

## Lectotypification of *Acacia gardneri*, *A. obtecta*, *A. sparsiflora* and *A. whitei* (Fabaceae, Mimosoideae)

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### Abstract

Lectotypes are here designated for the Australian species *Acacia gardneri* Maiden & Blakely, *A. obtecta* Maiden & Blakely, *A. sparsiflora* Maiden and *A. whitei* Maiden.

### Introduction

This paper lectotypifies four *Acacia* species that were represented by a number of syntypes or confusing type designations. Collections were examined at NSW and MEL, while mainly images and specimen data were assessed for collections held elsewhere, including AD (data only), BM, BRI (data only), K, PERTH and US. The location and assessment of herbarium specimens that potentially represented types was assisted by searching records in *Australia's Virtual Herbarium* (AVH 2013) and *Global Plants* (2013). The latter site enabled the examination of images of a number of type specimens and their label details. Type citations by other authors for these species were also addressed.

### Nomenclature

*Acacia gardneri* Maiden & Blakely, *Journal and Proceedings of the Royal Society of Western Australia* 13: 32, pl. 22, figs 6–11 (1927)

**Type:** Western Australia: [near] Prince Regent River, 12 June 1921, C.A. Gardner 1368; lecto (here chosen): NSW516385; isolecto: K793979, PERTH709018 *n.v.*, PERTH709026 *n.v.*, PERTH709034 *n.v.*

**Residual syntypes:** Western Australia: Packhorse Range, July 1905, W.V. Fitzgerald [1253] (NSW516386); Charnley River, Aug 1905, W.V. Fitzgerald (MEL2085981A, NSW516387).

In the protologue Maiden and Blakely cite the specimens “Near Prince Regent River, on the banks of streams in sandy soil, among quartzite rocks (C.A. Gardner, No. 1368, 12th June, 1921), also seen on the Moran and King Edward Rivers; Packhorse Range (W.V. Fitzgerald, No. 1253, July, 1905); Charnley River (W.V. Fitzgerald, August, 1905)”. From the available syntypes the Gardner 1368 specimen NSW516385 (Figs 1 and 2) is selected as the lectotype for the following reasons: (i) it is cited by the authors as the primary specimen; (ii) the NSW specimen would have been seen by the authors (the NSW sheet label is in Blakely’s handwriting); (iii) the specimen fits with the protologue description which repeats much of the information provided by Gardner;

and (iv) the specimen is a suitable representative branchlet with flowers and pods. As the species was named in honour of the collector of the specimen, the Western Australian botanist Charles Austin Gardner, it is fitting that his specimen is chosen as the lectotype.

The Packhorse Range specimen at NSW does not include Fitzgerald's collecting number "1253" that was cited in the protologue; however, the other details match and it would have been seen by the authors. The Charnley River specimen sheet at NSW is annotated indicating material from it was used for a drawing made by Ethel King (given as initials 'EK'), 19 April 1923. Components of King's line drawing appear in plate 22 of the protologue (the drawing was possibly altered and abbreviated by Margaret Flockton for the final plate since her initials also occur there). Although the original drawing by King indicates the use of the Charnley River specimen only (which has pods but no flowers), other material must have been used for the inflorescence and flower features in the final plate.

***Acacia obtecta*** Maiden & Blakely, *Journal and Proceedings of the Royal Society of Western Australia* 13: 20, pl. 5, figs 1–6 (1927)

**Type:** Western Australia: between Kunnunoppin [Kununoppin] and Mount Marshall about long. 118°, lat. 31°, and Lake Barlee (long. 119–120, lat. 29–30), Winter–Spring 1919, *Fitzgerald Fraser*, per *W.C. Grasby*; lecto (here chosen): NSW484887 (flowering branchlet); probable isolecto: K806144; possible isolecto (otherwise residual syntype): MEL501393A *n.v.*, PERTH703125 (fragment, ex K806144). Possible isolecto: PERTH766348 *p.p.* (flowerhead in attached bag).

**Residual syntype(s):** Western Australia: Lake Giles, Oct 1919 (*viz.* label on lower left of sheet); between Kunnunoppin and Mount Marshall, about long. 118°, lat. 31°, and Lake Barlee (long. 119°–120°, lat. 29°–30°), Winter–Spring 1919, *Fitzgerald Fraser*, per *W.C. Grasby* (NSW484886; PERTH766356 – photograph of part of NSW collection – see below) (fruiting and sterile branchlets); PERTH766348 (*p.p.*, excluding loose flowerhead in attached bag which is possibly part of the flowering lectotype collection that got mixed with this sheet of fruiting and sterile branchlets).

The citation in the protologue "Between Kununoppin and Mount Marshall, and also near Lake Giles (Fitzgerald Fraser, per W.C. Grasby, winter and spring, 1919). The type." indicates, and indeed, covers a number of specimens that can be considered as syntypes. Several sheets have similar label details (generally fitting the protologue type citation), however, specimens differ between flowering and fruiting branchlets and the general date "Winter–Spring 1919" possibly indicates a group of specimens collected at different times as well as different places (the protologue cites two general localities).

The NSW484887 sheet (Fig. 3) is selected as the lectotype for the following reasons: (i) it was seen and cited by the authors (Blakely's handwriting occurs on the label); (ii) it has a single label, unlike sheet NSW484886 with its different labels causing some confusion and the possibility of being a mixed collection (see below), (iii) the specimen fits with the protologue description, and (iv) the specimen is a suitable representative flowering branchlet, with likely duplicates at other herbaria.

Herbarium sheet NSW484886 (Fig. 4) consists of both fruiting and sterile branchlets and has two labels, indicating that it may be a mixed collection. On the lower left of the sheet there is a handwritten label that may be the collector's field tag (that probably slipped over a branchlet(s) but since separated) citing "Lake Giles, Oct 1919, 8 ft [feet]". This label may be incongruous with the pre-printed herbarium label of NSW484886 (lower right) which cites the locality as "between Kunnunoppin [Kununoppin] and Mount Marshall ... and Lake Barlee ...". However, Lake Giles is just south of the more pronounced Lake Barlee which is cited on the label (it may be that the herbarium label was annotated with "Lake Barlee" because it is "near Lake Giles"). This sheet is likely to include the "near Lake Giles" specimen(s) cited in the protologue. There remains, however, the possibility of a mixed collection, with elements from several sites covered by the herbarium label collection details. Unfortunately the state of the collections prior to curatorial processing is unknown.

PERTH766356 (a photograph of part of NSW484886) might provide evidence of what could be the actual (or part of the) Lake Giles collection because it shows the same handwritten 'Lake Giles' and herbarium labels as found on NSW484886 but with a single branchlet. On the photograph there is a determinavit slip dated 2 Feb 1988 where R.S. Cowan indicates that it is a photograph of the 'holotype' of *A. obtecta* held at NSW, while in the *Flora of Australia* account Cowan (2001, p. 53) cites the 'holotype' with the details of the herbarium label only ("between Kununoppin and Mt Marshall ... and Lake Barlee"). Since this reference to the type was published after 1 January 2001, Cowan's misuse of the term 'holotype' cannot be treated as a typification and corrected to 'lectotype' (refer McNeill et al. 2012, Articles 7.10 and 9.9). The branchlet on the PERTH766356 photograph (minus some parts that have broken off) is currently mounted far left on NSW484886 with other branchlets to its right.

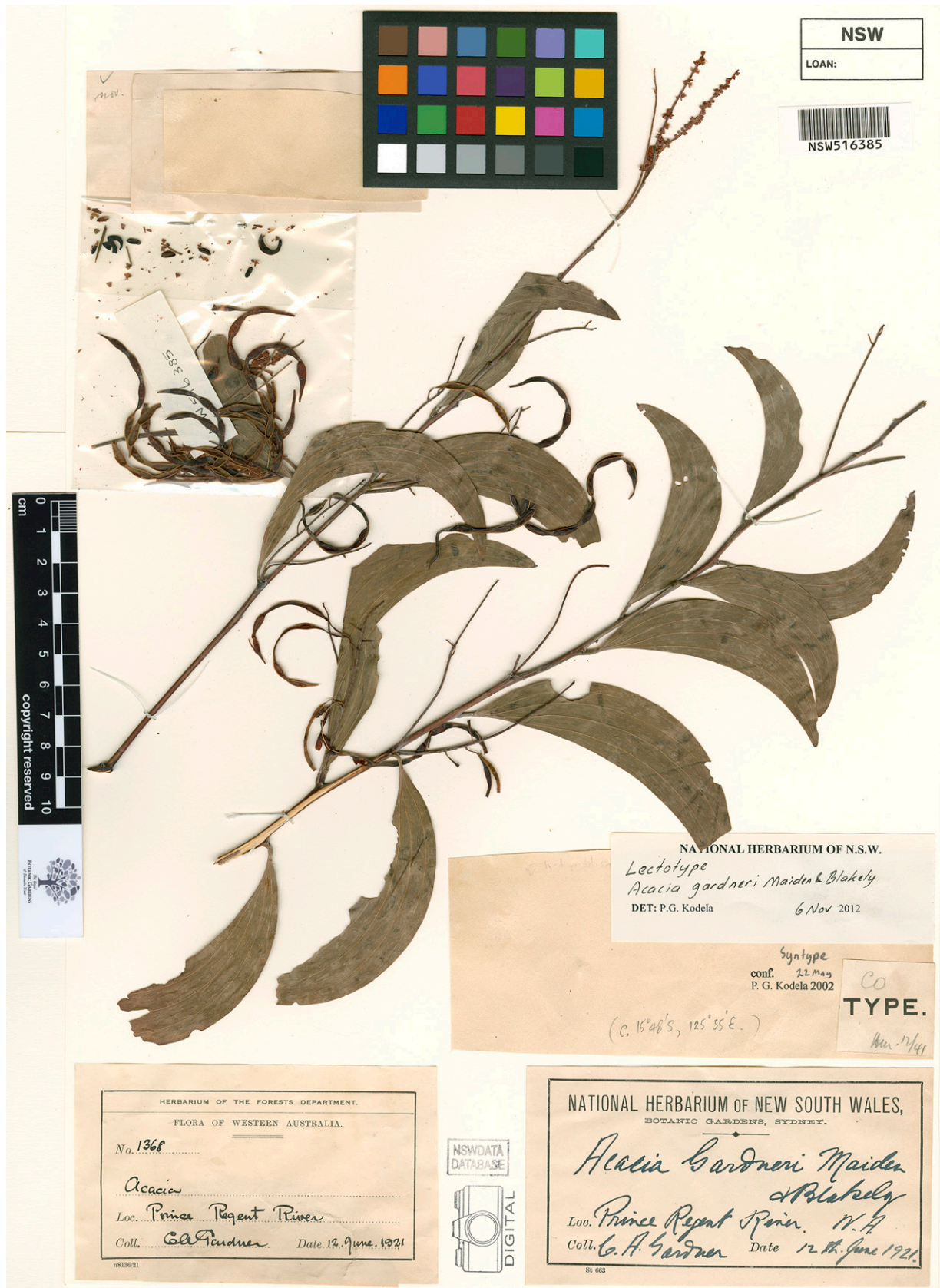


Fig. 1. Lectotype of *Acacia gardneri* Maiden & Blakely, NSW516385

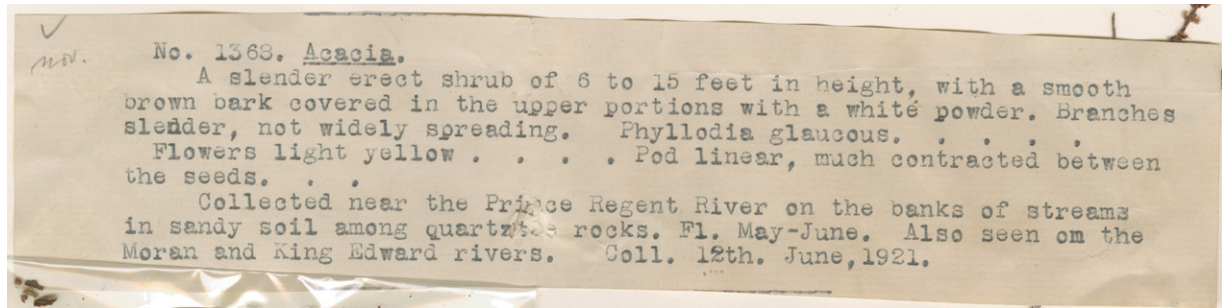


Fig. 2. Notes (attached to sheet) with the lectotype of *Acacia gardneri* Maiden & Blakely, NSW516385

Flowering and fruiting material of the above collections is likely to have been used by Margaret Flockton for the illustrations of *A. obtecta* in Maiden and Blakely (1927, plate 5); however, the annotation she usually provided in folders to indicate specimens were used in drawings is missing.

*Acacia sparsiflora* Maiden, *Journal and Proceedings of the Royal Society of New South Wales* 53: 221, pl. 15, figs 15–20, pl. 16, figs 1–4 (1920)

**Type:** Queensland: Eidsvold, *T.L. Bancroft* 5, Mar 1918; lecto (here chosen): NSW489921; isolecto: AD98582677 *n.v.*, BM796552 (branchlet with flowers), MEL2086584A, NSW830694, US288911 (branchlet with flowers).

**Probable residual syntypes:** Queensland: Eidsvold, *T.L. Bancroft* 5, Nov 1918 (BM796552 - branchlet with pods; MEL2086584B); Eidsvold, *T.L. Bancroft* 5 & 30 [see below], Nov 1918 (NSW830695–NSW830698).

In the protologue, Maiden (1920, p. 222) cites the type as “Dr. T.L. Bancroft’s No. 5, Eidsvold, Queensland”, which includes two flowering branchlets (dated March 1918) held at NSW (these would have been seen by Maiden and the folder was annotated by Margaret Flockton as being used for drawing “Phyllode and flower”, “29.10.19” [29 Oct 1919], in plates 15 and 16 of the protologue). This collection has previously been interpreted as the “holotype” and cited as “Eidsvold, *Bancroft* 5 (NSW, holo), [*n.v.*]” (Pedley 1978, p. 153). Maslin and Cowan (2001, p. 275) accepted this interpretation. However, there are also “T.L. Bancroft 5” fruiting specimens from Eidsvold, collected in Nov 1918, at BM and MEL. Maiden (1920, p. 223) states that “I only know the type specimen, which came from Eidsvold ...” and this could be interpreted to include a group of specimens of fruiting branchlets with a tag marked “No. 5 & No. 30” and an herbarium sheet label (in W.F. Blakely’s handwriting except for the specific epithet where Maiden has written “*sparsiflora* Maiden”) dated November 1918. These specimens would have been seen by Maiden for the description of the pods and seeds in the protologue; supported by an annotation in the folder that they were used by Margaret Flockton to draw “Pod & seed”, “29.10.19” [29 Oct 1919], in plate 16 of the protologue. Furthermore, with the collection there is a copy of a letter to Bancroft dated 1 July 1919 in which Maiden states that “Your herbarium specimen 5 = 30 (a supposed new species)”, which clearly indicates he regarded the numbers as representing the same taxon. A photograph of the habit was also provided by Bancroft of No. 5 showing several trees and including the annotation “5 = 30 new sp.” Since Maiden stated that he only knew the type specimen, it can be inferred that all the specimens he used for the description represent type material. This material includes a group of flowering and fruiting specimens with numbers 5 and 30 collected in March and November 1918. Under these circumstances it was desirable to select a lectotype.

Herbarium sheet NSW489921 (Fig. 5) is selected as the lectotype, because: (i) the original sheet label is in Maiden’s handwriting and the specimen would have been seen by him; (ii) it fits the protologue description; (iii) it is clearly labelled with a tied tag with Bancroft’s field number “No. 5”; (iv) it was in a folder annotated with wording that indicated the specimens were illustrated by Margaret Flockton for plates in the protologue; and (v) the specific epithet refers to sparse flowers (spikes interrupted) which is well demonstrated (particularly by the spikes in bud) of the lectotype.

Eidsvold is a small town in the North Burnett region of Queensland, Australia. It is named after Eidsvold Station, a nearby property. Thomas Lane Bancroft lived in the area 1910–1930 and collected extensively from the Eidsvold district and further afield (Bancroft *et al.* c. 2004). Pedley (1978, p. 154) suspects that Bancroft’s “Eidsvold” specimens were collected over a wide area, and suggests Bancroft’s *A. sparsiflora* specimens were probably not collected in the vicinity of Eidsvold (since no other collections appear to have been recorded



Fig. 3. Lectotype of *Acacia obtecta* Maiden & Blakely, NSW484887



Fig. 4. Residual syntype of *Acacia obtecta* Maiden & Blakely, NSW484886



Fig. 5. Lectotype of *Acacia sparsiflora* Maiden, NSW489921



Fig. 6. Lectotype of *Acacia whitei* Maiden, NSW108134



from there), but rather the type locality for the species is likely to be north of Chinchilla. Efforts to trace the details of Bancroft's movements during this period of his collecting and photography were unsuccessful.

There are other specimens from Eidsvold labelled *T.L. Bancroft 30*, Mar 1918 (including NSW171416, a branchlet with buds and flowers and a tag attached annotated by Bancroft: "No. 30. Is this same as no. 5?. Small tree"); *T.L. Bancroft s.n.*, Mar 1918; *T.L. Bancroft 30*, Nov 1918; *T.L. Bancroft s.n.*, Nov 1918; and *T.L. Bancroft s.n.*, undated, at various herbaria (including AD, BRI, MEL, NSW, PERTH) of uncertain type status. These may include syntypes and isolectotypes.

*Acacia whitei* Maiden, *Proceedings of the Royal Society of Queensland* 30: 35, pl. 2, figs 1–7 (1918)

**Type:** Queensland: Stannary Hills, *T.L. Bancroft s.n.*, anno 1910 [1909]; lecto (here chosen): NSW108134 (ex BRI); possible isolecto (otherwise residual syntypes): *T.L. Bancroft 171*, 30 Nov 1909 (supplied as "1910") (as cited in AVH 2013), BRI AQ22805 *n.v.*; *T.L. Bancroft 171*, undated (as cited by AVH 2013), BRI AQ197844 *n.v.*

The lectotype (NSW108134; Fig. 6), selected here, comprises three branchlets, two of which include buds, flowers and immature pods, would have been seen by Maiden when he described the species. It suitably matches the type citation "Type. Stannary Hills, *via* Irvinebank, North Queensland (Dr. T.L. Bancroft, 1910, communicated by Mr. C.T. White)" (Maiden 1918, p. 35), as well as the description and illustrations in the protologue. This sheet is annotated as being used for a detailed drawing made by Margaret Flockton, "31.7.17" [31 July 1917] and is here regarded as represented in the illustration in Maiden (1918, plate 2). The collection year is likely to be 1909, as indicated by BRI data, as Bancroft had moved from the area by 1910 (E. Bancroft, pers. comm., 2013).

A possible isolectotype or residual syntype may be represented by NSW108135 (ex BRI) which has slightly different label details (*viz.* Stannary Hills, *T.L. Bancroft 230*, "a bush about 6 ft [feet] high") to that of the lectotype. Nevertheless the locality citation is similar to that in the protologue and morphologically it is congruent with the protologue description. However, it has longer phyllodes and so may be from a different plant to the lectotype. If the lectotype (NSW108134) is indeed a duplicate (ex BRI) of *T.L. Bancroft 171* then NSW108135 would not be an isolectotype. Although these NSW sheets contain exchange material from Queensland Herbarium, they cannot be readily associated directly with specimens held at BRI due to differences in label details (based on the currently available electronic information).

Based on material at BRI, indicating that the Bancroft number "171" may be related to the type collection, the undated *T.L. Bancroft 171* specimen AD98583530 (*n.v.*) is likely to be type material. Likewise, MEL0580857A may also be part of the type collection from Stannary Hills; however, it does not include a collection date or field number to further assess its status.

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