

BOTANICAL INVESTIGATION

OF

NEW SOUTH WALES

1811-1880

Volume III

Appendices

Bibliography

L.A. Gilbert,
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APPENDIX I.

N.S.W. COLLECTORS ACKNOWLEDGED BY GEORGE BENTHAM IN

FLORA AUSTRALIENSIS

"We find the botanical work of one State sufficiently engrossing, and thus in botanical matters we are reversing the act of federation, which politically unites all our peoples. But our provincial arrangements are those of convenience only."

Joseph Henry Maiden, 1901.¹

¹ J. H. Maiden: address at the unveiling of the Mueller Memorial, St. Kilda Cemetery, 26 November 1901, Proc. Roy. Soc. NSW, 1908, p.78.

This analysis emphasises two important aspects of the whole survey: (i) the work of certain botanical collectors, both in the number of species collected, and in the extent of their travels and (ii) the extent to which taxonomists used the results of this field work.

Despite the great number of revisions of nomenclature during the last century, the remarkable thing about Bentham's work is that it is still so widely used and applauded among systematists at the present time. Thus the work of the early field collectors and observers is still being used and appreciated.

Compilation of the analysis presented some problems. Bentham published the 4,000-odd pages of his Flora over 15 years, during which many discoveries were made; so many, in fact, that Mueller earnestly hoped for a supplementary volume to incorporate these new discoveries. Bentham often had trouble with localities. We cannot always take it that "N.S.Wales" means just that, and in determining the number of N.S.W. species mentioned in the Flora, we must also look at localities listed under Victoria and Queensland. Other difficulties are:

- i) Not all specimens consulted were acknowledged as having been collected by named collectors. Some species have no named collectors at all, while others have the names of one or two collectors, and the words "and others" or "and many others." On other occasions, Bentham was much more precise--e.g. he listed Exocarpos strictus R.Br. as having been collected by ten different people or expeditions in N.S.W. Eight or nine different collectors are recorded for other species, but generally the number is much less.
- ii) Some species are described as being in "Herb.F.Muell." or in "Herb.Hook." and these are not taken into account since they could have been sent by any one of a number of collectors, for the herbarium of Mueller or of Hooker.
- iii) Sometimes Bentham was not sure of a species, usually because of insufficient material--e.g. "leaf only". These doubtful species are included if collectors and locality are clear.
- iv) Localities are often vague, for collectors were working in country which was only then being mapped; hence the term 'in the interior' was often used. Such species are included if collectors are known. Some localities were confused e.g. Port Macquarie (N.S.W.) and Macquarie Harbour (Tas.); Darling River and Darling Downs; Brisbane River (Qld.) and Brisbane Water (N.S.W.).
- v) Actual collectors are often impossible to determine--e.g. "Victorian and other Expeditions." In such cases plants are listed under Burke and Wills, although Herman Beckler was the actual collector. On the other hand, "in Leichhardt's collection" can be fairly safely taken to mean that Leichhardt himself collected the specimen. Sometimes

when two botanists worked together on the same expedition (e.g. Cunningham and Fraser) it is likely that both collected the same species in the same locality, and specimen folders may have included material from both collectors. In such cases, we can only be guided by Bentham's record. Mitchell's expeditions present another problem. No doubt many of the species attributed to Mitchell were in fact collected by him, but others may have been collected by Richard Cunningham, John Richardson or William Stephenson. As Mitchell and Stephenson actually came into conflict over the possession of specimens (see Appendix VII) it may be significant that although Bentham acknowledged Mitchell 113 times, Stephenson was acknowledged only once!

- vi) Collectors' names also present difficulty. The full names or initials were seldom given, and there are spelling variations attributable to handwriting on plant labels and in Bentham's manuscript. Thus there is Bull and Ball, and Dangar, Danger and Dargan. Wherever possible names of collectors have been expanded to include at least initials. Some collectors, perhaps mentioned only once or twice, remain obscure. They were probably among Mueller's vast number of correspondents who may even have collected something specific on request. Unfortunately, Mueller's enormous collection of in-letters has long since disappeared, most of it apparently being burnt over some days in 1935 when the old Melbourne Herbarium building was demolished. In some cases, additional information has been obtained from plant labels and from odd letters filed with specimens in the Melbourne Herbarium. Despite its shortcomings, this analysis suggests some interesting conclusions:
- (a) By 1875 or so, an intensive investigation of N.S.W. field botany had been carried out, much of it by the first exploratory expeditions to enter an area.
 - (b) Interest was shown in the geographical distribution of species.
 - (c) Bentham appreciated that some species had been introduced and were naturalised. These are omitted from this analysis.
 - (d) Of the earlier 'classic' collections, that of Brown was of the greatest assistance to Bentham, not those of Banks and Solander. Of the collections made after Brown, that of Allan Cunningham was the most valuable.
 - (e) The amateur botanists and collectors made a most important contribution - especially Charles Stuart and William Woolls.
 - (f) Bentham was very concerned about the nature of a species. He tended to be a 'lumper' rather than a 'splitter.' It was thus important for him to have a wide range of specimens from many different localities so that intermediate forms could be examined.

It should also be remembered that in transmitting specimens to England, Mueller necessarily selected on a botanical, not on a personal basis, so that Bentham often acknowledged a comparatively few species from field botanists who had in fact collected most assiduously. It seems, however, that where one collector's specimens were of a consistently high standard and/or reflected intensive work in a certain area (e.g. Herman Beckler, William Woolls, William Macarthur, Charles Stuart, Mrs. C. L. Calvert) these were sent, and used, in substantial numbers.

N.S.W. COLLECTORS ACKNOWLEDGED BY GEORGE BENTHAM IN
'FLORA AUSTRALIENSIS'

<u>COLLECTOR</u>	<u>NUMBER NSW. SPECIES ACKNOWLEDGED</u>	<u>PRINCIPAL COLLECTING AREAS (N.S.W. ONLY)</u>	<u>REMARKS.</u>
<u>A. Earlier Collectors</u>			
BANKS, Joseph & SOLANDER, Daniel	21	Botany Bay	See Thesis I.
BASS, George	1	Port Jackson; Illawarra.	"
BAUER, Ferdinand	7	Port Jackson	"
BROWN, Robert	1045	Port Jackson to Blue Mts.; Hunter R.	"
BURTON, David	6	Port Jackson to Nepean R.	"
CALEY, George	43	Port Jackson to Blue Mts.	Chiefly <u>Eucalyptus</u> .
PATERSON, William	1	Port Jackson	See Thesis I.
WHITE, John	5	Port Jackson	"
<u>B. Collectors after Brown.</u>			
ANDERSON, J.	2	Port Jackson	Probably James Anderson, Superintendent of Syd. Bot. Gdns. See Chapter V.
ATKINSON, Caroline L. W.--see CALVERT.			
BACKHOUSE, James (1794-1869)	105	Port Jackson to Blue Mts.; Illawarra; Port Macquarie; Hunter River.	Quaker missionary. See Chapter VI.

BAILEY, Frederick Manson (1827-1915)	2	Mt.Lindesay; Clarence and Hastings Rivers.	Colonial Botanist of Queensland, 1881-1915.
BALL (BULL) W. P.	2	Upper Murray; Tumbar- umba.	
BARTON, W.	1	"Murray Desert".	Also collected in S.Qld. in 1860s.
BAXTER, William (?)	1	Twofold Bay	Worked mainly in W.A.; collected for Syd.Bot.Gdns.
BEATTIE, -	1	near Albury.	
BECKLER, Herman	773	Richmond, Clarence, Macleay, Hastings and Darling Rivers.	Medical officer and botanical collector with Burke & Wills Expedition.
BURKE, Robert O'H. & WILLS, William (Expedition)	280	Darling R.; Scrope Range.	Specimens collected by Beckler.
BISSETT, W.	2	"On the Billabong".	Also "Bissill".
BONNEY, F.	15	Mt Murchison, west side of Darling R., c.100 m. N.E. Menindee.	Collected in 1867.
BOWMAN, Edward Macarthur (1826-1872)	22	Macquarie and Darling Rivers.	Eldest son of James Bowman, Colonial Surgeon.
BURKITT, J.	27	Between Lachlan and Darling Rivers.	Collected in 1862.
BUTLER	2	Clarence, Macleay, Hastings Rivers.	Meant to be Beckler?
BYNOE, Benjamin (1803?-1865)	6	Port Jackson	Naval surgeon 1825-1859.
CALVERT, Caroline Louisa Waring (1834-1872)	116	Blue Mts.; Berrima; Monaro.	Daughter of James Atkinson; married James Snowden Calvert 1870. See Chapter VI.
CARRON, William (1821-1876)	1	Upper Hastings (with Charles Moore).	Botanist with Edmund Kennedy's expedition. See Chapter VI.
CLOWES, G.	10	Port Jackson to Blue Mts.	

CUNNINGHAM, Allan (1791-1839)	841	Port Jackson to Blue Mts.; Illawarra; Western Rivers; Hast- ings R. N.W. Slopes.	Collection included 35 spp. ferns and 58 spp. <i>Acacia</i> . See Chapters II and V.
CUNNINGHAM, Richard (1793-1835)	60	Port Jackson to Blue Mts.	Brother of Allan, killed by aborig- ines on Bogan R., April 1835. See Chapters II and V.
DAINTREY, Edwin (1814-1887)	4	Port Jackson to Blue Mts.	Sydney solicitor, and "an excellent Botanist". The 4 specimens acknow- ledged were of terrestrial orchids. Sometimes confused with Richard Daintree (1831- 1878) a Queensland Govt. Geologist, who collected for Mueller. See Chapter VI.
DALLACHY, John (1820?-1871)	57	Darling, Murray, Lachlan, Murrumbidgee R's., Mt. Murchison	In 1858 Dallachy and Goodwin followed the Darling from Wentworth to Wil- cannia, collecting for Mueller.
DALLACHY, John & GOODWIN, (Rev.) T.H.	32	"	Dallachy was second superintendent of the Melb. Bot. Gdns. He worked chiefly in Victoria and Qld. Goodwin administered the Anglican aboriginal mission at Wentworth 1855-1866.
GOODWIN, (Rev.) Thomas Hill	1	"	
DANGAR, DANGER, DARGAN	3	Richmond River	Name uncertain
EAVES, -	3	Tweed R.	
FAWCETT, Charles Hugh (1812-1890)	46	Richmond R.	Police Magistrate, Tabulam, 1862-1870. M.L.A. for the Richmond, 1880-1882.
FITZGERALD, Robert David (1830-1892)	37	Tweed, Bellinger, Macleay Rivers. Port Jackson; Blue Mts.	Chiefly orchids and ferns. See Chapter VI.
FORDE, Helena (née SCOTT) (1832?-1910)	30	Lower Darling River.	Wife of Edward Forde, surveyor. See Chapter VI.

FRASER, Charles (1788?-1831)	227	Port Jackson to Blue Mts.; Macquarie, Lachlan, Hastings Rivers; Liverpool Plains.	Colonial Botanist; explored with Oxley and Allan Cunningham. See Chapters II and V.
GAUDICHAUD, Charles (1789-1854)	7	Port Jackson-Blue Mts.	'Pharmacien-botaniste' with Freycinet's Expedition, 1817-1820.
GILBERT, John (?) (1810?-1845)	1	"East coast" (perhaps Q'ld).	Probably John Gould's collector, killed on Leichhardt's 1844-5 Expedn.
GILES, Ernest (1835-1897)	6	Darling R.; Mt. Murchison.	Explored country west of Darling in 1860s.
GORDON, -	1	Blue Mts.	Perhaps belongs to Part A: Earlier Collectors. See <u>HRNSW</u> , IV, p.332. Letter of Gov.King, 10 Mar. 1801.
GUILFOYLE, William R. (1840-1912)	45	Tweed River.	Son of Michael Guilfoyle of Double Bay Nursery. Settled on Tweed 1869; Director of Melbourne Bot. Gdns., 1873 - 1909
GULLIVER, -	1	Port Jackson.	
HARVEY, William Henry (1811-1866)	39	Port Jackson; Newcastle; Kiama; Illawarra.	Prof. of Botany, Trinity, Dublin; author of <u>Phycologia Australica</u> , 1858-1863.
HENDERSON, John A.	48	Richmond and Clarence Rivers.	Collected at Ballina in the late 1860s.
HERIOT, -	3	Macleay R.	
HILL, Walter (1820-1904)	34	Mt. Lindesay, McPherson Ranges.	Superintendent, Brisbane Bot.Gdns. 1855-1881.
HILLYARD, -	1	Kurrajong.	
HODGKINSON, Mary (Mrs)	44	Richmond R.	Monocots. and Ferns only.
HOOKER, Joseph Dalton (Sir) (1817-1911)	15	Port Jackson.	Asst. Surgeon and Botanist, HMS <u>Erebus</u> , 1839-1843. Director of Kew 1865-1885.
HOWITT, Alfred Wm. (1830-1908)	6	Darling R., Barrier Range; towards Cooper's Ck.	Led expedition in search of Burke & Wills.

HUEGEL, (Baron) Charles von	12	Twofold Bay; Port Jackson, Blue Mts.	Austrian traveller and collector; visited Swan R., in 1830s.
JOHNSON, JOHNSTONE, -	34	Illawarra	Mainly grasses and ferns. There was a collector, Robert Mackenzie JOHNSTON (1844-1918), Registrar - Gen. of Tas.
KING, Philip Gidley (Jun.) (1817-1904)	1	Port Stephens	Son of P. P. King, and Manager of A.A.Co. at Port Stephens from 1854.
LAW, F. (also LAU)	1	Darling River. (probably incorrect).	Doubtful—all other species under Darling <u>Downs</u> , and are not counted.
LEICHHARDT, Friedrich Wilhelm Ludwig (1813-1848).	261	Port Jackson, Hunter, and Gwydir; Liverpool Plns., New England.	See Chapters V and VI.
LENNANS, -	1	Clarence River.	
LHOTSKY, Johann (1800-186?)	8	County Argyle; Monaro.	Travelled in NSW 1833-6.
LOWNE(S), -	5	Port Jackson-Blue Mts.; Illawarra.	
LOCKER, -	15	Ballandool River. (=Birrie River).	Some Queensland specimens possibly included.
LYALL, -	1	Port Jackson.	
MACARTHUR (Sir) William (1800-1882)	123	Illawarra; Lachlan; Murrumbidgee	Fifth son of John Macarthur; exhibit- or at Paris and London Exhibitions (1855 and 1862). See Chapters V and VI.
McLEAY, Alexander (?) (1767-1848)	3	Port Jackson; Hunter R.; Port Macquarie.	Alex. McLeay certainly visited Port Macquarie to see his daughter and son-in-law, Major A.C.Innes— but various members of the family were keen naturalists. See Chapters V and VI.

- MARSH, F. 1 Lachlan; Upper Bogan. 1 sp. orchid.
- MITCHELL, (Sir) Thomas Bogan, Macquarie, Gwydir, Collected either by
Livingstone 113 Narran, Darling, Lachlan Mitchell or by Wm.
(1792-1855) and Murray Rivers. Stephenson, Richard
Cunningham or John
Richardson. See
Chapter II.
- MOORE, Charles 366 Many places throughout Director Syd. Bot.
(1820-1905) colony, but esp. Port Gdns. 1848-1896. See
Jackson, Blue Mts., Chapter V.
Northern Rivers;
Liverpool Plains;
Illawarra.
- MORTON, Wm. Lockhart 23 Twofold Bay; "between Was still collecting
(1820-1898) Upper Bogan and in the Bogan in the
Lachlan." late 1880s.
- MOSSMAN, Samuel 13 Port Jackson; Twofold Author of books on
Bay. Australia in the
1850s.
- MUELLER, (Baron Sir) 370 Port Jackson; Kosciusko Govt. Bot. of Vict-
Ferdinand Jakob Plateau; Twofold Bay; oria, 1853-1896. See
Heinrich von Riverina; Murray R.; Chapter VI.
(1825-1896) Darling R. (Wentworth).
- NEILSON, - 55 Darling R.; between Collections in Melb.
Darling and Cooper's Ck. Herbarium, but noth-
ing is known of him.
Perhaps an early
pastoralist corres-
pondent of Mueller.
- NOLAN, - 1 Murrumbidgee R.
- OLDFIELD, Augustus Frederick Collected in N.S.W.,
(1820-1887) 17 Tweed R.; Hunter R.; W.A. and Tas. in
Twofold Bay. 1858-1859. Some
specimens in herbar-
ium at Oxford Univer-
sity.
- PANTON, - 4 Darling R.; Barrier Ra.
- PARKER (Mrs) 1 Kurrajong
- PARRY, (Lady) Isabella 3 Port Stephens Wife of Sir Wm. E.
Parry, A.A. Co.
Commissioner.
- PERROTT, Robert Issell Selected "Haroldston"
(1822-1895) 22 Armidale Armidale in 1861.
- RALSTON, A. J. 17 Illawarra
- RAMSAY, Edward P. 4 Ashfield; Wollongong; Director of Aust.
(1842-1916) Richmond. Museum, 1874-1894.
Correspondent of
Woolls and Mueller.

RICHARDS, -	1	Richmond R.	
RIETMANN, -	1	Shoalhaven	
RILEY, -	3	Clarence R.; Armidale.	
ROBINSON, -	2	Tweed R.; Berwick (under NSW).	
RUCKER, -	1	Maitland	
SCOTT, Alexander Walker (1800-1883)	3	Hunter R.; Ash Is.	Entomologist. Father of Helena and Harriet Scott, both natural history painters.
SCOTT (Miss) H.	3	Hunter R.; Ash Is.	Helena or Harriet - if the former, synonymous with Mrs. Helena Forde.
SHARPE, E. B.	1	"Dividing Range between Nangatta and Bondi" (!)	
SHEPHERD, Thomas William (1824-1884)	56	Illawarra	Son of Thomas Shepherd and proprietor of Darling Nursery.
SIEBER, Franz Wilhelm (1789-1844)	442	Port Jackson, Blue Mts.	See Chapter VI.
SIEMSEN, -	1	Blue Mts.	
STEPHENSON, Wm. (c.1790-1863)	1	"Within 125 m. of Sydney"	See Chapter II and Appendix VII.
STUART, Charles (1807-1877)	593	All from New England, except 1 from Bogan R., 1 from Murray R.	See Chapter VI.
STURT, Charles (1795-1869)	3	Lachlan to Darling R., Barrier Ra.	See Chapter II.
STRUTT, Wm.	1	N.W. interior.	Artist with Burke & Wills Expedition.
TAYLOR, N.	13	Mudgee	
THOZET, Anthelme (1826?-1878)	4	Port Jackson; Hastings River.	Did most of his work in Qld.
TOZER, Horatio (?) (1816-1865)	8	Hastings R., Port Macquarie.	Conducted early store and chemist's shop in Port Macquarie.
UNITED STATES EXPLOR- ING EXPEDITION (Wilkes)	21	Port Jackson; Hunter R.; Wollongong.	Visited N.S.W. late 1839. See Chapter VI.
VERNON, Wm. (1811-1890)	3	Port Jackson	Worked at Syd.Bot. Gdns. before taking charge of T. S. Mort's garden at Darling Pt.

VICARY, (Major) N (fl.1835-53)	19	Port Jackson-Blue Mts.	
WALKER, Alexander	1	Peel Range (Cocaparra Ra.)	
WALTER, Carl (1831-1907)	13	Cape Howe	Botanical collector and photographer. Came to Aust. with Baron von Huegel.
WILCOX, James Fowler (1823-1881)	119	Clarence and Hasting Rivers.	Naturalist on HMS "Rattlesnake."
WILHELMI, Carl	8	Blue Mts.; Manly Beach; Richmond.	Worked at Melb.Bot, Gdns. - returned to his native Dresden, 1865.
WILSON, -	1	Parramatta	
WOOLLS, (Rev.) Wm. (1814-1893)	506	Port Jackson-Blue Mts.; Berrima; Bathurst; Camden; Mudgee.	See Chapter VI.

APPENDIX II

ALLAN CUNNINGHAM'S LETTER TO SIR JOSEPH BANKS

1 DECEMBER 1817.

APPENDIX II. Allan Cunningham's Letter of 1 December 1817 to Sir Joseph Banks. Banks Papers, ANL, G026 (MF).

This letter, written at Parramatta, refers to an earlier letter of 20 September 1817, and continues:

"I had then the pleasure to report you my safe return from the late Western Expedition, with a fair Collection of specimens and seeds, in as good condition as the mode of conveyance and other like [?] conveniences, thro' a perfectly wild, and rather difficult Country afforded me the means of preserving...

"The early departure of the ship Harriet for England (via Cape of Good Hope) has enabled me to place under the special Care of the Captain (Jones), originals of the above Collection, pack'd in double Cases; lists referable to which I enclose [for] Mr. Aiton, to whom I write on this occasion.

"I am now exceedingly busy occupied in my outfit for the Northern Expedition, under the command of Lieut. P. King...

[Continues to outline the northern voyage plans]

"Upon the subject of my Expenses in this Country I beg leave to observe, that altho' economy has been aim'd at they have nevertheless been unavoidably very considerable.—Whatever Letters of Instructions His Excellency may have received from the Colonial Office on my account, it is sufficiently evident, they have not tended to dispose him to afford me any ordinary facility — either with a view of rendering my Expenses in the Colony the lighter, or enabling me to form my Collections of Plants with greater care, than I at present do. It is very just that during the late Expedition, I had partly the use of a Government Horse to carry my augmenting Collection as we advanced, but it is no less notoriously true, that had I not accompanied the Party, the same number of Horses would have gone, so that the animal was by [no?] means appropriated to my sole use, being for some time obliged to carry 2 cwt of flour, independent of Camp Kettles &c. — I receive a weekly victualing (sic) ration from His Majesty's Store, in common with the meanest prisoner, which at this period, and in fact for some time past has been so small, as to be insufficient for 3 Days' Meals of the Seven, so that the Expenses incurred in my temporary habitation, are but slightly reduced.—Such are the numbers of Persons that receive the like benefit from the Store, which is much affected by the great distressing Floods of February last, that it almost amounts to a Charity to take a Prisoner from the burden'd Government, hence the only servant I have occasion for at this period, can scarcely be consider'd an Indulgence! I must however acknowledge that His Excellency has hitherto condescended to allow me (upon an official application) an order upon the Superintendent of His Majesty's Lumber Yard, for the making of Packing Cases for transmitting my Plants to England, but they are, (and particularly those now sent home) of such bad condemned materials, as have obliged me to procure some Iron Hoops to bind them together and prevent them falling to pieces — It is literally a disgrace to the Issuing (sic) Officer to have allow'd such decay'd Boxes, destined (as was well-known) to contain some of the most valuable Plants of the Western Interior, to have been sent out of the Yard.

Again,

I brought down a Govern^t Horse from the mountains with my Collection, and upon my arrival at Parramatta, was requested by the Superintend. of His Majesty's Stock to return him to Government. Altho' I did not require a Horse at this time, having furnished myself with Employment for many weeks within Doors; still I was well aware of the difficulty of obtaining any assistance of this nature, when I might have required it — I wrote a letter (on Service) to the Governor, begging His Excellency would be pleased to grant me an order, warranting me to retain the Horse...with a view of assisting me in any future Botanical Excursions &c. - I rec^d His Excellencys answer refusing me this Indulgence.

[Encloses the original letter from the Governor for Banks's perusal — Cunningham would have turned the horse to grass "in a safe and convenient Paddock". He has drawn bills on "you and George Harrison, Esq^r Treasury Chambers, for £100 sterling"; accounts enclosed.]

"I have been call'd upon (for the Information of His Excellency and Lord Bathurst) for a General report of the Botany of the Western Interior, and have been induced to furnish a list of some of the most remarkable discover'd in those remote parts.

[Will send a duplicate collection either by the Chapman or Lord Elton, convict transports seeking cargo.]

"I conclude with observing, that it has been a subject of much regret to me, that ample Duplicates of my very interesting and valuable Seeds and bulbs had been collected by the several Persons (Prisoners) of the late Expedition, chiefly with a view of turning them to Cash, upon their return to Sydney, and I understand many are now in the Possession of several wealthy Individuals there, who intend to transmit them to their friends in England by the earliest opportunity; should any of the new plants of the western Interior, appear in any other Gardens besides Kew, I hope and trust, that nothing incorrect may be attach'd to me, who on all occasions, protested to Mr. Oxley our chief, against such dishonorable proceedings, but with little effect in point of checking it."

.....

The contents of this letter were apparently relayed by an informant to Governor Macquarie, who accordingly accused Cunningham of reporting to Banks that he had been uncooperative. Banks showed the letter to Earl Bathurst, who considered that this was not a letter of complaint, but merely a statement of fact. Not only does the letter account for friction between a Colonial Governor and a King's Botanist, but it indicates the kind of report which Banks received from his collectors and the difficulties they sometimes had to resolve in order to carry out their duties according to the rather stringent instructions Banks issued.

APPENDIX III.

MANNA.

APPENDIX III. Manna.

Some 50 years ago, when referring to the earliest records of the occurrence of "Australian manna", J.H. Maiden suggested that "historians might hunt the matter up."¹ What follows here is the result of such a "hunt" made as part of this botanical history.

The source of the Biblical manna of Exodus XVI and Numbers XI, "like coriander-seed, white", and tasting "like wafers made with honey", has been variously attributed to the tamarisk tree known as Manna of Mt. Sinai, Tamarix mannifera, to a leguminous shrub known as Hebrew or Persian Manna, Alhagi maurorum, and to the edible terrestrial lichen, Lecanora esculenta.²

The term "manna" is generally applied to any saccharine exudation from plants, and sometimes³ to the white, protective scales or "lerp"⁴ produced by the Psyllidae or Lerp-insects from their sugary excretion. Although I would here restrict the discussion to the "true" manna exuded directly from plants, it is by no means clear from the early records whether "lerp" or "true" plant manna was intended. The point is further complicated by the fact that it now seems definitely established that insects play the decisive role in the exudation of "true" plant manna. Theories concerning the origin of Australian manna will be considered later.

In the specific sense, the term "manna" has long been applied to the exudation of the Flowering or Manna Ash, Fraxinus ornus and the Round-leaved Flowering Ash, F. rotundifolia, natives of southern Italy and Sicily. This "official" manna of commerce has been used in medicine for centuries as a demulcent and mild purgative. The chief constituent of this manna is sweet-tasting mannitol, C₆H₁₄O₆ (formerly known as "manna sugar" or "mannite").

The sweet, manna-like exudation from the stems and leaves of certain Australian trees during the hot dry summer months, attracted the notice of the early settlers. The association of insects with the production of this manna was soon appreciated. In 1808, Colonel William Paterson reported to Banks that he had given Governor Bligh a specimen of manna which the deposed Governor would doubtless take to England. Writing from Launceston, Paterson advised that he had

1 Maiden : Forest Flora NSW, VII, (1922), p.107. Maiden made a similar suggestion about "archaeologists" doing likewise over 20 years before this. See Ag.Gaz. NSW, 1901, p.1527.

2 see for example, J. Lindley & T. Moore : The Treasury of Botany... Lond., 1876, II, pp.666, 713.

3 e.g. K.C. McKeown : Australian Insects, Syd., 1942, p.106, and A.R. Penfold & J.L. Willis : The Eucalypts, 1961, pp.150, 325.

4 the term "lerp", "laap" or "leup", meaning "sweet" was used by aborigines in the Wimmera District of Victoria to describe the lerp-scales or "lerp manna" often plentiful on the leaves of such mallee species as E.dumosa. See E.E. Morris : Austral English, Lond., 1898, pp.267-268. For some recent work on the sugary secretions of certain lerp-insects, see Ralph Basden in Proc.Linn. Soc.NSW, 1966, pp.44-46 and 1970, pp.9-10.

discovered

an insect which produces very fine manna, which has been given as that medicine and proves equally good. It is only found on the narrow-leaved eucalyptus where thousands of these insects resort to about the beginning of November and continue till January in the winged state when they deposit their eggs in the earth and die...this saccharine (sic) substance can be gathered in large quantities; I am certain upwards of twenty pounds might be procured from one tree...⁵

Paterson was probably referring to cicadas infesting the Manna, White or Ribbon Gum, E.viminalis.

In New South Wales, the most numerous and detailed reports of manna came from visitors to the highlands and western slopes. In May 1815, Surveyor George Evans reported manna near Bathurst where "several heavy showers of rain" dissolved

a white sweet substance, that lay scattered quite thick on the Ground, particularly where the Grass was burnt; some Gallons might have been picked up in a very short time. I had previously collected a little; no doubt some scientific Gentleman may be pleased to give their opinion thereon.⁶

Many a "scientific Gentleman", and many not so scientific, were to be intrigued by the nature, occurrence and possible use of this saccharine substance. By 1843 it was found that Eucalyptus manna was quite distinct from the manna of the pharmacopoeia, being chiefly composed of a sugar then called "melitose"⁷, now known as raffinose, $C_{18}H_{32}O_{16}$.⁸

Since manna had so long been used in medicine, it naturally followed that the "scientific Gentleman" most likely to be interested in this new Australian bush product was the physician. Thus Evans found a ready listener in Dr. Joseph Arnold, surgeon-superintendent of the female transport Northampton which came to Port Jackson in June 1815. Arnold gained the impression from Evans that in the Lachlan district,

most of the country was covered with a saccharine matter which resembles manna, it appears in small drops or tears of various sizes, and is of a more pleasant taste than manna.⁹

This interesting substance even found its way to Macquarie's dinner table :

5 Paterson to Banks, 29 Sept. 1808, HRNSW, VI, p.768.

6 HRA, VIII, p.613.

7 Proc.Linn.NSW, 1965, p.152.

8 for some early work on the chemical analysis of manna, see for example, G.C. Wittstein : The Organic Constituents of Plants and Vegetable Substances and their Chemical Analysis (translated and enlarged by Ferdinand von Mueller) Melb., 1878, pp.126, 129.

9 Joseph Arnold : Journal, 1810-1815, ML.C720, p.405 under entry for 13 July 1815.

Some that Mrs. Molle¹⁰ gave me to taste of, at the Governor's table, tasted very like the sugar that is sometimes covered over wedding cakes. Mr. Evans said that he thought one person might collect a gallon of it in a day, & that he used to eat a great deal of it in his travels....¹¹

Surgeon Peter Cunningham was also interested in the "species of our eucalyptus" which "produces...the finest manna...in very considerable abundance." This tree

is named by Mr. Allan Cunningham, the able botanist from Kew, the eucalyptus mannifera, and is met with in the cool regions of Argyle and Bathurst. The manna is found in flakes upon the grass, and also adhering to the branches and twigs, and several pounds may often be collected in a very short space of time.¹²

Surgeon Cunningham considered that

manna is one of the safest, and almost the only pleasant purgative we possess, and it is only its scarcity and high price that have prevented its coming into more general use. Instead of surfeiting yourself with nauseous salts, jalap, and so forth, you have only to sweeten your tea in the morning with manna, or take a paper of it by way of barley-sugar in your pocket, and turn thus the doctor's hitherto nauseous posset into an agreeable bonne-bouche.¹³

He also appreciated the economic significance of such a physic :

The wholesale price of manna is at present about 3s.6d. per pound; it was once as low as 2s.6d. and up another time at 10s.6d., but the average price is from 3s. to 4s. Here then is an excellent remunerating price for both the collector and shipper, calculated to call their attention to the procuring of this valuable medicine...¹⁴

Cunningham even saw the possibility of establishing a local manna industry on a plantation basis, "if these trees are found to produce it in sufficient quantity", for

it is by endeavouring to produce articles whereto other countries have not particularly turned their attention, that we must expect to prosper.¹⁵

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- 10 doubtless the wife of the Lieut.-Governor, George James Molle.
11 Arnold : Journal, loc.cit. Joseph Arnold (1782-1873) was befriended by Sir Thomas Stamford Raffles who, on becoming Governor of Sumatra, 1818, appointed Arnold as colonial naturalist. The two friends won a place in botanical history by discovering the remarkable parasitic plant which Robert Brown named Rafflesia arnoldi. This plant has no true stems or leaves, but consists of great fleshy flowers up to 3 feet across, the largest flowers known. Arnold died of fever on 26 July 1818 soon after this discovery.
12 Cunningham : Two Years, I, p.190.
13 op.cit., I, pp.190-191.
14 op.cit., p.191. Cunningham is here referring to the "official" Mediterranean manna; clearly he saw no difference between this and the Australian product.
15 ibid.

Yet another physician who was interested in manna was George Bennett, who on a visit to the southern highlands in December 1832, found "the peculiar saccharine mucilaginous substance called manna" beneath "the elegant drooping manna-trees (Eucalyptus mannifera)."
Bennett considered the exudation to be

quite a sweetmeat, and seems to consist of mucilage, sugar, and probably some magnesia: although it readily acts as an aperient on some persons, upon others it produces no affect; it does not dissolve in the sun, but, on the contrary, becomes dryer and of harder consistence, by exposure; rain dissolves it, but more secretion of it takes place after wet than during a continuance of dry weather.¹⁶

Another visitor to the southern highlands in the 1830s was Alexander Harris who found there

the finest specimen of manna-shedding trees I had ever met with; the tree is a species of gum, and the ground beneath the clumps was literally strewn with pieces as large as pigeons' eggs and downwards, and as white as the whitest loaf-sugar. A little of it is very nice, but much nauseates; and I have a notion, though I cannot vouch for its accuracy, that its properties are rather the reverse of the manna that is used medicinally.¹⁷

Nevertheless the manna had its uses:

When they are short of sugar, the men sometimes gather and use it in their tea. It is most palatable in tea made of the pennyroyal, which shepherds are so fond of.¹⁸

George Suttor, pioneer settler of Bathurst also used manna "to sweeten tea when sugar was scarce in the Colony." He added,

the medical men of Sydney to whom I had sent samples of it said it had all the virtues of the Manna of the Shops.¹⁹

16 Bennett: Wanderings, I, p.319.

17 Harris: Settlers and Convicts, p.136, referring to the locality then known as "Bungando" or "Bungandon", probably Bungendore.

18 ibid. Here was a true bush drink! The European Pennyroyal, Mentha pulegium, was doubtless an early introduction, but the Native Pennyroyal, M. satureioides (or one of its congeners, M. diemenica or M. australis) was probably the plant used here. See also T. W. Shepherd in The N.S.W. Medical Gazette, II, 1871-1872, p.129 : "In our rural or 'bush' pharmacy, the 'Native Penny Royal' is administered to old and young in the shape of 'tea'..." Shepherd was writing on M. satureioides.

19 George Suttor : "Notes on the Forest Trees of Australia", in Papers of Linnean Soc. of London, ML. FM 4/2699.

Some settlers were so enthusiastic about local manna that they implied that the manna used by druggists was a pseudo-product :

Some varieties of the eucalyptus exude from their leaves a sweet liquid, which, on drying, falls to the ground in small granules, some as large as a large pea, and which the colonists call 'manna', but these granules are much superior in taste to the so-called 'manna' of the chemists' shops. They are sweet like sugar, and of a pleasant almond flavour; I have gathered and eaten many of them.²⁰

In April 1837, Thomas Walker recorded that when near Yass, his party

stopped more than once to gather manna, which we found in considerable abundance under the white gum-trees... this is a concrete juice, which exudes from some species of the eucalyptus, and dropping from the leaves, is found on the ground in irregularly formed small hard masses, like a shower of various sized sugar plums. We found some pieces nearly as large as a sugared almond, and as white, but generally...much smaller. They have a pleasant sweet taste, and if eaten in quantities are, I believe, slightly laxative. We found a family of natives busy gathering and eating it, having nothing else for breakfast...²¹

Lieut.-Col. Godfrey Charles Mundy when visiting the Bathurst district in December 1846, found that

the Eucalyptus mannifera, or Flooded gum, grows in great profusion and to a majestic size. It sounds strange to English ears, -- a party of ladies and gentlemen strolling out in a summer's afternoon to gather manna in the wilderness. Yet more than once I was so employed in Australia. This substance is found in small pieces on the ground under the trees at certain seasons, or in hardened drops on...the leaves. It is snowy white when fresh, but turns brown when kept, like the chemists' drug so called, sweeter than the sweetest sugar...²²

During the 1850s William Gardner recorded "Manna Falls in New England", and he referred to one ridge in particular where "under the red,

20 Demarr : Adventures, p.111 (referring to the period 1839-1843).

21 Walker : Month in the Bush, p.15.

22 Mundy : Our Antipodes, I, p.351. There is no guarantee that Mundy's tree was that now known as E.mannifera. This botanical name was an appropriate one to bestow on any manna-producing species. For the confusion concerning the application of this name, see L.A.S.Johnson in Contrib.Nat.Herb. NSW, Vol.3, No.3, 1962, pp.105-108. It is likely that Mundy's tree was E.viminalis. The Rev. John Dunmore Lang also referred to this Bathurst manna : "From the lower side of the leaves of the white gum a substance of a whitish colour exudes in considerable quantity, and is found lying on the grass underneath the branches, in the dewy morning, like hoar-frost. It is called manna in the colony : it is of a sweetish taste, and is by no means unpleasant; but its relish reminds one too much of the medicine-chest to be particularly agreeable." Lang : Historical Account, II, p.374.

the White & the motely or speckled Gum Trees Considerable quantities may be gathered."²³

By 1860 Dr. George Bennett had concluded that "the Manna-tree of Australia" was E.viminalis²⁴, but it is clear that many of the reports of "manna-trees" on the highlands referred to the Candle Bark Gum, E.rubida, which resembles E.viminalis, and which is also known as Ribbon or Manna Gum. These appear to be the two chief manna-producing species in N.S.W., and both are found on the southern highlands and in the Bathurst district. Another closely-related manna-producing species is the White, Mottled or Cabbage Gum, E.mannifera.²⁵ This species was first named (but not published) by Allan Cunningham who found that its exudation was

frequently collected for medicinal purposes, is of a pleasant sweet taste... It dissolves immediately in water... It is frequently taken by persons at Bathurst as a pleasant purgative, so gentle in its operation that it may be administered to the tenderest infant --- the dose for a healthy adult being from 2 $\frac{1}{2}$ to 3 tablespoonsfull.²⁶

As shown, Cunningham's name had been published by his medical namesake, Peter Cunningham by 1827. In 1829 Dr. Robert Mudie published Cunningham's name again²⁷ and a little later he scientifically described E.mannifera in a paper, "Observations on some Medicinal Products of Australian Plants."²⁸ Mudie felt that the exudation of this aptly-named tree,

should it be found to suffer no injury or decomposition during the Voyage might materially reduce the price of

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- 23 Gardner : "Productions Northern NSW", UNE Archives, M20(MF). William Gardner lived at Oban, some 15 miles from Guyra where he was tutor to the Coventry family. He died at Oban, 10 Sept, 1860, aged 58. It is likely that his "red" gum was Tumble-down or Hill Red Gum, E.dealbata, or Bancroft's Gum (also known as Red or Orange Gum) E.bancroftii, or Blakely's Red Gum, E.blakelyi; the "White" gum would have been E.viminalis and/or E.rubida, both well-known manna-producing species, and "the motely or speckled Gum" could well have been E.mannifera which is still known as Mottled Gum and as Small Spotted Gum.
- 24 Bennett : Gatherings, pp.272, 362.
- 25 formerly known as E.maculosa.
- 26 from a note made by Cunningham on his specimen of the tree, now at Kew. Quoted in J.H. Maiden : A Critical Revision of the Genus Eucalyptus, Syd., 1903-1931, Part XXVI, (1916), p.112. Cunningham's unpublished Latin description was adopted in full by Mudie. Clearly the plant would be most justly known as E.mannifera A. Cunn. ex Mudie. The matter is considered in Contrib.Nat.Herb.NSW, Vol.3, No.3., 1962, p.106 where the suggestion made here is refuted.
- 27 Mudie : The Picture, p.155. The name was also published in Wm. Bland's edited version of the journals of Hume and Hovell, Bland : Journey of Discovery (1831), p.4, and in Sturt's published journal, Sturt : Two Expeditions (1834) I, p.xxxi (where it is given as "eucalyptus mammifera").
- 28 Transactions of the Medico-Botanical Soc., Lond., 1832-1833, pp.23-25. The quotations here are taken from a MS version in ML.A2133. See also Contrib.Nat.Herb.NSW, Vol.3., No.3., 1962, pp.105-108.

Manna which still retains its rank as a Medicine...From the accounts given of it, it does not appear that the Manna produced by this Eucalyptus is very different from that yielded by the Fraxinus on the coast of the Mediterranean; tho' as common report describes it, as having less of the nauseous taste, it may be less efficient as a Medicine...²⁹

To add to the uncertainty of the actual species of trees intended in these early reports, it must be noted that E.mannifera is also found in the Bathurst area, and along the highlands, and all three species, E.viminalis, E.rubida and E.mannifera look superficially alike. Manna has also been recorded as an exudation from Grey Gum, E.punctata; Spotted Gum, E.maculata; Forest Red Gum, E.tereticornis; the Lemon-scented Gum of Queensland, E.citriodora, and from the Rough-barked Apple, Angophora floribunda and the Smooth-barked Apple, A.costata.³⁰ All these "myrtaceous mannas" have been found to be distinct in composition not only from the "official" manna of medicine, but also from the "lerp manna" which is especially associated with the mallee country. However, in the far west of N.S.W., chiefly in sandy mallee country, there is the Sugarwood, Myoporum platycarpum, a small tree which exudes a manna rich in mannitol, and almost identical with the Ash manna of the Pharmacopoeia! Just as Peter Cunningham suggested the commercial production of manna from E.mannifera, in the 1820s, so have workers in our own time made a similar suggestion concerning Myoporum platycarpum.³¹

The origin of Australian manna intrigued the early workers no less than its composition and possible use. As already indicated, Colonel Paterson attributed manna production to insects and Dr. Joseph Arnold believed insects were responsible for Evans's manna :

It is equally found on the ground, stones, & plants, so that it cannot be an exudation from any vegetable; I am induced to believe it is the production of an insect of the Gryllus tribe, which is either excrementation or an article of food...³²

It is possible that Evans's manna was in fact lerp-scale, and Arnold could have been close to the truth of the matter.

Robert Mudie on the other hand was quite opposed to the "insect theory" to account for manna production :

It obviously arises from a rupture in the cortical Vessels of the Tree, produced not by the puncture of Insects but by Atmospheric action, as it is produced only in the dry season and the quantity varies with the degree and duration of the Drought. Toward the close of a long dry season it is found so abundant on the ground under the

29 ibid. It was shown later (1845) that the mannas were indeed different. Dr. Mudie is very close here to suggesting the old adage that a medicine had to be nasty to be effective!

30 Proc.Linn.Soc. NSW, 1965, p.152.

31 H.H. Hatt & W.E. Hillis in Journal of the Council of Industrial Research, 1947, p.207. See also E.E. Fisher in same Journal, 1945, p.159.

32 Arnold : Journal, ML.C720, p.405 The Gryllidae are crickets.

Trees that several pounds may be collected by one person in a few minutes, but when rain begins to fall it melts and disappears almost as rapidly as snow.³³

The amateur naturalist, Louisa Anne Meredith was also interested in manna and its origin. She maintained that it was

found upon and lying beneath the trees chosen by the locusts, in snow-white flakes, sometimes soft, and often nearly as hard as a sugar-plum, with a sweet and rather pleasant flavour; its medicinal properties being the same as those of the manna sold by druggists. Children are very fond of it, but I have never seen it in any quantity.³⁴

Mrs. Meredith recognised three theories concerning the origin of such manna : i. "that the insects made it, as bees make honey"; ii. "that it was a natural exudation from the tree, which attracted the locusts to feed on it"; iii. that the proboscises of "locusts" (i.e. cicadas) having drawn off juices from the trees, leave apertures through which exudation continues after the insects have fed.³⁵

Mundy also appreciated the problem :

Theories have been hazarded and essays published as to the origin of this singular substance; but whether it be formed by the puncture and deposit of an insect, or is the natural product of the tree, no one, I believe, can venture to assert.³⁶

Over a century later, there was still some doubt :

It is possible that eucalypt exudations always accompany an attack by leaf-hoppers...cicadas or other members of the Hemiptera, but reliable evidence has not been marshalled in support of this hypothesis.³⁷

In 1965, the hypothesis was advanced

that the manna is the result of the action of the enzymes of the saliva of insects on the sugars present in the phloem sap.³⁸

This seems to be the most satisfactory way of explaining why "manna occurs only on the site of a wound inflicted by an insect", and why wounds artificially inflicted upon the stems and leaves of trees are unproductive.³⁹ This was precisely what Dr. Benjamin Bynoe, discovered by experiment over 120 years earlier.

33 Mudie in ML. A2133.

34 Meredith : Notes and Sketches (1844), p.116.

35 op.cit., pp.116-117.

36 Mundy : Our Antipodes, I, p.352.

37 J.H. Willis in Aust. Encyc., 5, (1963), p.480.

38 Ralph Basden in Proc.Linn.Soc. NSW, 1965, p.152.

39 op.cit., p.153. "In more than 600 attempts to obtain manna by wounds artificially inflicted...not one resulted in the generation of manna."

Bynoe was medical officer to Captain J. Lort Stokes's survey expedition in HMS Beagle, 1837-1843.⁴⁰ Like other medical men, he was interested in manna formation, and his careful observations led him to the conclusion that Eucalyptus manna was produced by the activities of cicadas.⁴¹ Bynoe found that although he wounded "the tender branches with a sharp-pointed knife", he "could never obtain a saccharine fluid or substance."⁴²

The early observers were astute enough to see the entomological connection but they did not have the biochemical knowledge or techniques to enable them to determine that "lerp manna" and "tree manna" were differently produced and differently constituted, and that the phloem sap of the manna-producing trees (which belonged to several species) was different again from the manna produced, regardless of whether it was produced by insect ingestion and excretion, or by insect-initiated exudation. Only now, are we coming to the point of explaining what Paterson and other early observers knew to be a fact, namely, that manna-production and insect infestation are essentially connected.

40 Stokes himself had considered that the manna which had "the taste of a delicious sweetmeat, with an almond flavour", was a straightforward "exudation from the Eucalyptus". Stokes : Discoveries in Australia, I, pp.285-286.

41 Stokes : op.cit., II, pp.482-483.

42 op.cit., I, p.482.

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J.H. Maiden in Ag.Gaz. NSW, 1901, pp.1524-1527.

J.H. Maiden : Forest Flora NSW, VII, (1922), pp.101 et seq.

Ferdinand von Mueller : Eucalyptographia, Melb., 1879-1884, see under E.viminalis.

APPENDIX IV.

PLANTS COLLECTED DURING MITCHELL'S
FIRST THREE EXPEDITIONS, 1831-1836, AND
DESCRIBED BY DR JOHN LINDLEY AS NEW SPECIES, 1838.

SEVENTY-SIX PLANTS COLLECTED DURING MAJOR THOMAS MITCHELL'S FIRST
THREE EXPEDITIONS, 1831-1836, AND DESCRIBED BY
DR. JOHN LINDLEY AS NEW SPECIES, 1838.

Lindley's Name (1838)	Current Name (1968)	Vernacular Name
<u>Pleurandra incana</u>	<u>Hibbertia stricta</u> var. <u>canescens</u>	Guinea Flower
<u>Campylanthera eric- oides</u>	<u>Marianthus procumbens</u>	White Marianth
<u>Tetratheca ciliata</u>	<u>Tetrathecax ciliata</u>	Pink Eye
<u>Baeckia crassifolia</u>	<u>Baeckea crassifolia</u>	Desert Heath-Myrtle
<u>Baeckia alpina</u>	<u>Baeckea ramosissima</u>	Rosy Heath-Myrtle
<u>Baeckia calycina</u>	<u>Thryptomene calycina</u>	Bushy Heath-Myrtle
<u>Eucalyptus alpina</u>	<u>Eucalyptus alpina</u>	Grampians Gum or Stringybark.
<u>Genetyllis alpestris</u>	<u>Lhotzkya alpestris</u>	Snow Myrtle
<u>Loranthus quandang</u>	<u>Amyema quandang</u>	Grey or Quandong Mistletoe.
<u>Caoparis mitchelli</u>	<u>Caoparis mitchelli</u>	Wild Orange or Native Pomegranate.
<u>Pigea floribunda</u>	<u>Hybanthus floribundus</u>	Shrub Violet
<u>Hibiscus tridactylides</u>	<u>Hibiscus trionum</u>	Hibiscus
<u>Sida corrugata</u>	<u>Sida corrugata</u>	Sage Weed
<u>Sida fibulifera</u>	<u>Sida corrugata</u> var. <u>ovata</u>	Sage Weed
<u>Gyrostemon pungens</u>	<u>Codonocarpus cotinifolius</u>	Horse Radish or Mustard Tree
<u>Cryptandra tomentosa</u>	<u>Cryptandra tomentosa</u>	Prickly Cryptandra
<u>Correa leucoclada</u>	<u>Correa speciosa</u> var. <u>leucoclada</u>	Native Fuchsia
<u>Correa cordifolia</u>	<u>Correa speciosa</u>	Native Fuchsia
<u>Correa glabra</u>	<u>Correa speciosa</u> var. <u>glabra</u>	Native Fuchsia
<u>Correa rotundifolia</u>	<u>Correa alba</u> var. <u>rotundifolia</u>	Native Fuchsia
<u>Eriostemon pungens</u>	<u>Phebalium pungens</u>	Prickly Phebalium.
<u>Phebalium bilobum</u>	<u>Phebalium bilobum</u>	Phebalium.
<u>Didymeria aemula</u>	<u>Correa aemula</u>	Native Fuchsia
<u>Röpera aurantiaca</u>	<u>Zygophyllum fruticosum</u> var. <u>bilobum</u>	Twin-leaf.

<u>Pelargonium rodneyanum</u>	<u>Pelargonium rodneyanum</u>	Pelargonium, Rosy Storks-bill
<u>Trigonella suavissima</u>	<u>Trigonella suavissima</u>	Menindee or Darling Clover
<u>Psoralea patens</u>	<u>Psoralea patens</u>	Spreading Scurf-pea
<u>Psoralea tenax</u>	<u>Psoralea tenax</u>	Tough Scurf-pea
<u>Psoralea cinerea</u>	<u>Psoralea cinerea</u>	Scurf-pea
<u>Indigofera acanthocarpa</u>	<u>Glycyrrhiza acanthocarpa</u>	Wild Liquorice
<u>Daviesia pectinata</u>	<u>Daviesia pectinata</u>	Thorny Bitter-pea
<u>Daviesia brevifolia</u>	<u>Daviesia brevifolia</u>	Leafless Bitter-pea
<u>Pultenaea montana</u>	<u>Pultenaea scabra</u> var. <u>montana</u> .	Rough Bush-pea
<u>Pultenaea mollis</u>	<u>Pultenaea mollis</u>	Soft Bush-pea
<u>Bossiaea rosmarinifolia</u>	<u>Bossiaea cinerea</u>	Bossiaea or Pea-bush
<u>Dillwynia hispida</u>	<u>Dillwynia hispida</u>	Rough Parrot-pea
<u>Cassia teretifolia</u>	<u>Cassia artemesioides</u>	Silver Cassia
<u>Cassia heteroloba</u>	<u>Cassia eremophila</u>	Desert Cassia
<u>Acacia leucophylla</u>	<u>A. pendula</u>	Myall or Boree
<u>Acacia salicina</u>	<u>A. salicina</u>	Native Willow, Cooba
<u>Acacia sclerophylla</u>	<u>A. sclerophylla</u>	Hard-leaved Wattle
<u>Acacia aspera</u>	<u>A. aspera</u>	Rough Wattle
<u>Acacia farinosa</u>	<u>A. farinosa</u>	Mealy Wattle
<u>Acacia strigosa</u>	<u>A. aspera</u> var. <u>densifolia</u>	Rough Wattle
<u>Acacia exudans</u>	<u>A. verniciflua</u> var. <u>latifolia</u>	Varnish Wattle
<u>Acacia furcifera</u>	<u>A. armata</u>	Kangaroo Thorn
<u>Acacia acinacea</u>	<u>A. acinacea</u>	Gold-dust Wattle
<u>Trichinium</u> <u>alopecuroideum</u>	<u>Ptilotus alopecuroideus</u>	Pussy or Fox Tails
<u>Trichinium</u> <u>parviflorum</u>	<u>Ptilotus parviflorus</u>	"
<u>Trichinium</u> <u>sessilifolium</u>	<u>Ptilotus obovatus</u>	"
<u>Trichinium</u> <u>nobile</u>	<u>Ptilotus nobilis</u>	"
<u>Trichinium</u> <u>lanatum</u>	<u>Ptilotus obovatus</u>	"
<u>Atriplex halimoides</u>	<u>Atriplex halimoides</u>	Dwarf Saltbush

<u>Sclerolaena bicornis</u>	<u>Bassia bicornis</u>	Goathead Burr
<u>Eucarya murrayana</u>	<u>Eucarya murrayana</u> (Mitchell's name has been restored over <u>Fusanus persicarius</u> F. Muell.)	Bitter Quandong
<u>Fusanus acuminatus</u> (Listed under 'New Plants', but described by Brown in 1810)	<u>Eucarya acuminata</u>	Quandong
<u>Grevillea aquifolium</u>	<u>Grevillea aquifolium</u>	Prickly Spider Flower
<u>Grevillea variabilis</u>	<u>G. aquifolium</u>	Prickly Spider Flower
<u>Grevillea alpina</u>	<u>G. alpina</u>	Mountain Spider Flower
<u>Leucopogon cordifolius</u>	<u>Leucopogon cordifolius</u>	Beard-heath
<u>Leucopogon glacialis</u>	<u>Leucopogon glacialis</u>	Twisted Beard-heath
<u>Leucopogon rufus</u>	<u>Leucopogon rufus</u>	Rusty Beard-heath
<u>Epacris tomentosa</u>	<u>Epacris impressa</u>	Common Heath
<u>Tripetalus australasicus</u>	<u>Sambucus australasica</u>	Native Elder-berry
<u>Solanum esuriale</u>	<u>Solanum esuriale</u>	Wild Tomato, Nightshade
<u>Solanum ferocissimum</u>	<u>Solanum ferocissimum</u>	Prickly Nightshade
<u>Picris barbarorum</u> (Believed to have been introduced—if so, this must have occurred very early).	<u>Picris hieracioides</u>	Hawkweed
<u>Calostemma candidum</u>	<u>Calostemma luteum</u>	Wilcannia Lily
<u>Calostemma carneum</u>	<u>C. purpureum</u> var. <u>carneum</u>	Garland Lily (pink form)
<u>Bulbine suavis</u>	<u>Bulbine bulbosa</u>	Wild Onion; Native Leek
<u>Xerotes typhina</u>	<u>Lomandra leucocephala</u>	Woolly or White Mat-rush.
<u>Xerotes effusa</u>	<u>Lomandra effusa</u>	Scented Mat-rush
<u>Panicum laevinode</u>	<u>P. decompositum</u>	Native Millet
<u>Danthonia lappacea</u>	<u>Astrebla lappacea</u>	Curly Mitchell Grass
<u>Danthonia pectinata</u>	<u>Astrebla pectinata</u>	Barley Mitchell Grass
<u>Danthonia eriantha</u>	<u>Danthonia eriantha</u>	Wallaby Grass
<u>Eleusine marginata</u>	<u>Eleusine indica</u>	Crowsfoot Grass (Believed to have been introduced).

Reference: Mitchell: Three Expeditions, I, pp.xx-xxi. Current equivalents and vernacular names have here been added.

Lindley's names demonstrate the problems which arose when specimens, often poor or incomplete, from newly-investigated areas were referred to English botanists. In his letter to Mitchell, Lindley himself pointed to the need for complete specimens, and also for a range of intermediates, before a satisfactory identification could be made. In the list of seventy-seven species described as 'new' in Mitchell's published Journal, one was already acknowledged by Brown's name, thus reducing the number to seventy-six, of which thirty-one species have retained the names Lindley gave; nineteen species have retained Lindley's names in part after subsequent revisions, and twenty-six species—just over one-third of the total number—have lost Lindley's names either because the species had already been named, or because of fundamental revisions since Lindley's time.

See also Appendix VI.

APPENDIX V

PLANTS COLLECTED DURING STURT'S EXPEDITION INTO THE INTERIOR,
1844-1846, AND DESCRIBED BY ROBERT BROWN, 1849.

APPENDIX V Plants collected during Sturt's expedition into the interior, 1844-1846, and described by Robert Brown, 1849.

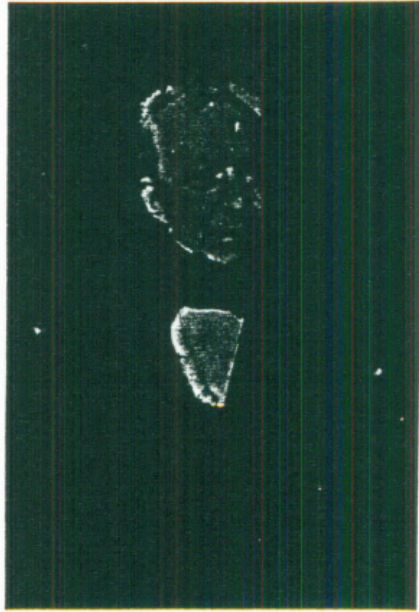
In the Botanical Appendix to Sturt's Narrative of an Expedition into Central Australia, Lond., 1849, Brown noted that Sturt and his surgeon collected "about one hundred species" of which about one-quarter were now described for the first time. Brown considered that this small collection of Sturt exceeded "the much more extensive herbarium, collected by Sir Thomas Mitchell, in his last expedition" in plants apparently representative of new genera.

It should be noted here that Professor J. B. Cleland in reviewing Alan Moorhead's Cooper's Creek has suggested that Sturt's "small acid berry" was the Native Currant, Canthium latifolium rather than the Sturt's or Berry Saltbush, Enchylaena tomentosa, as suggested here in Chapter II. (See Vic.Nat., July, 1964, p.77). This may well have been so. Regrettably neither species was attributed to this particular expedition either in Brown's list or in Flora Australiensis.

Brown's Classification	Current Classification	Vernacular Name	Locality and/or Habitat
<u>Blennodia canescens</u>	same	Cress	In low sandy areas.
<u>Sturtia gossypioides</u>	<u>Gossypium sturtianum</u>	Sturt's Rose	Creek beds in Barrier Range.
<u>Tribulus hystrix</u>	same	Caltrop	Sandhills. 26°S.
<u>Crotalaria sturtii</u>	<u>C.cunninghamii</u>	Bird-flower	Tops of sandhills 26° - 28°S.
<u>Clianthus dampieri</u>	<u>C.formosus</u>	Sturt's Desert Pea	Barrier Range.
<u>Clidanthera psoralioides</u>	<u>Glycyrrhiza acanthocarpa</u>	Wild Liquorice	Swampy areas.
<u>Swainsona grandiflora</u>	<u>S.greycana</u> ssp. <u>bracteata</u>	Darling Pea	"...rich alluvial flats of the Murray and Darling."
<u>Swainsona laxa</u>	same	Straggling Darling Pea	Not given ("Statio nulla indicata")
<u>Pentadynamis incana</u>	<u>Crotalaria dissitiflora</u>	Rattlepod	"On sand-hills with <u>Crotalaria sturtii</u> ."
<u>Cassia sturtii</u>	same	Cassia	"In sandy brushes of the Western interior."
<u>Cassia canaliculata</u>	<u>C.nemophila</u>	Cassia	Creek-beds in Barrier Range.

Brown's Classification	Current Classification	Vernacular Name	Locality and/or Habitat
<u>Cassia</u> <u>phyllodinea</u>	same	Cassia	Not given.
<u>Petalostylis</u> <u>labicheoides</u>	same	-	Creek-bed, with <u>Gossypium sturtianum</u> .
<u>Podocoma</u> <u>cuneifolia</u>	same	-	Not given.
<u>Leichhardtia</u> <u>australis</u>	same	Doubah, Native Pear	"Common on the Murray and in the interior."
<u>Jasminum</u> <u>lineare</u>	same	Desert Jasmine	Sterile regions of interior.
<u>Goodenia</u> <u>cyclontera</u>	same	Goodenia	Not given.
<u>Scaevola</u> <u>depauperata</u>	same	Fan-flower	"In salt ground... 26°S."
<u>Eremophila</u> <u>cunninghamii</u>	<u>E.oppositifolia</u>	Emu Bush	"In the sandy brushes of the low western interior, not beyond...29°S."
<u>Eremophila</u> <u>sturtii</u>	same	Turpentine Bush; Emu Bush	Darling River.
<u>Stenochilus</u> <u>maculatus</u>	<u>Eremophila</u> <u>maculata</u>	Native Fuchsia	Not given.
<u>Stenochilus</u> <u>longifolius</u>	<u>Eremophila</u> <u>longifolia</u>	Native Plum; Emu Bush	Not given.
<u>Grevillea</u> <u>sturtii</u>	<u>G.juncifolia</u>	Spider-flower	"On sand-hills... 27°S."
<u>Grevillea</u> <u>lineata</u>	<u>G.striata</u>	Beefwood	Replaces Eucalypts in creeks "about lat. 29° 30'S."
<u>Ptilotus</u> <u>latifolius</u>	same	Pussy-tails	26°S.
<u>Neurachne</u> <u>paradoxa</u>	<u>Zygochloa</u> <u>paradoxa</u>	Sandhill Cane Grass; Cane Spinifex	Not given.

TWO NOTABLE TAXONOMISTS.



ROBERT BROWN (1773-1858) an Episcopalian clergyman's son who after some medical training, joined Lieut. Matthew Flinders as botanist on the coastal surveys of Australia, undertaken in the Investigator 1801-1803. Five years after returning to England in 1805, Brown published his Prodromus Florae Novae Hollandiae which promoted A.L. de Jussieu's "natural system" of classification. Despite poor sales, this remained the chief work on the Australian flora until Bentham's Flora Australiensis appeared between 1863 and 1878. It is still a corner-stone of Australian taxonomic botany. As Banks's Librarian, 1810-1820, Brown was custodian of the immense collections which he transferred to the British Museum where they remained in his care in the new Department of Botany. Brown retained his interest in Australia, his last published work being an account of the plants collected on Charles Sturt's expedition to central Australia, 1844-1846.

Photo: c.1856, from F.W. Oliver: Makers of British Botany, Camb., 1913.

JOHN LINDLEY (1799-1865), Ph.D., F.R.S., F.L.S., a nurseryman's son who became the first Professor of Botany at London, 1829-1860. In his many published works, Lindley promoted de Jussieu's "natural system", with some modifications of his own. He served the Royal Horticultural Society in various secretarial positions, 1822-1863, and in 1838 sat with Joseph Paxton on the committee of three which enquired "into the management &c. of the Royal Gardens". As a result of this Committee's report, the control of Kew Gardens passed from the Lord Steward to the Commissioners of Woods and Forests, that is, from the Crown to the Government. Lindley described and named many Australian plants including some collected by Sir Thomas Mitchell and it was on his recommendation that Charles Moore was appointed Director of the Sydney Botanic Gardens in 1848.



Photo: c.1848 from F.W. Oliver : Makers of British Botany, Camb., 1913.

APPENDIX VI

PLANTS DESCRIBED AS NEW FROM THE COLLECTION MADE BY
SIR THOMAS MITCHELL DURING HIS TROPICAL AUSTRALIA
EXPEDITION, 1845-1846.

APPENDIX VI Plants Described as New from the Collection made by Sir Thomas Mitchell during his Tropical Australia Expedition, 1845-1846.

During his Tropical Australia expedition, 1845-1846, Mitchell collected over 350 species, which as Robert Brown pointed out, constituted a "much more extensive herbarium" than that brought back by Charles Sturt's Stony Desert expedition.¹ Of Mitchell's collection, nearly 150 species were considered new by the four botanists to whom the plants were referred. Lindley described fifty-six plants as new species; Bentham forty-one; Hooker forty; De Vriese three, and the opportunity was taken to publish six of Allan Cunningham's manuscript classifications as well. In addition, Lindley described the Queensland Bottle Tree, naming the genus Delabechea at Mitchell's request. The tree is now known as Brachychiton rupestre.

The plants described as new are here listed in the same taxonomic order as in Mitchell's published journal, but the contribution of each of the four botanists has been kept separate. Once again changes in nomenclature are clearly evident, for since Mitchell's expedition returned, further specimens, many of them "intermediates", have been discovered. Many of Mitchell's plants have accordingly been assigned to species described earlier, while in other cases the normal processes of revision have taken their toll of the names proposed.

Where possible, vernacular names have been added here, as well as revised botanical classifications. Some species are not native to New South Wales, but it seemed desirable to deal with this collection of plants as a whole rather than to divide them further. It is hoped that various misprints and discrepancies between the botanical footnotes in the body of Mitchell's journal and the "systematical list" appended to the work, have been corrected.

These plants are of particular historical interest, for John Lindley "arranged, described and presented" about 160 of them to Mitchell, who in 1852 donated them to the Australian Museum. The specimens were later transferred to the Botanic Gardens where they were unaccountably neglected by Charles Moore.²

1 See Appendix V.

2 See Botanic Gardens Papers, NSW Archives, 4/7577 and Chapter V, pp.501-503.

<u>Lindley's Classification</u>	<u>Current Classification</u>	<u>Vernacular Name</u>
<u>Anthistiria membranacea</u>	<u>Iseilema membranacea</u>	Landsborough or Barcoo Grass
<u>Chloris sclerantha</u>	<u>C.ventricosa</u>	Tall Star or Windmill Grass
<u>Chloris acicularis</u>	same	Curly Windmill Grass
<u>Danthonia triticoides</u>	<u>Astrebala lappacea</u>	Mitchell Grass

Lindley's Classification	Current Classification	Vernacular Name
<u>Pappophorum avenaceum</u>	<u>Enneapogon avenaceus</u>	Bottle-washers
<u>Pappophorum virens</u>	<u>Enneapogon nigricans</u>	Nigger-heads, Pappus Grass
<u>Pappophorum flavescens</u>	<u>Enneapogon flavescens</u>	-
<u>Stipa scabra</u>	same	Corkscrew or Spear Grass
<u>Sporobolus pallidus</u>	<u>S. caroli</u>	Yakka or Fairy Grass
<u>Pterostylis mitchelli</u>	same	Mitchell's Greenhood Orchid
<u>Meliccytus (?) oleaster</u>	<u>Denhamia oleaster</u>	-
<u>Frankenia scabra</u>	<u>F. pauciflora</u>	Sea-heath
<u>Frankenia serpyllifolia</u>	same	Thyme Sea-heath
<u>Capparis umbonata</u>	same	Caper-bush
<u>Capparis loranthifolia</u>	same	Caper-bush
<u>Comesperma sylvestris</u>	<u>C. sylvestre</u>	Milkwort
<u>Dodonaea acerosa</u>	<u>D. filifolia</u>	Native Hop, Hop-bush
<u>Dodonaea mollis</u>	<u>D. triangularis</u>	" "
<u>Dodonaea peduncularis</u>	same	" "
<u>Dodonaea pubescens</u>	<u>D. peduncularis</u>	" "
<u>Dodonaea tenuifolia</u>	same	" "
<u>Dodonaea trigona</u>	<u>D. triangularis</u>	" "
<u>Dodonaea triangularis</u>	same	" "
<u>Bursaria incana</u>	<u>B. spinosa</u> var. <u>incana</u>	Native Blackthorn
<u>Pittosporum salicinum</u>	<u>P. phylliraeoides</u>	Western Pittosporum
<u>Triphasia glauca</u>	<u>Eremocitrus glauca</u>	Desert Lime
<u>Boronia bipinnata</u>	<u>B. anemonifolia</u> var. <u>anethifolia</u>	Boronia
<u>Boronia eriantha</u>	same	Boronia
<u>Eriostemon rhombeum</u>	<u>E. difformis</u>	Wax-flower
<u>Geijera parviflora</u>	same	Wilga
<u>Geijera latifolia</u>	<u>G. salicifolia</u>	Brush Wilga
<u>Geijera pendula</u>	<u>G. parviflora</u>	Wilga
<u>Calandrinia balonensis</u>	same	Parakeelya
<u>Calandrinia pusilla</u>	<u>C. eremosa</u>	Purslane
<u>Trichinium semilanatum</u>	<u>Ptilotus exaltatus</u> var. <u>semilanatus</u>	Lamb or Pussy-tails

Lindley's Classification	Current Classification	Vernacular Name
<u>Trichinium conicum</u>	<u>Ptilotus alopecuroideus</u>	Lamb or Pussy-tails
<u>Atriplex nummularia</u>	same	Old Man Saltbush
<u>Chenopodium auricomum</u>	same	Golden Goosefoot
<u>Kochia thymifolia</u>	<u>K.brevifolia</u>	Blue-bush
<u>Kochia lanosa</u>	same	Blue-bush
<u>Kochia villosa</u>	same	Blue-bush
<u>Suaeda tamariscina</u>	<u>Kochia tamariscina</u>	Blue-bush
<u>Pimelea trichostachya</u>	same	-
<u>Elaeodendron maculosum</u>	<u>Flindersia maculosa</u>	Leopard Wood
<u>Polymeria longifolia</u>	same	-
<u>Jasminum suavissimum</u>	same	Native Jasmine
<u>Jasminum mitchellii</u>	<u>J.lineare</u>	Native Jasmine
<u>Trichodesma sericeum</u>	<u>T.zeylanicum</u> var. <u>sericeum</u>	Cattle-bush; Water-bush
<u>Brunonia simplex</u>	<u>B.australis</u>	Blue Pincushion
<u>Haloragis aspera</u>	same	Raspwort
<u>Haloragis glauca</u>	same	Raspwort
<u>Myriophyllum verrucosum</u>	same	Water Milfoil
<u>Callistemon nervosum</u>	<u>Melaleuca quinquenervia</u>	Paper-bark Tea-tree
<u>Eucalyptus melissiodorus</u>	<u>E.citriodora</u>	Lemon-scented Gum
<u>Leptospermum sericatum</u>	<u>L.attenuatum</u>	Tea-tree
<u>Melaleuca trichostachya</u>	same	Tea-tree

W. J. Hooker's Classification	Current Classification	Vernacular Name
<u>Adrianea acerifolia</u>	<u>Adriana glabrata</u> var. <u>acerifolia</u>	Bitter-bush
<u>Adrianea heterophylla</u>	<u>Adriana glabrata</u>	Bitter-bush
<u>Micrantheum triandrum</u>	<u>Phyllanthus mitchelli</u>	Spurge
<u>Keraudrenia integrifolia</u>	<u>K.hookeriana</u>	-
<u>Hibiscus sturtii</u>	same	Sturt's Hibiscus
<u>Sida frazeri</u>	<u>Abutilon fraseri</u>	Chinese Lantern
<u>Sida virgata</u>	same	Sida

W. J. Hooker's Classification	Current Classification	Vernacular Name
<u>Dodonaea filifolia</u>	same	Native Hcp; Hop Bush
<u>Dodonaea vestita</u>	same	" "
<u>Pleurandra cistoidea</u>	<u>Hibbertia stricta</u> var. <u>canescens</u>	Guinea-flower
<u>Pilothea ciliata</u>	<u>Philotheca australis</u> var. <u>parviflora</u>	-
<u>Phebalium glandulosum</u>	same	-
<u>Zieria frazeri</u>	probably <u>Z.arborescens</u>	-
<u>Conospermum sphacelatum</u>	same	-
<u>Grevillea mitchellii</u>	<u>G.chrysodendron</u>	Grevillea
<u>Grevillea juncifolia</u>	same	Desert Grevillea
<u>Grevillea longistyla</u>	same	Grevillea
<u>Hakea longicuspis</u>	<u>H.leucoptera</u>	Needlewood
<u>Hakea purpurea</u>	same	Needlewood
<u>Ventilago viminalis</u>	same	Supple Jack
<u>Catha cunninghamii</u>	<u>Maytenus cunninghamii</u>	-
<u>Logania cordifolia</u>	same	-
<u>Calotis scapigera</u>	same	Tufted Burr-daisy
<u>Calocephalus</u> <u>gnaphalioides</u>	<u>Helipterum moschatum</u>	Musk Sunray
<u>Eurybia subspicata</u>	<u>Olearia subspicata</u>	Daisy-bush
<u>Ethulia cunninghami</u>	<u>Epaltes cunninghamii</u>	Daisy-bush
<u>Flaveria australasica</u>	same	Daisy-bush
<u>Helichrysum ramosissimum</u>	<u>H.apiculatum</u> var. <u>minor</u>	Everlasting Daisy
<u>Helipteres glutinosa</u>	<u>Helichrysum elatum</u> var. <u>glutinosum</u>	Everlasting Daisy
<u>Myriogyne racemosa</u>	<u>Centipeda racemosa</u>	Sneeze-weed
<u>Rutidosis archnoidea</u>	<u>Podolepis arachnoidea</u>	Yellow Daisy-bush
<u>Eucalyptus acuminatus</u>	<u>E.camaldulensis</u> var. <u>acuminata</u>	River Red Gum
<u>Eucalyptus citriodorus</u>	<u>E.citriodora</u>	Lemon-scented Gum
<u>Eucalyptus populifolius</u>	<u>E.populnea</u>	Bimble Box
<u>Eucalyptus viminalis</u>	<u>E.tessellaris</u>	Carbeen
<u>Melaleuca tamariscina</u>	same	Tea-tree

W. J. Hooker's Classification	Current Classification	Vernacular Name
<u>Tristania angustifolia</u>	<u>Lysicarpus ternifolius</u>	Tom Russell's Mahogany or Mountain Oak
<u>Canthium oleifolium</u>	same	Wild Lemon
<u>Loranthus linearifolius</u>	<u>Lysiana linearifolia</u>	Mistletoe
<u>Loranthus subfalcatu</u>	<u>Lysiana subfalcata</u>	Mistletoe

Allan Cunningham's Classification	Current Classification	Vernacular Name
<u>Euphorbia eremophila</u>	same	Desert Spurge
<u>Sida filiformis</u>	<u>S. corrugata</u>	Corrugated Sida
<u>Sida tubulosa</u>	<u>Abutilon tubulosum</u>	Chinese Lantern
<u>Cassia coronilloides</u>	<u>C. australis</u>	Cassia
<u>Loranthus nutans</u>	<u>Anyema quandang</u>	Mistletoe
<u>Loranthus aurantiacus</u>	<u>Anyema miquelii</u>	Mistletoe

De Vriese's Classification	Current Classification	Vernacular Name
<u>Goodenia flagellifera</u>	<u>G. glabra</u>	Goodenia
<u>Linshotenia bicolor</u>	<u>Dampiera linschotenii</u>	-
<u>Velleia macrocalyx</u>	<u>Velleia macrocalyx</u>	-

Bentham's Classification	Current Classification	Vernacular Name
<u>Acacia excelsa</u>	same	Ironwood
<u>Acacia longispicata</u>	<u>A. cunninghamii</u> var. <u>longispicata</u>	Wattle
<u>Acacia macradenia</u>	same	Wattle
<u>Acacia pinifolia</u>	<u>A. juncifolia</u>	Wattle
<u>Acacia varians</u>	<u>A. salicina</u>	Native Willow; Cooba
<u>Acacia victoriae</u>	same	Prickly Wattle; Pin Bush
<u>Acacia uncifera</u>	same	Wattle

Bentham's Classification	Current Classification	Vernacular Name
<u>Aotus mollis</u>	same	-
<u>Bossiaea carinalis</u>	same	Pea-bush
<u>Cassia circinata</u>	same	Cassia
<u>Cassia zygomphyla</u>	<u>C.nemophila</u> var. <u>zygomphyla</u>	Cassia
<u>Crotalaria dissitiflora</u>	same	Rattle-pod; Bird Flower
<u>Crotalaria mitchellii</u>	same	Rattle-pod; Bird Flower
<u>Cyclogyne swainsonioides</u>	<u>Swainsona</u> <u>swainsonioides</u>	Swainson or Darling Pea
<u>Daviesia filipes</u>	same	Pea-bush; Bitter Pea
<u>Erythrina vespertilio</u>	same	Coral Tree
<u>Gompholobium foliosum</u>	<u>Burtonia foliosa</u>	Pea-bush
<u>Hovea leiocarpa</u>	same	Hovea
<u>Indigofera brevidens</u>	same	Native Indigo
<u>Jacksonia ramosissima</u>	same	Pea-bush
<u>Kennedya procurrens</u>	<u>Kennedia procurrens</u>	-
<u>Labichea rupestris</u>	same	-
<u>Labichea digitata</u>	<u>L.rupestris</u>	-
<u>Leptocyanus latifolius</u>	<u>Glycine tabacina</u> var. <u>latifolia</u>	-
<u>Lotus laevigatus</u>	<u>L.australis</u>	Australian Trefoil
<u>Lotus australis</u> var. <u>pubescens</u>	<u>L.coccineus</u>	Australian Trefoil
<u>Psoralea eriantha</u>	same	-
<u>Swainsona phacoides</u>	same	Swainson or Darling Pea
<u>Vigna lanceolata</u>	same	Pea-bush; 'Yam'
<u>Vigna suberecta</u>	<u>V.lanceolata</u>	Pea-bush; 'Yam'
<u>Mentha grandiflora</u>	same	Native Mint; Pennyroyal
<u>Prostanthera odoratissima</u>	same	Mint-bush
<u>Prostanthera ringens</u>	same	Mint-bush
<u>Prostanthera euphrasioides</u>	same	Mint-bush
<u>Myoporum dulce</u>	<u>M.deserti</u>	Dogwood
<u>Eremophila mitchelli</u>	same	Budda
<u>Stenochilus pubiflorus</u>	<u>Eremophila longifolia</u>	Emu Bush
<u>Stenochilus salicinus</u>	<u>Eremophila longifolia</u>	Emu Bush
<u>Stenochilus curvipes</u>	<u>Eremophila maculata</u>	Native Fuchsia

Bentham's Classification	Current Classification	Vernacular Name
<u>Stenochilus</u> <u>bignoniaeflorus</u>	<u>Eremophila bignoniflora</u>	Emu Bush
<u>Morgania floribunda</u>	<u>M.glabra</u> var. <u>floribunda</u>	Blue-top

APPENDIX VII

WILLIAM STEPHENSON, M.R.C.S.,
Surgeon and Naturalist

WILLIAM STEPHENSON, M.R.C.S.

Surgeon and Naturalist

William Stephenson was born about 1790, and was living at Kendal, Westmoreland when he became a Member of the Royal College of Surgeons on 4 March 1814. College calendars record this address until 1821. He is said to have been an army medical officer, receiving a wound which obliged him to ride side-saddle thereafter. He had been in India and China before coming to Australia about 1839. Having served as surgeon and naturalist with Sir Thomas Mitchell's expedition, 1845-1846, he was registered as a medical practitioner in New South Wales on 1 January 1848. He was then living at Port Macquarie. Thereafter he apparently went to the Richmond River, and about 1853 to the Manning River, where he lived for the last ten years of his life at Cundletown, Chatham and Taree. He died from anasarca¹ complicated by severe bronchitis in the home of his friends the Whitbreads at Taree on 24 September 1863, aged 73.

Prolonged enquiries made in 1949-1951, and a search of old Manning River cemeteries, failed to reveal registration of his death, place of burial or grave monument, but it is likely that he was interred in the old Taree Estate Cemetery in an unmarked grave. The few brief glimpses we have of Stephenson in reminiscences and press notices, indicate that he was considered "a fine old fellow", who was "highly respected", given to riding side-saddle on his black pony, and to practising his "peculiar habit of whistling 'in season and out of season'".² He submitted gutta percha from "Ficus ferruginea" (= Ficus rubiginosa?) barks and fibres from Eucalyptus, a cone of Macrozamia, "smut of wheat said to excel sepia as a pigment" and other items to the Paris Exhibition of 1855, and won "Honourable Mention."³ Nikolai S. Turczaninow (1796-1864) a Russian botanist, dedicated Trachymene stephensonii to the surgeon-naturalist in 1847; Bentham reclassified the plant as Siebera stephensonii in 1866, mentioning that the specimen

1 General dropsy.

2 J. H. Maiden in Proc. Roy. Soc. NSW, 1908, p.122.

3 Paris Universal Exhibition, 1855: Catalogue of Works Exhibited in the British Section... Lond., 1855, p.126.

was No.284 in the Stephenson collection, and found "within 125 miles of Sydney";⁴ this umbelliferous plant is now known as Platysace stephensonii.

The following newspaper reports of the unhappy larceny charge over natural history specimens tend to reveal more of Mitchell's vindictiveness than of Stephenson's avarice. It is unfortunate that the initial hearing was held in camera, and that the subsequent trial was not fully reported, for the reasons given by the reporter himself. It is interesting, if not significant, that Bentham acknowledged Stephenson only once in Flora Australiensis, whereas Mitchell was acknowledged no less than 113 times as collector of N.S.W. species.⁵ The name of John Richardson, another collector with Mitchell, does not appear at all. On the other hand, it must be acknowledged that Mitchell himself was a rather keen and discerning collector.

Sydney Morning Herald, 2 Feb. 1847.

"Committal for Larceny.—Mr. William Stephenson, surgeon and naturalist to the late exploring expedition under Sir Thomas Mitchell, was yesterday committed to take his trial on a charge of larceny, by stealing some preserved birds, insects, and dried specimens of plants, collected during the expedition, and claimed as the property of the Government. The charge was preferred by Mr. Drysdale, storekeeper to the expedition. As the case was heard in a private room we know nothing of the merits of the case further than what could be gleaned out of doors, which was to the following effect: that Mr. Drysdale, in common with the other individuals belonging to the party, agreed to give up whatever specimens they might collect, and that the defendant had collected the specimens referred to, and had subsequently refused to surrender them; in consequence of which the charge of larceny was preferred against him, the property having been previously found by executing a search warrant in the defendant's lodgings in the Royal Hotel, where the articles were found in the defendant's presence, who afforded the officer holding the search warrant every facility in putting the same into force. After being committed the defendant was allowed to be at large on the usual bail of £80, with sureties in £40 each."

4 Benth.: Fl.Aust., III, p.357.

5 See Appendix I.

Sydney Morning Herald, 5 March 1847.

"Larceny

William Stephenson, late of Sydney, surgeon, was indicated for having stolen a number of specimens of natural history, the property of Her Majesty the Queen. The information contained several counts, in which the property alleged to be stolen was variously described, as well as the offence itself; the intent of this variation being to bring the alleged offence either within the colonial laws or within the British statute, by which it is made penal for public servants to appropriate anything coming under their charge in the ordinary course of their occupation.

The case for the Crown was conducted by the Attorney-General; and the prisoner, who pleaded not guilty, was defended by Mr. Holroyd. Mr. Stephenson, had it appeared, been attached as surgeon (sic) and naturalist to the late exploring expedition, commanded by Sir Thomas Mitchell who was the principal witness for the prosecution. According to the evidence of Sir Thomas Mitchell, the prisoner had entered into the engagement upon the express understanding that all the specimens of natural history collected by him should be considered as the property of the public; for although he had offered to consider as remuneration the permission to collect duplicate specimens, this permission had been refused by the late Governor. During the journey specimens of animals and plants were collected both by the prisoner and by other persons attached to the expedition, but the prisoner had the general charge of those specimens as naturalist. Towards the termination of the journey, the collections were given up to Sir Thomas Mitchell, but no complete list of the specimens were made out, this being reserved at the prisoner's request until he should reach Sydney. After the expedition had terminated, the prisoner was applied to by Sir Thomas Mitchell to assist in the arrangement of the specimens, but Sir Thomas himself postponed two appointments made for that purpose, and as each party accused the other of a want of courtesy, some notes passed between them, in the last of which Sir Thomas declined further communication with Mr. Stephenson. This was about three weeks after the prisoner's return, and immediately after writing the note, Sir Thomas caused measures to be taken, in consequence of which the prisoner was two days afterwards apprehended. On searching the bed-room of the prisoner at the Royal Hotel, some cases of insects and a number of botanical specimens were discovered, and it was stated by Mr. M'Leay, who had examined both this collection and those handed over to Sir Thomas Mitchell, that the former contained many new species of which the latter possessed no specimens. The wrappers with which many of the specimens were enveloped were inscribed with the names of the places where they had been collected, and the date of collection, in a hand writing believed to be that of Mr. Stephenson, and many of the insects were said by Mr. M'Leay to be such as might probably have been collected in the regions traversed by the expedition. It appeared, however, that the prisoner had not attempted any concealment at the time of the search, and although the instructions of Sir Thomas Mitchell had been communicated to him by the latter, his attention was not particularly drawn during the journey to the circumstance that he must not collect specimens for himself.

The case for the Crown having been closed, Mr. Holroyd took a number of legal objections to the information which his Honor agreed to reserve for the opinion of the full Court. The learned gentleman then proceeded to address the Jury at considerable length, pointing out the absence of any proof of a direct intention on the part of Mr. Stephenson, and the many indications shown by Sir Thomas Mitchell of an unfriendly feeling towards that person. Several witnesses were likewise called, who gave the prisoner a high character for honesty and integrity.

His Honor briefly summed up, giving to the Jury a statement of the facts, and directing them to find upon those facts whether the prisoner had or had not been guilty of stealing the articles mentioned in the information, or any portion of them.

The Jury, without leaving the box, found a verdict of not guilty, and the prisoner was discharged."

....

"(The latter case would have been reported more fully but in the small court room where it was held, there is no accommodation for the press. A reporter has no place to sit and take notes, nor can he even stand in a position to hear and see what passes without being in the way of the counsel or the jury.)"

On 17 May 1847 the offending material was, "by order of the Governor, handed over, as public property" to the Committee of Management of the Australian Museum and Botanic Garden. In addition to insect and other zoological specimens, Stephenson's surrendered collection included

"476 specimens of dried plants
27 Bulbs & Tubers
164 Packages of Seeds."

The Committee agreed to return a silk handkerchief "and other small articles,"⁶ but the natural history material was retained.

References: NSW Govt. Gazette, 1848-1863.
SMH, 9 and 21 Oct. 1863.
John Allen: Peeps into the Past, Chronicle Office,
Wingham, 1928.
L. A. Gilbert et al: Correspondence in The Northern
Champion, Taree, Nov. 1951.
Records of the Royal College of Surgeons, London.

⁶ Minute Book I, 1336-1863, (Aust.Mus.Lib.), minute of 17 May 1847.