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AUSTRALIAN PLANTS CULTIVATED IN ENGLAND BEFORE 1788

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ABSTRACT

Nelson, E.C. (National Botanic Gardens, Glasnevin, Dublin 9, Ireland) 1983. Australian plants cultivated in England before 1788, *Telopea* 2(4): 347-353. — The three voyages of Captain James Cook resulted in the introduction into cultivation in England of at least nine species of Australian plants. Joseph Banks and Daniel Solander participated in the first voyage and introduced *Casuarina torulosa*, *C. stricta*, *Pouteria sericea*, *Eucalyptus gummifera*, *Dianella caerulea* and *Atylosia reticulata* from the east coast of New Holland. Tobias Furneaux, who commanded the second ship, H.M.S. "Adventure" on the second voyage, introduced *Leptospermum lanigerum* and *Eucalyptus obliqua* from Van Diemen's Land. David Nelson and William Anderson introduced *Acacia verticillata* from the third voyage. These species were cultivated at Kew and in other English gardens in the 1770s, and *Eucalyptus obliqua* was listed for sale by at least one London nurseryman in 1778.

INTRODUCTION

Accounts of plant introductions into the British Isles usually state that the first Australian plant cultivated in England was *Banksia serrata* L.f.; this claim may be traced back to February 1800 when John Kennedy, one of the proprietors of the famous nursery of Kennedy and Lee, Hammersmith, Middlesex, wrote that '... this species of Banksia was the first to vegetate amongst the number of different seeds, which were received ... from Botany Bay in 1788; thus, has the pre-eminence of seniority here, to all plants which have been introduced from thence, to Great Britain' (Kennedy 1800). However Kennedy's claim is not supported by other published records, including William Aiton's catalogue of plants grown at Kew (Aiton 1789) and later works based on this catalogue (e.g. Smith, 1880, Chittenden 1956). This account was prompted by a study of Aiton's catalogue and by the chance discovery of some dated herbarium specimens of Australian plants grown in England before 1788, among the collections in the British Museum (Natural History) (BM).

The only sources of seeds of Australian species before 1788 were the botanists and others who participated in the three voyages of exploration commanded by Capt. James Cook. Joseph Banks and Daniel Solander were on the first voyage (1769-1771), during which Botany Bay was discovered and the eastern Australian coastline explored from Cape Howe to Torres Strait. During the second voyage (1772-1774/5), only H.M.S. "Adventure" commanded by Capt. Tobias Furneaux visited Australia, landing at Adventure Bay, Tasmania, in March 1773 (Nelson 1981). On the third voyage (1776-1780), William Anderson and David Nelson collected plants and seeds in Tasmania, also at Adventure Bay, the only landing place (for summaries of the botanical results of these voyages see Edwards 1978, Nelson 1981, Stearn 1974, 1978).

Collections of seeds from these voyages would have gone to Joseph Banks initially, but the most important destination of seeds intended for germination would have been the Royal Gardens at Kew. Banks' association with Kew began when he became its unofficial director on the death of Princess Augusta in 1772 and the "resignation" of the Earl of Bute (Stearn 1961). Later, other botanic gardens and individuals also received some seeds.

SOURCES—MANUSCRIPT AND PUBLISHED

Basic information on the introduction of plants into the Royal Gardens, Kew, is found in William Aiton's *Hortus Kewensis* (1789), which generally gives the name of the person who collected seeds, and the place and year of collection. According to Aiton (1789), eight Australian plants were introduced before 1788 (see Table 1). At least, this list indicates those species which were successfully raised from seeds collected during the three Cook expeditions and which survived until about 1789.

Species [modern name in brackets]	Locality	Year	Introduced by
<i>Casuarina torulosa</i> Ait.	New South Wales	1772 [1771]	J. Banks
<i>Sideroxylon sericeum</i> Ait. [<i>Pouteria sericea</i> (Ait.) Baehni]	New South Wales	1772 [1771]	J. Banks
<i>Eucalyptus obliqua</i> L'Hér.	Van Dieman's Land	1774	T. Furneaux
<i>Philadelphus laniger</i> Ait. [<i>Leptospermum lanigerum</i> (Ait.) J.E.Sm.]	Van Dieman's Land	1774	T. Furneaux
<i>Casuarina stricta</i> Ait.	New South Wales	1775 [1771]	Kennedy & Lee [J. Banks]
<i>Acacia verticillata</i> (L'Hér.) Willd.	Van Dieman's Land	1780	J. Banks [W. Anderson & D. Nelson]
<i>Dolichos reticulatus</i> Ait. [<i>Atylosia reticulata</i> (Ait.) Benth.]	New South Wales	1781 [1771]	J. Banks
<i>Dianella aspera</i> Sims	New South Wales	1783 [1771]	R. Cuff [J. Banks]

Table 1

Australian plants introduced before 1788 as listed by Aiton (1789), and cultivated in the Royal Gardens, Kew, before 1789. The dates and collectors' names are discussed in the text; when a date or name is shown to be erroneous, the correct information is given in square brackets []. At that time (1789), New South Wales included modern Queensland; Van Dieman's Land was the name used for Tasmania.

Some of these published records can be confirmed using manuscripts and herbarium specimens, although few manuscripts are extant which show the provenance of seeds received at Kew for this period.

The most important manuscript is Daniel Solander's 'Slip Catalogue' [Botany Library, British Museum (Natural History)]; this contains descriptions of plants collected mainly on the first voyage, with later additions made by Solander noting plants cultivated in England. This manuscript was also annotated by Jonas Dryander, with additions and amendments.

A second relevant manuscript is a 'Day Book' [Botany Library, British Museum (Natural History)], kept by Solander (see Stearn 1961) recording plant specimens sent from various gardens to Banks and Solander for identification and naming in the late 1770s and early 1780s. The most important entry in the 'Day Book' is that for 6 October 1778 (see Table 2), which was made before seed collections from the third voyage reached England, and thus refers only to first and second voyage plants.

A third manuscript, also in Daniel Solander's handwriting, is titled 'Seeds from the South Sea 1780' (see Edwards 1978: 34) [Botany Library, British Museum (Natural History)]. This records all the seeds collected during the third voyage, and notes the gardens and people which received surplus seeds.

PLANTS INTRODUCED FROM THE FIRST VOYAGE

Specimens, including seeds, collected during the first voyage reached England in July 1771. Aiton (1789) only listed two species introduced from this expedition, *Casuarina torulosa* and *Pouteria sericea* (as *Sideroxylon sericeum*); the date given, 1772, was when Banks became associated with Kew. However, the record of *Casuarina stricta* also belongs to the first voyage although Aiton (1789) gave 1775 as the date

Number	Species [modern name in brackets]	Place of origin	Introduced by: date
520	<i>Sideroxylon sericeum</i> [<i>Pouteria sericea</i>]	New South Wales	J. Banks: 1771
524	<i>Casuarina stricta</i>	New South Wales	J. Banks: 1771
525	<i>Metrosideros gummifera</i> [<i>Eucalyptus gummifera</i> (J. Gaertn.) Hochr.]*	New South Wales	J. Banks: 1771
526	<i>Casuarina suberosa</i> [<i>C. torulosa</i>]	New South Wales	J. Banks: 1771
531	[<i>Philadelphus laniger</i> β pilger [<i>Leptospermum lanigerum</i>]	Tasmania	T. Furneaux: 1774
533	[<i>Philadelphus laniger</i> α canescens [L. <i>lanigerum</i>]	Tasmania	T. Furneaux: 1774
536	<i>Metrosideros obliqua</i> [<i>Eucalyptus obliqua</i>]	Tasmania	T. Furneaux: 1774

Table 2

Australian plants sent to Banks from Kew on 6 October 1778: the numbers and species names are transcribed from the 'Day Book' entry for that date (other information added by the author). The missing numbers represent non-Australian plants; on that day a total of 17 plants were received by Banks, including New Zealand and S. Pacific island species, which suggests that these Australasian plants were kept together as a group at Kew.

*This species is one of several noted in this entry which are not listed in *Hortus Kewensis* (Aiton 1789); this must indicate that the seedlings died between 1778 and 1789. *Eucalyptus gummifera* was among plants received on 22 August 1777 from the nurseryman James Lee, according to the 'Day Book'—the strange entry reads '*Metrosideros gummifera* Ms call'd by you *Agapanthus*' (the significance of the last part is uncertain, but the seedling or seed packet may have borne that name).

of introduction and credited the species to the nurserymen John Kennedy and James Lee; their only possible connection with Australia at that time would have been through Banks. This is supported by a letter*, addressed to John Ellis (who was especially interested in the viability and longevity of seeds), dated 17 December 1771 (five months after the return of the expedition), in which James Lee commented that ". . . the seeds that Mr Banks & Doctor Solander brought home were equally good in the papers with those enclosed in wax . . ." (Savage 1948). This suggests that Banks gave Kennedy and Lee some seeds which they successfully germinated, although no explicit record of such a donation is known (see below).†

There is an herbarium specimen of *Casuarina stricta* in BM labelled "*Hort Kew 1778*", and according to an entry in the 'Day Book', a specimen of this species was sent to Banks from Kew on 6 October 1778 (see Table 2). Solander annotated his 'Slip Catalogue' entry, "*Florent in Horto Kewensi 1778 Octobri*".

Atylosia reticulata must also have been raised from seed from the first voyage as it does not occur in Tasmania, which was the only area visited during the later voyages; the date given by Aiton (1789) is therefore incorrect (Table 1). The same applies to *Dianella caerulea*; Cuff may have had the first plant to flower in England.

The records of *Casuarina torulosa* and *Pouteria sericea* are also confirmed by manuscript records. Both plants were among the specimens sent from Kew to Banks on 6 October 1778 (Table 2). At the time Solander gave the manuscript name *Casuarina suberosa* to *C. torulosa*; there is a specimen in BM labelled "*Hort. Kew*", and Solander annotated his 'Slip Catalogue', "*Cult in Hort. Reg. Kew*". Although there is no herbarium specimen of *Pouteria*, the 'Slip Catalogue' record for it (under *Sideroxylon sericeum*) is annotated "*Colitur in Horto Regio Kewensi*".

*Original in library, Linnean Society, London (Ellis correspondence).

†Although James Lee sent Banks specimens of *Eucalyptus gummifera* for naming on 22 August 1777, there is no mention in the 'Day Book' of *Casuarina* spp. received from Lee or Kennedy.

Another species must be included in the list of plants introduced into cultivation after the first voyage, although it is not listed in *Hortus Kewensis* (Aiton 1789). It is *Eucalyptus gummifera*, which was being grown by Kennedy and Lee in August 1777 and was in cultivation at Kew in October 1778, according to separate entries in the 'Day Book' (see Table 2). This is not a Tasmanian species, so that the seedlings must have been raised from seed collected by Banks. Banks certainly had fruits of this plant as it was named by Joseph Gaertner (1788), who had been granted the use of Banks' herbarium and received duplicates of Banks' fruits and seeds (Stearn 1961, 1974). Gaertner (1788) published descriptions of many examples of Australian fruits and seeds, and thereby inadvertently published some of Banks' and Solander's manuscript names (Stearn 1961, 1974).

Thus six Australian plants were introduced by Banks and Solander after Cook's first voyage. As they collected numerous fruits and seeds in Australia, it is surprising that only six species were successfully germinated. It may be suggested that the small number of introductions resulted from Banks' desire to keep most of his fruits and seeds for his carpological collections, but it might be the result of poor germination and establishment of seedling due to the complete lack of horticultural experience of Australian plants at that time.

PLANTS INTRODUCED FROM THE SECOND VOYAGE

Works on the history of Australian botany do not include any reference to collections made in Tasmania during Furneaux's visit in March 1773, but it is now known that herbarium specimens of at least one species, *Leptospermum lanigerum*, were collected by Furneaux at Adventure Bay (Nelson 1981). In his own account* of the visit, Furneaux stated that he had collected seeds, but their fate was uncertain until recently. Seeds from Tasmania reached England in July 1774, when H.M.S. "Adventure" returned. Aiton (1789) attributed two species to Furneaux, and both records are confirmed by specimens in BM. As well as one herbarium sheet which represents the original collection from Adventure Bay, there are specimens of *Leptospermum lanigerum* collected from plants growing in Kew in 1778 and also in Banks' own garden in 1779. Again, the 'Day Book' records that this species was among specimens sent from Kew to Banks on 6 October 1778, under the names *Philadelphus laniger* α *canescens* and *P. laniger* β *piliger* (Table 2); these varieties were described by Solander† (Aiton 1789), but are no longer recognised and simply represent slight variations within the seedlings. Solander annotated his 'Slip Catalogue' entry for the variety α *canescens*, "florent in Horto Dⁿⁱ Banks ad Spring Grove prope Smallbury Green Maio 1779". Thus from Furneaux's seed, plants were raised at Kew, and were grown there and in Banks' own garden.

The other species introduced by Furneaux was *Eucalyptus obliqua*, which is the type species of the genus, and was named and depicted by the French botanist Charles-Louis L'Héritier de Brutelle in *Sertum Anglicum* (1789). L'Héritier based many of his new species on plants which he saw growing at Kew during a fifteen month sojourn in England in 1786 and 1787 (Stafleu 1963, Gilmour et al. 1963). He also had had access to Banks' herbarium; the drawing by Redouté of *Eucalyptus obliqua* in *Sertum Anglicum* was prepared from a specimen collected by William Anderson and David Nelson at Adventure Bay, Tasmania, in 1777 (in BM). L'Héritier could have seen living plants of this species raised from seed collected both by Furneaux and later by Anderson and Nelson (see below). No herbarium specimen collected by Furneaux in Tasmania can be located, but there is one specimen in BM dated 1775 which was

*Original in Public Record Office, London (see Nelson 1981).

†Solander wrote most of the botanical descriptions in the first two volumes of the first edition of *Hortus Kewensis* (Aiton 1789). Jonas Dryander wrote the descriptions for the third volume and edited Solander's earlier work.

annotated as coming from "*Hort. Malcolm*"; however the annotation was altered to read "*Hort. Comte de Coventry*". This specimen is remarkable, not only for the date 1775, but also for the altered annotation. The Earl of Coventry had an estate called Croomb d'Abitot in Worcestershire and he was a collector of exotic trees and shrubs; a catalogue of the garden was published in 1824 and among the species listed is *Eucalyptus obliqua* (Dean 1824). Malcolm certainly was William Malcolm, a nurseryman of Kensington, London (Harvey 1973, Henry 1975). What makes this annotation so remarkable is the fact that in his second published catalogue dated 1778, William Malcolm included a plant named *Metrocedros obliqui* (Malcolm 1778: 28)*—this can only be *Eucalyptus obliqua*. Thus, either enough seedlings were raised from Furneaux's seed for Kew to distribute specimens—there were plants at Kew, for according to the 'Day Book', a plant named *Metrosideros obliqua* was among specimens received from Kew on 6 October 1778 (Table 2)—or Furneaux collected sufficient seed for some to be distributed to suitable gardens for germination. *Eucalyptus obliqua* is the first Australian plant to have been sold to English gardeners. The annotation on the BM specimen may be interpreted as indicating that Lord Coventry bought a plant from Malcolm, and later sent a specimen to Banks for identification, although there is no entry for Lord Coventry in the 'Day Book'.

PLANTS INTRODUCED FROM THE THIRD VOYAGE

Seeds collected by William Anderson, the surgeon attached to the expedition, and David Nelson, the young gardener, reached London in October 1780. Solander listed all the seeds received, including twenty-three lots from Van Dieman's Land; most of the lots were unidentified, and few of those named can be assigned modern names—the only recognisable lot is that numbered 147-1 which was named *Metrosideros obliqua* (*Eucalyptus obliqua*). Thus Anderson and Nelson are credited with bringing to England a second batch of seeds of *E. obliqua*!

Aiton (1789) only ascribed this third voyage with one introduction, *Acacia verticillata*; Banks was named as the person who introduced the seed, but Nelson was credited with the native collection. There is a specimen collected in Tasmania by Nelson in BM, and also one labelled "*Hort Dⁿⁱ Salisbury 1786*"; a specimen of *Eucalyptus obliqua* collected in 1785 from the same garden is in LINN. It appears that few, if any, of the other species noted by Solander in the list of 'Seeds from the South Sea 1780' germinated and survived until 1789 when *Hortus Kewensis* was compiled.

Lemmon† (1968) claimed that Nelson introduced *Oxylobium ellipticum* R. Br. and *Melaleuca squarrosa* J.E. Sm., but while he collected herbarium specimens there are no manuscript records, nor herbarium specimens from gardens dated before 1788, to confirm this claim; neither species is listed by Aiton (1789).

CONCLUDING REMARKS

In this paper, nine species are noted as having been introduced into cultivation in England from Australia before 1788; the published records of Aiton (1789) having been confirmed by reference to manuscripts and herbarium specimens. It is possible that other species were also raised from Australian seeds, but no verifiable record of their successful germination and survival has been found.

*The publication by Malcolm of *Metrocedros obliqui* is invalid; there is no description or illustration. From the manuscripts of Solander, it is clear that L'Héritier adopted Solander's unpublished specific epithet for this plant, as did Malcolm!

†Lemmon (1979) stated that William Dampier "introduced *Clianthus formosus* and other plants from the Antipodes" before the end of the seventeenth century. While Dampier collected herbarium specimens (now in OXF) in north-western Australia in 1699, there is no evidence that he collected seeds and thereby introduced plants into England.

In England in the late eighteenth century there was great interest among the nobility, wealthy landed proprietors, professional men and owners of commercial gardens in the acquisition of new and rare plants (Henrey 1975). For example, William Malcolm (see above) wrote that "... the collecting of plants and seeds from the various parts of the globe, and propagating them, has been my favourite study; in the execution of which, I have spared neither expence, labour or attention" (Malcolm 1771, see Henrey 1975:649). For nurserymen, like Malcolm, the fashion for collecting rare plants was profitable, and it is likely that to claim a first introduction, or a first flowering in cultivation, enhanced their reputations. In the case of Australian plants, claims of first introduction and first flowering were not uncommon but were sometimes incorrect. According to an annotation on the back of a painting of *Kennedia rubicunda* (Schneev.) Vent. drawn by F.P. Nodder in 1777*, the plant was in flower in December 1790 "... at his Majesties Garden [Kew]. The First Production of that Climate [i.e. Australia] that has yet Flowered in England"—this claim is contradicted by the entries in Solander's 'Slip Catalogue' and 'Day Book' for such species as *Casuarina stricta*.

After the founding of the settlement of Botany Bay in 1788, seeds reached England in larger quantities. The second edition of *Hortus Kewensis* (Aiton 1810) listed many more Australian plants, including numerous species raised from seeds collected by Robert Brown and Peter Good during the voyage of H.M.S. "Investigator". The new residents of Botany Bay included people who were requested by Banks to send him seeds, and the return of the ships of the "First Fleet" to England brought the first of these seeds. Among the material received were *Banksia serrata* (Kennedy 1800), *B. oblongifolia* (*B. integrifolia* L.f.) *Leptospermum laevigatum* (J. Gaertn.) F. Muell. *Lambertia formosa* J.E.Sm. and *Melaleuca armillaris* (J. Gaertn.) J.E.Sm., all of which were successfully grown by James Lee and John Kennedy (Willson 1961, Edwards 1978).

While Lee and Kennedy certainly had remarkable success in cultivating Australian plants after 1788, they cannot claim to have introduced or grown the first Australian plants; that privilege was achieved by the Royal Gardens at Kew, which raised seedlings of Australian plants from seeds brought back between 1771 and 1780 by Banks, Solander, Furneaux, Anderson and Nelson from Cook's three voyages.

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*Original in Botany Library, British Museum (Natural History); pers. comm. D. McGillivray (in litt. 28 July 1980).

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