# Goods inwards, goods outwards: mapping plant mobilities using Kew Gardens’ historic records

## Supervisors

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The supervisory team combines expertise and perspectives from archival and information science, environmental history and history of science, and digital and computational humanities, as well as experience of successful PhD supervision in a collaborative context.

## Subject

This PhD project is about using botanical records to access complex histories of people, trans-continental and longitudinal networks of science, and colonial access to land and natural resources.

Record books in the Kew archives – often referred to as [goods inwards and outwards](https://www.biodiversitylibrary.org/item/305115#page/1/mode/1up) – document both the arrival of plants, seeds, and other botanicals into the collections at Kew and the dispersal by Kew of plants, seeds and botanicals to botanists, estates, nurseries, colonial administrators, donors, and other scientific institutions. Organised chronologically from 1793, each handwritten entry records the scientific names of the specimens in a consignment and sometimes the Indigenous names, the parties involved, and – in most cases – where the consignment originated or was sent to.

This data is significant. This is in part because of the connections between people and institutions that they enable. But the data is also significant because register books support detailed readings of object biographies and assessments of changes in plant- and bio- diversity. And combined with specialist data services such as the International Plant Names Index, and general linked knowledge bases such as Wikidata, these data offer the ability to trace specimens from particular locations in space and time to their regions of origin, to the places from which they were displaced first by trade and proto-globalisation and later by colonial exploitation and 'green imperialism'.

## Research questions and methods

This PhD project will use a single set of archive materials as the jumping off point for asking a series of interconnected research questions:

* How can the ‘goods inwards and outwards’ records at Kew be used to access complex histories of people, and trans-continental and longitudinal networks of science?
* By modelling these records as data, how can the entangled networks and geographies they represent be made knowable?
* What can 'critical fabulations' of specimen exchanges reveal about the relationships between regions and individuals, unrecognised labour, and scientific celebrity?
* To what extent can approaches from data science enrich understandings of Kew as a node in a global network of specimen exchange?

This collaborative and highly interdisciplinary doctoral research project draws on a range of research methods. The doctoral researcher will read archives along and against the grain (Stoler 2009). They will encounter perspectives from information science that challenge inherited notions of record structure (Bowker & Star 2010) and seek to recover unseen hands people in the reconstruction of networks of exchange (Lawther 2023). They will be encouraged to draw on expanded digital humanities – in particular critical data studies (D'Ignazio & Klein 2020), digital anthropology (Odumosu 2020), and data science (Gebru et al. 2020) – to construct justice-oriented approaches to building, mapping, and analysing networks of plant mobility. And they will frame their research around historical approaches to science, empire, and the environment, from Richard Grove’s pioneering repositioning of colonial science as an enabler of ‘green imperialism’ (Grove 1995) to recent work on plant commodification (Alcorn 2020) or technologies of ecological expansionism (Keogh 2023).

As a result, this opportunity is well suited to a range of potential candidates. The successful student may have a background in History, Cultural Geography, or Cultural Studies, with a particular interest in histories of science, empire, and/or the environment. They may have a background in Data Science, Digital Humanities, or Critical Data Science, with a particular interest in network analysis, information extraction, or probabilistic modelling. They may have a background in Information Science or Digital Media Studies, with a particular interest in data modelling, person-centred information management, or feminist/queer/anti-racist data infrastructures. Or they may have a background, set of life experiences, or path to doctoral study that we haven’t considered.

In short, any candidate will be considered who can show a commitment to the topic area and to the proposed interdisciplinary approach, and who can demonstrate the relevance of their background and experience to the project. We anticipate that doctoral student will have wide scope to decide how best to combine the possible methods for approaching the archival material, to expand on when and why it is appropriate to foreground one method over another, and to reflect on their own standpoint as a researcher in relation to the area of practice.

## Research Context

This collaborative doctoral research project draws together perspectives and imperatives from information science, digital humanities, and histories of science, empire, and the environment. It seeks to make original contributions in three areas. First, analysis of botanical exchange between people, across places, and over time has the potential to contribute to historical research seeking to map trans-continental networks of science, to identify historic vectors of climate change, and to suggest future avenues of research into specimen displacement and proto-globalisation. In so doing, such work engages with the latest debates on decolonization of histories of science by situating and decentring Western botanical knowledge and including local and indigenous actors in the discussion (Dubald & Madruga 2022). Second, research that draws on approaches from data science to probablize, for example, connections between data points or – more radically – data points unseen in a given set of records (Kestemont 2022), has the potential to both advance computational approaches to humanities data, and to support critical fabulations that strain against the limits of the archive, that redeem the contributions and traumas of unseen hands (Hartman 2008). Third, the project is an opportunity to build a test case for forms of data modelling that enable ambitious research agendas, suggesting to GLAM[[1]](#footnote-1) sector ways of using digitisation to go beyond cross-collection discovery and of how moments of action – here, botanical exchange – can be used as waypoints from which to map the mobilities of people, ecologies, and geographies.

## Skills development and employability enhancement

The doctoral researcher will be co-located between Southampton Digital Humanities, the Royal Botanic Gardens at Kew, and the Department of Archaeology and History at the University of Exeter. The skills and experiences gained will significantly enhance their employability prospects in academia, the cultural sector, and analysis focused roles in policy, development, and other third-sector organisations.

At the University of Southampton, the doctoral researcher will be part of an interdisciplinary group that takes critical and justice-led approaches to computational work in humanities research, education, and enterprise. They will join weekly team meetings, be able to benefit from and contribute to the Digital Humanities skills workshop programme, have opportunities to teach on relevant modules (e.g. “Data Environmentalism” or “Data, Culture, and Justice”), and have access to targeted support from Southampton’s Doctoral College, a focal point for doctoral training and researcher development and a hub for its doctoral community.

At the Royal Botanic Gardens, the doctoral researcher will receive a full induction to Kew’s library and archives and in-situ training in navigating and handling archives and their associated material culture, and in developing a critical understanding of what gets digitised, why, and how, and how to work with volunteers. They will have access to the training programme open to all Kew PhD students (~100 total cohort) organised by Kew’s Science Education team, as well as opportunities to contribute to Kew’s annual PhD symposium, write for Kew’s blog, or work with Learning and Participation to communicate findings to Kew staff and publics. Training around public engagement will be available, with opportunities to participate in the development of small exhibitions, contribute to social media and participate in other outreach activities. Through working in an interdisciplinary team which is home to 15 other arts and humanities doctoral researchers, they will gain valuable experience of the GLAM sector.

At the University of Exeter, the doctoral researcher will be based in the Department of Archaeology and History. The student will be part of a diverse graduate research environment that will help them build critical approaches in global and imperial histories. The Streatham campus of the University has been designed as a botanical garden and part of the largest plant nursery in Europe in the early-19th century. The PhD student will be able to experience the botanical gardens and reflect on the significance of the gardens in imperial history. They will further benefit from the events organised by the Tabbi’at – Environmental and Health Humanities in the Middle East and Africa Network, and by the Centre for Imperial and Global History. And they will have opportunities to teach relevant modules (e.g. “Science, Empire, Natural History Museums”) and on the new BA in Environmental Humanities.

1. Galleries/Gardens, Libraries, Archives, and Museums [↑](#footnote-ref-1)