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Plant artefacts then and now: reconnecting biocultural collections in Amazonia

Luciana Martins

Biocultural collections are a vital means of preserving, transmitting and generating environmental knowledge and Indigenous knowledge.¹ Composed of botanical, zoological and ethnographic objects from around the world, these collections preserve a wealth of knowledge and documentation about human cultural practices related to the uses of animals and plants. Inextricably linked to global exploration, colonialism and imperial expansion, historical biocultural collections have often been misrepresented or neglected in terms of research, and their application to contemporary problems overlooked. In contrast, in the last 20 years, ethnographic collecting institutions have made important advances in digital repatriation, developing ethnomuseological methods to explore it ‘as the intersection of archival interests, Indigenous information management systems, archival standards, and divergent notions of access and privacy’.² A raft of collaborative projects reconnecting Western ethnographic collecting institutions with Indigenous peoples around the world – such as the Inuvialuit Living History Project in Canada, the Plateau Peoples’ Web Portal in the United States, Digital Dynamics Across Cultures in Australia, and [Re:]Entanglements in Nigeria and Sierra Leone, to name but a few³ – have endeavoured to develop participative visual and digital methods that seek to enable colonised groups to regain control over how cultural materials are used in digital and physical exhibitions and what stories are told about the objects, and to explore their significance in the present.⁴

While progress has been made in the reinterpretation and reactivation of ethnographic collections, the managers of natural history collections have been relatively slow to develop specific tools for integrating historical, environmental and Indigenous knowledge. As Anna Tsing suggests, 'instead of merely cataloguing diversity, we need to tell the histories in which diversity emerges . . . Diversity is created in collaborative synergies; it is always becoming.'⁵ As she further argues, 'plants and animals are part of a human disturbance regime; they have a contaminated history'.⁶ Increased understanding of current use of plant resources therefore depends on the integration of historical and contemporary biocultural data. Biocultural collections, combined with the contemporary knowledge of the source communities, provide insights into the nature and drivers of socio-environmental change since their collection.

Creating digital access to biocultural collections is an important route to developing these new uses, but ensuring digital formats give equal weight to different knowledge systems, including those of the natural sciences, social sciences and humanities, and Indigenous knowledge, is a major challenge. Such work requires confrontation of museums' neocolonial legacy in the twenty-first century by new co-curatorial practices with Indigenous communities. But this is further complicated: biocultural heritage is different from cultural heritage, involving the observance of good practice related to the 'sovereign rights of States over their natural resources' in areas within their jurisdiction, as recognised by the Convention on Biological Diversity. This mandates 'the equitable sharing of the benefits arising from the utilization of knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for conservation and sustainable use of biological diversity'.⁷

Our project, *Digital Repatriation of Biocultural Collections: Connecting Scientific and Indigenous Communities of Knowledge in Amazonia*, addresses this challenge through engagement with the biocultural collections amassed by nineteenth-century botanist Richard Spruce. Funded by the British Academy Knowledge Frontiers programme, our interdisciplinary, international team includes Indigenous and non-Indigenous researchers and museum curators from the UK, Brazil and Germany.⁸ The project forms part of a research programme that Birkbeck, University of London and the Royal Botanic Gardens, Kew have been developing collaboratively since 2015, in partnership with the Botanical Garden of Rio de Janeiro, the Socio-Environmental Institute (ISA) and the Federation of the Indigenous

Organizations of the Rio Negro (FOIRN). The research programme aims to reanimate the objects through contemporary Indigenous knowledge, creating a major knowledge base system that will integrate them with the herbarium vouchers, manuscripts and correspondence Spruce sent to Kew and other British institutions. The knowledge base will seek to incorporate this database of expert scientific, historical and Indigenous knowledge with linkages designed to enable its retrieval in response to specific queries, allowing for new assemblages of data according to a wide range of users through the development of a specific ontology.⁹ The current project therefore represents a further step towards this main goal.¹⁰

A focus on mobility and circulation can help to illuminate both the circumstances under which collections were assembled and the ways in which they may be reactivated. This chapter begins with an overview of Richard Spruce's collecting practice, through which a large part of Kew's Amazonian collection was formed. This brief historical account is followed by a reflection on how to retrieve the sense of flow out of this collection – how to mobilise its 'latent' knowledge. By reconnecting the collections with the peoples and places from where they originated, the project aims to reactivate past and present knowledge. As Joshua Bell remarks: 'A central goal of work with collections is to understand not only the processes that brought things to a repository, but also the life-worlds in which objects partook before they were collected and the life-worlds they subsequently move through as part of an institution.'¹¹

Collections also move beyond institutions, as Felix Driver, Mark Nesbitt and Caroline Cornish point out in the Introduction to this volume. In what follows, we delineate the trajectory of the biocultural objects from the Upper Rio Negro to Europe, indicating potential paths for their virtual return.

An ethnobotanist avant la lettre

Richard Spruce spent 15 years collecting plants in the Amazon and the Andes (1849–64). His ethnobotanical collections are currently held mainly at the Royal Botanic Gardens, Kew and the British Museum in London. When Spruce departed for the Amazon in 1849, the term 'ethnobotany' did not exist. The term's coinage was much later, and is attributed to John W. Harshberger, a professor of biology at the University of Pennsylvania.¹² However, nineteenth-century naturalists such as Spruce regarded the Indigenous uses of plants as part of their

natural history. In this, they took inspiration from the writings of the philosophical travellers of the day, such as Alexander von Humboldt, the celebrated explorer of South America. Nevertheless, Spruce lacked the immense resources and patronage available to Humboldt. As he explained in the introduction to his meteorological notes, now held at the Royal Geographical Society archives:

As I travelled at my own expense & risk and proposed to keep myself in funds by the sale of my collections of dried plants, I found it necessary to be very economical in my outfit, . . . nor would I afford to purchase any expensive instruments. I therefore took out with me only a pocket-sextant and artificial horizon (by Simms) which proved to be very good; a watch (by Dent) which should have been adequate for all ordinary astronomical purposes, but turned out very defective; & a single thermometer . . . ¹³

The botanist George Bentham, who named and described many of the plants sent by Spruce, was his main intermediary in the UK, selling his herbarium specimens to other collectors in Europe and beyond. Arrangements were also made for Spruce to send William Hooker, Director of the Royal Botanic Gardens, Kew, herbarium specimens and artefact collections for Kew's newly created Museum of Economic Botany, which aimed to provide visitors with object lessons on the use of plants from all over the world.¹⁴ As Hooker advised Spruce in a letter:

You will not forget gums & resins & other vegetable products . . . You will send us no doubt the blow pipe or seed used by the Indians for shooting birds etc. & say what it is made of: – & you will bear in mind all useful vegetable products. Even the 'fishing net' is very suitable. You will find clothing of various vegetable materials.¹⁵

Spruce collected constantly on his travels in Amazonia. Alongside around 14,000 herbarium specimens, he amassed 350 ethnobotanical artefacts, wrote detailed reports on plant uses, and made drawings of peoples and landscapes. Among the Spruce collections now held at the Manchester Museum Herbarium, there is a diagrammatic map of the Uaupés river, locating the 18 Indigenous nations that inhabited the banks of the river.¹⁶ Dating to 1853, the fading pencil notations, with the key to the nations reinforced in ink by Spruce himself, provide a unique record of the Indigenous occupation of the Upper Rio Negro in the mid-nineteenth century, a pivotal moment in its history.

In a note on the top right-hand side of the map, Spruce acknowledged that it was drawn 'according to Sres Chagas & Mello'. Chagas, a trader, was a very useful man, although 'a great scoundrel', as Spruce wrote to Alfred Russel Wallace, who also knew him.¹⁷ Mello was one of Spruce's 'best friends' on the Rio Negro. Such men were crucial intermediaries in the business of exploration and collecting. However, as Spruce recognised, trade in that part of Brazil in the mid-nineteenth century also included slave-raiding of Indigenous boys and girls, which relied on the detailed geographical knowledge recorded on the map.

As Spruce explained in a 'hasty note' to William Hooker in the wake of his imminent departure 'with a crew of 9 Indians' for a journey to the mouth of the Uaupés river:

I was so fortunate as to buy altogether [Nos. 122–143] in a lot of a trader who had ascended a long way up the River Uaupés; they include many things of great rarity, especially the stones worn by the Tucháuas or chiefs, which would fetch a pound a piece in Pará: I know persons who have been for years in quest of them without success.

There are duplicates of nearly all the articles, and the owner refused to break the lot, or I should probably have been content with one for each. Perhaps you will like to take the whole for your Museum, although some of the articles contain scarcely anything of vegetable about them. Should you however prefer taking only a part of them, I shall be glad if you will reserve the rest for me . . .

The box in which I send these things took an Indian carpenter a week to make, for he had two trees to cut down in the forest, & out of each a couple of planks to make. The wood is Marupá, which is much used throughout the Amazon & Rio Negro for making trunks. This box will afford you fine specimens of it. I have never yet seen it either in fruit or flower . . .

I have been obliged to leave out the shield and stool for want of room – they will come next time.¹⁸

Spruce was right to be cautious about sending this lot to the Kew Museum, for William Hooker hastily replied:

We have recieved [*sic*] your last sendings for the Museum from Rio Negro & I have paid the £20 in full for them. Some of them are not indeed quite so botanical as I could wish, but most of them have something vegetable belonging to them; & that is the apology for introducing into the Museum feathers monkey's teeth etc.¹⁹

A significant number of the objects made of teeth and feathers were donated to the British Museum in 1866, in addition to some duplicates, such as the shield, the quiver, fire-fans, necklaces, baskets and other ethnographic artefacts. As Caroline Cornish and Felix Driver note, this was a period both of reorganisation at Kew, following William Hooker's death in 1865, and the restructuring of the British Museum's ethnographic collection.²⁰

Spruce, however, was genuinely interested in understanding how these biocultural objects were used, describing them in detail in his journals, letters and labels. After his seven-month sojourn in the region, Spruce was keen to revise his initial impressions, as he wrote in a letter to Hooker:

As I have now spent several months among these Indians, I have seen the whole of these articles in use, and I have two corrections to make to the account I gave you of them. The *Murucú*, or spear, is really used in war, and the white stone is worn by *all* the men, and not merely by the chiefs (as I had been wrongly informed). Those of 'royal' descent alone, are allowed to wear a stone bored lengthwise instead of across.²¹

Spruce's collecting impulse was therefore not just accumulative. He made an effort to document and to revise his own interpretation of the uses of the objects. The same revisionary and documentary impulse can be seen in his sketches. Spruce's delicate pencil portrait of Anássado, a six-year-old Tariana girl, which survives at the Royal Society Archives, is a case in point (Figure 1.1). Careful to note that her eyes 'are too far apart', he provides the meaning of her name ('Grandmother of the Macaws'), her family ties, her location (Iauareté-cachoeira, a waterfall on the Uaupés river), drawing attention to her hairstyle and the fact that 'she wears the white stone bored lengthwise, like all of royal race'. As Spruce explained, in the list of objects he sent to Hooker, the piece of porphyry was perforated 'by means of slender strips of the skin of the stem of a species of *Alpinia* (called *Pacóva-sororóca*), twirled rapidly between the palms of the hands, with the addition of a little fine sand', said 'to be the work of weeks to bore one of them'.²² The laborious work might therefore clarify the greater, royal value given to the stone bored lengthwise.

In addition, Spruce compiled vocabularies of 21 Indigenous languages across Amazonia, 'most of them used by tribes living beyond the frontiers of Brazil', as he related in an 1865 letter to his friend, botanist and pharmacologist Daniel Hanbury.²³ It seems he planned to

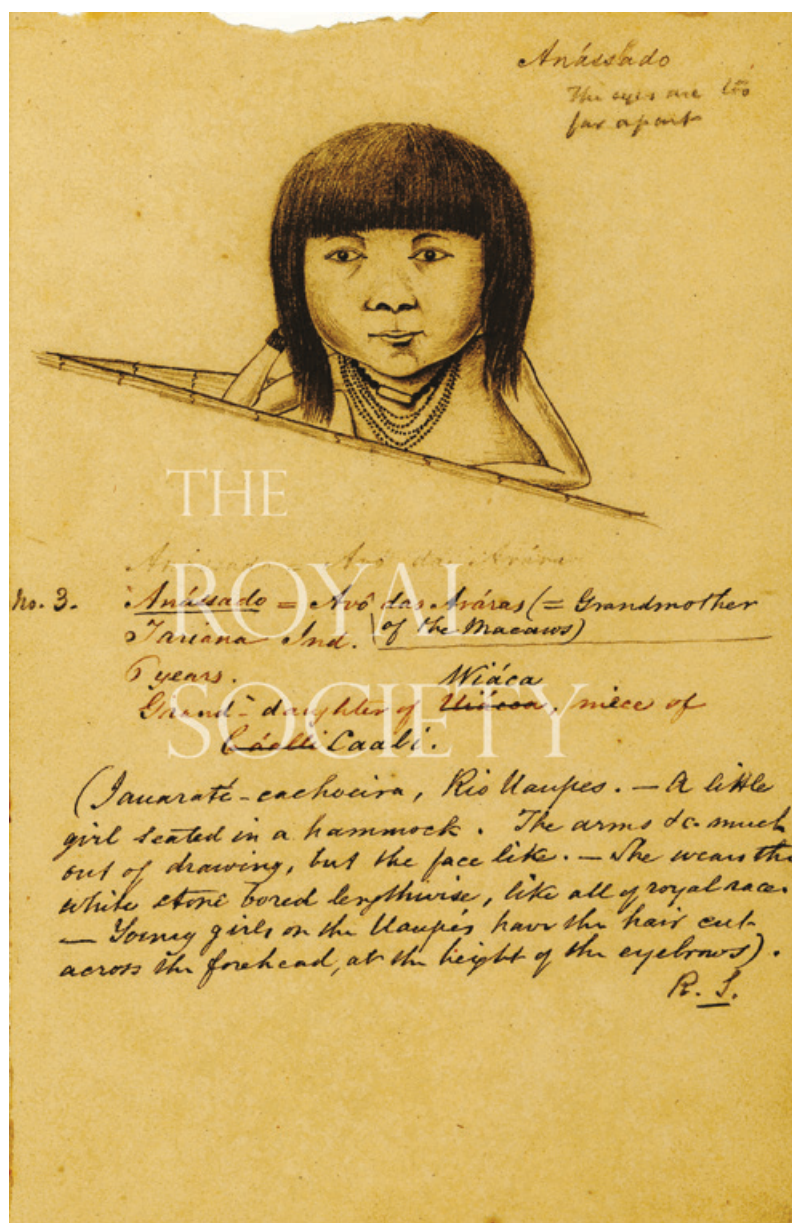


Figure 1.1 Portrait of Anássado, drawn by Richard Spruce (c. August 1852–June 1853), MS236/12. © The Royal Society.

send them to the Anthropological Society, together with an ‘introductory account of Indian nations, their sites, manners & customs’. However, in the event they were never published.²⁴

Spruce’s engagement with the Indigenous peoples of the Uaupés – materialised in his attempt to plot them on his diagrammatic map, to draw their delicate portraits and to understand their language – attests to the relational, dialogic aspect of his collecting practice.²⁵ Writing to a friend in 1888, he said they ‘are people of the most moral habits of any I met in S. America’.²⁶ He continued: ‘They are clearly industrious, agricultural Indians, dwelling along large rivers, in which they bathe night & morning, building for themselves substantial houses.’ Without such close and continuous engagement, it is unlikely that he would have been able to obtain the remarkable biocultural collections that he amassed in the region, which are an under-regarded legacy of his 15 years of travel. While other nineteenth-century explorers managed to amass similar collections of ethnographic artefacts, details of their uses and materials are more difficult to find in their collections. Like the German Theodor Koch-Grünberg in the early twentieth century, who was deemed to be a ‘modern’ anthropologist due to his ability to gain intimate insights into Amazonian Indigenous ways of life,²⁷ Spruce’s skill in garnering detailed ethnobotanical information depended upon common understanding and trust between the collector, Indigenous peoples and intermediaries through personal engagement and empathy.

What is distinctive about Spruce’s collecting practice is that he was remarkably systematic. He collected raw materials in the form of plant parts, and varied artefacts made from the same species. For example, in the case of the palm *Astrocaryum vulgare* (known in Portuguese as *tucum*), he collected fruits, rings made of the seeds, a rope and a spadix (Figure 1.2). Although one of the *Astrocaryum vulgare* voucher specimens at Kew was not collected by Spruce, it nevertheless bears a sketch of the fruit with a note ‘fruit in Museum’ (Figure 1.3). In Spruce’s handwriting, this annotation provides evidence of the meticulous work he undertook at Kew during his five-and-a-half-month stay in the neighbourhood during his return to England (despite having severe cramps in his hands and arms, as he confided to Hanbury).²⁸ Diligently labelling his herbarium specimens, he was careful to cross-reference plants and artefacts, linking the botanical and the cultural. As the example of the cassava grater he collected for Kew’s Museum attests (Figure 1.4), on many occasions, Spruce numbered each artefact, and registered the number in his notes, associating it with a particular herbarium voucher specimen.²⁹ Spruce was therefore ahead of his time, developing a methodology



Figure 1.2 Biocultural objects made of *tucum* (*Astrocaryum vulgare*) collected by Richard Spruce: (a) Fruits collected in São Gabriel da Cachoeira (EBC 34980); (b) Spadix collected in Pará (EBC 40022); (c) Rings made of the seeds, collected in São Gabriel da Cachoeira (EBC 35009); (d) Rope collected in Barra do Rio Negro (Manaus; EBC 35010). Courtesy: Board of Trustees of the Royal Botanic Gardens, Kew.

for ethnobotany 130 years before the collection of herbarium voucher specimens became routine.³⁰

Today, Spruce's collections have huge potential as data for studies of Amazonian vegetation and ethnobotanical knowledge over the last two hundred years, providing a basis for analysis for future research in Brazil. In our current work, we are focusing on a small group of objects originally from northwest Amazonia, selected from Spruce's collections at the Royal Botanic Gardens, Kew and the British Museum in London. This regional focus enables us to extend the focus of our research to comparable collections, including the Koch-Grünberg and Robert Schomburgk collections at the Ethnological Museum in Berlin. Although Koch-Grünberg did not regard his expedition to the Upper Rio Negro in 1903 'as primarily a journey of collecting',³¹ the instructions he received from his supervisor, Karl von den Steinen (Head of the South American Department of the Ethnological Museum), made the objective of his expedition clear: 'Your main task is to build up a systematic collection with particular consideration of series . . . Would you under any circumstances



Figure 1.3 Herbarium specimen of *Astrocarium vulgare* collected by the French plant collector Paul Sagot in French Guiana in 1858 (No. 593; barcode K000526397). Courtesy: Board of Trustees of the Royal Botanic Gardens, Kew.

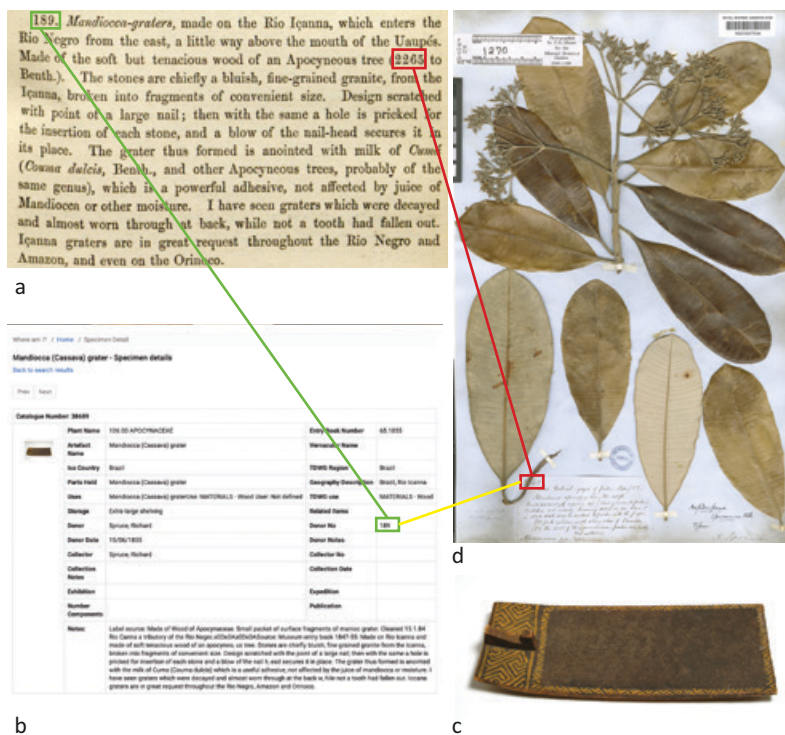


Figure 1.4 Example of cross-referencing of voucher specimen and artefact (a) Extract from Richard Spruce's 'Botanical objects communicated to the Kew Museum, from the Amazon or its tributaries, in 1853', *Hooker's Journal of Botany and Kew Garden Miscellany* 7 (1855): 277; (b) Kew Economic Botany Catalogue entry (EBC 38689); (c) Mandioca (cassava) grater, collected in Rio Içana by Richard Spruce (EBC 38689); (d) Voucher specimen of *Aspidosperma spruceanum* Benth. ex Müll. Arg., collected in São Gabriel da Cachoeira in April 1852 by Richard Spruce (No. 2265; barcode K000587694). Images b–d Courtesy: Board of Trustees of the Royal Botanic Gardens, Kew.

give preference to a long stay among one single tribe than to brief visits to numerous tribes'.³²

As Paul Hempel points out, the tension between von den Steinen's instructions and Koch-Grünberg's objectives reflects the methodological shift in anthropology at the turn of the century from the gathering of extensive and rare collections of material culture to the in-depth study of a single cultural group or area.³³ Despite complaining about the limitations that 'museum obligations' placed on 'actual research practice'



Figure 1.5 Tukano Indians with ceremonial shield and rattle-lance, Tiquié river, Plate VII in Koch-Grünberg, Theodor. *Zwei Jahre bei den Indianern Nordwest-Brasiliens*. Stuttgart: Strecker und Schröder, 1921.

during fieldwork, Koch-Grünberg's Rio Negro collection 'consisted of nearly 1300 objects, 1000 photographs and word lists from 40 languages and dialects'.³⁴ Given that Koch-Grünberg travelled to the same Upper Rio Negro region as Spruce did, but 50 years later, his collection complements Spruce's. It also includes artefacts not collected by Spruce, and photographs documenting the way that some artefacts were used, providing further material for a diachronic study of these artefacts (Figure 1.5).

Our research on these two Amazonian collections revolves around the following questions: In what ways can effective collaborative forms of production of socio-environmental knowledge emerge from cross-cultural research practices? What difference does it make to our understanding of these objects if we consider their mobility through different spatio-temporalities – those enmeshed in field practice but also in the metropolitan archive? Can digital technologies be used to integrate Indigenous knowledge systems into the very core of practices of display, curation, and the reuse of objects and knowledge for multiple audiences?³⁵ Can biocultural objects from different collections be integrated meaningfully without erasing their different stories, taking into account not only what they were made to be, but what they have become?³⁶

By investigating a specific set of objects from a specific location – northwest Amazonia – and relating them to specific cultural dynamics and environmental features, our aim is to offer our project as an example for comparison, instead of a model to be followed.³⁷ As with any case study, the intention is to provide a point of reference or comparison, through which researchers working on other regions and other collections can better understand their own methods and findings.

Situating mobility

There are a variety of ways of 'liberating' colonial collections from their institutional seclusion, as Paul Basu argues in his contribution to this volume (page 66). For the purposes of this chapter, I highlight four key interrelated points associated with the mobility of these collections that reactivate their social relations. First, for ecological and socio-cultural reasons, there is a direct geography of artisanal specialisation among ethnic groups in northwest Amazonia.³⁸ Such specialisation defines a formalised network of inter-community trade, or an 'internal' mobility, which existed in Spruce's time and which still survives in the present. For

example, the Tukano are known for their wooden stools, the Tuyuka and Bará are exceptional canoe-makers, the Hupda make the baskets used to carry cassava, the Kubeo specialise in funeral masks, and the Desana and Baniwa concentrate on basketry of various types and uses, while the latter are also known for their manioc graters. Curare poison and pan pipes are made by the Maku peoples and the Makuna.³⁹ Our research explores how to visualise this network, connect artefacts and relate them to particular socio-environmental dynamics.⁴⁰

However, some artefacts are part of a wider cultural complex, that is, they 'belong' to more than one ethnic group. So, the second point to make here concerns the need to be attentive to the nuances of ethnic attribution of provenance. As Aloisio Cabalzar puts it:

The Baniwa of the Içana river started trading their baskets under the trademark 'Arte Baniwa', and not long after this they started to trade a spice made up of grinded and smoked peppers mixed with salt as 'pimenta Baniwa' [recently used as an ingredient for an Irish beer]. There is nothing exclusively 'Baniwa' about these products, all the other ethnic groups of the Upper Rio Negro produce the same spice and the same baskets. The other ethnic groups feel that the Baniwa are representing these artefacts as being something of the Baniwa instead of belonging to the 23 different groups of the Upper Rio Negro, and making a profit of it. This causes some friction between the Baniwa and the others.⁴¹

We therefore need to develop research tools that can capture these nuances.

The third point relates to culturally sensitive materials, and how to deal with them, both in a digital portal and in a physical museum display. An example is the sacred trumpet, an instrument that is handled exclusively by men during their *Jurupari* ceremonies.⁴² During an interactive workshop held in Kew in 2015, João Paulo Lima Barreto, a Tukano researcher, advised us that, according to local tradition, the trumpet should not be seen by any women.⁴³ The British Museum followed the advice promptly, tagging it as a sensitive item in their database. However, as times are changing and Indigenous societies are dynamic, the demand of equal rights for Indigenous women might call for some flexibility regarding the maintenance of particular patriarchal traditions. The question of how we should deal with culturally sensitive objects is thus not straightforward. Discussing strategies for decolonising the museum, Jennifer Shannon argues that it is better to display a concealed

object than no object at all.⁴⁴ Citing the example of the display of a mask at the University of British Columbia's Museum of Anthropology, which was wrapped in a glass case but flanked by two labels with contrasting points of view from representatives of the source community – one stating that the display of these masks was forbidden, and the other saying that it was fine to display them as long as the masks were not made for ceremonial purposes – Shannon highlights the importance of bringing to the public eye the postcolonial dynamics of collaborative processes.⁴⁵ In this way, such display creates a space for dissonant voices to be heard, allowing for different meanings and histories to emerge.

The fourth point relates to the life cycle of these artefacts. As André Martini reminds us in his study of the physical repatriation of sacred ornaments from the Indian Museum in Manaus to the Upper Rio Negro communities, since artefacts were kept distant from their original place for a very long period of time, the result was that they were deemed dead for the Tukano, having lost their specific role in the Indigenous society and the world.⁴⁶ A similar reaction was recently reported by the ethnobotanist Juliana Lins during her preliminary project fieldwork on the Upper Tiquié, when she showed some photographs of Koch-Grünberg's collection of artefacts to Indigenous communities.⁴⁷ According to an elderly Desana *kumu* (traditional healer), some of the objects, such as the ceremonial shield, were considered dangerous because they had been taken away against their will. In order to be reintegrated into their society, the artefacts had to undergo a series of rituals to bring them back to life. From 2009 to 2013, the Goeldi Museum in Manaus developed a co-curatorial digital repatriation project based on its own Koch-Grünberg collection; as was reported, when a Baniwa 'master of music and dance', Luiz Laureano da Silva, encountered the ritual objects that were no longer produced in the region, he greeted them fondly with a '*Olá vovô!*' (Hi, Grandpa!).⁴⁸ Following a patrilineal relationship, the artefacts were regarded as part of the Baniwa family. When visiting the museum, the Baniwa were drawn to them, feeling the need to caress and touch them, as if meeting a cherished relative that had been away for too long.

A comparable sense of tactility was evident during the visit of Indigenous researchers from the Upper Rio Negro to the collections in Berlin and London in June 2019 (Figure 1.6). While the initial plan was to invite only three Indigenous researchers to Europe, the Indigenous researchers themselves highlighted the need to include two more people in the team: a *baya* (chant specialist), and a *kumu*. Responding to their request, we included in the team the *baya* Guilherme Pimentel Tenório (Tuyuka), and the *kumu* Tarcísio Borges Barreto (Tukano). As they



Figure 1.6 Indigenous researchers discuss a ceremonial shield during the project workshop at the Royal Botanic Gardens, Kew, June 2019. Photograph: Luciana Martins.

explained to us, ceremonies to prepare the team to encounter the objects that had left their ‘home’ so long ago would protect team members from the eventual evil that the contact with the old objects might bring. In addition, through the proper chants, the objects’ cosmological force could return to the Rio Negro mountains, reinforcing the Indigenous ancestral

culture. The night before leaving Berlin, the *kumu* Tarcísio Borges Barreto dreamt of these mountains, which he took as an indication of the safe return of the objects' 'souls'. Amazonian peoples, argues Stephen Hugh-Jones, 'live in different object worlds' within their cultures, which brings a need to understand, respect and embrace different ontologies.⁴⁹ As Hugh-Jones goes on to explain, Tukanoan creation myths differ from other Amazonian myths 'both because they do indeed tell of a creation from nothing, of gods who bring the world and its contents into being through their thoughts' and – importantly in the context of this chapter – 'because their main focus is on objects and artifacts rather than on animals'.⁵⁰ Rather than 'objects', the Indigenous groups from the Upper Rio Negro refer to artefacts as 'Instruments of Life and Transformation', key elements of their primary creation myths.⁵¹

This leads us to a key methodological step of this project, which is to extend the focus from objects to their making, enabling us to follow up the life stories of the materials used to create the objects, linking them to particular ecologies.⁵² Some of the objects in these collections are no longer used in the region, especially the ones employed in rituals, which were deemed demoniac by the Salesian missionaries, and therefore forbidden.⁵³ The missionaries even destroyed most of the *malocas* (longhouses), a central element for the social organisation of the Indigenous peoples of the Upper Rio Negro, where they lived, kept their instruments and performed their ceremonies.⁵⁴

Our project seeks to facilitate the engagement of the Indigenous researchers and practitioners with the historical artefacts through learning; that is, the artefacts will be used as sources of inspiration and motivation for the making of new artefacts. This process will be documented on video, which will be available on the project website. Furthermore, the new artefacts have the potential to be reinserted in the life of the Indigenous communities and reassembled into museum collections, bringing our research full circle. During the workshop at Kew in 2019, the Indigenous researchers highlighted the need to produce, in addition to a proposed website, printed pedagogic materials to be used in community schools in remote regions, where WiFi and electricity are scarce and unreliable. Responding directly to this identified need, the project plan has been revised to include the production of a teaching and learning toolkit based on the biocultural collections. Designed for use within Indigenous community schools, these teaching materials will disseminate information about artefacts no longer produced in the region, together with the biocultural knowledge associated with them.⁵⁵ The production of this toolkit in Portuguese, with the main terms

translated into *Ye'pamahsã* (Tukano) language, fits within the larger context of current linguistic projects in northwest Amazonia, which aim to strengthen and enhance Indigenous languages.

In this way, the project aims to ensure that the knowledge and skills associated with traditional craftwork are passed on to future generations, so that objects can continue to be produced within their communities, providing livelihoods to their makers and reflecting creativity. At the same time, the aim is to enhance the value of Indigenous craft, culture and knowledge nationally and internationally. The latter responds to the pressing need to raise awareness among the wider Brazilian population of the critical role of Indigenous communities as custodians of Amazonian biodiversity and ecosystem services.

As the project evolves, we are working iteratively to develop a digital collection of selected Upper Rio Negro artefacts that will include cross-referenced data from Kew, the British Museum and the Ethnological Museum in Berlin and contemporary Indigenous knowledge. In addition, besides the making of new artefacts, in a second workshop to take place in 2020 in the Upper Rio Negro, we aim collaboratively to develop protocols for the viewing, circulation and reproduction of these materials.⁵⁶ As an incentive to further collaborations through discussions in the region itself, we are also including on the website a directory of historical biocultural collections from the Amazon held by collecting institutions outside Brazil. Drawing upon this experience, we are working on a report outlining our findings and recommendations for developing multi-institutional, international and interdisciplinary digital repositories of biocultural collections co-curated with Indigenous researchers.

Conclusion

Since Spruce's time, the Indigenous groups of the Rio Negro have experienced significant pressures and changes, including those from slavery, messianic movements, a long period of forced catechisation by Salesian missionaries, and wider integration into the market and urban networks. In Brazil today, Indigenous peoples and their territorial rights are increasingly at risk, with new constitutional amendments and decrees that undermine the achievements of the 1988 Brazilian Constitution, which championed human rights and the protection of the environment (as recognised by the UN Human Rights Council).⁵⁷ This process has accelerated significantly in the past few years. Moreover, the institutional neglect of Brazil's cultural heritage is a case of undisputed concern, as

reflected in the devastating fire at the country's National Museum in September 2018, which led to the loss of an irreplaceable collection of Indigenous artefacts and research.

Fires are also causing considerable loss of biocultural diversity in Amazonia, with satellite images recently showing fierce flames engulfing the heart of the continent's forests and savanna. Although fires are endemic in the region, 'the unusually severe scale of fires corresponded to direct government encouragement', specifically in Brazil and Bolivia,⁵⁸ which favours agribusiness, mining and hydroelectric megaprojects detrimental to the globally significant richness of biodiversity, Indigenous cultural heritage and territorial rights.

In this frightful context, the re-mobilisation of biocultural collections in Global North museums and collecting institutions, through collaborative projects, becomes an important asset for Indigenous peoples in the Global South. As such, the artefacts that were collected within a framework of colonial science can emerge as relevant political tools of cultural resilience, enabling the recovery of social, cultural and environmental practices in Amazonia.

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Notes

1. Salick et al., 'Biocultural collections'.
2. Christen, 'Opening archives', 187. See also Bell et al., 'After the return'.
3. Inuvialuit Living History: <http://www.inuvialuitlivinghistory.ca/about>; the Plateau Peoples' Web Portal: <https://plateauportal.libraries.wsu.edu/about>; Digital Dynamics Across Cultures: <http://vectors.usc.edu/projects/index.php?project=67>; [Re:]Entanglements: <https://re-entanglements.net> (all accessed 13 February 2020).
4. Gubrium and Harper, *Participatory Visual and Digital Methods*, 172–3.
5. Tsing, 'Contaminated diversity', 95.
6. Tsing, 'Contaminated diversity', 96.
7. United Nations, *Convention on Biological Diversity*, Article 15(1) and Article 8(j).

8. The project team includes Luciana Martins (Birkbeck, University of London), Mark Nesbitt and William Milliken (Royal Botanic Gardens, Kew), Aloisio Cabalzar (ISA, Socioenvironmental Institute) and Viviane da Fonseca-Kruel (Jardim Botânico do Rio de Janeiro), with the support of Andrea Scholz (Ethnological Museum Berlin), Laura Osorio Sunnucks (British Museum) and Nildo Fontes (FOIRN, Federation of the Indigenous Organizations of Rio Negro).
9. A comparable knowledge base on Andean textiles was developed in the AHRC-funded project Weaving Communities of Practice (<http://www.weavingcommunities.org>, accessed 17 February 2020). See Brownlow et al., 'Andean weaving knowledge base'.
10. One of the 'shared' artefacts we have produced in the course of this research programme so far is a short film, entitled *The Many Lives of a Shield* (Luciana Martins and Bea Moyes, 2016), which is an early attempt to reflect on how to tell the story of one of the artefacts of the Spruce collection at Kew (<https://vimeo.com/200369869>, accessed 28 October 2019). Another one is a handbook of ethnobotany, the scope and content of which were developed during a workshop in São Gabriel da Cachoeira, in the Amazon, in November 2016. Published in Portuguese, *Ye'pamahsã* (Tukano) and Baniwa languages, the handbook responds to 'the local demand for botanical knowledge of the Amazon to be disseminated through both schools and local associations', as asserts Dagoberto Lima Azevedo, a Tukano researcher who participated in the workshop and who was responsible for the translation into his own language (one of the three officially recognised Indigenous languages in the municipality); Dagoberto Lima Azevedo, personal communication, October 2017; Cabalzar et al., *Manual de Etnobotânica*. For further outputs, see Fonseca-Kruel et al., 'Biocultural collections'.
11. Bell, 'A bundle of relations', 245.
12. Clément, 'Historical foundations of ethnobiology', 174.
13. Spruce, 'Meteorological observations'.
14. The Museum of Economic Botany at Kew opened in 1847; Cornish and Nesbitt, 'Western ethnobotanical collections'.
15. Letter from William Hooker to Richard Spruce, n.d., Director's Correspondence RSP/2/3: 149, Archives, Royal Botanic Gardens, Kew (Kew).
16. Martins and Cabalzar, 'O Rio Uaupés do Passado'.
17. Letter from Richard Spruce to Alfred Russel Wallace, 2 July 1853, Alfred Russel Wallace Family Papers, WP1/3/26, Archives, Natural History Museum. See also Wallace, *A Narrative of Travels*, 220.
18. Letter from Richard Spruce to William Hooker, 19 August 1852, Director's Correspondence 71/367, Archives, Kew.
19. Letter from Sir W. J. Hooker to R. Spruce, 31 March 1853, Director's Correspondence RSP/2/3/111, Archives, Kew.
20. The British Museum received another batch of ethnographic artefacts collected by Richard Spruce in 1960, further to the closure of two of Kew's museum collections. See Cornish and Driver, "Specimens Distributed". On the relocation of ethnographic collections within the British Museum, see Wingfield, 'Placing Britain in the British Museum'.
21. Italics in the original. Spruce, 'Journal of a voyage up the Amazon and Rio Negro', 33.
22. Spruce, 'Botanical objects', 210.
23. Letter from Richard Spruce to Daniel Hanbury, 21 March 1865, Richard Spruce papers, Box 14, Archives, Royal Pharmaceutical Society (RPS).
24. Letter from Richard Spruce to Daniel Hanbury, 16 September 1866, Richard Spruce papers, Box 14, Archives, RPS.
25. See Ballard, 'Return of the past'; Bell, 'A bundle of relations'.
26. Letter from Richard Spruce to M. B. Slater, 3 March 1888, Spruce Letters and Newspapers, Manchester Museum.
27. Hempel, 'Theodor Koch-Grünberg and visual anthropology', 198.
28. Letter from Richard Spruce to Daniel Hanbury, 19 December 1864, Richard Spruce papers, Box 14, Archives, RPS. Through Spruce's correspondence with Hanbury, it is possible to infer that he lived at 5 Waterloo Place, Kew from 24 October 1864 until 10 April 1865.
29. See Knight, *Richard Spruce in the Amazon*.
30. For an account of the collection of voucher specimens becoming standard practice in ethnobotany in the 1980s, see Nesbitt, 'Use of herbarium specimens', 315.
31. Hempel, 'Theodor Koch-Grünberg and visual anthropology', 193.
32. Karl von den Steinen, 20 February 1903, Acta Koch Reise 1903/05, 190/03, quoted in Hempel, 'Theodor Koch-Grünberg and visual anthropology', 199.

33. Hempel, 'Theodor Koch-Grünberg and visual anthropology', 198–9.
34. Hempel, 'Theodor Koch-Grünberg and visual anthropology', 198; Koch-Grünberg, *Zwei Jahre bei den Indianern Nordwest-Brasiliens*.
35. Christen, 'Tribal archives'; dos Santos and Machado Dias Junior, 'Ciência da Floresta'.
36. Thomas, *Entangled Objects*; Clark, 'Australiana in the Museum of Economic Botany'.
37. Satsuka, 'Biodiversity in Satoyama conservation', 81.
38. Ribeiro, *Os Índios das Águas Pretas*.
39. Instituto Socioambiental, 'Rio Negro ethnic groups', https://pib.socioambiental.org/en/Povo:Etnias_do_Rio_Negro, accessed 26 October 2019.
40. Fonseca-Kruel et al., 'Biocultural collections'.
41. Aloisio Cabalzar, personal communication, June 2018.
42. Augustat, 'Sacred musical instruments'.
43. João Paulo Lima Barreto, personal communication during Digital Amazon Workshop at the Royal Botanic Gardens, Kew, July 2015.
44. Shannon, 'Projectishare.com', 69.
45. Shannon, 'Projectishare.com', 69.
46. Martini, 'O retorno dos mortos', 331–5.
47. Juliana Lins, unpublished report, June 2019.
48. Shepard Jr. et al., 'Objeto, sujeito, inimigo, Vovô', 778.
49. Hugh-Jones, 'Fabricated body', 35.
50. Hugh-Jones, 'Fabricated body', 35.
51. Hugh-Jones, 'Fabricated body', 36. This was also explained to us during the workshop at Kew in 2019.
52. Ingold and Hallam, 'Making and growing'.
53. The Salesians are a Catholic missionary order founded in Italy in 1859. In Brazil, they started their work in Mato Grosso in 1895. The Salesians first reached São Gabriel da Cachoeira in 1914. See Hemming, *Die If You Must*, 235–54.
54. See Hugh-Jones, 'Clear descent or ambiguous houses?'; Cabalzar, 'O templo profanado'.
55. A Birkbeck College Global Challenges Research Fund award supported the production of the toolkit.
56. The second workshop was planned to take place in April 2020, but in the wake of the Covid-19 pandemic, it was cancelled. A new date will be arranged once travel to the Rio Negro Indigenous Territory is permitted again.
57. Carneiro da Cunha et al., 'Forum: Indigenous peoples'.
58. Blair, 'Understanding the fires in South America'.

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