

Robert Brown, the typification of his new *Acacia* names in edition 2 of Aiton's "Hortus Kewensis"

B.R. Maslin and R.S. Cowan

Western Australian Herbarium, Department of Conservation and Land Management,
PO Box 104, Como, Western Australia 6152

Abstract

Maslin, B.R. and R.S. Cowan. Robert Brown, the typification of his new *Acacia* names in edition 2 of Aiton's "Hortus Kewensis". *Nuytsia* 10 (1): 107-118 (1995). Robert Brown published nine new species of *Acacia* in W.T. Aiton's second edition of "Hortus Kewensis". In the past, typification of these species has presented problems for two main reasons. Firstly, there were uncertainties regarding the material on which they were based, i.e. Brown's "wild" gatherings from Australia between 1801 and 1805, and/or from plants in cultivation in England. Secondly, it appears that there are no cultivated specimens extant which can be regarded as type material. There is, however, a collection by William McNab, a gardener at Kew, who made specimens of Brown's *Acacia* species from cultivated plants at Kew between 1806 and 1809; this collection is curated by the National Herbarium at Dublin (DBN). The following Brown species names are here lectotypified on the basis of Brown's "wild" material: *A. alata*, *A. biflora*, *A. marginata* (= *A. myrtifolia*), *A. melanoxylon*, *A. pulchella* and *A. sulcata*; a neotype for *A. acicularis* (= *A. brownii*) has been chosen from Brown's "wild" collections while *A. armata* is neotypified on a cultivated plant in the William McNab collection at DBN. One species, *A. ciliata* (= *A. browniana* var. *browniana*), had been neotypified in a previous paper.

Introduction

Of the 53 species of *Acacia* presented by Robert Brown in edition 2 of Aiton's "Hortus Kewensis" nine species from Australia were described as new, namely, *A. acicularis*, *A. alata*, *A. armata*, *A. biflora*, *A. ciliata*, *A. marginata*, *A. melanoxylon*, *A. pulchella* and *A. sulcata*. Difficulties have been encountered in the past in typifying some of these names (*vide* Maslin 1975: 398, 425-426 and Maslin 1978: 291), mainly because it was not known on what material they were based. As "Hortus Kewensis" provided descriptions for plants in cultivation at the Royal Botanic Garden, Kew (and elsewhere in southern England, *vide* Mabberley 1985), it is reasonable to suppose that Brown used cultivated specimens to prepare his descriptions. However, as will be discussed below, it seems probable that, in some cases at least, he also used "wild" material which he collected during his visit to Australia from 1801 to 1805 (see Burbidge 1956, Stearn 1960, Mabberley 1985 and Vallance 1989 for details of Brown's Australian visit). Although Brown's "wild" specimens are preserved at the

Natural History Museum, London (BM) and elsewhere (*vide* Powell & Morley 1976), there seems to be no surviving cultivated material that can definitely be said to have been used by Brown for the "Hortus Kewensis". There is, however, a hitherto little-known collection of plants made by William McNab from the plants grown at Kew Gardens. The collection, which is housed at the National Herbarium, Glasnevin, Dublin (DBN), is valuable because it contains what appears to be the only specimens of the cultivated plants Brown described, and as such they help to identify the taxa, as well as being potentially available as neotypes.

The purpose of this paper is to determine what *Acacia* specimens Robert Brown used to compile his descriptions of new species in "Hortus Kewensis", and to select types from among them. This task has been facilitated by an examination of Robert Brown's unpublished manuscript descriptions at BM of both "wild" and cultivated plants, and his collection of "wild" specimens at BM, and McNab's cultivated material at DBN.

Robert Brown and the "Hortus Kewensis"

1. Brown's involvement in Aiton's "Hortus Kewensis" ed. 2

Aiton's "Hortus Kewensis" was published in two editions, the first in 1789 in three volumes and the second between 1810-1813 in five volumes. Britten (1912) remarked that the title, "Hortus Kewensis", was misleading because the work treated plants cultivated not only at the Royal Botanic Gardens at Kew, but also at Chelsea, Upton and Islington gardens. Indeed, as noted by Mabberley (1985), this work was really a guide to the plants in cultivation in southern England at that time. This is not at variance with the preface of edition 2, where the purpose is described as "an attempt to trace back, as far as possible, how long each plant has been cultivated in the British gardens and to fix the epoch of its introduction."

The second edition of Aiton's "Hortus Kewensis" was edited initially by Dryander but after his death the task was assumed by Robert Brown. The nature of Brown's involvement was that of scientific editor, rather than the pre-printing sort of editing. In a letter to de Candolle in 1817, Brown wrote "I must take this opportunity of stating that I am neither deserving of praise or blame for any part of that work unless what I put my name to ... the Manuscript was prepared for publication before it came into my hands, and all I had time to do was to attempt to save it from very gross errors & to add a certain portion of original information in each of the 3 last volumes [i.e. commencing with page 175 of vol.3]." (Mabberley 1985).

2. Authorship of *Acacia* names published in "Hortus Kewensis"

Aiton, in a postscript on pages 531-532 of volume 5 of "Hortus Kewensis" ed. 2, stated that not all of Brown's contributions to this work are indicated in the volumes; however, those that are bear the notation "Brown mss". In the case of *Acacia*, this notation appears at the end of the descriptive text of each of the nine new species, as well as at the end of three of the four new combination that were effected, namely, *A. decipiens* (Koenig.) R. Br., *A. nigricans* (Labill.) R. Br. and *A. sophorae* (Labill.) R. Br. That Brown was indeed the author of the nine new *Acacia* species is supported also by the fact that in J.J. Bennett's (1867: 471-510) publication of Brown's miscellaneous contributions he included the descriptions of these species. Bennett was in a peculiarly good position to know precisely what Brown had contributed because he was Brown's long-time friend and personal assistant.

3. Brown's descriptions of *Acacia* in "Hortus Kewensis"

The descriptions of the nine new species of *Acacia* were very brief and, with the exception of *A. melanoxyton* and *A. sulcata*, seem to have been based solely on flowering material. Each description was followed by the notation "Brown mss" which, as already noted, indicates that the contribution was in fact that of Brown. The provenance of each species was given and, except for *A. acicularis*, followed by the notation "*Robert Brown, Esq.*". This is interpreted here to mean that Brown collected these species in the "wild"; Crisp (1990) adopted a similar interpretation. However, as will become evident in the species discussions below, Brown appears to have used information directly from his "wild" collections in the "Hortus Kewensis" treatments only infrequently. The difficulty comes in attempting to assess to what extent he did use data from his "wild" collections in preparing the protologues. While we can be reasonably certain that both "wild" and cultivated specimens were involved only in the description of *A. sulcata* and perhaps of *A. biflora*, both kinds of material must surely have contributed to his concept of the species. The four collecting sites given for the nine new species were: "South-west coast of New Holland" (for *A. alata*, *A. biflora*, *A. ciliata*, *A. marginata*, *A. pulchella* and *A. sulcata*), "South coast of New Holland (for *A. armata*), "Van Diemen's Island" (for *A. melanoxyton*) and "New South Wales. Colonel William Paterson" (for *A. acicularis*).

For each species the date of its introduction into cultivation was also given along with the name of the person responsible; in most cases this was 1803 by Peter Good but for *A. melanoxyton* it was "about 1808" by John Walker and for *A. acicularis* it was anonymously introduced in 1796. Other information in the protologue included the common name for the species, the flowering period, and symbols denoting that each was grown in a "Green House" and was "Shrubby".

Brown's manuscript descriptions of *Acacia*

During his travels in Australia Brown prepared descriptions of many of the species he collected and upon returning to England prepared another set of descriptions of what he believed to be the same taxa, based on cultivated plants grown from seed from the "wild". However, manuscripts at BM show that not all of Brown's nine new species of *Acacia* were represented in both sets of descriptions: for *A. alata*, *A. armata*, *A. marginata* and *A. sulcata* there are descriptions of both "wild" and cultivated plants; for *A. acicularis* only a "wild" plant description; for *A. biflora*, *A. ciliata* and *A. pulchella* only cultivated plant descriptions; while for *A. melanoxyton* it is equivocal as to whether the only known description refers to a "wild" or a cultivated plant.

Each description is usually dated (the date of collection for "wild" specimens and presumably the date of description for cultivated specimens) and includes a reference to the source of the material described. The taxa are treated as part of *Mimosa* and the species epithets are mostly either absent or are different from those in the published account. In many cases, someone (presumably Britten) has annotated the manuscript descriptions with the published species name. In instances where the published species names were not provided by either Brown or Britten it has been necessary for us to match Brown's manuscript descriptions with his published ones.

The specimens

1. Robert Brown's collection of "wild" specimens at BM

As already noted Robert Brown was in Australia from 1801 to 1805, during which time he collected assiduously in many parts of the continent. Although many of his best specimens from the south coast of Australia, and all the living plants, were destroyed with the sinking of the *Porpoise*, he reached England without having lost any one species altogether (Stearn 1960). Surviving specimens were studied by Brown at the BM and after his death were bequeathed to his successor, J.J. Bennett, who stipulated in his will that the first set should go to BM and duplicates to K and E. Edwards (1976) related that James Britten subsequently compiled a manuscript list of the species, arranged by the numbers which he assigned to each species; it is these numbers that are often erroneously cited as Bennett or Brown numbers.

2. Is there a collection of cultivated plants used by Brown?

Several authors have stated that a collection of cultivated plants was at BM on which the "Hortus Kewensis" was based: James Britten (1905) in discussing the important collections at herb. BM noted that "The most important collection of cultivated plants is, however, that from the Royal Gardens, Kew, which contains the types of the numerous species described by Banks' librarians Solander and Dryander (helped in the second edition by Brown) in Aiton's *Hortus Kewensis*; the MS. original descriptions of these and of a large number of other plants in the Sloane and Banksian herbaria are preserved in the Department of Botany." Lasegue (1845) in his classic compilation of information about collections then in existence stated (translation) "An herbarium composed of plants cultivated at the Royal Garden at Kew and described in the *Hortus Kewensis* is found in a special Aiton collection which is part of the Banks herbarium". Britten (1912), however, pointed out that Lasegue was not altogether accurate, "for Aiton did not possess a herbarium, it being his custom, as has been already stated (p.3), to 'carry his specimens and doubts to Banks' library, where they were examined and resolved by Solander." Furthermore, Stearn (1981) notes that "The plants raised at Kew from their seed needed identification, which could only be done by a botanist such as Solander with both Banks' herbarium and rich library at hand. Thus specimens grown at Kew likewise came into the Banksian herbarium." He also states: "The types of the Hortus Kewensis are not at Kew, as is often expected, but in the Department of Botany at the Natural History Museum, having come with the Banksian herbarium."

Notwithstanding the preceding comments, we have been unable to locate cultivated material at BM that originated from Kew Gardens and formed the basis of Robert Brown's treatment of *Acacia*.

3. William McNab's collection of cultivated specimens at DBN

An important and until recently, little-known collection of plants in the W.R. McNab collection at DBN has relevance to the typification of Brown's *Acacia* names (Nelson 1990). W.R. McNab was professor of botany to the Royal College of Science in Dublin and Scientific Superintendent of the National Botanic Gardens, Glasnevin. He was the grandson of William McNab who was a gardener at the Royal Botanic Gardens, Kew, from 1801 until 1810 (Nelson 1980). The *Acacia* specimens at DBN were collected by William McNab (Nelson 1990) between 1806 and 1809 from plants growing at Kew Gardens and included the following species, *A. alata*, *A. armata* (= *A. paradoxa*), *A. biflora*, *A. ciliata* (= *A. browniana* var. *browniana*), *A. marginata* (= *A. myrtifolia*), *A. pulchella* and *A. sulcata*. These plants were probably grown from seed supplied by Peter Good around 1803 and were the plants upon which Robert Brown based descriptions published in "Hortus Kewensis".

However, as will be discussed below, there is no evidence that Brown actually used the DBN specimens to prepare either the manuscript descriptions or the published descriptions of *Acacia* in "Hortus Kewensis". For this reason these specimens cannot be considered original type material. However, the DBN specimens do have historic value and in one case (that of *A. armata*) is selected as a neotype, as was done by Crisp (1990) for *Brachysema latifolium*.

Typification of Brown's names

The general principles governing our selection of types will be outlined in a forthcoming paper (Maslin & Cowan, in prep). However, in view of the above discussion, the following considerations particular to the present paper should be noted:

1. If an adequate "wild" specimen exists (at BM) that is annotated by Brown with the manuscript or published name of the taxon, and if this agrees with the protologue, we have selected it as the lectotype of the name. For the most part, Brown's "Hortus Kewensis" descriptions were based primarily on cultivated material but the fact that he cited his Australian collections is taken to mean that the "wild" material contributed materially to his taxonomic concept of most of the species.
2. If no "wild" material is known to exist, we have selected a neotype, usually from the McNab specimens at DBN.

The sheet numbers cited below are those affixed by James Britten, which, as noted above, have often been erroneously ascribed to J.J. Bennett (Edwards 1976).

Acacia acicularis R. Br. in W.T. Aiton, Hortus Kew. 2nd edn, 5: 460 (1813). Neotype (flowering specimen): "Mimosa ericaefolia", Port Jackson, N.S.W., Oct. 1803, *R. Brown* - central right hand specimen on sheet titled "Iter Australiense, 1802-5" and bearing [Britten no.] 4300 (BM).

In the protologue of *Acacia acicularis* Brown described a flowering specimen and appended the notation "Brown mss" to the description. He also referred to material that Colonel William Paterson had collected from "New South Wales" and said that the species had been introduced [into England, anonymously] in 1796.

We have not been able to locate any material collected by William Paterson at BM. However, there is a sheet at BM bearing specimens of Brown's "wild" gatherings of the species, a number in flower and one in very young fruit. This sheet is labelled by Brown as "Mimosa ericaefolia, Port Jackson, Oct. 1803". These specimens differ from the protologue only in having a very sparse indumentum of minute hairs which are confined to the branchlet apices (branchlets glabrous in the protologue). Unlike most other species of *Acacia* described by Brown in "Hortus Kewensis", specimens from plants of this species cultivated at Kew Gardens have not been located at DBN.

There is only one Robert Brown manuscript description of *A. acicularis* at BM and it is annotated "Mimosa acicularis. inter Sydney & Botany". This account of "wild" material is not dated and describes flowering specimen(s), but it does not appear to be the basis from which the published description was abstracted. This is not surprising because, as is indicated by our discussions of other *Acacia* species described in "Hortus Kewensis", Brown normally based the descriptive text of the protologue on his manuscript descriptions of cultivated plants.

In the absence of both Paterson specimens and of material from cultivated plants it is necessary to select a replacement type for the name *A. acicularis*. Accordingly, a neotype has been selected from among Brown's "wild" gatherings from the same general area cited in his manuscript description of "wild" material. The slight difference between the neotype specimen and the protologue can be explained by assuming that Brown overlooked the sparse, minute hairs at the apices of the branchlets.

Acacia acicularis is the base name of *A. brownii* (Poiret) Steud. and the complex nomenclature of this species and its very close relative, *A. ulicifolia* (Salisb.) Court, is discussed by Court (1957 & 1972: 155-156) and by Pedley (1980: 239-214).

Acacia alata R. Br. in W.T. Aiton, Hortus Kew. 2nd edn, 5: 464 (1813). Lectotype (here selected): "Mimosa platycaulis." Observatory Hill, Princess Royal Harbour [Albany, W.A.]. In collibus saxosis solo saxoso prope littorae Portus Regis Georgii III in ora australe Nova Hollandia, Dec. 1801, *R. Brown* - upper right hand flowering specimen on sheet titled "Iter Australiense, 1802-5" and bearing [Britten no.] 4314 (BM); isolectotypes: K, E. Paralectotypes: Sterile and fruiting specimens mounted on sheet with lectotype (BM, K, E).

Note: In the protologue Brown described flowering material and appended the notation "Brown mss" to the description; he also referred to material he had collected from the "South-west coast of New Holland", and said that the species had been introduced [into England] by Peter Good in 1803.

At BM the only Robert Brown specimens seen are those cited above which represent Brown's "wild" gatherings of the species. The specimens comprise flowering, fruiting and sterile elements and the sheet is labelled by Brown as *Mimosa platycaulis*. The DBN material of this species consists of flowering and fruiting specimens, both labelled *Acacia alata* by McNab. They were collected in 1808 from plants grown at Kew but there is no evidence that Brown actually saw this material. Both these "wild" and cultivated specimens represent the same taxon.

There are two Robert Brown manuscript descriptions of *A. alata* at BM, both under the name *Mimosa platycaulis*. One describes both flowers and fruits of the "wild" gatherings referred to above, while the other describes only a flowering specimen in cultivation at Kew in 1806.

From comparing the two manuscript descriptions with the protologue it seems probable that the "Hortus Kewensis" account was abstracted from Brown's 1806 description of the plant in cultivation at Kew. Although the DBN specimens are from plants grown at Kew (collected in 1808), there is no evidence that Brown actually used these to prepare his published description. Therefore, because there is no cultivated material which can be regarded as a type of *A. alata* we have selected the lectotype from among Brown's "wild" gatherings.

Acacia alata will be treated as comprising four varieties in the forthcoming "Flora of Australia" account.

Acacia armata R. Br. in W.T. Aiton, Hort. Kew. ed. 2, 5: 463 (1813). Neotype (here selected): "Acacia armata," Kew, 1809 [William McNab] (DBN, flowering specimen).

Note: In the protologue Brown described flowering material and appended the notation "Brown mss" to the description; he also referred to material he had collected from the "South coast of New Holland", and said that the species had been introduced [into England] by Peter Good in 1803.

At BM there are two sheets of *A. armata* (= *A. paradoxa*) which probably represent Brown's "wild" gatherings of this species; however, neither is labelled by Brown with either the manuscript or published name that he used for this taxon. The collecting localities are in Brown's hand on small slips of paper attached to "R. Brown Iter Australiense" labels, both of which are numbered "4313". One sheet is labelled "Bay IX" [Memory Cove, S.A., *vide* Burbidge 1956] and the other, although hard to decipher, appears to be "Kangar." [Kangaroo Island, S.A.]. The specimens on these two sheets apparently represent mixed gatherings of *A. armata*. The upper right hand specimen on the "Bay IX" sheet is a good match for the uppermost specimen on the "Kangar." sheet. These specimens are in very young bud and are distinguished from the remaining specimens by having coarsely ribbed branchlets, larger and more widely spaced phyllodes and coarser, fewer spiny stipules. The remaining four specimens on the "Bay IX" sheet and the lowermost specimen on the "Kangar." sheet are with buds, flowers and a single legume. Curiously, neither of the above localities is cited by Brown in his manuscript description of "wild" *A. armata* (as *Mimosa spinosissima*) which was based on material collected from "Anchorage VII" (i.e. Waldgrave and Flinders Islands, S.A., see below). However, the lowermost specimen on the "Kangar." sheet is quite a good match for this description and it seems possible that this specimen has been mounted on this sheet without a correct label. Some support for this interpretation is given by the fact that Peter Good's manuscript at BM lists seed of *Mimosa spinosissima* from "Anchorage VII" but not from Memory Cove or Kangaroo Island.

The DBN material of this species consists of a flowering and a fruiting specimen, both labelled *Acacia armata* by McNab. They were collected in 1809 from plants grown at Kew but there is no evidence that Brown actually saw this material. Both the "wild" and cultivated specimens represent the same highly variable species, *A. paradoxa* (syn. *A. armata*).

There are two Robert Brown manuscript descriptions of *A. armata* at BM, both under the name *Mimosa spinosissima*. One describes fruits (not including seeds) of "wild" gatherings from "Anchorage VII" [Waldgrave and Flinders Islands, S.A., *vide* Burbidge 1956] collected on 13 Feb. 1802. The other describes a flowering specimen and was prepared in April 1808 from a plant in cultivation at Kew. From comparing these two manuscripts with the protologue it seems likely that the "Hortus Kewensis" description was taken mainly from Brown's 1808 account of the plant in cultivation at Kew.

Because there are uncertainties regarding Brown's "wild" gatherings at BM and because none of these specimens is annotated by him as to the published or manuscript name, we consider it best to neotypify this name by one of the cultivated specimens at DBN. Accordingly, the flowering specimen annotated by William McNab (and assumed to have been collected by him) has been chosen.

Acacia biflora R. Br. in W.T. Aiton, Hort. Kew. ed. 2, 5: 463 (1813). Lectotype (here selected): "Mimosa scalena." Bay I [Lucky Bay, E of Esperance, W.A., *vide* Burbidge 1956], 7 Jan. 1802, R. Brown - upper right hand specimen on sheet titled "Iter Australiense, 1802-5" and bearing [Britten no.] 4309 (BM); isolectotypes: BM, K, E.

Note: In the protologue Brown described flowering material and appended the notation "Brown mss" to the description; he also referred to material he had collected from the "South-west coast of New Holland", and said that the species had been introduced [into England] by Peter Good in 1803.

There is only one sheet of type significance of this species at BM and this supports two flowering collections separated by a pencilled line. The specimen to the right of the line is *A. robiniae* Maslin and is labelled simply "A. biflora R. Br." (not in Brown's hand). The other specimens, to the left of the line, are assumed to be Brown's "wild" gathering from Lucky Bay and represent *A. biflora*, *sensu*

lectotypico (see above). The label accompanying these specimens is annotated in Brown's hand. The DBN material of this species consists of flowering specimens, both labelled *Acacia biflora* by McNab; they were collected in 1809 from plants grown at Kew but there is no evidence that Brown actually saw this material. This material represents *A. robiniae*.

There is only one relevant Robert Brown manuscript description at BM. This is annotated "Mimosa biflora" and describes a flowering specimen in cultivation at Kew in 1807, grown from seed collected at "Port King George's Sound" [Albany, W.A.]. Close scrutiny of this description leads us to the conclusion that the plant described by Brown was likely *A. robiniae*, a conclusion supported by the fact that the DBN cultivated specimens are also this species. Moreover, the plant described and illustrated as *A. biflora* by Wendland (1820) also seems to be *A. robiniae*, suggesting that the misapplication was prevalent in gardens in Europe at the time.

The published original description of *A. biflora*, however, seems unlikely to have been based exclusively on Brown's manuscript description of the plant cultivated at Kew. Indeed, following a careful examination of all relevant material we are of the opinion that elements of both *A. biflora* and *A. robiniae* are included in the original description. As there is no cultivated material which can be regarded as type of *A. biflora* we have selected the lectotype from among Brown's "wild" gatherings.

Acacia ciliata R. Br. in W.T. Aiton, Hort. Kew. ed. 2, 5: 465 (1813). Neotype (*vide* B.R. Maslin 1975: 425): "Acacia strigosa Link" (not in Brown's hand and with no other details) - lower left hand flowering specimen on sheet titled "Iter Australiense, 1802-5" and bearing [Britten no.] 4321 (BM).

Note: In the protologue Brown described flowering material and appended the notation "Brown mss" to the description; he also referred to material he had collected from the "South-west coast of New Holland", and said that the species had been introduced [into England] by Peter Good in 1803.

As discussed by Maslin (1975: 425), the BM sheet on which the neotype is mounted is very inadequately labelled; there is no indication of the origin of the (mixed) specimens it bears and there is no direct indication that Robert Brown ever consulted the material (as evidenced by the absence of his handwriting). The material comprises a flowering specimen of *A. luteola* Maslin, four flowering specimens and a fruiting specimen of *A. browniana* H. Wendl. var. *browniana*; these two taxa occur sympatrically at Albany, a locality visited by Brown in 1801/02. The lowermost flowering specimen on the sheet was selected as the neotype of *A. ciliata* by Maslin (*loc. cit.*). The DBN material is mounted on a sheet of flowering specimens labelled *Acacia ciliata* by McNab; these are *A. browniana* var. *browniana* and were collected in 1808 from plants grown at Kew but there is no evidence that Brown actually saw this material.

There is one Robert Brown manuscript description at BM which accords well with the protologue of *A. ciliata*. It is simply annotated "Mimosa" by Brown and describes a flowering specimen in cultivation at Kew in May 1806. Although this description agrees quite well with the specimen selected previously as the neotype, it is impossible to determine with any degree of certainty whether this is cultivated or "wild" material.

From comparing the manuscript description with the protologue it seems probable that the "Hortus Kewensis" account was abstracted from Brown's 1806 description of the plant in cultivation at Kew. However, as there remains so many uncertainties regarding the origin and authenticity of specimens at BM we are not able to improve on the original neotypification.

Acacia ciliata is treated as conspecific with *A. browniana* var. *browniana* by Maslin (1975).

Acacia marginata R. Br. in W.T. Aiton, Hort. Kew. ed. 2, 5: 462 (1813). Lectotype (here selected): "Mimosa." King George III Sound [Albany, W.A.], Dec. 1801, *R. Brown* - upper left hand fruiting specimen on sheet titled "Iter Australiense, 1802-5" and bearing [Britten no.] 4336 (BM).

Note: In the protologue Brown described flowering material and appended the notation "Brown mss" to the description; he also referred to material he had collected from the "South-west coast of New Holland", and said that the species had been introduced [into England] by Peter Good in 1803.

The BM specimen selected as lectotype agrees very well with Brown's description of what we assume to be "wild" *A. marginata* (see below). However, the origin of the remaining two flowering specimens on the type sheet is uncertain. They are unlikely to be Brown's "wild" gatherings because his manuscript description of the plants growing at Albany refers only to fruits and seeds; while they may represent Brown's Hort. Kew material, it is not possible, judging from his manuscript description of the cultivated plant, to be definite about this. The DBN material of this species consists of a flowering specimen labelled *Acacia marginata* by McNab. They were collected in 1808 from plants grown at Kew but there is no evidence that Brown actually saw this material. Both the "wild" and cultivated specimens represent the same taxon, i.e. *A. marginata* R. Br. (= *A. myrtifolia* (Sm.) Willd.).

There are two Robert Brown manuscript descriptions at BM which probably refer to *A. marginata* and both are annotated by Brown simply as "*Mimosa*" (no species epithet given). One is based on Brown's "wild" gatherings from "Prope littora Portus Regis Georgii III Dec. 1801" and describes a fruiting specimen with seeds; the other describes flowering material based on a specimen cultivated at Kew in April 1807.

From comparing the two manuscript descriptions with the protologue it seems probable that the "Hortus Kewensis" account was based on Brown's 1807 description of the plant in cultivation at Kew. However, as there is no certain cultivated material which can be regarded as type of *A. marginata* we have selected a lectotype from among Brown's "wild" gatherings.

This species will be treated as conspecific with *A. myrtifolia* (Sm.) Willd. in the forthcoming "Flora of Australia" account of *Acacia*.

Acacia melanoxylon R. Br. in W.T. Aiton, Hort. Kew. ed. 2, 5: 462 (1813). Lectotype (here selected): "Derwent" [River, Tasmania, Feb. - July 1804], *R. Brown*, sheet titled "Iter Australiense, 1802-5" and bearing [Britten no.] 4364 (BM, fruiting specimen); isolectotype: E. Paralectotypes: (1) Flowering specimen mounted on sheet with lectotype (BM, E, also DBN but on an individual sheet). (2) "*Mimosa cinerascens*", Port Dalrymple, Tasmania, Jan. 1804, *R. Brown*, sheet titled "Iter Australiense, 1802-5" and bearing [Britten no.] 4364 (BM, specimen in young fruit).

Note: In the protologue Brown described fruits, seeds, and probably also flowers, and appended the notation "Brown mss" to the description. He also referred to material he had collected from "Van Diemen's Island" and said that the species had been introduced [into England] by John Walker in 1808.

There are two sheets at BM, both annotated [Bennett no.] 4364, which may have a bearing on the typification of this name. These specimens are labelled by Brown thus:

(1) "Derwent" but with no other details (specimens with mature seeds and near-mature flowers). In a manuscript at BM which lists the plants collected from the Derwent River between February and July 1804, Brown cites the following: "*Mimosa cinerascens*. In campis & ripas riviior: frequens"; this entry may well be a reference to the collection cited above. There are duplicates of this collection at both E and DBN (ex herb. W.R. McNab).

(2) "*Mimosa cinerascens*. In campis non[?] longe a cult.[?]: Port Dalrymple, Jan. 1804" (specimen in young fruit).

There is only one Brown manuscript description of this species at BM. It uses the name *Mimosa cinerascens* and describes flowering material. Although there is no direct indication as to the origin of the plant described ("wild" or cultivated) it may possibly be based on a "wild" gathering because the plant is described as a small or medium tree.

It is difficult to determine the basis of the "Hortus Kewensis" description of *A. melanoxyton* because none of the specimens at BM or DBN is from a cultivated plant and the source of the manuscript description is equivocal. An examination of this description shows that the "Hortus Kewensis" account was not taken directly from it. Furthermore, it is a curious fact that there is no McNab material at DBN collected from Kew Gardens, as there is for most other Brown species discussed in this paper. However, because the protologue alludes to Brown's collections from Tasmania, we consider this material to be available for lectotypification. It is noted that Pedley (1978: 222) regarded Brown's Port Dalrymple, Jan. 1804, specimen (in young fruit) as the holotype of *A. melanoxyton*. However, in view of the fact that two collections of "wild" material are involved, a lectotype should have been selected. Because the "Derwent" collection, unlike the one from "Port Dalrymple", provides the seed characters contained in the original description and is represented by a duplicate at E, we consider it to be the better source of the lectotype.

Acacia pulchella R. Br. in W.T. Aiton, Hort. Kew. ed. 2, 5: 464 (1813). Lectotype (here selected): "*Mimosa armata*." King George III Sound [Albany, W.A.], R. Brown - lower right hand flowering specimen on sheet titled "Iter Australiense, 1802-5" and bearing [Britten no.] 4322 (BM); isotype: K. Paralectotypes: Sterile and fruiting specimens mounted on sheet with lectotype (BM).

Note: In the original description of *A. pulchella* Brown described a flowering specimen; he referred to his own manuscript and to material he had collected from the "South-west coast of New Holland" and he also stated that the species had been introduced [into England] by Peter Good in 1803.

There are two sheets at BM which may have a bearing on the typification of this name, one labelled (in an unknown hand) "Hort. Kew. New Holl. Mr Brown" and the other (in Brown's hand) "*Mimosa armata*. King George III Sound". The first sheet bears a single flowering specimen and the second bears four specimens (comprising both flowering and fruiting elements). The DBN material of this species consists of two sheets labelled *Acacia pulchella* by McNab; in each case the specimens were collected from plants grown at Kew. The flowering specimens were collected in 1806, the fruiting ones in 1808. There is no evidence that Brown actually saw this material. All specimens referred to above are *A. pulchella* var. *pulchella*.

The one relevant manuscript description of *A. pulchella* at BM is annotated by Brown as both "*Mimosa congesta*" and "*M. microphylla*". It describes a flowering specimen in cultivation at Kew in May 1806, grown from seed sent from "Port R. G. III" [Albany, W.A.].

Maslin (1975: 398) refrained from typifying *A. pulchella* because of insufficient data. It now seems quite probable that the original description of *A. pulchella* was taken from Brown's manuscript description of the plant in cultivation at Kew in 1806. However, it is unlikely that the BM specimen labelled "Hort. Kew. New Holl. Mr Brown" was used by Brown because it does not accord well enough with his manuscript description. Therefore, since there is no cultivated material that can be regarded as type, and as Brown's "wild" specimens are not at variance with either the original description or the manuscript description, the lectotype has been selected from among these. Mr A.B. Court annotated the same specimen as lectotype in 1967 but his choice was not published.

Maslin (*loc. cit.*) suggested that Brown's field label bearing the name *Mimosa armata* had been attached to the BM specimen in error because this name was not used in the original description. This was an erroneous suggestion because it is now known that Brown commonly altered epithets between those used in his manuscripts and those appearing in his published account.

Acacia sulcata R. Br. in W.T. Aiton, Hort. Kew. ed. 2, 5: 460 (1813). Lectotype (here selected): "Mimosa undata." In collibus sterilibus prope Princess Royal Harbour ad Portum Regis Georgii III [Albany, W.A.] in ora australi Nova Hollandia, Dec. 1801, *R. Brown* - upper right hand flowering specimen on sheet titled "Iter Australiense, 1802-5" and bearing [Britten no.] 4302 (BM). Paralectotypes: Five fruiting specimens mounted on sheet with lectotype (BM); ? paralectotype: E, K (labels lack the [Britten] number).

Note: In the protologue Brown described both flowering and fruiting material and appended the notation "Brown mss" to the description; he also referred to material he had collected from the "South-west coast of New Holland", and said that the species had been introduced [into England] by Peter Good in 1803.

At BM the only Robert Brown specimens seen are those cited above which represent Brown's "wild" gatherings of the species. The specimens comprise both flowering and fruiting elements and the sheet is labelled by Brown as *Mimosa undata*. The DBN material of this species consists of a sheet supporting two small flowering specimens, both labelled *Acacia sulcata* by McNab; they were collected in 1806 from plants grown at Kew but there is no evidence that Brown actually saw this material. Both these "wild" and cultivated specimens represent the same taxon.

There are two Robert Brown manuscript descriptions of *A. sulcata* at BM. One is under the manuscript name *Mimosa undata* and describes both flowers and fruits; it is based on Brown's "wild" material from King George Sound, Albany. The other is prepared as *Acacia sulcata* and describes flowering material based on a specimen from a plant cultivated at Kew in May 1806.

From comparing the two manuscript descriptions with the protologue it seems likely that the account of the flowers was derived primarily from Brown's 1806 description of the plant in cultivation at Kew; fruit characters probably came from his description of "wild" material. As there is no cultivated material which can be regarded as type of *A. sulcata*, we have selected the lectotype from among Brown's "wild" gatherings at BM.

As discussed by Cowan & Maslin (1993) *A. sulcata* comprises three varieties.

Acknowledgements

We are most grateful to David Mabberley, Paul Wilson and Gillian Perry for their critical review of the manuscript. The Directors of both the Natural History Museum (BM) and the National Botanic Gardens, Glasnevin (DBN) are thanked for allowing us access to their valuable Robert Brown material. We appreciate the assistance provided by Roy Vickery (BM) and Peter Weston, Australian Botanical Liaison Officer, Kew 1992-3. Charles Nelson is thanked for his useful discussions concerning the McNab collections. The work was conducted with financial support provided by the Australian Biological Resources Study.

References

- Bennett, J.J. (1867). "The Miscellaneous Botanical Works of Robert Brown." (Published for the Ray Society by Robert Hardwicke: London.)
- Britten, J. (1905). The national herbarium. *J. Bot.* 43: 120-124.
- Britten, J. (1912). The history of Aiton's 'Hortus Kewensis'. *J. Bot.* 50 (Suppl.): 1-16.
- Brown, R. (1813). *Acacia* in W.T. Aiton, Hortus Kewensis ed. 2, 5: 459-473.
- Burbidge, N.T. (1956). Robert Brown's Australian collecting localities. *Proc. Linn. Soc. New South Wales* 80: 229-233.
- Court, A.B. (1957). Changes in the nomenclature of some Victorian dicotyledons. *Victorian Naturalist* 73: 173.
- Court, A.B. (1972). Notes on Australian acacias I. *Muelleria* 2: 155-163.
- Cowan, R.S. & Maslin, B.R. (1993). *Acacia* Miscellany 7. *Acacia sulcata* and related taxa in Western Australia (Leguminosae: Mimosoideae). *Nuytsia* 9: 69-78.
- Crisp, M.D. (1990). On the typification of *Brachysema latifolium* R. Br. *Glasra* 1: 9.
- Edwards, P.I. (1976). Robert Brown (1773-1858) and the natural history of Matthew Flinders' voyage in H.M.S. Investigator, 1801-1805. *J. Soc. Bibliogr. Nat. Hist.* 7(4): 385-407.
- Lasegue, A. (1845). "Musée Botanique de M. Benjamin Delessert." (Librairie de Fortin, Masson & Cie.: Paris.)
- Mabberley, D. (1985). "Jupiter Botanicus. Robert Brown of the British Museum." (*J. Cramer/British Museum -Natural History: Braunschweig/London.*)
- Maslin, B.R. (1975). Studies in the genus *Acacia* (Mimosaceae) 4. A revision of the series Pulchellae. *Nuytsia* 1: 388-492.
- Maslin, B.R. (1978). Studies in the genus *Acacia* (Mimosaceae) - 8. A revision of the Uninerves-Triangulares, in part (the tetramerous species). *Nuytsia* 2: 266-333.
- Maslin, B.R. & Cowan, R.S. (in prep.). What type of type? *Australian Systematic Botany Newsletter*.
- Nelson, E.C. (1980). A contribution towards a catalogue of collectors in the foreign phanerogam section of the herbarium, National Botanic Gardens, Glasnevin (DBN). *Glasra* 4: 31-68.
- Nelson, E.C. (1990). William Ramsay McNab's herbarium in the National Botanic Gardens, Glasnevin (DBN). 1. Its early history and acquisition. *Glasra n.s.*, 1: 1-7.
- Pedley, L. (1980). A revision of *Acacia* Mill. in Queensland (concluded). *Austrobaileya* 1: 235-337.
- Powell, M. & Morley, B. (1976). The Robert Brown material in the National Herbarium, Glasnevin, Dublin. *Contr. Natl Bot. Gard. Glasnevin* 1: 22-38.
- Stearn, W.T. (1960). "An introduction to Robert Brown's 'Prodromus Florae Novae Hollandiae'." Facsimile edition as *Historiae naturalis classica* 6: v-ii. *J. Cramer, Wernheim.*
- Stearn, W.T. (1981). "The Natural History Museum at South Kensington." (Heinemann: London.)
- Vallance, T.G. (1989). Jupiter Botanicus in the Bush: Robert Brown's Australian Field-work, 1801-5. *Proc. Linn. Soc. New South Wales* 112(2): 49-86.
- Wendland, H.L. (1820). "Commentation de Acaciis Aphyllis." (Hanover.)