BRILL

IAWA Journal 35 (1), 2014: 85–104

iawa

THE WOOD COLLECTION (XYLARIUM) OF THE ROYAL BOTANIC GARDENS, KEW

Caroline Cornish Peter Gasson Mark Nesbitt

***Keywords*:**

e.g.

e.g.

the provenance and quality of identification of specimens, and are thus of immediate

institution, and (3) a good understanding of the collection profile is vital in planning

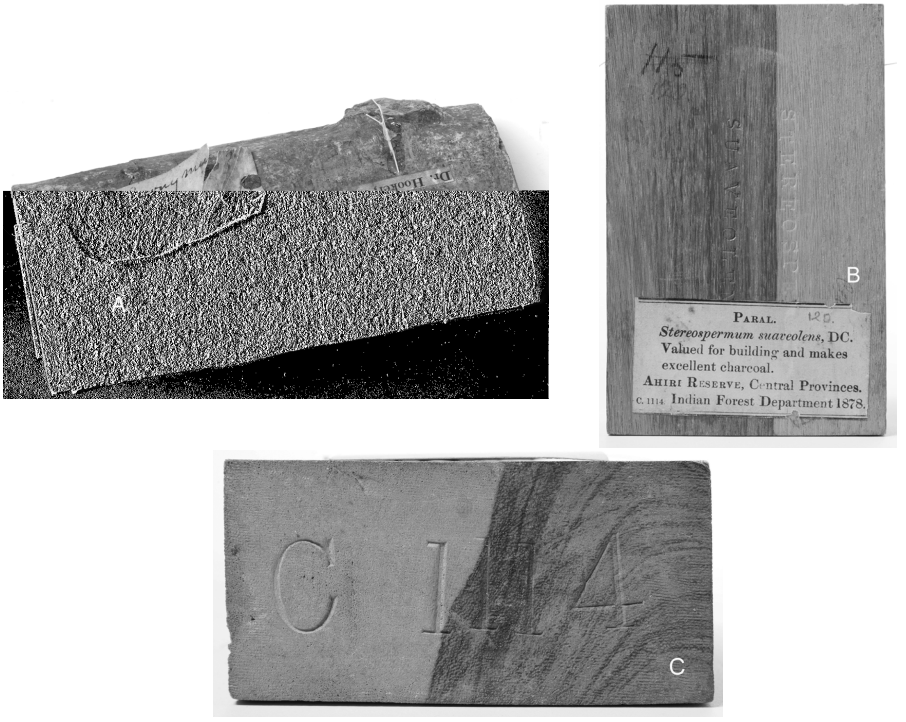
Building the collection

scientific botanist' but also 'the merchant, the manufacturer, the physician, the chemist,

Kew's wood collection from the second half of the nineteenth century reflects two

accessions of significant size came from Joseph Hooker's expedition to the Himalaya from 1848 to 1851. Hooker labelled his specimens in the field with details of location

Flora Indica



Euonymus grandiflorus

Stereospermum suaveolens

Stereospermum suaveolens DC. with imprinted figures connoting region of collection and

woods in the Kew collection. This 'magnificent collection of forest produce' comprised

gums, fibres, fruit, and other miscellaneous forest produce' (Hooker 1880: 56). The

Flora Indica

scientific officers' (Hooker 1880: 59) (Fig. 1

Manual of Indian Timbers

International exhibitions

tific value was assured by the involvement of scientists such as William and Joseph

this way they managed to ensure that wood specimens were labelled scientifically and

Institutions

European networks were highly active. Over the first years of the twentieth century
Xylotomotheca italica

Flora analitica
d'Italia

with rich collections from the Indonesian archipelago, showing that scientific loyal-

Aristocratic woods

Yarborough from his Brocklesby estate in Lincolnshire. Brocklesby is a fine example

Wooden artefacts

include Tunbridge Ware, pulleys, and brush-making from Britain; some fine drinking

et al.

Housing and using the collection

However, they were generally small specimens which could fit the scale
In the very first Museum Guide, Hooker outlined the
raw material
manufactured *prepared article*

In Museum No. 3 Hooker chose to reflect the geographic principle

) They were later re-arranged to reflect Bentham & Hooker's *Genera Plantarum*

'inconveniently crowded, and the contents difficult of inspection and confused' (Royal

Museum – lent itself to a series of themed displays aimed at specific audiences. The 1902 Report on British Forestry had identified three discrete groups with varying training

The Museum reflected this by separat

of tree foliage and flowers, and 'photographs of isolated trees, woodland scenery, and

Genera Plantarum (Bentham & Hooker 1862–83), 'to assist *student*

The Jodrell Laboratory

first keeper of the Jodrell Laboratory (from 1892 to 1906), who was a pioneer in the

and books were published by Jodrell staff, but only seven specifically concerned wood

tions of his early years confirm that wood anatomy was not well-established at Kew:

his first decade (193
as many as published in the previous five decades. Despite the pressure of war work on subjects such as medicinal plants and nettle fibres, in 1950 Metcalfe published a
Anatomy of the Dicotyledons

calfe & Chalk 1950). In this work Metcalfe focussed on leaf and young stem anatomy

This period saw an increase in the number of large collections received from field

the Council for Scientific and Industrial Research (CSIR) in

Metcalfe's most significant innovation in collections was the creation of a collection

tive and floral plant parts. Slides were, and still are prepared in the Jodrell Laboratory

) Later the Commonwealth Scientific and Industrial Research Organization (CSIRO).

Figure 3. A: C.R. Metcalfe in his office in the old Jodrell Laboratory building, demolished in

the foreground contain the slide collection. – D: Part of the slide collection in its current fire-proof

The shift in acquisition from exhibitions to field botanists and specialist forestry institutes is clearly reflected in a greater proportion of wood specimens being vouchered

and this has been repeatedly confirmed by subsequent work. A case where the identi fication proved to be incorrect shows the importance of referring to original records
Dalbergia nigra

et al

basis and ambiguity of that identification. Anatomical examination by Gasson showed
Hymenaea

Research and acquisitions

Anatomy of the Dicotyledons *Anatomy of the Monocotyledons*
Anatomy of the Dicotyledons
anatomists continue to undertake many identification enquiries, led by Peter Gasson

samples were added to the collection (Prior & Gasson 1990; Prior & Price Williams

et al

et al

Pacific	935	3

et al *Swietenia*
spp.) (White & Gasson 2008) and rosewoods (*Dalbergia* *et al*.
et al.
the collection, at 15% (Table 1), but dominate recent field collections. Gwilym Lewis

InsideWood *PROTA*
Index Xylariorum (Lynch &

links to researchers in other institutions have been a major factor in significant dona

to a very high standard (rarely listed, but see for the Netherlands, van der Dussen &

exclusively anatomists. Increasingly refined analytical techniques for wood are making
et al. 2010), DNA (Lowe & Cross 2011), spectros

Institution / Expedition			
Smithsonian, USA (USw)	791	North & South America	1960s
CSIR / CSIRO, Australia (FPAw)	723	Australia & Pacific	1960s–1970s
Victoria & Albert Museum, London	278	India	
Departments of Agriculture & Interior,			
Exhibition			
Commercial			

(continued on next page)

Botanists (Professional)

Luis García Esteban & Paloma de Palacios

Botanists (Amateur)

Botanists (Kew)

---

et al. 2011) and stable isotope analysis (Kagawa & Leavitt 2009). The

example, in the history of wood, whether archaeological (Gale & Cutler 2000) or nine

Storm woods

Storm'. This storm was only a month after the publication of an identification manual *et al*.

(Cutler & Gasson 1988; Cutler *et al* *et al*.
et al.
covered by the root book (Gasson & Cutler 1990a, 1990b). Another storm in January

1993; Gasson & Cutler 1996).

Institutional transfers

The Museum was closing down its Acton store, and offered Kew first option on the

et al

fieldtrips of the twentieth century, such as Iltis and Koeppen's Mexican expedition of

Housing and curation

five tons which was subsequently cut down at the Laboratory and used in special testing

transferred to the top floor of Museum No. 1, with this floor now closed to the public

). The 34,314 specimens classified as woods (at March 2013) are robust

the Banks Building in the 1980s were frozen first, and new accessions are frozen at

Stegobium

unique identifier of a wood specimen (Baas 1980; Barker 2008), and this information

a unique identifier to be allocated. In addition, the Kew catalogue number is an unam
biguous identifier for collection management. Best practice in citing Kew specimens
and

tion about specimens can be found in lists held in the curation office, and in letters and

progress has been made in finding relevant files. Kew's Library has good holdings for

mists is visible in their influence on collecting by Kew botanists, and the role of their

Long-term staffing patterns are hard to predict, but the future of two aspects of

lection (and in wood anatomy research), this is not the case for equally active fieldwork carried out in Africa, southeast Asia or Madagascar. Whereas woods from the first two

are global in scope. Filling the gaps will require closer liaison with field botanists in

.

Bentham G & Hooker JD. 1862–1883. Genera plantarum ad exemplaria imprimis in Herbariis Kewensibus servata definite.

Braga, JWB, Pastore TCM, Coradin VTR, Camargos JAA & Silva AR. 2011. The use of Near *Swietenia macrophylla*

Bridge M, Gasson P & Cutler DF. 1996. Dendroclimatological observations on trees at Kew and

digirep.rhul.ac.uk/file/f5bcc23c-e039-e81b-8f25-2156ff0f662d/1/2013cornishcphd.pdf
Cutler DF, Bridge MC & Gasson PE. 1993. An introduction to dendrochronological work on

Cutler DF & Gasson PE. 1988. Wind blown trees: research at the Jodrell Laboratory, Kew.

Cutler DF, Gasson PE & Farmer MC. 1989. The wind blown tree root survey: Preliminary results.

Cutler DF, Rudall P, Gasson PE & Gale RMO. 1987. Root identification manual of trees and

Europe. Chapman & Hall, London.
Edmondson J, Gunn A & Malpas J. 1989. A provisional list of wood samples in the collections Occasional Papers 4. National Museums & Galleries on Merseyside,

Evans JA, Gasson P & Lewis GP. 2006. The wood anatomy of the Mimosoideae (Leguminosae).

inselvatichite e largamente coltivate in Italia disposte per quadri analitici. 5 vol. Tipografia

Gale R & Cutler D. 2000. Plants in archaeology: identification manual of vegetative plant materials

. Office of the Superintendent of Government Printing, Calcutta.

In: Ferguson IK & Tucker S (eds.), Advances in legume systematics Part 6:

Inga

Gasson P. 2011. How precise can wood identification be? Wood anatomy's role in support of the

Gasson P, Baas P & Wheeler E. 2011. Wood anatomy of CITES-listed tree species. IAWA Journal

Gasson P & Cutler DF. 1990a. Root anatomy of seventeen genera hardy in the British Isles.

Gasson P & Cutler DF. 1990b. Tree root plate morphology. Arboricultural Journal 14: 193–

Gasson P & Cutler DF. 1996. Windblown trees: a source of scientific information. In: Donaldson LA, Singh AP, Butterfield BG & Whitehouse LJ (eds.),

Gasson P, Miller R, Stekel D, Whinder F & Zieminska K. 2010. Wood identification of *Dalbergia nigra*
and Naïve Bayes Classification. Annals of Botany 105: 45–56.

Gasson P, Trafford C & Matthews B. 2003. Wood anatomy of Caesalpinioideae. In: Klitgaard B & Bruneau A (eds.), Advances in legume systematics, part 10, Higher level systematic:

Gasson P, Wray E & Schrire BD. 2004. Wood anatomy of the tribe Millettieae with comments

VIII. Royal Botanic Gardens, Kew [copy on file in Kew's Library].

gether with observations on the structure and affinities of their natural orders and genera.

Kagawa A & Leavitt S. 2009. Stable carbon isotopes of tree rings as a tool to pinpoint the geo

Kite GC, Green PWC, Veitch NC, Groves MC, Gasson PE & Simmonds MSJ. 2010. Dalnigrin, a neoflavonoid marker for the identification of Brazilian rosewood (*Dalbergia nigra*

Lowe A J & Cross HB. 2011. The application of DNA methods to timber tracking and origin verification. IAWA Journal n.s. 32: 251–262.

Lynch AH & Gasson PE. 2010. Index Xylariorum - Edition 4. Royal Botanic Gardens, Kew.

P, Bolton AJ & Catling DM (eds.), Wood structure in biological and technological research:

Metcalfe CR. 1976b. History of the Jodrell Laboratory. Typescript manuscript, on file in Library,

Metcalfe CR & Chalk L. 1950. Anatomy of the dicotyledons; leaves, stem, and wood in relation

Nagata T, DuVal A, Lack HW, Loudon G, Nesbitt M, Schmull M & Crane PR. 2013. An unusual

Oliver D. 1866 Official guide to the Kew museums: a handbook to the museums of economic
.

Prior JAB & Gasson PE. 1990. Comparative wood anatomy of Afromontane and Bushveld spe

Prior J & Price Williams D. 1985. An investigation of climatic change in the Holocene epoch

Royal Botanic Gardens, Kew. 1886. Official guide to the Museums of Economic Botany. No.

Royal Botanic Gardens, Kew. 1919. Official Guide to the Museums of Economic Botany. No.
.

van der Dussen L & Miedema T. 2008. Houtcollecties van België en Nederland. Privately pub

White L & Gasson P. 2008. Mahogany. Royal Botanic Gardens, Kew.

Accepted: 3 September 2013