



Nomenclature and typification of several pre-1958 names in *Trymalium* revisited (Rhamnaceae: Pomaderreae)

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Abstract: The typification of six taxa of *Trymalium* Fenzl is reviewed. Lectotypes are designated for *T. angustifolium* Reissek, *T. daphnifolium* Reissek, *T. ledifolium* var. *rosmarinifolium* (Steud.) Benth. (basynonym: *Pomaderris rosmarinifolia* Steud.) and *T. odoratissimum* Lindl., as well as for the heterotypic synonyms *Cryptandra anomala* Steud., *C. floribunda* Steud., *C. glaucophylla* Steud., *P. westringiifolia* Steud., *T. billardierei* var. *tomentoso-hirsutum* Fenzl, *T. floribundum* Steud. and *T. ledifolium* var. *obovatum* Benth. Three names published for plants cultivated in Paris in the 1840s (*Trymalium albidum* Jacques, *T. candidum* Neumann and *T. incanum* J.F.Cels & A.Cels) are discussed and are tentatively referred to *T. odoratissimum* Lindl. subsp. *odoratissimum*.

Keywords: Nomenclature, typification, Rhamnaceae, Pomaderreae, *Trymalium*, cultivated plants

Introduction

Trymalium Fenzl is one of the smaller genera of Rhamnaceae in Australia, with twelve species distributed in south-western Western Australia and one species occurring in South Australia. Two species found in the Grampians, Victoria, were transferred to *Spyridium* by Kellermann (2006).

The typification of several species of *Trymalium* was reviewed by Kellermann *et al.* (2008). These authors indicated a “holotype” for many accepted taxa and their synonyms, but, as McNeill (2014) and Mosyakin *et al.* (2019) have pointed out, holotypes for names published before 1958 only exist in very few instances. In most cases, it is recommended that a lectotype should be chosen. This advice is followed here and lectotypifications are published for most of the remaining names.

Kellermann *et al.* (2008) selected a lectotype of *Trymalium urceolare* (F.Muell.) Benth. and *T. wayi* F.Muell. & Tate, as well as a neotype of *T. litorale* (Diels) Domin. *Trymalium spatulatum* (Labill.) G.Don was lectotypified in a separate paper (Kellermann 2021b).

For names published by Steudel (1845) in *Plantae Preissianae*, Kellermann *et al.* (2008) usually indicated that the “holotype” was in LD, where Preiss’ standard reference set is located (Crisp 1983; Orchard 1999). However, Steudel’s own herbarium, which contains duplicates of Preiss’ collections, is at P and the specimens there are usually annotated by Steudel; as such, some of these are chosen here as lectotypes of his names. In other

words, some of the “holotypes” listed in Kellermann *et al.* (2008) are here re-visited, but deliberately not chosen as lectotypes in favour of Steudel’s specimens at P. Since Kellermann *et al.* (2008) was published after 1 January 2001 their indications of a “holotype” do not constitute inadvertent lectotypifications (Art. 9.10; Turland *et al.* 2018), as from that date the phrase “here designated” was required to effect lectotypification of names.

Reissek (1848) published a synopsis of Western Australian Rhamnaceae in the Appendix for *Plantae Preissianae*, in which many of the taxa described by Steudel (1845) were revised or synonymised with other species – seemingly because Steudel’s treatment of the family was not considered rigorous enough. Reissek also had more herbarium material available to him.

The following species and infraspecific taxa were described more recently by Rye (1995, 1996, 2000) and their typifications do not need to be reviewed: *Trymalium densiflorum* Rye, *T. elachophyllum* Rye, *T. ledifolium* var. *lineare* Rye, *T. monospermum* Rye, *T. myrtillus* subsp. *pungens* Rye, *T. odoratissimum* subsp. *trifidum* (Rye) Kellermann, Rye & K.R.Thiele (as *T. floribundum* subsp. *trifidum* Rye) and *T. venustum* Rye.

In this paper, type specimens that were examined in person are indicated with an exclamation mark (!). Digital images of all other specimens were viewed online at JSTOR Global Plants (JSTOR 2021) or other herbarium websites. Photos of specimens at CGE taken by J. Wege during a visit to that institution were also examined. Specimens that have not been seen in person or as an image are indicated by “*n.v.*”.

Nomenclature

Trymalium angustifolium Reissek

in Lehm., *Pl. Preiss.* 2: 284–285 (1848). — *Cryptandra angustifolia* (Reissek) F.Muell., *Syst. Census Austral. Pl.* 60 (1882). — **Type citation:** “Ad fl. Cygnorum (Drummond!).” **Lectotype (here designated):** Swan River, 1838, *J. Drummond s.n.* (W0046836, top specimen, accessioned 1840). **Residual syntype:** “Nov. Holl. austr. occ.” [south-western Australia], *J. Drummond 719* (W0046836, bottom three branches, accessioned 1844, the middle branch with label: “Ist von Steud[el] nicht beschrieb[en] im I vol”, i.e. “Was not described by Steudel in Vol. 1”). **Possible syntypes:** Swan River, *J. Drummond 719* (K00034029!, ex Herb. Saunders; P06831709, ex BM); W. Australia, *J. Drummond 719* (P06831709); Swan River, *J. Drummond 143* (K000349025!, ex Herb. Hooker); Swan River, *J. Drummond s.n.* (CGE; G ×3, photo at MEL; K000349026!, ex Herb. Hooker; K000349027!, ex Herb. Hooker, mounted on same sheet as K000349026; K000349028!, ex Herb. Saunders; MEL 56053!); Swan River, 1839, *J. Drummond s.n.* (CGE; K000349024!, ex Herb. Bentham); W.A., *J. Drummond s.n.* (MEL 56052!); Swan River, *J. Drummond 3* (E00770103).

Typification. As Reissek (1848) only provided very general collecting details, there are several specimens that are potentially original material. The type sheet at W, where Reissek worked, contains two *Drummond* collections: The top specimen is selected above as lectotype, as the branch label corresponds to the protologue (“fl. Cygnorum” = “Swan River”); the bottom collection has three branches and a less specific collection locality. It also includes an annotation that the specimen had not been described in Steudel’s (1845) Rhamnaceae treatment.

Note. *Trymalium angustifolium* is endemic to south-west Western Australia, from Mt Lesueur along the Darling Range to near Wandering, generally in jarrah (*Eucalyptus marginata*) and wandoo (*E. wandoo*) forests and woodlands on lateritic soils.

Trymalium daphnifolium Reissek

in Lehm., *Pl. Preiss.* 2: 283–284 (1848). — *Trymalium ledifolium* var. *daphnifolium* (Reissek) Benth., *Fl. Austral.* 1: 424 (1863). — **Type citation:** “Ad fl. Cygnorum (Drummond!).” **Lectotype (here designated):** Swan River, *J. Drummond s.n.* (W0046833, specimen on right-hand side). **Remaining syntype:** Australasia austr. occid., *J. Drummond s.n.* (W0046833, specimen on left, fruiting). **Possible syntypes:** Swan River to Cape Riche, *J. Drummond 5: 237* (K349032!; P0676665); Swan River, *J. Drummond 237* (?LD1097165 *n.v.*); Swan River, W.A., *J. Drummond s.n.* [“with no. 720”] (K349035!, ex Herb. Saunders); Swan River, *J. Drummond s.n.* [“No. 720 or 237?”] (K349034!); Swan River, *J. Drummond s.n.* (K349031!; K349033); W.A., *J. Drummond s.n.* (MEL56126!; MEL76340!; MEL 76341!).

Typification. As for the lectotype of Reissek’s *Trymalium angustifolium* selected above, the type sheet for *T. daphnifolium* at W also contains two collections, both of them by James Drummond. The specimen on the right-hand side includes flowering material and is designated in this paper as the lectotype of the name. There are many duplicates of Drummond collections available in other herbaria, which are all possible syntypes. It is not clear, which collecting number is associated with the type, 237 or 720.

Note. The species occurs in south-west Western Australia, between Geraldton and Hyden, with an isolated record near Ravensthorpe, in woodlands and shrublands on sandy and loamy soils.

Trymalium ledifolium Fenzl

in Endl. *et al.*, *Enum. Pl.* 24 (1837). — **Type citation:** “King Georges Sound. (Hügel.)” **Holotype:** King George’s Sound [but probably collected in the vicinity of Perth], *K.A.A. von Hügel s.n.* (W1996-0008124).

Cryptandra floribunda Steud. in Lehm., *Pl. Preiss.* 1: 186–187 (1845). — **Type citation:** “In limosis ad fluvium Cygnorum Juli 1839. Herb. Preiss. No. 1675.” **Lectotype (here designated):** In solo limoso ad fl. Cygnorum prope praedium rusticum D. Gregory et in valle cataractae, 1 July 1839, *L. Preiss 1675* (LD1068175, determined by Steudel & Reissek). **Isolectotypes:** In solo limoso ad fl. Cygnorum prope praedium rusticum D. Gregory et in valle cataractae, 1 July 1839, *L. Preiss 1675* (P06766663, ex Herb. Steudel; W1889-0316770, ex Herb. Reichenbach); In limosis ad fluvium Cygnorum, July 1839, *L. Preiss 1675* (HBG510060; P06766659, ex Herb. Drake; P06766662, ex Herb. Cosson & de Franqueville); In Nova Hollandia, Swan River Colonia, ad flumen Cygnorum in limosis, *L. Preiss 1675* (MEL56117!, ex Herb. Sonder); N. Holl – Riv. Des Cygnes, *L. Preiss 1675* (P06766648); “Fl. Cyc.” [Flumen Cygnorum], *L. Preiss 1675* (K000732058, ex Herb. Reichenbach & Hooker, left specimen); “Sw. ri.” [Swan River], *L. Preiss 1675* (K000732058, ex Herb. Hooker, right specimen); Nov. Holland. occ. austr., *L. Preiss 1675* (M0217862!); Nuova Ollanda, *L. Preiss 1675* (FI010478, “Com: dal Sig:^{re} Preiss in Febb:^{io} 1846”); Australasia, *L. Preiss 1675* (W1996-0008125); *s.loc.*, *L. Preiss 1675* (BR0000013468248; L2327509; P 06831834, ex Herb. Lenormand; S11-13081, ex Herb. Lehmann).

Trymalium ledifolium Fenzl var. *ledifolium*: Benth., *Fl. Austral.* 1: 424 (1863).

Typification. Only one specimen of Hügel’s collection of *Trymalium ledifolium* from Western Australia is known to exist; as such, this specimen at W is accepted as holotype of the name. The incorrect location on the label is discussed in Kellermann *et al.* (2008).

Preiss’ specimens are distributed in many herbarium collections. The specimen of *Cryptandra floribunda* from the Preiss Herbarium at LD is designated above

as the lectotype. It is a well-preserved flowering branch, has an original collecting label and was determined by Steudel as *C. floribunda* and by Reissek as *Trymalium ledifolium*. There is a specimen from the *Preiss 1675* gathering in Steudel's personal herbarium at P; however, it was not determined by him as *C. floribunda*.

Note. The typical variety of *Trymalium ledifolium* grows along the Western Australian coast from north of Green Head south to near Bunbury, in heathlands and shrublands on limestone and calcareous dunes.

***Trymalium ledifolium* var. *rosmarinifolium* (Steud.) Benth.**

Fl. Austral. 1: 424 (1863). — *Pomaderris rosmarinifolia* Steud. in Lehm., *Pl. Preiss.* 1: 184–185 (1845). — *Trymalium rosmarinifolium* (Steud.) Reissek in Lehm., *Pl. Preiss.* 2: 283 (1848). — **Type citation:** “In calcareis fruticosis ad tergum montis Baldhead 16 Oct. 1840. Herb. Preiss. No. 1674.” **Lectotype (here designated):** In calcareis inter frutices ad tergum montis “Baldhead” (Plantagenet), 16 Oct. 1840, *L. Preiss 1674* (LD1068303, determined by Steudel & Reissek). **Isolectotypes:** In nova Hollandia, Swan River Colonia, ad tergum montis Baldhead, *L. Preiss 1674* (MEL56115!), ex Herb. Sonder); In calcareis inter frutices ad tergum montis Baldhead (Plantagenet), 16 Oct. 1840, *L. Preiss 1674* (MEL56119!; P06766673, ex Herb. Steudel); N. Holl. – Riv. Des Cygnes, *L. Preiss 1674* (P06766646); Australia, 16 Oct. 1840, *L. Preiss 1674* (MO357435); Australasia, *L. Preiss 1674* (W0046831); *s. loc.*, *L. Preiss 1674* (L2327510; S11-13080; W1889-0316771, ex Herb. Reichenbach).

Pomaderris westringiifolia Steud. in Lehm., *Pl. Preiss.* 1: 185 (1845), as “*westringiaefolia*”. — *Trymalium*

westringiifolium (Steud.) Reissek in Lehm., *Pl. Preiss.* 2: 284 (1848), as “*westringiaefolium*”. — *Spyridium westringiifolium* (Steud.) Benth, *Fl. Austral.* 1: 431 (1863), as “*westringiaefolium*”. — *Cryptandra westringiifolia* (Steud.) F.Muell., *Syst. Cens. Austral. Pl.* 61 (1884), as “*westringifolia*”. — **Type citation:** “In planitie clivuli calcarei Arthur'shead [sic] 23 Aug. 1839. Herb. Preiss. No. 1686.” **Lectotype (here designated):** In planitie clivuli calcarei Arthur'shead, 23 Aug. 1839, *L. Preiss 1686* (LD1068367, determined by Steudel & Reissek). **Isolectotype:** In planitie clivuli calcarei Arthur'shead, 23 Aug. 1839, *L. Preiss 1686* (MEL227039!).

Cryptandra anomala Steud. in Lehm., *Pl. Preiss.* 1: 187 (1845). — **Type citation:** “In N. Holl. occ.-austr. Herb. Preiss. No. 1685”. **Lectotype (here designated):** In N. Holl. occ. austr., Nov. 1840, *L. Preiss 1685* (P06766664, specimen with flowers and early fruit, ex Herb. Steudel). **Isolectotypes:** In Nova Hollandia australi-occidentali (Swan River Colonia), *L. Preiss 1685* (MEL56120!, flowers and early fruit, ex Herb. Sonder); In reg. int. Austr. mer.-occid., Nov. 1840, *L. Preiss 1685* (LD1010814, determined by Steudel & Reissek, sterile specimen). **Possible isolectotype:** *s. loc.*, *L. Preiss 1685* (MEL56116A!, sterile specimen on left hand side).

Cryptandra glaucophylla Steud. in Lehm., *Pl. Preiss.* 1: 187 (1845). — **Type citation:** “In asperis montis Greenmountain 27 Jul. 1839. Herb. Preiss. No. 1684.” **Lectotype (here designated):** In asperis montis Greenmountain, N. Holl. occ. austr., *L. Preiss 1684* (P06766658, ex Herb. Steudel). **Isolectotypes:** In asperis montis Greenmountain, 27 July 1839, *L. Preiss 1684* (MEL56118!); In asperis montis “Greenmountain”, 27 July 1839, *L. Preiss 1684* (LD1068239, determined by Steudel & Reissek).



Fig. 1. *Trymalium ledifolium* var. *rosmarinifolium* at Boonarraring Brook Reserve, north of Gingin (Western Australia). **A** Young shrub growing in eucalypt woodland; **B** inflorescence. — J. Kellermann 180 (AD). Photos: J. Kellermann.

Typification. *Pomaderris rosmarinifolia* and *P. westringiifolia* are both lectotypified by specimens in LD, which were annotated by Steudel and Reissek. For *Cryptandra anomala* and *C. glaucophylla* the lectotypes are instead chosen from Steudel's herbarium in P; in contrast to the LD material for these two species, the lectotype of *C. anomala* is better preserved and in flower, while that of *C. glaucophylla* is much larger.

Note. *Trymalium ledifolium* var. *rosmarinifolium* (Fig. 1) occurs in south-west Western Australia and extends from near Badgingarra south along the Darling Range to Cape Leeuwin, Albany and the Stirling Range, in woodlands and forests on clays, loams and sandy soils, particularly over laterite.

Trymalium myrtillus S.Moore

J. Linn. Soc., Bot. 34: 183–184 (1899). — **Type citation:** “Viget prope Coolgardie, ubi mens. Aug. floret.” **Holotype:** “Shrub 4 feet high / yellowish white flowers”, Near Coolgardie, Western Australian Goldfields, Aug. 1895, *S. Moore s.n.* (BM001014733). **Isotypes:** K000732054 (with detailed drawing of flower); NY00415075.

Trymalium myrtillus S.Moore subsp. *myrtillus*: *Rye, Nuytsia* 11: 110 (1996).

Typification. Moore (1899: 177) stated in the introduction of his account of plants collected in the interior of Western Australia that “[T]he first set of plants [...] is at the British Museum” and that “second and third sets” have been sent to “Columbia College, New York” (now incorporated into NY) and to K, respectively. As the author definitely indicated where the primary set of specimens is located, the specimen at BM is here accepted as holotype (see McNeill 2014; Mosyakin *et al.* 2019).

Note. *Trymalium myrtillus* subsp. *myrtillus* is endemic to south-west Western Australia, in woodland and mallee shrubland, often on granite, between the Die Hardy Range, Lake Grace, Bremer Bay and Balladonia.

Trymalium odoratissimum Lindl.

Edwards's Bot. Reg. 24: Misc. 26 (1838). — **Type citation:** “The species [...] was introduced from Swan River by R. Mangles, Esq. by whom a plant in flower was presented to the Horticultural Society of London in February 1838”. **Lectotype (here designated):** Sheet with no indication of location, date or collector at CGE (ex Herb. Lindley), illustrated in Kellermann, Rye & K.R.Thiele, *Trans. Roy. Soc. S. Austral.* 132: 21, Fig. 1 (2008). **Possible syntype:** “specimen in Anglia cultum” (MEL56077!).

Trymalium billardierei var. [β] *tomentoso-hirsutum* Fenzl in *Endl. et al., Enum. Pl.* 25 (1837), as “*Billardieri*” and “*tomentoso-hirsuta*”. — *Trymalium billardierei* var. [β] *calvescens* Reissek in *Lehm., Pl. Preiss.* 2: 282 (1848), *nom. superfl. & illeg.*, as “*Billardieri*” — *Spyridium spadiceum* var. *calvescens* Benth., *Fl. Austral.* 1: 282

(1863), *nom. superfl. & illeg.* — **Type citation:** “*Swan-River.* (Hügel.)”. **Lectotype (here designated):** Swan River, *K.A.A. von Hügel s.n.* (W0046834, labelled as “ β *tomentosa glabrescens*”). **Possible syntype:** [Hort. Hietzing, 1841,] *K.A.A. von Hügel s.n.* (K349018, right-hand specimen on sheet).

Trymalium floribundum Steud. in *Lehm., Pl. Preiss.* 1: 185 (1845). — **Type citation:** “In sublimosis saxosis ad latus praeruptum vallis Cataractae ad caput fluvii Cygnorum 25. Jul. 1839. Herb. Preiss No. 1680.” **Lectotype (here designated):** Swan-River, In sublimosis saxosis ad latus praeruptum vallis Cataractae ad originem fluvii Cygnorum, 25 July 1839, *L. Preiss 1680* (P00643757, ex Herb. Steudel, annotated by Steudel). **Isolectotypes:** In solo sublimoso inter saxa ad latus praeruptum vallis Cataractae ad caput fl. Cygnorum, 25 July. 1839, *L. Preiss 1680* (LD1010430, annotated by Steudel & Reissek); In Nova Hollandia, (Swan River Colonia, in valle Cataractae ad caput fluminis Cygnorum), *L. Preiss 1680* (MEL56071!), ex Herb. Sonder; Swan-River, In sublimosis saxosis ad latus praeruptum vallis Cataractae ad caput Fluvii Cygnorum, 25 July 1839, *L. Preiss 1680* (P00643758, ex Herb. Drake); Ad flum. Cygnorum, *L. Preiss 1680* (MEL56070!; W18890316768); N. Holl. – Riv. Des Cygnes, *L. Preiss 1680* (P06766682); Western Australia, *L. Preiss 1680* (MEL56072!); Nov. Holland. Occ. austr., *L. Preiss 1680* (M0211893!); Australia, *L. Preiss 1680* (MO-2366294, ex Herb. Bernhardt); Nuova Ollanda, *L. Preiss 1680* (FI010477); Australasia, *L. Preiss 1680* (HBG510059); *s.loc.*, *L. Preiss 1680* (S11-13082); *s.loc.*, *L. Preiss 1680* (BR0000013526085; L2327496; W0046832, mounted on same sheet as *Preiss 1682*, *Drummond II 718* and an unnumbered Drummond collection).

Trymalium expansum Steud. in *Lehm., Pl. Preiss.* 1: 185 (1845). — **Type citation:** “In rupestribus ad clivulum vallis Toodyayvalley ditionis Victoria. 7. Mart. 1840. Herb. Preiss. No. 1683.” **Holotype:** In rupestribus ad clivulum vallis ‘Toodyayvalley’ (Victoria), 7 Mar. 1840, *L. Preiss 1683* (LD1010366).

Trymalium billardierei var. [α] *tomentosum* Reissek in *Lehm., Pl. Preiss.* 2: 282 (1848), as “*Billardieri*” and “*tomentosa*”. — *Trymalium billardierei* var. *hirsutum* Benth., *Fl. Austral.* 1: 424 (1863), *nom. superfl. & illeg.*, as “*Billardieri*” (in error for var. *tomentosum*). — *Trymalium spatulatum* var. *tomentosum* (Reissek) Ostenf., *Biol. Meddel. Kongel. Danske Vidensk. Selsk.* 3(2): 85 (1921), as “*spathulatum*”. — **Type citation:** “Ad King Georges Sound (Hügel!); in rupestris ad clivulum vallis Toodyayvalley [*sic*] (Victoria) 7. Mart. 1840 fructifera, (Hb. Preiss. No. 1683); in solo sublimoso inter saxa ad latus praeruptum vallis cataractae ad caput fl. Cygnorum (25. Jul. 1839 florens Herb. Preiss. No. 1682); ad fluv. Cygnorum. Herb. Preiss. No. 1680. (Drummond. Coll. II. No. 718).” **Lectotype:** Halfway House, Darling Ranges, W.A., 13 Sep. 1839, *L. Preiss 1682* (LD1010494, annotated by Steudel & Reissek), *fide* Kellermann, Rye & K.R.Thiele, *Trans. Roy. Soc. S. Austral.* 132: 23 (2008). **Isolectotypes:** In Halfway house (Darling ranges), *L. Preiss 1682* (MEL56103!); N. Holl. – Riv. Des Cygnes, *L. Preiss 1680* (P

06766683); W.A., *L. Preiss 1682* (MEL56097!); Australia, *L. Preiss 1682* (MO-2366295, ex Herb. Bernhardt); Australasia, *L. Preiss 1682* (W0046832, mounted on same sheet as *J. Drummond 718*); *s.loc.*, *L. Preiss 1682* (L2327495). **Remaining syntypes:** *L. Preiss 1680* (see *T. floribundum* for details); *L. Preiss 1683* (see *T. expansum* for details); King Georges Sound, K.A.A. von Hügel *s.n.* (W0046835, labelled as “var. α *calvescens* *hirsuta*”); Nouvelle Hollande occidentale, R. des cygnes (Swan-river), *J. Drummond 718* (P06766696); Swan River, *J. Drummond 718* (W0046832); W.A., *J. Drummond 718* (MEL56099!); W. Australia, *J. Drummond 718* (P06766691, ex BM); Swan River, *J. Drummond s.n.* (K000349019; K000349022); *s.loc.*, *J. Drummond s.n.* (W0046832).

Trymalium ledifolium var. *obovatum* Benth., *Fl. Austral.* 1: 424 (1863), as “var. (?) *obovatum*”. — **Type citation:** “Rocks at Todyay [*sic*], Oldfield. The specimens are small and in bud only”. **Lectotype (here designated):** Rocks at Toodyay, Western Australia, A.F. Oldfield *s.n.* (K349030, ex Herb. Hooker, with detailed drawing of flower). **Possible isolectotype:** “Spreading shrub 2–3ft, fragrant”, Rocks Toodyay, A.F. Oldfield 427 (MEL56121!).

Trymalium odoratissimum Lindl. subsp. *odoratissimum*: Kellermann, Rye & K.R.Thiele, *Trans. Roy. Soc. S. Austral.* 132: 23 (2008). — *Trymalium floribundum* Steud. subsp. *floribundum*: Rye, *Nuytsia* 10: 133 (1995).

Typification of *Trymalium odoratissimum*. Kellermann *et al.* (2008) listed two specimens of *Trymalium odoratissimum* and incorrectly stated that one of them is the “holotype”. Following McNeill (2014), the specimen from Lindley’s herbarium at CGE is above selected as the lectotype of the name.

Typification of *T. billardierei* varieties. When Fenzl (1837) published *Trymalium billardierei* he included the earlier *Ceanothus spatulatus* Labill. in synonymy; hence Fenzl’s species name is illegitimate, as he should have taken up the available epithet *spatulatum* (Kellermann 2021b). Of the two varieties he included, the first, var. [α] *dense-tomentosa*, was intended to be the typical variety, as he listed the type of *C. spatulatus* and a specimen collected by Hügel under specimens examined: “*In terra Van - Leuwin* (Labill.), — *King Georges Sound*. (Hügel).” (however, the Hügel collection is actually material of *T. odoratissimum*, not *T. spatulatum*). The first varietal name is thus not validly published. The second variety published by Fenzl is var. [β] *tomentoso-hirsutum*, typified by another Hügel collection held at W.

Reissek (1848) also listed *Trymalium billardierei* in his enumeration of Rhamnaceae in Western Australia, but he explicitly excluded Labillardiere’s *C. spatulatus*, meaning that his concept of *T. billardierei* was different from Fenzl’s. However, as the name *T. billardierei* is illegitimate it cannot be applied at species level. Reissek took up Fenzl’s two varieties and enumerated them, but with slightly different epithets, as *T. billardierei* var. [α] *tomentosum* and var. [β] *calvescens*. Since Labillardiere’s

collection was excluded from the first variety, this variety now has a validly published and legitimate name. Reissek’s second varietal name is superfluous and illegitimate, however, as it is typified by the same specimen as Fenzl’s var. *tomentoso-hirsuta*.

As discussed in Kellermann *et al.* (2008), there is one sheet at W with Hügel’s collection of *T. billardierei* var. *tomentoso-hirsutum*, and a possible further syntype at K. The specimen at W is designated above as the lectotype. The other variety, *T. billardierei* var. *tomentosum*, was lectotypified in Kellermann *et al.* (2008).

Typification of *T. floribundum* and *T. expansum*. The lectotype designated above for *Trymalium floribundum* is not the “holotype” at LD that was listed by Kellermann *et al.* (2008), as the specimen from Steudel’s herbarium at P is larger and in better condition than the specimen in LD. The P specimen was also annotated by Steudel.

As discussed in Kellermann *et al.* (2008), only one Preiss specimen of *T. expansum* could be located and this is accepted as the holotype of the name. The specimen is in quite bad condition, consisting of a bare leafless branch with some small fragments of leaves and a few flowers in a fragment packet.

Typification of *T. ledifolium* var. *obovatum*. Two specimens collected by Oldfield have been located. The material at K is designated as the lectotype above, as it was seen by Bentham.

Note. The typical subspecies of *Trymalium odoratissimum* is endemic to south-west Western Australia, from the vicinity of Mt Lesueur along the Darling Range to the Murray and Williams Rivers, with a few records further south, in forests, woodlands and shrublands, often along streams. There is minor intergradation or hybridisation between the two subspecies where they co-occur.

Doubtful names for cultivated material

Trymalium albidum Jacques

Rev. Hort. J. Jard. Amateurs 6(2): 26 (1844). — **Type citation:** “Je l’ai vu en fleur, en mars 1844, au Jardin des Plantes de Paris”. — **Specimen:** “h.[ortus] Par.[is] 1843 [or 1849].”, *Anon. s.n.* (P06831809, ex Herb. Spach).

= ?*Trymalium odoratissimum* Lindl. subsp. *odoratissimum*

Trymalium candidum Neumann

Art Construire Gouverneur Serres 51 (1844), *nom. nud. & inval.* — **Specimen:** “Avril. 1843. Orang.[erie], hort.[us] Cels.”, *Anon. s.n.* (P06831810, ex Herb. Houlet).

= ?*Trymalium odoratissimum* Lindl. subsp. *odoratissimum*

***Trymalium incanum* J.F.Cels & A.Cels**

Extr. Cat. Cult. Frères Cels 2: 15 (1844), *nom. nud.* & *inval.*

= ?*Trymalium odoratissimum* Lindl. subsp. *odoratissimum*

Note. These three names relating to plants cultivated in Paris all appeared in print in 1844 and they possibly refer to the same taxon, as the epithets have almost the same meaning in Latin: *albidum* (white), *candidum* (shining white), *incanum* (grey hairy). These possibly refer to the colour of the lower leaf surface, which is densely hairy, or to the flower colour.

Jacques (1844) provided an account of *Trymalium* species in cultivation at the time, namely: *T. spatulatum* (Labill.) G.Don (Kellermann 2021b); *T. capsulare* (G.Forst.) G.Don, a synonym of *Colubrina asiatica* (L.) Brongn. (Kellermann 2021a); *T. wendlandianum* (Schult.) Sweet, a synonym of *Pomaderris ferruginea* Sieber ex Fenzl; and *T. albidum* Jacques. He gave short descriptions for all four species and stated that he had observed *T. albidum* in the botanic garden of Paris, meaning that since he wrote the description from live material, there might not be an original specimen. Jacques also mentioned the sales catalogue of the nursery of the Cels brothers (Cels & Cels 1844) and stated that *Trymalium incanum*, mentioned in the catalogue, could very likely be *T. albidum*. The name *T. candidum* was mentioned in Neumann (1844) in a list of plants that can be grown in temperate glasshouses.

Thanks to the fact that the holdings of herbarium P are now fully available online (Le Bras *et al.* 2017), it was possible to view digital images of two specimens that were collected in French gardens in the 1840s and are labelled as *Trymalium albidum* and *T. candidum*; they are listed above and shown in Fig. 2. In both cases these horticultural names are attributed to “Ad.[olphe Théodore] Brongn.[iart]” on the specimens, but they were not published by him.

The label on the specimen of *Trymalium albidum* is hard to read and the year of collection could be 1843 or 1849. The two specimens are very similar and it is possible that they are duplicates, or at least collected from the same plant; they also both have a similar note attached, with the same handwriting. As the specimen of *T. albidum* was collected in 1843 or 1849, but Jacques (1844) states that he drew up the description from a shrub he had seen flowering in March 1844, this specimen cannot be original material of *T. albidum*. However, both specimens are important records of the plants cultivated in Paris at the time and confirm the names listed in the books and nursery catalogues.

These two specimens are most likely *Trymalium odoratissimum* subsp. *odoratissimum*, but without examining flowers under the microscope to check if they have styles with two stigmatic lobes (which is not visible on scanned specimens), it is impossible to be

sure of the subspecies. The other subspecies, *Trymalium odoratissimum* subsp. *trifidum*, has three stigmatic lobes, and leaves that “are usually larger and more acute [...] and often serrate” (Rye 1995: 134). The shape and size of the leaves on the two specimens also indicate that they may represent the typical subspecies.

No specimen could be found bearing the name *Trymalium incanum*. Since the specimen in P that is labelled *T. candidum* was collected at the gardens of the Cels brothers, it is feasible that this name refers to the same plant listed as *T. incanum* in their nursery catalogue. As such, all three names are considered here to be doubtful synonyms of *T. odoratissimum* subsp. *odoratissimum*.

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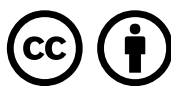
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Fig. 2. Herbarium specimens of *Trymalium* plants cultivated in Paris in the 1840s, possibly representing *T. odoratissimum* subsp. *odoratissimum*. **A** *Trymalium albidum*: "h. Par.", 1843 or 1849, Anon. s.n. (P06831809). **B** *Trymalium candidum*: "Orang. hort. Cels", Apr. 1843, Anon. s.n. (P06831810). — Images courtesy of the Museum national d'Histoire naturelle, Paris, under a Creative Commons CC-BY 4.0 license (photos slightly cropped).

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