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Stabilisation and conservation of the Wallich Correspondence held at Central National Herbarium (CAL), Botanical Survey of India (BSI), Howrah, India.

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Abstract

The Wallich Catalogues are also known as the 'Numerical list of dried specimens of plants in the Museum of the Honourable East India Company (EIC)'. The collection was supplied by Dr. Wallich, Superintendent of the Botanic Garden at Calcutta. The collection holds 33 volumes, including one fern manuscript, one brittle book of Wallich's *Tentamen Flora Nepalensis Illustratae* and three-volumes of Wallich's *Plantae Asiaticae Rariores*. The collection was in a poor condition. This is an overview of how the collection has been stabilised and conserved for long term preservation.

Introduction

Nathaniel Wallich (b.1786 – d.1854) was a Danish physician and botanist. Wallich served as an Assistant Superintendent of the Calcutta Botanic Garden during 1815 – 1816 and as Superintendent during 1817 – 1846. Between 1820 and 1844 he collected specimens from several localities: Singapore in 1822; Penang in 1822; Assam 1833; the Cape of Good Hope during 1842 – 1844. The main set of Wallich collections is held at the Royal Botanic Gardens, Kew, and around 12,000 specimens are held at the Central National Herbarium, Howrah.

His plant collections in Nepal resulted in the publication of *Tentamen Flora Nepalensis Illustratae* (Wallich, 1824 – 1826). The three-volume *Plantae Asiaticae Rariores* (Wallich, 1830 – 1832) contains descriptions and figures of a selected number of unpublished East Indian plants. *A numerical list of dried specimens of plants in the Museum of the Honourable East India Company (EIC) which have been supplied by Dr. Wallich, Superintendent of the Botanic Garden at Calcutta* is often cited as *Wallich's Catalogue* (Wallich, 1828 – 1849). Many of the names in the Numerical List were considered as nomina nuda. The palm genus *Wallichia* is named after him (Hind, undated).

At the Central National Herbarium (CAL), The Botanical Survey of India (BSI) has one lithographed book called *Wallich's Catalogue* Wallich's correspondence (32 volumes), Wallich's manuscript of Ferns (1-volume), one brittle book of Wallich *Tentamen Flora Nepalensis Illustratae* and three-volumes of Wallich's *Plantae Asiaticae Rariores*. Dr Wallich's insights into the botanical sciences are remarkable, and he holds a very important place in the contribution of Indian natural history.

Wallich produced these catalogues to list and name every botanical specimen which had been collected from the Indian subcontinent, Nepal, Malaysia, Mauritius and Africa. When matched with the herbarium specimens (dried and pressed plant specimens), these catalogues form an extremely important resource for understanding the taxonomy and distribution of many Asian species. Hence, it was important that these sets be stabilized and conserved for their future use (see Figs. 1 & 2).



Fig. 1. Sample volumes from Wallich's correspondence. (picture credit: BSI, Howrah).

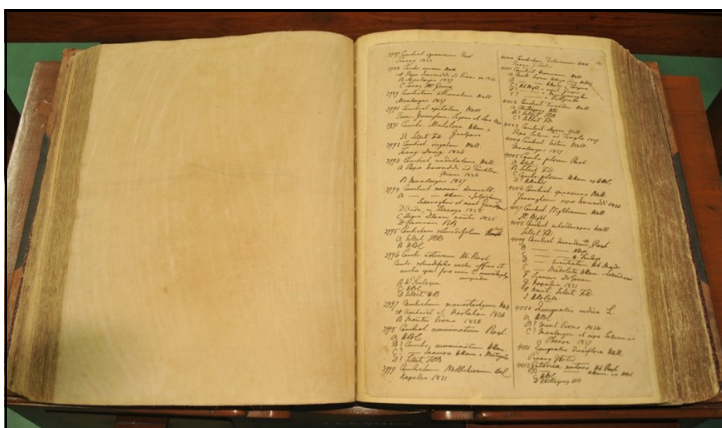


Fig. 2. A sample volume from Wallich's catalogue. (picture credit: BSI, Howrah).

As part of The World Collections Funded Project for Nathaniel Wallich, three hundred and forty one herbarium specimens and one hundred and four drawings/illustrations held at the Natural History Museum (NHM) have been scanned (see Table 1). This was a collaborative project between:

- The British Library
- Kew Gardens
- Natural History Museum
- And special inputs were provided by BSI and the National Archives at New Delhi, India.

This project involved digitising, databasing the drawings/illustrations, herbarium specimens and correspondence held at Kew Gardens, Natural History Museum (NHM) and British Library and bringing these collections together under a common umbrella by way of a website portal hosted by Kew Gardens (Nathaniel Wallich Collection, 2015).

Table 1. Collections from Kew, NHM and British Library. (Source: www.kew.org/wallich)

	Kew	NHM	British Library
Specimens	234	341	0
Drawings	205	104	0
Correspondence	0	0	111

Methods and materials

The aim of this study was to stabilise the Wallich's correspondence for long term conservation held at the Central National Herbarium (CAL), Acharya Jagdish Chandra Bose Indian Botanic Garden (AJBIBG), Botanical Survey of India (BSI), Howrah. We wanted this important collection to be protected from dirt, and where possible, minimise handling.

Noltie (1999) pointed out that the conservation status of the Wallich Catalogues is a cause of international concern and that they are in dire need of stabilisation and restoration for their long term conservation and sustainable use. As part of the World Collections funded project on digitising the Wallich's collection, in 2011-2012, a team of six people from Kew, Natural History Museum (NHM) and a paper conservator visited CAL to assess Wallich's correspondence. Based on this visit and the conservation report prepared, this work is further to this visit (Christopher Mills, personal communication, January 2011).

The conclusion of the report was that these catalogues were not accessible due to their fragile nature and needed conservation to enable safe handling. The bindings have fallen off and the paper is extremely brittle (see Fig 1). The report initially recommended the immediate need of stabilising the items so that they can be handled and treated further for restoration, followed by more in depth conservation. It is the initial stabilisation which is the subject of the current project, and this short write up.

Conservation techniques used here follow the standard techniques for paper conservation in paper conservation, in particular the following methods as mentioned in Kolar (2008), British Standards Institute (2012), Care, Handling & Storage of Books (2015), Packing and storing books (2015) and Paper, Book & Paintings Conservation Section, V & A (2015). We stored the catalogues in acid free archival boxes (recommended by Chris Collins). A minimum of 0.5cm across all the dimensions was added to the original dimensions of the catalogues which were provided by BSI staff. Premier tabbed archival boxes (paper at least 1000 micron and above) were bought from Conservation by Design Ltd, UK. The boxes were shipped to India by first week of July 2015. With the help of BSI staff, we assembled the archival boxes and stabilisation was carried in the last week of July. The catalogues along with one brittle book of Wallich *Tentamen Flora Nepalensis Illustratae* and three-volumes of Wallich's *Plantae Asiaticae Rariores* have been tied with cotton book tape and kept in these boxes (see Fig 3). Full facilities were provided at CAL and we managed to complete this task in just under a week.



Fig. 3. Volumes tied with cotton book tape and kept in *Premier*TM tabbed archival boxes. (Picture credit: Raneer Prakash)

Results

The catalogues are now held in specially designed *Premier*TM tabbed archival boxes and stored in metal cabinets (Fig 4). The environmental conditions are stable, with temperature at 17°C degrees and relative humidity between 40-50%. The boxes are placed on 35 shelves in three cabinets. A book of Wallich *Tentamen Flora Nepalensis Illustratae* and three-volumes of Wallich's *Plantae Asiaticae Rariores* are also kept in cabinets in this room. Handling instructions for these archival catalogues have been written up and a copy of this is kept in the Monocot Type Herbarium located on the 3rd floor of CAL where these volumes are stored.



Fig. 4. Volumes kept in 3 cupboards in secure, environmentally controlled conditions. Staff at BSI (from left to right: Mr. Shyam Biswa, Dr. C. Karthigeyan (Scientist 'C'), Dr V. Prasanna (Head of CAL), Dr Paramjit Singh (Director, BSI), Raneer Om Prakash (Curator, Flowering Plants, NHM), Dr Pushpa Kumari (Scientist 'C'), Dr Ms Mahua Pal (Botanical Assistant), Dr V. Sampath Kumar (Scientist 'D') and Dr V. Prasad (Scientist 'D')). (Picture credit: Raneer Prakash)

Discussion

This project has been an opportunity to use and share the skills between continents. The Wallich's catalogues have now received the attention and care that they have needed to safeguard them for the future. The next stage will be to conserve the catalogues themselves, which will involve BSI working with more partners, potentially including: NRLC (National Research Laboratory for Conservation of Cultural Properties), Lucknow; National Museum, New Delhi; Paper Conservation Unit, Salar Jung Museum, Hyderabad and freelance conservators.

Working on this project built our international partnership work, and allowed the catalogues to be more accessible to both amateurs and researchers. As these volumes have already been digitized, they will not require a substantial physical handling in the future and will thus prevent further damage to the catalogues. We aim to share the images online so that they will be accessible across the world.

This opportunity has strengthened collaborative links between NHM and BSI and has helped getting such an important collection conserved, and we hope that people will get many more opportunities to work collectively across boundaries. As we bring this article to an end, we would like to reflect on the work done so far and we wonder if the *Wallich Catalogues* look happy now? Maybe not yet, but they will be when they are restored fully to their original glory!

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Supplier details

Conservation By Design, 2 Wolseley Road, Kempston, Bedford, MK42 7AD, <http://www.conservation-by-design.com/category.aspx?id=12>

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