggs around the city of Ega, Bates is pictured on one of the banks of the river holding a club on his hands. In the foreground, a group of several Indians battle with bare hands with an alligator which they are dragging to the shore, while other Indians focus on the capture of turtles. In the background, the man dressed in the colonial style on top of a canoe, is probably Antonio Cardozo, the police deputy who invited Bates and secured the Indians who would accompany them during many excursions around Ega. The account of this particular event, and the illustration itself, show how the indigenous inhabitants of the country were invaluable helpers in the collection of specimens, for both European naturalists and local merchants. Besides his job in the police force, Cardozo made a profit from selling turtle meat and eggs.



Figure 3. "Turtle-fishing and adventure with alligator".<sup>64</sup>

63 Wallace, *A Narrative of Travels*, 121.

64 Bates, *The Naturalist on the River Amazons*, vol. 2, 265.

On another occasion, Bates attributed the success of one of his excursions to Alexandre, a Tapuio Indian who had also been of help to both Edwards and Wallace:

“Our principal man was Alexandro [sic], one of Mr. Leavens’s Indians. He was an intelligent and well-disposed young Tapuyo [sic], an expert sailor, and an indefatigable hunter. To his fidelity we were indebted for being enabled to carry out any of the objects of our voyage.”<sup>65</sup>

Bates’ choice of words is revealing. When looking at traveller’s books we often find this idea of possession connected with how they referred to the indigenous peoples. Even if Indian slavery was officially prohibited throughout the country by that time, it seems there were still remnants of such attitude. In all of the books here mentioned, we can find expressions such as *our* Indians, *my* Indians, or, *someone’s* Indians as Bates used it. We can also find several examples of situations when natives were procured for the travellers as if they were products. Wallace mentioned how a military commander in the region “had procured us three Indians,”<sup>66</sup> or how another inhabitant had “applied to some of the authorities to furnish me with Indians.”<sup>67</sup> Even though slaving indigenous inhabitants was then prohibited, institutions such as the Directory of Indians still furnished the legal instruments necessary for maintaining forced labour. The Directory was created with the intention of educating the natives, teaching them the Portuguese language and culture, integrating them to colonial society as subordinates of the Portuguese Crown. However, as pointed out by Monteiro,<sup>68</sup> it also allowed the “Directors of Indians”, particularly in small towns, to explore indigenous labour for their own profit. Elizabeth Agassiz also noticed the cruelty with which the indigenous inhabitants were forced to enlist in the army to fight in the Paraguayan War (1864-1870), retelling what she had heard from one of the local women:

“She assured me that they were taken wherever found, without regard to age or circumstances, women and children often being dependent upon them; and if they made resistance, were carried off by force, and frequently handcuffed or had heavy weights attached to their feet. Such proceedings are entirely illegal; but these forest villages are so remote, that the men employed to recruit may practice any cruelty without being called to account for it. [...] The appearance of things certainly confirms this, for we scarcely see any men in the villages, and the canoes we meet are mostly rowed by women.”<sup>69</sup>

Agassiz and his wife did not live amongst the Indians as much as Bates, Wallace or Spruce, for example, on account of being dependent on someone who would be able to translate between them and the natives. Still, they did spend a few days as guests with an Indian couple. Between the cities of Vila Bela and Manaus, Agassiz’s entourage visited a small village near Lake José Assú. Disgruntled with the crowded and uncomfortable accommodations on board the steamer on which they travelled, Agassiz and his wife relied on Major Coutinho’s rapport with the locals to stay as guests with Laudigári and Esperança (a name that translates to Hope). For several days, the couple

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65 Bates, *The Naturalist on the River Amazons*, vol. 1, 112.

66 Wallace, *A Narrative of Travels*, 108.

67 Wallace, *A Narrative of Travels*, 114.

68 Maria Elizabeth Brêa Monteiro, “Entre a brandura e a força,” *Acervo: revista do Arquivo Nacional* 21, n.º 1 (2008): 133-148.

69 Agassiz and Agassiz, *A Journey in Brazil*, 269.

stayed as guests on the Indian's oca<sup>70</sup> and had singular opportunities to observe their hosts' habits up close. From this experience, they recorded in their travel book their impressions about the Indians' daily life, their festivities and religious beliefs, the division of labour between men and women, and many other characteristics of the group's culture.

While for the Agassiz couple this may have been a one-time experience among the indigenous population, travellers such as Bates and Wallace had to rely more often on the company and hospitality of the locals due to their limited funds. For Spruce, for example, staying with the Indians was a sort of enjoyable getaway from the idiosyncrasies of Brazilian society. In contrast to the European traditions seen in the larger urban centres, the Indians were, as Edwards had put it, "ease-loving."<sup>71</sup> In Spruce's words:

"I much enjoy living among the Indians for a few days together, though I might tire of it were the residence compulsory and permanent. It is such a relief to get out of the town; for these Brazilians, half-savages as you undoubtedly picture them, are the greatest sticklers for etiquette and costume on the face of the earth. It is ridiculous seeing them going to Mass in the 'latest Parisian costume' – toiling under the weight of black coats and hats, things which in this climate are a complete abomination. Contrasted with this, the *laissez-aller* of the Lages [Indians] was delightful."<sup>72</sup>

During his time in Brazil, Bates had many opportunities of staying with the Indians, and recorded his experiences in detail. One time, while guest with a group of *Mundurucu* Indians near the town of Santarém, Bates showed them a book he had been sent by his agent in London. It was a two-volume copy of Charles Knight's *Pictorial Museum of Animated Nature, and Companion for the Zoological Gardens*, published in 1844. The book was a great compendium of fauna from various parts of the world, illustrated with five thousand woodcut prints of animals. When he took the book out to show it to the Indian chief, he noticed the natives' curiosity when looking at animals they had never seen before, and also their attempt to understand them by making comparisons with the local fauna. According to Bates:

"It was no light task to go through the whole of the illustrations, but they would not allow me to miss a page, making me turn back when I tried to skip. The pictures of the elephant, camels, orang-otangs, and tigers, seemed most to astonish them; but they were interested in almost everything, down even to the shells and insects. They recognised the portraits of the most striking birds and mammals which are found in their own country; the jaguar, howling monkeys, parrots, trogons, and toucans. The elephant was settled to be a large kind of Tapir; but they made but few remarks, and those in the Mundurucu language, of which I understood only two or three words. [...] Before I finished, from fifty to sixty had assembled; there was no pushing or rudeness, the grown-up women letting the young girls and children stand before them, and all behaved in the most quiet and orderly manner possible."<sup>73</sup>

70 From the *Tupi* language *oka*, this is the name given to the traditional Indian house. They were, usually, very large circular or oval structures made of wood and covered with palm leaves, where several Indian families resided together. There used to be no internal rooms or windows, and every inhabitant slept on a hammock slung between two poles.

71 Edwards, *A Voyage up the Amazon*, 3.

72 Spruce, *Notes of a Botanist*, 242.

73 Bates, *The Naturalist on the River Amazons*, vol. 2, 128.



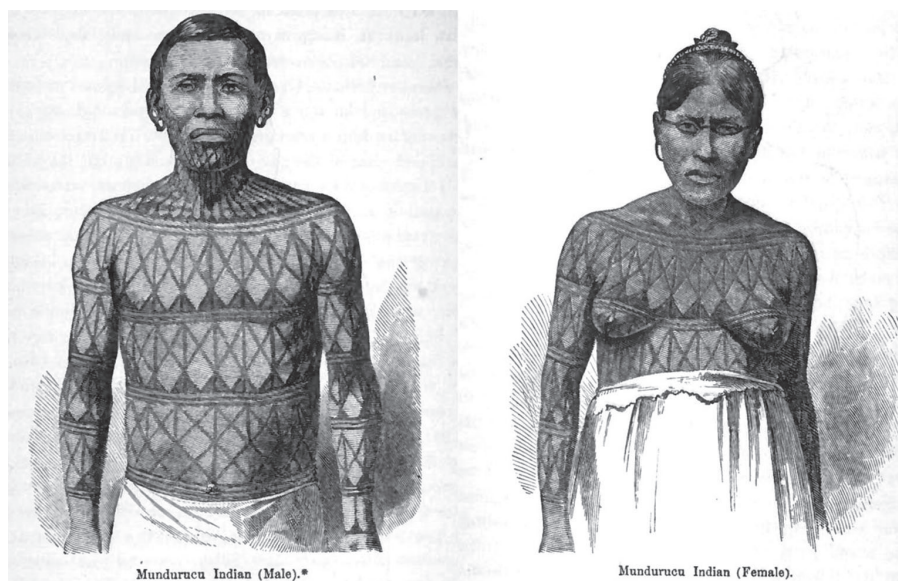


Figure 4. *Mundurucu* man and woman.<sup>74</sup>

In Bates' opinion, the *Mundurucu* were "perhaps the most numerous and formidable tribe of Indians now surviving in the Amazons region."<sup>75</sup> According to the traveller, they hardly deserved to be called savages, maintained peaceful relations with the settlers and were slowly becoming more civilised. Bates had noticed that the younger generation had, for instance, stopped tattooing their children. Because of these characteristics, and by comparing the differences between the dozens of Indian groups with whom he met, Bates put the *Mundurucu* on the more civilised side of the scale, while on the other hand, the *Mura* represented what was most perverse about the native indigenous groups. According to Bates:

"The Muras have a bad reputation all over this part of the Amazons, the semi-civilised Indians being quite as severe upon them as the white settlers. Every one spoke of them as lazy, thievish, untrustworthy, and cruel. They have a greater repugnance than any other class of Indians to settled habits, regular labour, and the service of the whites; their distaste, in fact, to any approximation towards civilised life is invincible."<sup>76</sup>

His interest in the matter of the origin of species also led him to try to investigate the origin of the native inhabitants of the South American continent, and the reasons why there were so many distinct groups such as the *Mura* and the *Mundurucu*. His best hypothesis was that this difference in character was linked to the different territories they inhabited. The regions where the *Mura* resided being constantly flooded by the rivers, agriculture was a challenge and, therefore, this made them nomads who relied mostly on fish for their diets. This, Bates said, was one of the

74 Agassiz and Agassiz, *A Journey in Brazil*, 313, 314.

75 Agassiz and Agassiz, *A Journey in Brazil*, 129.

76 Bates, *The Naturalist on the River Amazons*, vol. 1, 326.

characteristics which differentiated the *Muras* from "the nobler agricultural tribes belonging to the Tupí nation."<sup>77</sup> He also noted the lack of easily domesticated animals in South America as one of the key factors that made them less industrious than their Central and North American counterparts, again because of the direct effect this had on the Indian diet<sup>78</sup>. While many travellers tried to understand and categorize the difference between these indigenous groups, trying to ascertain which would be the most advanced or civilised between them, Wallace concluded:

"It will be necessary to obtain much more information on this subject, before we can venture to decide whether such similarities show any remote connection between these nations, or are mere accidental coincidences, produced by the same wants, acting upon people subject to the same conditions of climate and in an equally low state of civilisation; and it offers additional matter for the wide-spreading speculations of the ethnographer. The main feature in the personal character of the Indians of this part of South America, is a degree of diffidence, bashfulness, or coldness, which affects all their actions. It is this that produces their quiet deliberation, their circuitous way of introducing a subject they have come to speak about, talking half an hour on different topics before mentioning it: owing to this feeling, they will run away if displeased rather than complain, and will never refuse to undertake what is asked them, even when they are unable or do not intend to perform it."<sup>79</sup>

According to Wallace, a key element of the Indian character was their willingness to do what was asked of them. Whether really willingly or not —as there were countless instances when they were coerced into working for settlers or joining the government's armed forces— one thing remains true: the indigenous groups of the Amazon were almost omnipresent in 19<sup>th</sup> century scientific expeditions through Brazilian Amazonia. Their vast empirical knowledge of the natural environment around them and their well-honed skills for both hunting and navigating the rivers, made them invaluable assistants to naturalists who visited Brazil.

## Conclusion

The accounts of these 19<sup>th</sup> century naturalists point to the social aspect of natural science as practised in the field during scientific expeditions. Interacting with local inhabitants was fundamental, as they could aid with information about the local environment, by acting as guides through the forests, by navigating the boats through the complex maze of streams and rivulets, by helping in the collection of Natural History specimens, and so much more. In Brazilian Amazonia, with its small number of large urban centres and limited foreign presence, this was felt all the more strongly. On the last chapter of his travel book, while giving advice for travellers who wished to visit the region, Edwards complained about some of the difficulties they would encounter. The naturalist perceived the government as weak, "too republican to be a monarchy, and too monarchical to be a republic"<sup>80</sup> and its fragile presence in the region, along with the many rebellions, contributed to a stalled state

77 Bates, *The Naturalist on the River Amazons*, vol. 1, 326.

78 Bates, *The Naturalist on the River Amazons*, vol. 1, 192.

79 Wallace, *A Narrative of Travels*, 360.

80 Edwards, *A Voyage up the Amazon*, 203.

of development. Even though there was a considerable number of European and North American merchants living in Pará as shop owners, which facilitated the stay of foreign naturalists, the interior of Brazilian Amazonia was still populated almost exclusively by natives and small groups of Portuguese settlers. Travelling through these areas required social expertise if one was to harness the support of the locals. Many travellers have written about the difficulties of navigating through the region's rivers and forests, as well as in finding particular specimens in the thick forest growth, but also about their surprise when discovering that the natives had no such problems.

With its large numbers of indigenous groups, each with their own particular language, culture, territory and history of relationship with the settlers, travellers had to learn to adapt. Either by learning their native languages or by relying on the aid of brokers, travellers were often accompanied by natives who contributed to the success of their expeditions. During these interactions, they observed and learned about the natives, but also from them, as they shared their much-valued empirical knowledge of the region, its fauna and flora. Travel books are, thus, unique sources of information, and provide us clues about how native indigenous peoples understood and inhabited their environments.

At the same time, they are also important sources of information on the travellers themselves and how they fit into these new and, at least to them, unknown environments. These narratives are as much about the travellers as they are about what and who they observed. They reveal the mental processes, the biases, the understanding and the comparisons they made while trying to understand the social and natural environment around them. This is a story about how European scientific culture tried to comprehend and explain the Nature and the peoples of the Tropics. Moreover, these narratives allow us to realise is how much the natives themselves played an active role in shaping travellers' experiences and contributed to the development of European science.

The great diversity of groups that inhabited it, both native and otherwise, means that Brazilian Amazonia can be understood as a contact zone,<sup>81</sup> a space that favoured cultural exchange and knowledge transmission. Despite the fact that these relations were often marked by severely asymmetric power dynamics, and that our sources mostly reflect the Euro-imperialist background of its authors, the narratives published by these naturalists clearly show that 19<sup>th</sup> century fieldwork was fundamentally a social practice, dependent as much on the naturalists themselves, as on the people they met. This is why, despite all their social differences, we have chosen to speak of collaboration. Even though it is important to keep in mind the great diversity of relations that permeated any scientific expedition, —since these relations were not all the same— what travel books such as those published by Bates, Wallace, Spruce, Edwards and Agassiz tell us is that the local indigenous inhabitants of the Amazon were a constant presence. During their time in Brazil, these naturalists received significant contributions from members of the indigenous groups that inhabited the land, particularly with the collection of specimens and with navigating through the region's rivers.

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81 Mary Louise Pratt, *Os olhos do império: relatos de viagem e transculturação* (São Paulo: EDUSC, 1999).



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### **Anderson Pereira Antunes**

Master and Ph.D in the History of Science and Medicine at Fundação Oswaldo Cruz/Fiocruz (Brazil). He has published "Uma análise da rede de auxiliares da expedição de Louis Agassiz a Brasil (1865-1866)", *Revista Brasileira de História da Ciência* 9 (2016): 113-125 <<https://www.arca.fiocruz.br/handle/icict/30119>>, and (co-authored with Luisa Medeiros Massarani and Ildeu de Castro Moreira) "Local collaborators in Henry Walter Bates's Amazonian Expedition (1848-1859)." In *The Scientific Dialogue Linking America, Asia, and Europe Between the 12<sup>th</sup> and the 20<sup>th</sup> Century. Theories and Techniques Travelling in Space and Time*, edited by Fábio D'Angelo (Naples: Associazione culturale *Viaggiatori*, 2018): 382-400. [anderson.p.antunes@gmail.com](mailto:anderson.p.antunes@gmail.com)

### **Luisa Massarani**

Master of Science Diffusion, Technology and Health (Divulgação da Ciência, Tecnologia e Saúde), Fundação Oswaldo Cruz/Fiocruz (Brazil). Ph.D in Gestão, Educação e Difusão em Biociências at the Universidade Federal do Rio de Janeiro. Coordinator of the National Institute of Public Communication of Science and Technology, coordinator of the Master of Communication of Science, Technology and Health, and professor of the History of Science and Medicine Postgraduate Programme at Casa de Oswaldo Cruz, Fundação Oswaldo Cruz/ Fiocruz (Brazil). She has published (co-authored with Maria de Lourdes Patiño Barba y Jorge Padilla González) "Public engagement in science: Mapping out and understanding the practice of science communication in Latin America," *Anais da Academia Brasileira de Ciências* 91 (2019): 1-16, doi: <http://dx.doi.org/10.1590/0001-3765201920171000>, and (co-authored with Vanessa Guimaraes, Rafael Velloso, and Denyse Amorim) "Diálogos sobre a exposição 'Oceanos': um estudo com famílias no Museu da Vida," *Interfaces Científicas - Humanas e Sociais* 7, n.º 3 (2019): 103-114, doi: [10.17564/2316-3801.2019v7n3p103-114](https://doi.org/10.17564/2316-3801.2019v7n3p103-114). [luisa.massarani6@gmail.com](mailto:luisa.massarani6@gmail.com)

### **Ildeu de Castro Moreira**

Ph.D in Physics at Universidade Federal do Rio de Janeiro. Coordinator Deputy of the National Institute of Public Communication of Science and Technology, and professor of the Physics Institute of the Federal University of Rio de Janeiro (Brazil). His most recent publications are "Feynman e suas conferências sobre o ensino de física no Brasil", *Revista Brasileira de Ensino de Física* 40, n.º 4 (2018): 1-7, doi: <http://dx.doi.org/10.1590/1806-9126-RBEF-2017-0374>, and "Como caminha o financiamento à ciência no Brasil: o que nos espera em 2018?," *Ciência e Cultura* 70 (2018): 4-5, doi: <http://dx.doi.org/10.21800/2317-66602018000100002>. [ildeucaastro@gmail.com](mailto:ildeucaastro@gmail.com)