

## PROJECT REPORT

### *Mobilising the value of biocultural collections in Brazil*

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#### **Activity 1 - Integrated collections research - Experiential learning in UK**

This intensive training was given to two participants from Rio de Janeiro Botanic Garden (Viviane Fonseca Krueel and Mariana Taniguchi) who are engaged in biocultural collections development of the Re flora data platform (Activity 2) and in-country training (Activity 3). Training was provided through working with staff members including Dr Mark Nesbitt, curator of Kew's Economic Botany Collection, Frances Cook (Assistant) and a range of other Kew staff. The key outcomes were that participants were able to digitise several thousand pages of Spruce manuscript, and hundreds of objects (Figure 1). This hands-on training visit was designed to build skills in photography, specimen curation, data management and public engagement. Images of the economic botany artefacts generated through this study visit are being integrated into the Brazilian *Re flora Virtual Herbarium*, linked with Spruce's relevant 'voucher' herbarium specimens already available online (<https://goo.gl/Hq7RdR>).

*Methodology* - Introduction to advanced curation of ethnobotanical specimens: technical aspects of curation of ethnobotanical specimens, including cataloguing, storage, handling of toxic materials, object conservation. Participants were guided through reassessment of selected Richard Spruce specimens from Brazil, such as fragile artefacts such as the Desana shield, and how to re-catalogue these to current museum standards. By the end of their stay the trainees were familiar with Kew's ethnobotany collections and aware of strengths and weaknesses in its curation, and thus able to take a fresh approach to documentation and storage of biocultural collections and associated data. Mariana Taniguchi was also given detailed training in use of Lightbox software for photo editing and metadata.

*Training in museum photography and manuscript digitization* (Figure 1 c,d) -This activity was emphasized because of its central importance in academic and public dissemination, and because the Spruce economic botany collection was last photographed in 2004. New images from new angles were generated from this practice in Kew during the training. The trainees worked alongside a highly experienced specialist photographer on digitisation of museum specimens, and under supervision of experienced library staff on manuscripts (which have not previously been digitised). The training allowed us to go beyond the photographic registry into curatorial practices, such as the choice of viewpoints, the use of scales and colour bars, the inclusion of documentation in images and the creation of efficient workflows. The results were used to improve the Re flora data platform as a case study in herbarium collections integrated with Spruce objects.

Viviane Fonseca Krueel and Mariana Taniguchi received detailed briefing on Kew interpretation practice at the Hive and other sites, and undertook visits to see presentation of indigenous artefacts at the British Museum, Pitt-Rivers Museum, Ashmolean Museum (Oxford). The Horniman Museum was substituted by the Wellcome Collection for its innovative public engagement programmes. Two gardens were chosen for detailed visits: Chelsea Physic Garden, and the medicinal plant garden of the Royal College of Physicians, both of which were rich in suggestions for public programming that could be applied at JBRJ. A highlight was Taniguchi's participation as an 'explainer' at the Economic Botany display at a Kew weekend festival; 20,000 people attended this festival. In addition, Krueel and Taniguchi technical visit to other museums and gardens, including the Natural History Museum, Oxford Botanic Garden, and Science Museum.

The Project work on museum integration had two components: detailed work by Kruel and Taniguchi and Kew hosts, working with a current MA student working on Spruce material, to identify key material categories (archives, objects etc) and links between them; then work by Taniguchi on digitising two key gaps identified by this: Spruce's collecting notes and c. 100 objects either not or inadequately photographed before. Circa 4,000 images were taken and a set sent to Rio for activity 2 of the project.

### *Impacts*

*Guidance on integration of collections for research* – Richard Spruce's Amazon collections were used as a case study, including ethnobotanical, herbarium and manuscript materials held at Kew. Trainees selected ethnobotanical artefacts through different collection materials and learned how this leads to more integrated understanding of their significance and meaning. Existing Kew projects were used to prompt discussion of employment of ethnobotanical collections for research into biodiversity and traditional knowledge, particularly in relation to source communities' engagement.



Figure 1: (a,b,c) Viviane Fonseca Kruel and Mariana Taniguchi, two participants from Rio de Janeiro Botanic Garden, were able to digitise several thousand pages of Spruce manuscripts, and hundreds of Spruce objects; (c) this hands-on training visit was designed to build skills in photography, specimen curation and data management.

## **Activity 2 - Data platform development and programme management**

This work phase was conducted over a few months by JBRJ IT staff, so that repatriated images from the Kew Economic Botany Collection (EBC) could be disseminated via the Virtual Herbarium. This step contributed to the acquisition of equipment related to the improvement of storage space and the capacity to process more images and their associated data. We relied on the guidance of two employees hired for this work provided by JBRJ specialists.

### *Impact*

We increased the largest capacity in Brazil for the development of integrated data resources, as well as plant samples. This resulted in development of integrated data resources on the important Amazonian collections and observations on the uses of plants made by Richard Spruce in the nineteenth century, and the beginning of a Brazilian biocultural dataset.

Platform adaptation to the Re flora database has been developed to include images and data from Spruce material (generated during training at RBG Kew), allowing the repatriation of biocultural information about the Brazilian Amazon (Figure 2). This activity focused on building capacity for dissemination of integrated biocultural data/collections using the Richard Spruce material - <https://goo.gl/Hq7RdR>. This has increased the capacity of Rio de Janeiro Botanical Garden to disseminate information on collections held inside and outside Brazil, widening the impact and reach of the Re flora Virtual Herbarium and thus building on the investment already made in this resource by the Newton Fund/British Council.

Resultado da Busca

Copiar ítem Atualizar Consulta Clear Relatório Nova Consulta

Por listagem No Mapa  Typus

Consulta Herbario Virtual=Por listagem, Apenas Artefatos=im:

Total de exsicatos: 66 Total de duplicatas: 0  
 Total de exsicatos com coordenadas geográficas: 06  
 Total de determinações: 66 Total de imagens: 187  
 Tempo de Consulta: 10.26 seg

Páginas: 1 2 3 4

Foto	Dados da Determinação
	ANNONACEAE <i>Socogeopsis multiflora</i> (Mart.) R.E.Fr. Determinador: Sem determinar
	APOCYNACEAE <i>Alastonia</i> Determinador: Sem determinar
	APOCYNACEAE <i>Prestonia</i> Determinador: Sem determinar
	APOCYNACEAE <i>Thevetia peruviana</i>

Informações Histórico de Determinação

Relatório Figura Relatório Figura Relatório Figura Relatório Figura Relatório Figura Relatório Figura

Dados da Determinação

Nome Científico: ARCADEACEAE *Loxoptilium piassaba* Willd.  
 Typus:  
 Nêco:

reflora.jbrj.gov.br/reflora/geral/ExibeFiguraFSIUC/ExibeFiguraFSIUC.do?idFigura=16741112

reflora.jbrj.gov.br/reflora/geral/ExibeFiguraFSIUC/ExibeFiguraFSIUC.do?idFigura=16740896

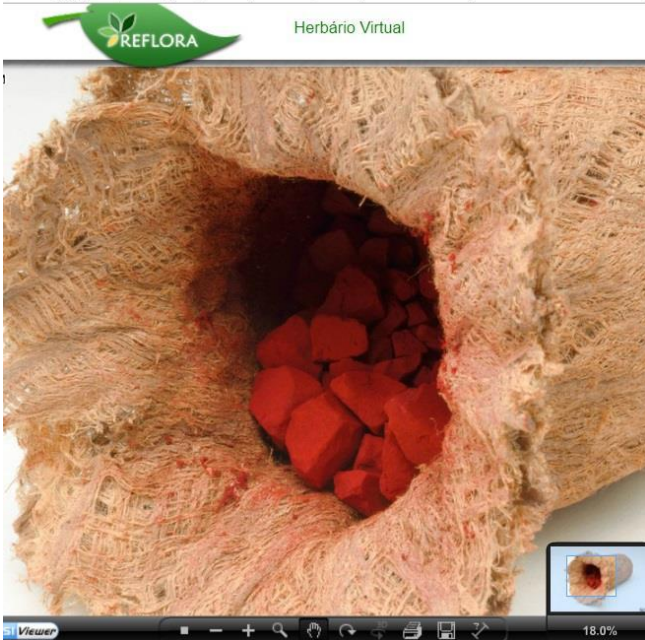


Figure 2: After activity 1, and images processing, one can access the ethnobotanical artifacts (in Brazil) collected by Richard Spruce from Amazon, access to the Herbarium Virtual <http://reflora.jbrj.gov.br/.../Consult.../ConsultaPublicoHVUC.do>

### **Activity 3 - Integrated collections research - Brazil-based training course at JBRJ**

This course ran 18-21 October and was led by Dr Viviane Krueel (JBRJ), Dr Luciana Martins (Birkbeck, University of London) and Dr Mark Nesbitt (Royal Botanic Gardens, Kew).

Introductory workshop and dissemination event the first day was an orientation and dissemination event, attended by 25 researchers including the 13 participants in the course, and held at the Escola Nacional de Botânica Tropical. The programme (Figure 3) comprised nine talks covering the interaction between collections, ethnobotany and history. All talks led to extensive discussion, particularly from participants seeking to incorporate new elements (e.g. the Nagoya Protocol) into their work.

#### *Methodology*

Three days of intensive workshops (19-21 October) were attended by 13 participants (listed at attachment 1,2; Figure 4: the 3 trainers, and 13 representing 4 institutions in Rio de Janeiro, 1 in São Paulo, 1 in Pará, 2 in Amazonas and 1 in Paraíba). Participants were recruited through institutional contacts to ensure a wide diversity of skills and perspectives was represented: these included ecology, ethnobotany, taxonomy, collections, public engagement, anthropology and history. Given this high level of expertise in different fields, the course was structured as guided discussions (instead of 'lectures') that took place among the relevant collections: herbarium, economic botany, and living plants. The high level of engagement from all participants is evidence that this approach was successful. Two trainers and 4 participants in this workshop then moved to the second workshop, in São Gabriel da Cachoeira, ensuring reinforcement of new skills and their dissemination to a wider group. All participants were given a copy of *Curating Biocultural Collections* (Kew, 2014) which is the standard reference work for ethnobotanical collections.

*Working with ethnobotanical objects* - This component was led by Nesbitt on 19 October and used examples from the JBRJ economic botany collection to examine acquisition rationale, documentation and procedures, the interpretation of objects in terms of manufacture and use, and ethical aspects, including those related to historic and overseas collections (Figure 4). Particularly valuable contributions were made by Claudia López of Museu Goeldi. The lessons of the morning were reinforced by an afternoon visit to CRAB - Center for the Brazilian Handcrafts, where an exhibition that combined purely indigenous objects with those made by indigenous peoples to commission by commercial designers. This enabled exploration of the complex question of authenticity in crafts.

*Integrating collections* - This had several components. On 20 October Martins discussed the use of textual and visual sources using resources in the JBRJ Library, and Luisa Rocha introduced the museum facilities of JBRJ, including its exhibition of historic botanical works (Figure 5). These formed the basis of a discussion as to the nature of authority in scientific writing, and the use of visual materials such as book illustrations. On 21 October Viviane Krueel, Dagoberto Azevedo (indigenous Tukano) and 5 (Head of Living Collections) led an in-depth tour of the gardens, with focus on the Amazon collections and medicinal plant garden. After this, Rafaela Campostrini Forzza led a discussion using historic Richard Spruce specimens in the Herbarium.

Throughout these discussions cross-cutting themes were explored: differences between scientific and indigenous perspectives; the central role of Richard Spruce in historic collections from the Amazon region; the usefulness of different types of specimen for reaching different audiences, and overall how can different forms of data be compared and what new insights can they generate.

*Impact* - Breadth: the format of an open workshop on day 1, followed by detailed training and then

a second workshop in São Gabriel, was effective in reaching a range of audiences. The initial workshop was attended by opinion formers including Julia Knights (British Embassy), Diana Daste (British Council), Sergio Besserman (President of JBRJ) and Gustavo Martinelli (Head of Research, JBRJ). The intensive workshop had attendees from many institutions who will apply the approaches explored in the workshop; it is also an important outcome that JBRJ staff from a wide range of departments participated during the week - an internal collaboration that is essential to continuation of this interdisciplinary work.

### Evidence

The most powerful evidence for the success of the course is in its application to the São Gabriel da Cachoeira workshop, where its themes were explored with mainly indigenous participants. All three of the trainers have gained perspectives that have fed into subsequent stages of the project, particularly relating to integration of different collections at Kew and JBRJ. Strong working relationships have been formed with all participants, and Martins and Nesbitt are now much better placed to work with JBRJ on future stages of the project.

## PROGRAMAÇÃO

**Terça-feira 18 de Outubro de 2016**

**TREINAMENTO E CAPACITAÇÃO EM COLEÇÕES BIOCULTURAIS**

Local: Escola Nacional de Botânica Tropical  
Rua Pacheco Leão 2040, Horto - Rio de Janeiro-RJ  
9:30-17:00

**9:30-10h** - Coffee  
**10h** - Abertura do evento  
**10:30 - 12h** - Apresentações  
"Coleções Bioculturais e a proposta Mobilising the value of biocultural collections in Brazil". Mark Nesbitt (Kew) & Viviane Stern da Fonseca Krueel (JBRJ)  
"Investigando o legado de Richard Spruce: saberes e usos da flora na Amazônia brasileira" - Luciana Martins (Reader in Latin American Visual Cultures; Birkbeck, University of London)  
"A floresta na cosmologia dos Tukanos" - Dagoberto Lima Azevedo (Mestrando do Núcleo de Estudos da Amazônia Indígena - NEAI)  
"Pesquisas Interculturais e Manejo Ambiental no Noroeste Amazônico" - Adelson Lopes da Silva & Pieter-jan van der Veld (Pesquisadores do Instituto Socioambiental)  
**12:30-14:00** - Brunch  
**14h- 17h** - Apresentações  
"Reflora: repatriamento de coleções históricas brasileiras" - Rafaela Forzza e Luis Alexandre Estevão (JBRJ)  
"Registros da natureza brasileira, séculos XVIII e XIX" - Lorelai Kury (Casa de Oswaldo Cruz/Fundação Oswaldo Cruz)  
"Das drogas do sertão à sociodiversidade: ciência, política e reconfigurações da Amazônia" - Ana Maria Lima Daou (UFRJ/Depto. de Geografia)  
"A Coleção Etnográfica do Museu Paraense Emílio Goeldi e os povos indígenas: desafios contemporâneos" - Claudia Leonor López Garcés (Pesquisadora em Antropologia do Museu Paraense Emílio Goeldi)

**Quarta-feira 19 de Outubro de 2016**

Local: Manhã - Prédio do Herbário do JBRJ, 2º. Andar, Sala Múltiplo Uso  
Tarde: Exposição CRAB/SEBRAE  
9:30-17:00

**9:30-12:00**  
Conservação e curadoria de acervo - prática sobre a história das coleções de artefatos e/ou derivados de vegetais, política de aquisição e conservação, conhecimento tradicional associado à biodiversidade, formas de exibição de informações e materiais.

**12:00** - Almoço

**14:00** - Visita técnica a exposição CRAB / Origem Vegetal - Centro Sebrae de Referência do Artesanato Brasileiro (SEBRAE) - Praça Tiradentes 67, 69, 71, Centro.  
Local: Manhã - Museu do Meio Ambiente Rua Jardim Botânico, 1008/Jardim Botânico  
Tarde - Biblioteca Barbosa Rodrigues  
9:30-17:00

**Quinta-feira 20 de Outubro de 2016**

**9:30** - Café  
**10:00-12:00**  
"Diálogo sobre a Lei da Biodiversidade no Brasil" - Dra. Manuela da Silva (Fiocruz)  
**12:00** - Almoço  
**14h-17h**  
Biblioteca Barbosa Rodrigues: práticas na interpretação de informações sobre as espécies vegetais potencialmente úteis do Brasil e suas ligações históricas (Coordenação: Luciana Martins, Birkbeck; participação de Rosana Simões Medeiros e Maria da Penha Fernandes Ferreira)

**Sexta-feira 21 de Outubro de 2016**

Local: Manhã - Encontro no portão do JBRJ, no. 1008, próximo a Loja da Associação de Amigos do JBRJ;  
Tarde - Herbário do JBRJ (RB)  
9:00-17:00

**9:00-12:00**  
Prática na Coleção Viva do JBRJ: fonte de informação e difusão do conhecimento etnobotânico - Marcus Nadruz, Luisa Rocha e Yara Britto (JBRJ)  
**12:00** - Almoço (Coleção Temática de Plantas Medicinais)  
**13:30-16:00**  
Visita técnica as coleções científicas no Herbário do JBRJ /RB - Rafaela Forzza (JBRJ)





Figure 3: Programme of the Course/Training in Biocultural Collections in Rio de Janeiro, JBRJ.



Figure 4: (a,b,c) Dr Nesbitt used examples from the JBRJ economic botany collection to examine acquisition rationale, documentation and procedures, the interpretation of objects in terms of manufacture and use, and ethical aspects, including those related to historic and overseas collections; d) Practices and visit to CRAB – Center for the Brazilian Handcrafts, where an exhibition that combined purely indigenous objects with those made by indigenous peoples to commission by commercial designers.



Figure 5: (a,b): Dr Martins discussed the use of textual and visual sources using resources in the JBRJ Library, and Dr Luisa Rocha introduced the museum facilities of JBRJ, including its exhibition of historic botanical works; Dagoberto Azevedo (indigenous Tukano) interest in the JBRJ library and in the original books of the naturalist Spruce and others; (c, d) Dagoberto Azevedo (indigenous Tukano) and 5 (Head of living collections) led an in-depth tour of the gardens, with focus on Amazon collections and medicinal plant garden.

The event was disseminated through the JBRJ newsletter <http://jbrj.gov.br/node/690>



#### **Activity 4 - Indigenous research and collections training, São Gabriel da Cachoeira**

##### *Exchange of scientific and indigenous knowledge*

The workshop on Ethnobotany that took place at the Instituto Socioambiental - ISA headquarters and at the Maloca (longhouse) of the Federation of Indigenous Organizations of Rio Negro – FOIRN in São Gabriel da Cachoeira (Figure 6) aimed at bringing Brazilian and British research institutions closer to collaborative research - intercultural and interdisciplinary. It focused on providing 12 indigenous trainees from the Tiquié (Tukano, Tuyuka and Desana peoples), Içana (Baniwa and Koripako peoples), and lower Uaupés (Tukano and Pira-tapuya peoples) with new skills in biocultural research.

The workshop was carried out by specialist trainers from Rio de Janeiro Botanical Garden, Royal Botanic Gardens, Kew (UK), Museu Paraense Emílio Goeldi (MPEG) and Birkbeck, University of London, as well as ISA staff and indigenous knowledge holders and researchers, with support from the Federation of Indigenous Organizations of Rio Negro (FOIRN).

The meeting, which began on October 27 and lasted until November 5, promoted the exchange of scientific and traditional knowledge on plants and their uses, including training in botanical and ethnographic research methodologies (Figure 7-8) and a parallel workshop on botanical illustration led by Rachel Rosadas and Patricia Villela – volunteers from the Rio de Janeiro Botanic Garden. The workshop was complemented by a follow-up programme of community-based research to consolidate skills.

Overall, the workshops outcomes included: (1) increased capacity among indigenous researchers for application of systematic/scientific techniques for data capture and collections, including collecting and preparing dried plant specimens and artefacts, documenting specimens and their uses (note taking, interviewing, photography and drawing skills), which enhanced autonomous research; (2) increased understanding among indigenous representatives of biocultural collections held in museums and associated research programmes; (3) increased understanding/knowledge among non-indigenous researchers/trainers of indigenous cultural contexts and ethnobotanical knowledge; (4) a strengthening of collaborative relationships between indigenous communities and participating research institutes; (5) increased specific ethnobotanical skills among ISA team to support and guide indigenous biocultural research initiatives; (6) definition of the scope and content of a training manual on biocultural research for use in wider development of the above approach and capacity-building with other indigenous communities.

On the first day of the workshop, indigenous researchers, Adeilson and Pieter (ISA researchers) presented the participative intercultural projects carried out in the Upper Rio Negro, such as the research on Baniwa pepper and the Tuyuka capoeira forest surveys. Dagoberto made a presentation on Tukano cosmology, which was a whole new subject for most of the participants. The following days included classes and field exercises focused on techniques for collection, conservation and exhibition of biocultural material and visits to the herbarium and library of the Botanical Garden (as follows in the attached Schedule).

This event also built understanding among researchers/trainers of cultural contexts and requirements for biocultural data collection and management, and established new collaborative relationships between indigenous communities and participating research institutes (including FOIRN). Based on film shot at the workshop and in the Kew Collections, Luciana Martins and the Derek Jarman Lab produces a video now available online <https://vimeo.com/194984574>. A series of events was run in the evenings, including film showings and lectures, to which the public were

invited alongside participants. The workshop was disseminated through blogs at Kew and ISA: <https://goo.gl/7pZrKa>; <https://goo.gl/2WwxJA>. The outline for the content of the methods manual (now in production) was developed through discussion and needs analyses conducted during the workshop. This was followed by the initiation of a field research programme, under way and supported by ISA, assisting trainees to put their new learning into practice in the context of projects focused on sustainable resource use, and documenting/valuing traditional knowledge and practices.



Figure 6: The director of FOIRN, opens the workshops of this Project at Maloca do Saber in São Gabriel da Cachoeira, AM.



Figure 7: Training in plant collection for herbarium, with trainer Mateus Gomes Macedo, from Desana (Image by Pieter-Jan van der Veld – ISA).



Figure 8: Training in photography of the artefacts with the trainee Armindo F. Miguel Brazão, Baniwa, and Felipe Storch of ISA (Image by Pieter-Jan van der Veld – ISA).



Figure 9: Botanical illustrations of Ismael Pimentel dos Santos, Desana, produced during the SGG workshop (Image by Juliana Lins - ISA).

## Media coverage and project dissemination

Blogs, newsletters, online articles

- <https://www.socioambiental.org/pt-br/noticias-socioambientais/cooperacao-brasil-inglaterra-promove-pesquisas-interculturais-sobre-plantas-do-rio-negro>
- <http://jbrj.gov.br/node/685>
- <http://jbrj.gov.br/node/690>
- <http://www.kew.org/discover/blogs/kew-science/mobilising-richard-spruce%E2%80%99s-19th-century-amazon-legacyKew>
- <http://www.bbk.ac.uk/arts/research/current-research-projects/mobilising-the-value-of-biocultural-collections-in-brazil>
- <http://amazonia.org.br/2016/11/etnobotanica-aproxima-conhecimentos-indigenas-e-cientificos/>
- <http://www.ecoamazonia.org.br/2016/12/cooperacao-brasil-inglaterra-promove-pesquisas-interculturais-plantas-rio-negro/>

Videos

- <https://vimeo.com/201827169>
- <https://vimeo.com/195320863>
- <https://vimeo.com/194984574>