

## New taxa, New Combinations and an Infrageneric Classification in *Pomaderris* (Rhamnaceae)

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### Abstract

An infrageneric classification of *Pomaderris* is presented; 16 new taxa are described (*P. adnata*, *P. apetala* subsp. *maritima*, *P. andromedifolia* subsp. *confusa*, *P. argyrophylla* subsp. *graniticola*, *P. betulina* subsp. *actensis*, *P. bodalla*, *P. coomingalensis*, *P. crassifolia*, *P. delicata*, *P. elliptica* var. *diemenica*, *P. helianthemifolia* subsp. *hispida*, *P. helianthemifolia* subsp. *minor*, *P. ligustrina* subsp. *latifolia*, *P. mediora*, *P. precaria*, *P. reperta*); one new combination is made (*P. phyllicifolia* subsp. *ericoides*); and lectotypes, where required, are chosen for established species.

### Introduction

*Pomaderris* is a genus distributed in south-western, southern and eastern Australia, as well as in New Zealand. The taxonomy of representatives in South Australia is relatively well understood (Jessop 1986) and problems in Western Australia have recently been addressed (Rye 1996*a*, 1996*b*; Walsh 1994). However, the genus is most diverse in eastern Australia, and several new species have been described in recent years (Ross 1990; Walsh 1988, 1989, 1990*a*, 1990*b*, 1992). While examining specimens from Australian herbaria in preparation of a comprehensive account of the genus, more new taxa have come to light. In common with other members of the genus, many of these new taxa are rare, and/or narrowly endemic. These new taxa are described in order to make their names available and elucidate their conservation status prior to the publication of Volume 24 of the *Flora of Australia*. Lectotypes are also chosen for taxa where typification has previously been unclear.

### Descriptions of Sections

In the course of preparing the account of the genus, it became obvious that several distinct groups could be recognised on floral and fruiting characters, and to a lesser extent, characters of the indumentum. Previous attempts to distinguish groups within the genus were very rudimentary (e.g. Reissek 1858; Wakefield 1951) and have been based principally on characters that have been shown to be of little systematic significance, e.g. presence/absence of petals. We have observed that many species are ambiguous in this respect, and often apetalous and petalous flowers may be found within the same

inflorescence. The groups, described below as sections, are based on characters of perceived significance at a level above that of species.

We believe that recognition of these sections improves the understanding of the genus, and that these groups generally form plausible morphological and biogeographic entities. However, further work may refine this classification, particularly with respect to the large section *Pomaderris*. More detailed investigation (e.g. cladistic analysis) should clarify phylogenetic relationships between sections.

***Pomaderris* sect. *Psilogyne* N.G. Walsh, sect. nov.**

Frutices; folia lineares ad obovatos anguste; inflorescentia cymis parvis paniculatis; flores apetalis, ovarium superum glabrum (plus minusve) disco plano circumcintum, sepala decidua tempore florendi; capsula summo indentata, torus basalis, pyrenae rimis longitudinalibus vel operculis indistinctis dehiscentes.

*Type:* *P. angustifolia* N.A. Wakef.

*Shrubs.* *Indumentum* of leaf undersurfaces and branchlets of stellate or stellate and simple hairs. *Leaves* linear to narrowly obovate. *Inflorescence* of small paniculate cymes (mostly under 8 cm long). *Flowers* apetalous; ovary 3-locular, superior, glabrous or nearly so at the summit; disc present, flat. *Sepals* deciduous in fruit. *Capsule* indented at apex; torus basal; pyrenes dehiscing by a longitudinal split, or an indistinct membranous operculum almost as long as the pyrene.

Two species in mainland south-eastern Australia: *P. angustifolia* N.A. Wakef., *P. helianthemifolia* (Reissek) N.A. Wakef.

*Etymology*

The sectional name is derived from Greek (*psilos* = naked, *gyne* = female) and refers to the glabrous ovary of members of the section — a unique feature in the genus.

***Pomaderris* sect. *Apetalae* N.G. Walsh, sect. nov.**

Frutices vel arbores parvae; indumentum pilis stellatis tantum; folia ovata ad obovata; inflorescentia paniculata vel racemosa; flores apetalis, ovarium inferum ad semi-superum, discus absens, sepala persistentes tempore florendi; capsula summo obtusa, torus medialis ad subapicalem, pyrenae operculis membranaceis, rimis ventralibus dehiscentes, vel indehiscentes apparenter interdum.

*Type:* *P. apetala* Labill.

*Shrubs or small trees.* *Indumentum* of leaf undersurfaces and branchlets of stellate hairs only. *Leaves* ovate to obovate. *Inflorescence* paniculate or racemose. *Flowers* apetalous; ovary 3-locular, inferior to half-superior, summit pubescent, rarely glabrous; disc absent. *Sepals* persistent in fruit. *Capsule* obtuse at apex; torus medial or nearer apex; pyrenes dehiscing via a membranous operculum, ventral slit, or sometimes apparently indehiscent.

Six species in eastern Australia, three of these also in New Zealand (two indigenous, one naturalised): *P. apetala* Labill., *P. aspera* Sieb. ex DC., *P. oraria* F. Muell. ex Reissek, *P. paniculosa* F. Muell. ex Reissek, *P. halmaturina* J.M. Black, *P. oblongifolia* N.G. Walsh.

***Pomaderris* sect. *Flabellares* N.G. Walsh, sect. nov.**

Frutices; indumentum pilis stellatis tantum; folia flabellata; inflorescentia paniculata vel racemosa; flores apetalis, ovarium c. semisuperum, discus absens, sepala decidua tempore florendi; capsula summo obtusa, torus medialis ad subapicalem, pyrenae superficie interiore corrugatae profunde, operculum indistinctum.

*Type: P. flabellaris* (Reissek) J.M. Black

*Shrubs.* *Indumentum* of leaf undersurfaces and branchlets of stellate hairs only. *Leaves* fan-shaped. *Inflorescence* paniculate or racemose. *Flowers* apetalous; ovary 3-locular, c. half-superior, summit pubescent; disc absent. *Sepals* deciduous in fruit. *Capsule* obtuse at apex; torus medial or nearer apex; pyrenes deeply corrugated on inner face, operculum indistinct.

One species endemic on the Eyre Peninsula in South Australia.

***Pomaderris* sect. *Pomaderris***

Frutices vel arbores parvae; indumentum pilis stellatis et simplicibus; folia varia; inflorescentia paniculata vel racemosa raro floribus solitariis; flores petali vel apetali, ovarium infernum ad c. semisuperum raro superum, discus absens, sepala decidua tempore florendi; capsula summo obtusa vel acuta, torus medialis ad subapicalem raro ad subbasalis, pyrenae operculis membranaceis dehiscentes.

*Type: P. elliptica* Labill.

*Shrubs or small trees.* *Indumentum* of leaf undersurfaces and branchlets of simple and stellate hairs (rarely stellate hairs only). *Leaves* ovate (mostly), obovate, elliptic, orbicular or linear. *Inflorescence* paniculate or racemose, rarely of solitary flowers. *Flowers* petalous or apetalous; ovary 3-locular, usually inferior to c. half-superior, rarely nearly superior, summit pubescent; disc absent. *Sepals* deciduous in fruit. *Capsule* obtuse to acute at apex; torus medial or nearer apex, rarely below midway; pyrenes dehiscing via a membranous operculum.

Forty-seven species in eastern Australia, two shared with and three endemic in New Zealand: *P. adnata* N.G. Walsh & F. Coates, *P. andromedifolia* A. Cunn., *P. argyrophylla* N.A. Wakef., *P. aurea* N.A. Wakef., *P. betulina* Cunn. ex Hook., *P. bodalla* N.G. Walsh & F. Coates, *P. brogoensis* N.G. Walsh, *P. brunnea* N.A. Wakef., *P. canescens* (Benth.) N.A. Wakef., *P. cinerea* Benth., *P. clivicola* E.M. Ross, *P. cocoparrana* N.G. Walsh, *P. coomingalensis* N.G. Walsh & F. Coates, *P. costata* N.A. Wakef., *P. cotoneaster* N.A. Wakef., *P. crassifolia* N.G. Walsh & F. Coates, *P. delicata* N.G. Walsh & F. Coates, *P. discolor* (Vent.) Poir., *P. elachophylla* F. Muell., *P. elliptica* Labill., *P. eriocephala* N.A. Wakef., *P. ferruginea* Sieb. ex Fenzl, *P. gilmourii* N.G. Walsh, *P. hamiltonii* L. Moore, *P. intermedia* Sieb. ex DC., *P. kumeraho* A. Cunn., *P. lanigera* (Andrews) Sims, *P. ledifolia* A. Cunn., *P. ligustrina* Sieb. ex DC., *P. mediocris* N.G. Walsh & F. Coates, *P. nitidula* (Benth.) N.A. Wakef., *P. notata* S.T. Blake, *P. pallida* N.A. Wakef., *P. parrisiae* N.G. Walsh, *P. pauciflora* N.A. Wakef., *P. phyllicifolia* Lodd. ex Link, *P. pilifera* N.A. Wakef., *P. precaria* N.G. Walsh & F. Coates, *P. prunifolia* A. Cunn. ex Fenzl, *P. queenslandica* C.T. White, *P. racemosa* Hook., *P. reperta* N.G. Walsh & F. Coates, *P. rugosa* Cheeseman, *P. sericea* N.A. Wakef., *P. subcapitata* N.A. Wakef., *P. subplicata* N.G. Walsh, *P. vaccinifolia* F. Muell. ex Reissek, *P. vellea* N.A. Wakef., *P. velutina* J.H. Willis, *P. virgata* N.G. Walsh.

***Pomaderris* sect. *Annulares*** N.G. Walsh, sect. nov.

Frutices; indumentum pilis stellatis et simplicibus; folia ovata ad elliptica anguste; inflorescentia paniculata; flores petali vel apetali, ovarium infernum, discus praesens, elevatus leniter, sepala decidua tempore florendi; capsula summo obtusa vel acuta, torus medialis ad subapicalem, pyrenae operculis membranaceis dehiscentes.

*Type: P. grandis* F. Muell.

*Shrubs.* *Indumentum* of leaf undersurfaces and branchlets of simple and stellate hairs. *Leaves* ovate to narrow-elliptic. *Inflorescence* paniculate. *Flowers* petalous or apetalous; ovary 3-locular, inferior, summit pubescent; disc present, slightly raised. *Sepals*

deciduous in fruit. *Capsule* obtuse to acute at apex; torus medial or nearer apex; pyrenes dehiscent via a membranous operculum.

Three species from eastern Queensland and south-west Western Australia: *P. canescens* (Benth.) N.A. Wakef., *P. grandis* F. Muell., *P. tropica* N.A. Wakef.

#### *Etymology*

The sectional name refers to the annular disc possessed by members of the section.

#### ***Pomaderris* sect. *Umbelliflorae* N.G. Walsh, sect. nov.**

Frutices; indumentum pilis stellatis et simplicibus; folia obovata, cuneata vel orbiculata; inflorescentia terminalis umbellata; flores apetalis vel apetalis, ovarium infernum vel subinfernum, discus praesens, planus vel elevatus leniter, sepala persistentes tempore florendi; capsula summo obtusa, torus medialis ad subapicalem, pyrenae operculis membranaceis vel rimis basalibus vel medialis dehiscentes.

*Type: P. obcordata* Fenzl

*Shrubs.* Indumentum of leaf undersurfaces and branchlets of simple and stellate hairs. *Leaves* obovate, cuneate or orbicular. Inflorescence a terminal umbellate cyme, sometimes head-like. *Flowers* petalous or apetalous; ovary 3-locular, inferior or semi-inferior, summit pubescent; disc present, flat or slightly raised. *Sepals* persistent in fruit, or deciduous. *Capsule* obtuse at apex; torus medial or nearer apex; pyrenes dehiscent via a membranous operculum or a basal or medial slit.

Five species from south-west Western Australia, southern South Australia and far western Victoria: *P. brevifolia* N.G. Walsh, *P. forrestiana* F. Muell., *P. myrtilloides* Fenzl, *P. obcordata* Fenzl, *P. rotundifolia* (F. Muell.) Rye.

#### *Etymology*

The sectional name refers to the umbellate inflorescence that characterises members of the group.

#### ***Pomaderris* sect. *Biloculares* N.G. Walsh, sect. nov.**

Frutices infirmi; indumentum pilis simplicibus et (obscuris) stellatis; folia ovata vel obovata; inflorescentia cyma terminalis umbellata; flores apetalis, ovarium subinfernum, discus praesens anguste inconspicuus, sepala persistentes tempore florendi; capsula summo obtusa, torus subapicalis, pyrenae rimis medialis longitudinalis dehiscentes.

*Type: P. bilocularis* A.S. George

*Weak shrubs.* Indumentum of leaf undersurfaces and branchlets of simple and (obscure) stellate hairs. *Leaves* ovate to obovate. Inflorescence a terminal umbellate cyme. *Flowers* apetalous; ovary 2-locular, semi-inferior, summit pubescent; disc present, narrow, inconspicuous. *Sepals* persistent in fruit. *Capsule* obtuse at apex; torus near apex; pyrenes dehiscent via longitudinal slits.

One species endemic in south-west Western Australia.

### **Key to Sections**

1. Ovary superior, summit glabrous (rarely with a few scattered hairs); capsule indented at apex; leaves narrow-obovate, oblong or linear, to 10 mm wide .....sect. *Psilogyne*
1. Ovary half-inferior to inferior, summit usually distinctly pubescent (rarely sub-glabrous); capsule obtuse to acute; leaf shape various, mostly wider than 10 mm (if less, then leaves usually ovate to orbicular) .....2
2. Leaf undersurfaces, stems and hypanthium with stellate hairs only .....3
2. Leaf undersurfaces, stems and/or hypanthium with some simple hairs .....5

3. Leaves fan-shaped, wider than long, often partly folded; pyrenes corrugated on ventral surface; Eyre Peninsula (South Australia) only .....sect. *Flabellares*
3. Leaves oblong to orbicular, no wider than long, mostly flat; pyrenes smooth on ventral surface; all States except Northern Territory .....4
4. Sepals persistent in fruit; petals absent .....sect. *Apetalae*
4. Sepals deciduous in fruit; petals present or absent .....sect. *Pomaderris*
5. Style 2-branched; ovary 2-locular .....sect. *Biloculares*
5. Style 3-branched or 3-lobed; ovary 3-locular .....6
6. Floral disc absent; South Australia, Queensland, New South Wales, Victoria, Tasmania .....sect. *Pomaderris*
6. Floral disc present, forming a raised annulus (sometimes narrow) within the points of attachment of the stamens; Western Australia, South Australia, Queensland, far-western Victoria .....7
7. Inflorescence paniculate; stipules deciduous .....sect. *Annulares*
7. Inflorescence a simple terminal umbellate cyme; stipules persistent .....sect. *Umbelliflorae*

### Descriptions of Species, Subspecies and Varieties

As in most reasonably large genera, specific and infraspecific boundaries in *Pomaderris* are not always easy to define. It might be argued that several of the infraspecific taxa described below differ in as many characters as do a number of species and could be reasonably treated at specific rank. They have been retained as subspecies or varieties where the differences are subtle (but we believe substantial) so that the component members of a species are readily observed as ‘belonging’ with each other. New species described below have less immediately appreciated affinities, and may appear equally similar to several other species. Infraspecific taxa are defined as subspecies where the morphological, geographical and/or ecological discontinuity(ies) between them are almost or quite complete. Varietal rank is used where variation within a species is more continuous, but decidedly different at the extreme ranges, and where the geographical distribution and/or ecological amplitude is not or hardly discontinuous.

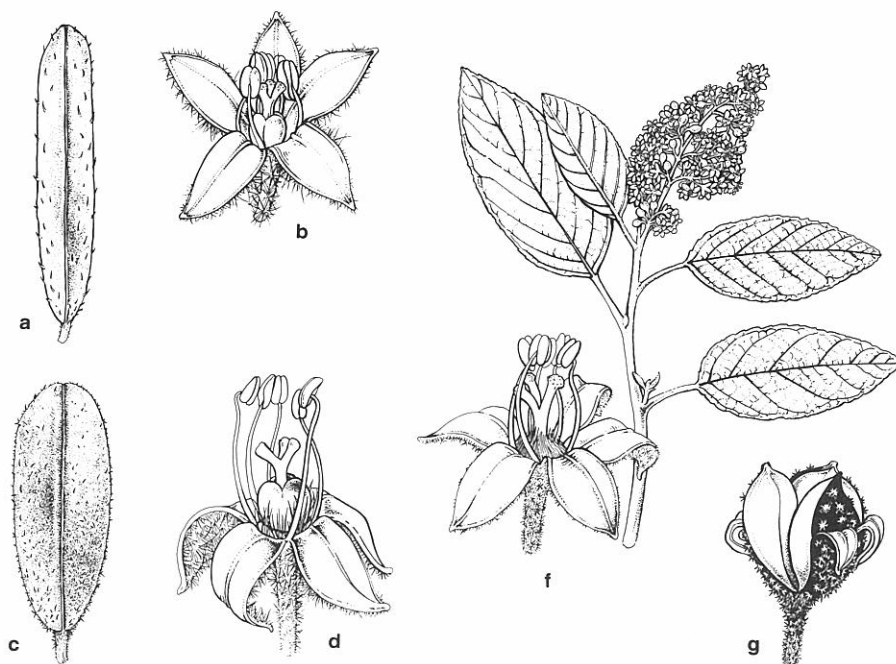
#### SECTION *PSILOGYNE*

*Pomaderris helianthemifolia* (Reissek) N.A. Wakef. subsp. *hispida* N.G. Walsh & F. Coates, subsp. nov.

Differt a subspecie typica foliis pagina supera hispidis.

*Type*: Victoria, East Gippsland, Mangans Lake, Genoa district, N.A. Wakefield 2249, 7.xi.1948 (holotype MEL; isotypes NSW, BRI).

Pubescent *shrub* 1–2 m tall. *Leaves* oblong, 10–45 mm long, 2–10 mm wide, adaxial lamina hispid with loosely appressed to spreading simple hairs. *Inflorescence* of 20 to >50 flowers, pyramidal, terminal or axillary, 6–8(–12) cm long, 2–3(–6) cm wide; bracts caducous; pedicels (1.5–)2–3(–3.5) mm long. *Flowers* yellow; externally pubescent, with sparse, spreading, greyish and rusty simple hairs and medium to dense, greyish stellate hairs; hypanthium 1–2 mm in diameter, 0.5–1 mm long; sepals 1.5–2 mm long; stamens 1–2 mm long; anthers 0.5–0.8 mm long; disk smooth, glabrous; style 0.5–0.8 mm long, branched in middle or lower third. *Fruit* c. 3 mm long, purplish or blackish, obovoid; torus basal. Pyrene dehiscence via a longitudinal split; seed 1.5–2 mm long. (Fig. 1a–b)



**Fig. 1.** a–b *Pomaderris helianthemifolia* subsp. *hispida* (Wakefield 2249): a leaf,  $\times 3$ ; b flower,  $\times 7$ . c–d *P. helianthemifolia* subsp. *minor* (Muir 1644): c leaf,  $\times 3$ ; d flower,  $\times 7$ . e–g *P. apetala* subsp. *maritima* (e–f, Walsh 2149, g, Beaglehole 75235): e flowering branch,  $\times 0.5$ ; f flower,  $\times 7$ ; g fruit,  $\times 5$ .

#### *Representative Specimens* (19 specimens examined)

VICTORIA: East Gippsland, Genoa River, 1 km downstream from Yambulla Creek confluence, N.G. Walsh 574, 12.v.1981 (MEL). NEW SOUTH WALES: Boonoo Boonoo National Park, Cypress Rest Area (NNE of Tenterfield via the Mount Lindsay Highway), R.G. Coveny 16573, 14.x.1993 (MEL, NSW, BRI, NE, CANB).

#### *Distribution and Conservation Status*

Occurs along the Great Dividing Range from Tenterfield, New South Wales, south to East Gippsland and Eastern Highlands, Victoria. Not considered rare or threatened at present. The commonest and most widespread representative of the species.

#### *Habitat*

Riparian shrubland, woodland and open forest on a variety of substrates including skeletal, rocky soils, gravels and sandy loam. Altitude range 40–600 m.

#### *Phenology*

Flowers: October–November. Fruits: November–January.

#### *Etymology*

The subspecific epithet refers to the nature of the indumentum on the adaxial surface of the leaf.

*Notes*

*Pomaderris helianthemifolia* subsp. *hispid*a differs from the type subspecies in the leaves being hispid on the adaxial surfaces (subsp. *helianthemifolia* is glabrous adaxially). Subsp. *helianthemifolia* is narrowly endemic in the eastern part of the Avon River catchment near Briagolong area.

***Pomaderris helianthemifolia*** (Reissek) N.A. Wakef. subsp. *minor* N.G. Walsh & F. Coates, subsp. nov.

Differt a subspecie typica foliis minoribus pagina supera hispidis et disco hispido.

*Type*: Victoria, Eastern Highlands, beside Rose River at its crossing by the Lake Buffalo Road, *N.G. Walsh 3455*, 19.ix.1992 (holotype MEL; isotypes CANB, NSW).

*Pubescent shrub* 1–2 m tall. Leaves narrow-obovate, (5–)6–9(–13) mm long, 2–4 mm wide; adaxial lamina with sparse, loosely appressed, greyish simple hairs. *Inflorescence* of 10–50 flowers, pyramidal, terminal or axillary, c. 3 cm long, 2 cm wide; bracts caducous; pedicels 1–1.5 mm long. *Flowers* yellow; externally moderately to densely pubescent with greyish long and short stellate hairs; hypanthium c. 1 mm in diameter, 0.5 mm long; sepals 1.5–2 mm long; stamens 1.5–2 mm long; anthers 0.5–0.8 mm long; disk moderately to densely pubescent; style 0.5–1 mm long, branched from near base. *Fruit* 2–3 mm long, purplish to blackish, obovoid; apex impressed; torus basal. *Pyrene* dehiscence via a longitudinal split; seed 1.5–2 mm long. (Fig. 1c–d)

*Representative Specimens* (10 specimens examined)

VICTORIA: Campaspe River above Kileens Bridge, above Eppalock, *F. Robbins s.n.*, 21.x.1961 (MEL); 28.5 km S of Whitfield, in Wabonga Plateau State Park, near the King R. above Lake William Hovell, 1.2 km E of Park boundary, *A. Piesse 727*, 7.i.1987 (MEL).

*Distribution and Conservation Status*

Endemic in Victoria, occurring in the north east and perhaps central parts of the State along the Buffalo and Wonnangatta rivers and their tributaries, and possibly, from the Campaspe River catchment. The single central Victorian collection, purportedly from near Eppalock, (Robbins s.n.) was from a site that was flooded after completion of Lake Eppalock. It is possible that the subspecies no longer occurs in central Victoria. Localised but not currently considered rare or threatened.

*Habitat*

Riparian shrubland and dry open forest. Altitude range 400–600 m.

*Phenology*

Flowers: October–November. Fruits: November–January.

*Etymology*

The epithet refers to the small leaves, on average, the smallest of the three subspecies.

*Notes*

Subsp. *minor* is distinguished from both other subspecies by the hispid floral disc and the smaller leaves (rarely longer than 1cm). It is further distinguished from subsp. *helianthemifolia* in having leaves that are hispid adaxially.

*Key to subspecies of P. helianthemifolia*

1. Leaves glabrous on upper surface .....subsp. *helianthemifolia*  
 1. Leaves hispid on upper surface .....2  
 2. Leaves 10–45 mm long; disc glabrous .....subsp. *hispidula*  
 2. Leaves 5–9(–13) mm long; disc hispid .....subsp. *minor*

SECTION *APETALAE****Pomaderris apetala*** Labill. subsp. ***maritima*** N.G. Walsh & F. Coates, subsp. nov.

Differt a subspecie typica foliis obtusis, ad bis longioribus quam latioribus, pagina supra pilis stellatis persistentibus et in habitatione maritima.

*Type*: Tasmania, Asbestos Ra. National Park, c. 1.7 km due S from northern tip of Badger Head, *N.G. Walsh 2368*, 23.ii.1989 (holotype MEL; isotype HO).

*Pomaderris* sp. aff. *apetala* (Coastal) *sensu* J.H. Ross (Ed.), *Census Vasc. Pl. Victoria*, 4th edn (1993).

*Pomaderris tainui* Hector, *Trans. & Proc. New Zealand Inst.* 11: 429 (1879). *Type*: New Zealand, North Island, Mokau, *J. Hector*, 1879 (holotype AK; isotype K).

*Pubescent shrub* 1–3 m tall. *Leaves* ovate, 30–60 mm long, 15–30 mm wide; base obtuse; margins shallowly serrulate; apex obtuse; adaxial lamina wrinkled, sparsely pubescent with greyish stellate hairs; abaxial lamina densely pubescent with greyish (rarely rusty on veins) stellate hairs. *Inflorescence* of 20 to >50 flowers, pyramidal, terminal or upper-axillary, 5–15 cm long, 2–7 cm wide; bracts caducous; pedicels 1.5–2.5 mm long. *Flowers* cream, externally densely pubescent with greyish stellate hairs; hypanthium 1.25–2 mm in diameter, 1–1.5 mm long; sepals 1.8–2.1 mm long; stamens 1.5–2.5 mm long, erect; anthers 0.75–1 mm long; ovary virtually inferior, pubescent with long stellate hairs; style 1–1.5 mm long, branched in middle third. *Fruit* 3–4 mm long, blackish, obovoid to ovoid; apex obtuse; torus in middle third; operculum membranous, occupying most of inner face; seed 1.5–1.75 mm long. (Fig. 1e–g)

*Representative Specimens* (17 specimens examined)

VICTORIA: Reeves Beach, near western limit of Ninety Mile Beach, *N.G. Walsh 1601*, 14.vi.1986 (MEL, CANB); Wilsons Promontory, Lighthouse Point, *P.C. Heyligers 81034*, 13.xi.1981 (MEL). TASMANIA: Hawley, c. 1.5 km W of Freers Beach, *F. Coates s.n.*, 22.xii.1992 (MEL). NEW ZEALAND: Taranaki, North of Mohakatino River mouth, *N.G. Walsh 4670*, 5.i.1997 (MEL).

*Distribution and Conservation Status*

Restricted to South Gippsland at Wilsons Promontory and 90 mile Beach in Victoria; central northern Tasmania and Mokau area, North Island New Zealand. Conservation Code (Briggs and Leigh 1989) 3RCat.

*Habitat*

Predominantly dry coastal vegetation, ecotone between dune scrub or salt marsh and coastal woodland, but also known from grassy *Allocasuarina littoralis* woodland on dolerite in central northern Tasmania. Altitude range 0–60 m.

*Phenology*

Flowers: October–November. Fruits: December–January.



*Etymology*

The epithet refers to the coastal habitat of the subspecies.

*Notes*

Subsp. *maritima* differs from the typical subspecies in the relatively shorter (less than twice as long as wide), obtuse leaves with persistent indumentum on the upper surface. The coastal habitat further distinguishes the two taxa. Subsp. *apetala* is typically a species of wet forests, occurring in Tasmania and in the Grampians mountains in Victoria. Both subspecies occur at the type locality — subsp. *apetala* approaching the coast along a gully from the adjoining forest, and subsp. *maritima* growing quite independently of the forest community and closer to the coast than the other subspecies. The habit and general appearance of the plants is quite different at this locality, subsp. *apetala* being more slender and having leaves that are considerably darker and sub-glossy on the adaxial surface, whereas subsp. *maritima* is a compact shrub with an overall greyish or grey-green cast.

*Key to subspecies of P. apetala*

1. Leaves more than twice as long as wide, usually acute; upper surface glabrescent; plants generally of wet forests and gullies .....subsp. *apetala*
1. Leaves up to twice as long as wide, obtuse; stellate hairs persisting on upper surface; plants of coastal dunes and cliffs .....subsp. *maritima*

SECTION *POMADERRIS**Pomaderris crassifolia* N.G. Walsh & F. Coates, sp. nov.

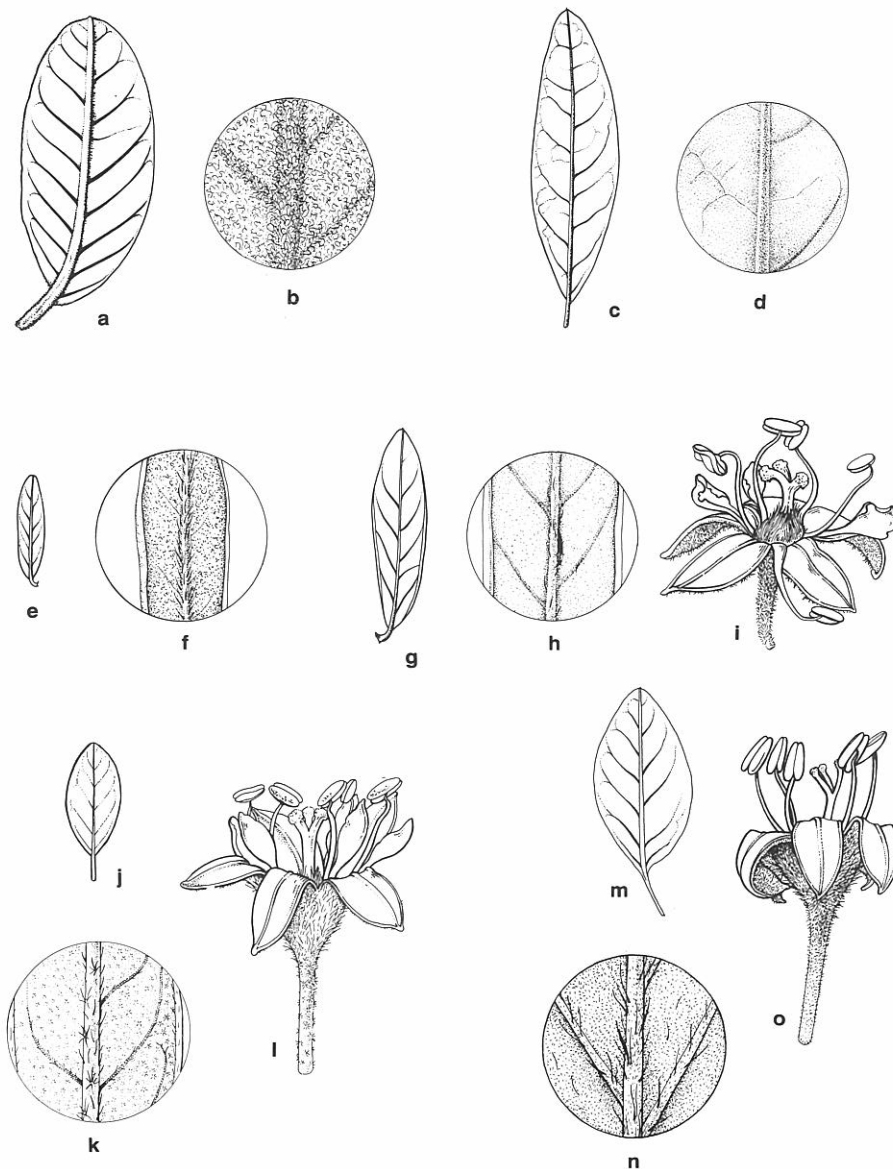
*Pomaderridi velleae* N.A. Wakef. affinis sed foliis pagina supera glabris et floribus apetalis differt.

*Type*: Queensland, Mount Ernest, MacPherson Ra., *P.I. Forster 7411*, 14.ix.1990 (holotype MEL; isotypes BRI, CANB, K, NSW).

*Shrub* 1–2 m high. *Young stems* woolly. *Leaves* ovate or elliptic, 20–60 mm long, 10–28 mm wide; base obtuse; margins recurved; apex obtuse; adaxial lamina glabrous, smooth; abaxial lamina densely villous-woolly consisting of dense, curled, spreading, rusty simple hairs and greyish stellate hairs; secondary veins apparent beneath; petiole 5–10 mm long; stipules ovate, 4–6.5 mm long, deciduous. *Inflorescence* terminal, of 20 to >50 flowers, hemispherical or globoid (either a single globoid cluster or several clusters forming a more or less hemispherical panicle), 1.5–5 cm long, 1.5–5 cm wide; bracts caducous; pedicels 1–2.5 mm long. *Flowers* cream; externally densely villous with simple and stellate silvery-greyish hairs; hypanthium c. 1.2 mm in diameter at summit, 1.5–2 mm long; sepals 2.3–3 mm long; petals absent (rarely 1 to a few in some flowers, then spatulate, 1–1.5 mm long); stamens 2.5–3 mm long; anthers 1–1.4 mm long; ovary inferior, summit simple-pubescent; style glabrous or simple-pubescent near base, 1–1.3 mm long, branched in upper or middle third. *Fruit* c. 4 mm long, brown, broadly ellipsoid; apex obtuse (sometimes shortly beaked); torus in middle third; operculum membranous, occupying c. half of inner face of pyrene; seed c. 2 mm long. (Fig. 2a–b)

*Representative Specimens* (6 specimens examined)

QUEENSLAND: summit of Mt Ernest, *G. Leiper s.n.*, 11.ix.1989 (BRI); Johnsons Mountain, 8 km from Swanfels, *M.E. Ballingall 2727*, 9.viii.1992 (BRI). NEW SOUTH WALES: 2 miles (3.2 km) E of Gloucester, *R. Coveny s.n.*, 4.ix.1967 (NSW).



**Fig. 2.** a–b *Pomaderris crassifolia* (Forster 7411): a leaf, x1; b undersurface detail, x3. c–d *P. coomingalensis* (Forster 15904): c leaf, x1; d undersurface detail, x3. e–f *P. mediora* (Walsh 3910): e leaf, x1; f undersurface detail, x3. g–i *P. adnata* (Walsh 3911): g leaf, x1; h undersurface detail, x3; i flower, x7. j–l *P. delicata* (Walsh 4035): j leaf, x1; k undersurface detail, x3; l flower, x7. m–o *P. bodalla* (Walsh 4045): m leaf, x1; n undersurface detail, x4; o flower, x7.

#### *Distribution and Conservation Status*

South-eastern Queensland to north-eastern New South Wales; Warwick region, D'Aguilar and MacPherson Ranges, with a disjunct southerly occurrence near Gloucester. Conservation Code (Briggs and Leigh 1989) 3K.

### Habitat

Closed heathland, shrubland and open woodland on shallow soils. Exposed, rocky sites amongst rocks, on cliffs and mountain summits. Altitude range 200–820 m.

### Phenology

Flowers: August–September. Fruits: October.

### Etymology

The epithet is Latin (*crassus* = thick, *folia* = leaves) and refers to the relatively thick-textured leaves.

### Notes

The new species appears to be most closely related to *P. vellea* N.A. Wakef., resembling it in inflorescence shape and relatively large flowers, a very dense woolly indumentum of young stems, petioles and abaxial surfaces of the leaves, and in the relatively thick-textured leaves. It is immediately distinguishable from that species however by the leaves being glabrous (rather than velutinous) on their adaxial surfaces. It is further distinguishable from *P. vellea* by the normally apetalous flowers and the sepals free to the base (usually shortly fused near the base in *P. vellea*). *Pomaderris crassifolia* resembles *P. ferruginea* in some respects and some specimens had been ascribed to that species, but the blunt, thickish leaves and denser woollier indumentum comprising strongly curled hairs, and the (normally) apetalous flowers distinguish *P. crassifolia*.

### *Pomaderris coomingalensis* N.G. Walsh & F. Coates, sp. nov.

*Pomaderridi clivicolae* E.M. Ross affinis sed foliis pagina supera glabro et pagina inferna pilis internervis destitutis differt.

*Type:* Queensland, Coomingleh Ra., Burnett District, Aliens Rd south end, *P.I. Forster 15904*, 28.xi.1994 (holotype MEL; isotypes AD, BRI, CANB, K, MO, NSW).

*Shrub* 3–5 m high. *Young stems* with dense, greyish stellate hairs. *Leaves* ovate or elliptic, 20–60 mm long, 7–18 mm wide; base cuneate; margins entire, plane or recurved; base cuneate; apex obtuse; adaxial lamina glabrous, smooth, lateral veins not or slightly impressed; abaxial lamina pubescent with dense, greyish stellate hairs; veins with sparse to medium, closely appressed, greyish or rusty simple hairs and dense, greyish stellate hairs, projecting beyond indumentum of internerves; petiole 2–5 mm long; stipules narrow-triangular or triangular, acute, 2–3 mm long, caducous. *Inflorescence* of 20–50 flowers, pyramidal or hemispherical, terminal, 1–1.8 cm long, 1–1.5 cm wide; bracts caducous (or a few weakly persisting to anthesis); pedicels 1–2 mm long. *Flowers* cream or yellow; externally densely pubescent, consisting of sparse to moderate, closely appressed to loosely appressed, greyish or rusty simple hairs and dense, greyish stellate hairs; hypanthium c. 1 mm in diameter, 0.5–0.8 mm long; sepals 1.2–1.5 mm long; petals absent; stamens 1–1.5 mm long; anthers 0.5–0.7 mm long; ovary inferior, summit pubescent with simple and stellate hairs; style glabrous, 1–1.5 mm long, branched in middle third. *Fruit* not seen. (Fig. 2c–d)

### *Representative Specimens* (3 specimens examined)

QUEENSLAND: State Forest 28, *P.I. Forster 6713*, 28.iv.1990 (BRI, CANB, MEL); Coomingleh State Forest, west of Monto, *A.R. Bean 2084*, 13.viii.1990 (BRI).

*Distribution and Conservation Status*

Queensland, narrowly endemic to the Coomingleh Range between Monto and Theodore. Conservation Code (Briggs and Leigh 1989) 2K.

*Habitat*

Occurs in *Eucalyptus decorticans* and *Corymbia maculata* open forest on red soil. Altitude 460 m.

*Phenology*

Flowers: November–December.

*Etymology*

Derived from the only known locality for the species.

*Notes*

*Pomaderris coominglehensis* appears most closely related to *P. clivicola* E.M. Ross (Ross 1990), also a Queensland endemic. Both species have relatively narrow leaves, very small apetalous flowers and similar indumentum, but *P. coominglehensis* is immediately distinguished by the leaves being glabrous (rather than minutely but densely stellate-pubescent) on the adaxial surface, and lacking simple hairs on the internerves of the abaxial surface. Both species, on current knowledge, are very localised.

***Pomaderris mediora* N.G. Walsh & F. Coates, sp. nov.**

*Pomaderridi phyllicifoliae* Lodd. ex Link affinis sed foliis pagina supera glabro, pagina inferna villosa, stipulis deciduis, floribus minoribus differt.

*Type*: New South Wales, Turrismetta Head, between Narrabeen and Mona Vale, c. 22 km N of Sydney central, *N.G. Walsh 3910*, 18.ix.1994 (holotype MEL; isotypes CANB, NSW).

*Pomaderris* sp. B *sensu* S.W.L. Jacobs & J. Pickard, *Pl. New South Wales* 185 (1981).

*Shrub*, procumbent to 3 m high. *Young stems* villous with sparse to medium, spreading, greyish or rusty simple hairs overlying dense, greyish stellate hairs. *Leaves* narrow-elliptic or narrow-obovate, 10–18 mm long, 1.5–5 mm wide; base cuneate; margins entire, recurved or occasionally revolute; apex obtuse, recurved; adaxial lamina glabrous, smooth, lateral veins not or slightly impressed; abaxial lamina villous with medium to dense, curved, spreading, greyish or yellow-rusty simple hairs and dense, white-greyish stellate hairs; lateral veins obscure; petiole 1.5–3 mm long; stipules narrow-triangular, acute, 1–4 mm long, caducous. *Inflorescence* of 10 to >50 flowers, pyramidal, terminal or axillary, 2–7 cm long, 1–6 cm wide; bracts persistent (at least the smaller ones); pedicels 1–3 mm long. *Flowers* cream; outer surface villous with medium to dense, loosely appressed to spreading greyish or yellow-rusty simple hairs (sparser on sepals) and dense, white-greyish stellate hairs; hypanthium 0.6–0.7(–0.9) mm in diameter, 0.7–1 mm long; sepals 1–1.5 mm long, erect or spreading; petals absent; stamens 1–1.3 mm long, erect; anthers c. 0.5 mm long; ovary half-inferior to inferior, summit simple-pubescent; style glabrous, 0.7–1 mm long, branched in upper or middle third. *Fruit* 2.5–3 mm long, brown to grey, obovoid to ellipsoid; apex obtuse (sometimes very shortly beaked); torus approximately equatorial; operculum membranous, occupying most of pyrene inner face; seed 2–3 mm long. (Fig. 2e–f)

*Representative Specimens* (16 specimens examined)

NEW SOUTH WALES: Sublime Point, *P. Moore s.n.*, x.1985 (MEL); Frenchs Forest, Bluffs Track, *L. McDougall 89*, 12.x.1988 (NSW).

*Distribution and Conservation Status*

Endemic to the central coast of New South Wales, south from the mouth of the Hawkesbury River to Bulli near Wollongong. Conservation Code (Briggs and Leigh 1989) 2RC.

*Habitat*

Apparently confined to undifferentiated sandstones and shales of the Narrabeen Group. Occurring in heathland and scrub formations on ridges and headlands. Altitude 20–500 m.

*Phenology*

Flowers: September–October. Fruits: October–November.

*Etymology*

The epithet is derived from Latin (*medius* = middle, *ora* = coast) alluding to the species' distribution within the Central Coast floristic division of New South Wales (Anderson 1961, 1968).

*Notes*

The new species has been placed previously with *P. phyllicifolia* with which it shares features such as relatively narrow leaves that have recurved or revolute margins, apetalous flowers, and fruits having the pyrene operculum almost as long as the pyrene itself. It differs from *P. phyllicifolia* subsp. *phyllicifolia* in having leaves that are glabrous adaxially and villous beneath, deciduous stipules and generally smaller flowers. From *P. phyllicifolia* subsp. *ericifolia*, which is sometimes glabrous above (see below) it is immediately distinguishable by the broader, non-linear leaves. Plants from the Wollongong, Austinmer, Sublime Point and Bulli Pass areas have a more densely villous leaf abaxial surface and calyx; flowers and stipules are at the large end of the range for the species.

*Pomaderris adnata* N.G. Walsh & F. Coates, sp. nov.

*Pomaderridi phyllicifoliae* Lodd. ex Link et *P. mediorae* N.G. Walsh similis strictim sed caulibus pilis destitutis et foliis pagina inferna pilis sparsis parvis adpressis, et floribus petalis differt.

*Type*: New South Wales, Sublime Point, *N.G. Walsh 3911*, 21.ix.1994 (holotype MEL; isotypes CANB, NSW).

Spreading *shrub* to 2 m high. *Young stems* pubescent with dense, greyish stellate hairs. *Leaves* narrow-elliptic, narrow-obovate, elliptic or obovate, 15–30 mm long, 3–8 mm wide; base cuneate; margins entire or very slightly sinuate, recurved; apex obtuse; adaxial lamina glabrous, smooth, lateral veins not or slightly impressed; abaxial lamina pubescent with dense, greyish stellate hairs; lateral veins apparent, penninerved, with very sparse, closely to loosely appressed, greyish or yellow-rusty simple hairs and medium to dense, greyish stellate hairs; petiole 1–3 mm long; stipules narrow-ovate, acute, 1–2 mm long, deciduous. *Inflorescence* of c. 20–50 flowers, hemispherical or globoid, terminal or axillary, 1–4 cm long, 1–3 cm wide; bracts caducous; pedicels

1–2.5 mm long. *Flowers* cream; externally densely pubescent with white-greyish stellate hairs; hypanthium 1–2 mm in diameter, 0.7 mm long; sepals 1.8–2 mm long; petals present on most flowers but sometimes fewer than 5, 1.2–1.5 mm long, oblanceolate, flat or slightly cupped; stamens 1.8–2.2 mm long, distinctly longer than petals, the filaments shortly adnate to the petal base; anthers 0.7–0.8 mm long; ovary half-inferior, stellate-pubescent; style glabrous, 0.8–1.3 mm long, branched in middle third. Fruit ovoid, c. 3 mm long, blackish; apex acute; torus slightly below midway; operculum membranous, occupying most of pyrene inner face; seed c. 1.8 mm long. (Fig. 2g–i)

#### *Other Specimens Examined*

NEW SOUTH WALES: type locality, *N.G. Walsh 4074*, 19.xii.1995 (MEL); *P.C. Jobson 4285*, 2.vi.1996 (MEL, NSW).

#### *Distribution and Conservation Status*

Known only from a very small population from Sublime Point, near Wollongong, Central Coast floristic subdivision of New South Wales (Anderson 1961, 1968). Conservation Code (Briggs and Leigh 1989) 1V.

#### *Habitat*

Heathy woodland and open forest on sandy loam. Altitude c. 320 m.

#### *Phenology*

Flowers: September. Fruits: November–December.

#### *Etymology*

From the Latin *adnatus* (= joined) referring to the base of the staminal filament which is shortly united with the petal claw.

#### *Notes*

In its narrow-elliptic to obovate leaves, *P. adnata* bears a superficial resemblance to *P. mediora* and *P. phyllicifolia*, but the indumentum of the stems and abaxial leaf surfaces is very different, with simple hairs being absent from the stems, and rather short, sparse and appressed on the midrib and larger lateral veins of the abaxial leaf surfaces. The flowers are quite unlike either of those two species however, being petalous and bearing only stellate hairs on the hypanthium and sepals. The condition of each of the staminal filaments being shortly united with the claw of its subtending petal occurs also in the narrowly endemic Victorian species *P. subplicata* (Walsh 1992), but that species differs substantially from *P. adnata* in its smaller (to 10 mm long), relatively broader leaves that are finely stellate pubescent on both surfaces.

#### ***Pomaderris delicata* N.G. Walsh & F. Coates, sp. nov.**

A *P. andromedifolia* A. Cunn. foliis minoribus, pagina abaxiali non sericea et stipulis minoribus non persistentibus differt.

*Type*: New South Wales, Goulburn-Bungonia Rd, 12 km ESE of Goulburn, *N.G. Walsh 4035*, 11.x.1995 (holotype MEL; isotypes BRI, CANB, HO, NSW).

*Shrub* 1–2 m high. *Young stems* pubescent with very sparse, loosely appressed greyish-yellow or rusty simple hairs and dense, greyish-yellow stellate hairs. *Leaves* elliptic, 13–30 mm long, 5–15 mm wide; base cuneate; margins entire, plane or slightly recurved; apex obtuse to broadly acute; adaxial lamina glabrous, smooth,

lateral veins not or only slightly impressed; abaxial lamina densely pubescent with greyish stellate hairs; midrib with a few appressed, pale or rusty simple or comb-like hairs, sometimes extending onto lateral veins; petiole 3–5 mm long; stipules triangular, acute, 1–2 mm long, caducous. *Inflorescence* of 20 to >50 flowers, pyramidal, terminal, 1.5–4 cm long, 2–5 cm wide; bracts caducous; pedicels 1.5–3 mm long. *Flowers* golden-yellow; externally pubescent with sparse to moderately dense, loosely appressed to spreading greyish simple hairs (sometimes very short) and dense, greyish stellate hairs, both hair types less dense on sepals; hypanthium 0.8–1.2 mm in diameter, 0.8–1 mm long; sepals 1.7–2 mm long, spreading; petals 1.7–2 mm long, spatulate; stamens c. 1.5 mm long; anthers 0.9–1.1 mm long; ovary inferior, pubescent with simple and stellate hairs; style glabrous, 1–1.5 mm long, branched in upper to middle third. Fruit ellipsoid to obovoid, 2.5–3.5 mm long, brown; apex obtuse; torus c. equatorial; operculum c. two-thirds pyrene length; seed c. 2 mm long. (Fig. 2j–l)

#### *Representative Specimens* (6 specimens examined)

NEW SOUTH WALES: Goulburn-Bungonia, C.W.E. Moore 2735, 20.x.1953 (CANB, MEL, NSW); Bungonia Road, 8 miles (10.8 km) from Goulburn, I.C.R. Holford, 14.x.1955 (NSW); Beside Goulburn-Bungonia Rd, c. 11 km by road from Goulburn, N.G. Walsh 3917, 21.ix.1994 (CANB, MEL, NSW).

#### *Distribution and Conservation Status*

Narrowly endemic to an area between Bungonia and Goulburn, Southern Tablelands of New South Wales (Anderson 1961, 1968), occurring along the roadside for a distance of c. 0.2 km, and extending for an unknown distance into woodland on adjacent private properties. Conservation Code (Briggs and Leigh 1989) 2Ri, but further surveys are warranted to assess potential habitat threats.

#### *Habitat*

Dry open forest (*Eucalyptus sieberi*, *E. macrorhyncha* dominant) on skeletal to shallow soil derived from Silurian sandstones and siltstones (Towrang Beds). Altitude c. 750 m.

#### *Phenology*

Flowers: October. Fruits: December.

#### *Etymology*

The epithet is derived from Latin and refers to the dainty appearance of the plant.

#### *Notes*

This entity has formerly been referred (tentatively) to *P. andromedifolia*, a species that occurs close to populations of *P. delicata* but differs significantly in its generally longer leaves that are always silky-pubescent on the abaxial surface, as are the young stems, hypanthium and sepals. *P. andromedifolia* also differs in having larger stipules (2–4 mm long) that usually persist for several nodes below the growing tip, whereas those of *P. delicata* fall before or soon after the expansion of the leaf blade. Further, the stems of *P. delicata* become glabrous by the second year and adopt a polished appearance, whereas those of *P. andromedifolia* usually retain a covering of hairs for several seasons.

***Pomaderris bodalla*** N.G. Walsh & F. Coates, sp. nov.

*Pomaderridi brunneae* N.A. Wakef. affinis sed foliis marginibus non recurvatis, pagina inferna non villosa et nervis lateralibus impressis vix differt.

*Type:* New South Wales, Dignam Ck, 6.5 km SW of Tilba Tilba, *N.G. Walsh 4045*, 13.x.1995 (holotype MEL; isotypes CANB, NSW).

*Shrub* 2–4 m high. *Young stems* with spreading; rusty simple hairs and dense, greyish stellate hairs. *Leaves* elliptic, broad-elliptic, broad-obovate, or often, sub-rhombic, (15–)20–25(–30) mm long, (10–)12–15(–20) mm wide; base cuneate; margins entire but often slightly undulate; apex obtuse to broadly acute, occasionally terminated by a tuft of simple hairs; adaxial lamina glabrous, smooth; lateral veins not or slightly impressed; abaxial lamina pubescent with sparse to very sparse, spreading rusty simple hairs overlaying dense, greyish stellate hairs; lateral veins clearly visible, with simple hairs denser than those of internerves; petiole 2.5–6 mm long. *Stipules* triangular or narrow-triangular, 2–7 mm long, deciduous. *Inflorescence* many-flowered, narrowly pyramidal, terminal, 2–8 cm long, 1.5–4 cm wide; bracts caducous; pedicels 1–2 mm long. *Flowers* cream; externally densely pubescent, greyish with loosely appressed or spreading simple hairs overlaying stellate hairs, sparser on sepals; hypanthium 0.8–1.2 mm in diameter, 0.6–0.8 mm long; sepals 1.5–1.7 mm long, erect to slightly spreading; petals absent; stamens 1–1.5 mm long; anthers 0.7–0.9 mm long; ovary inferior, stellate-pubescent or with simple hairs largely obscuring stellate hairs; style glabrous, 0.8–1.2 mm long, branched in middle third. *Fruit* not seen. (Fig. 2m–o)

*Representative Specimens* (10 specimens examined)

NEW SOUTH WALES: Bodalla-Runnyford, *M. Shoobridge*, 2.x.1961 (BRI, CANB, NSW); Nerrigundah, *W. McReadie*, x.1966 (NSW); Bodalla State Forest, Red Creek Rd, 1 km N of Tinpot Rd, *N.G. Walsh 4047*, 12.x.1995 (CANB, MEL); 2 km ESE of Brogo Hall, *N.G. Walsh 4051*, 12.x.1995 (CANB, MEL, NSW).

*Distribution and Conservation Status.*

Occurs in the South Coast botanical subdivision of New South Wales (Anderson 1961, 1968) where apparently endemic between Nerrigundah and Brogo. Conservation Code (Briggs and Leigh 1989) 2R.

*Habitat*

Occurs in sheltered sites (streambanks, gully heads etc.) in moist open-forests. Altitude range 40–350 m.

*Phenology*

Flowers: October.

*Etymology*

From the locality of Bodalla, the centre of known distribution of the species; an Aboriginal word of somewhat obscure meaning, but which probably refers to the locality's proximity to water.

*Notes*

*Pomaderris bodalla* has previously been confused with *P. brunnea* — a species having leaves with recurved margins, villous abaxial indumentum and strongly impressed lateral veins. Some specimens have also been determined as *P. discolor* which also has recurved leaf margins. The latter species characteristically has leaves that are evenly tapered to the cuneate base and acute apex, and has (sometimes petalous)



flowers with sparser simple indumentum on the hypanthium and widely spreading sepals. Near Brogo, *P. bodalla* sometimes grows with *P. brogoensis*, and some plants have been collected that may be hybrids between the two. These have the general appearance of *P. bodalla*, but the leaves are minutely stellate-pubescent adaxially, and the new growth is often rusty villous as it is in *P. brogoensis*.

***Pomaderris precaria*** N.G. Walsh & F. Coates, sp. nov.

*Pomaderridi cocoparranae* N.G. Walsh et *P. repertae* N.G. Walsh affinis sed floribus apetalis; a *P. cocoparrana* foliis pagina inferna pilis in internervis dispersis differt; a *P. reperta* foliis pagina supra indumento sparsiori, pagina inferna pilis in internervis sparsioribus differt.

*Type:* New South Wales, Rylstone-Bylong Rd, *N.G. Walsh 3906*, 18.ix.1994 (holotype MEL; isotypes CANB, NSW).

*Pomaderris* sp. D sensu G.J. Harden, *Flora New South Wales* 1: 364 (1990).

Slender *shrub*, 1.5–3 m high. *Young stems* greyish-rusty with sparse to medium, loosely appressed simple hairs overlying dense stellate hairs. *Leaves* elliptic or obovate, 10–45 mm long, 8–25 mm wide, entire; base cuneate to obtuse; margins plane; apex obtuse; adaxial lamina subvelutinous with very short (c. 0.1 mm long), simple, straight hairs that are shortly hooked apically, lateral veins not or only slightly impressed; abaxial lamina densely pubescent with sparse, loosely appressed to spreading greyish or rusty simple hairs overlying dense greyish stellate hairs; midrib and lateral veins pubescent or villous, clearly visible, with a moderately dense indumentum of appressed or semi-appressed simple rusty hairs overlying greyish stellate hairs; petiole 3–9 mm long; stipules ovate, acuminate, 3–5 mm long, deciduous. *Inflorescence* of c. 50–200 flowers in terminal, approximately hemispherical panicles 3–5 cm long, 3–8 cm wide; bracts deciduous (or a few weakly persisting); pedicels 2–4 mm long. *Flowers* yellow; indumentum greyish, densely pubescent to villous with loosely appressed to spreading simple hairs overlaying stellate hairs, sparser on sepals; hypanthium c. 1 mm in diameter, 0.8 mm long; sepals 1.8–2.7 mm long; petals 1.2–2.2 mm long, spatulate, margins entire or crenulate, distinctly clawed; stamens 1–2 mm long; anthers 0.8–1.4 mm long; ovary inferior, summit villous with simple and stellate hairs; style glabrous, 1.3–1.8 mm long, slightly lobed to branched in middle third. *Fruit* blackish, 4–5 mm long, ovoid or ellipsoid, obtuse but shortly beaked; torus c. equatorial; operculum c. half as long as pyrene; seed c. 2.5 mm long. (Fig. 3a–c)

*Representative Specimens* (7 specimens examined)

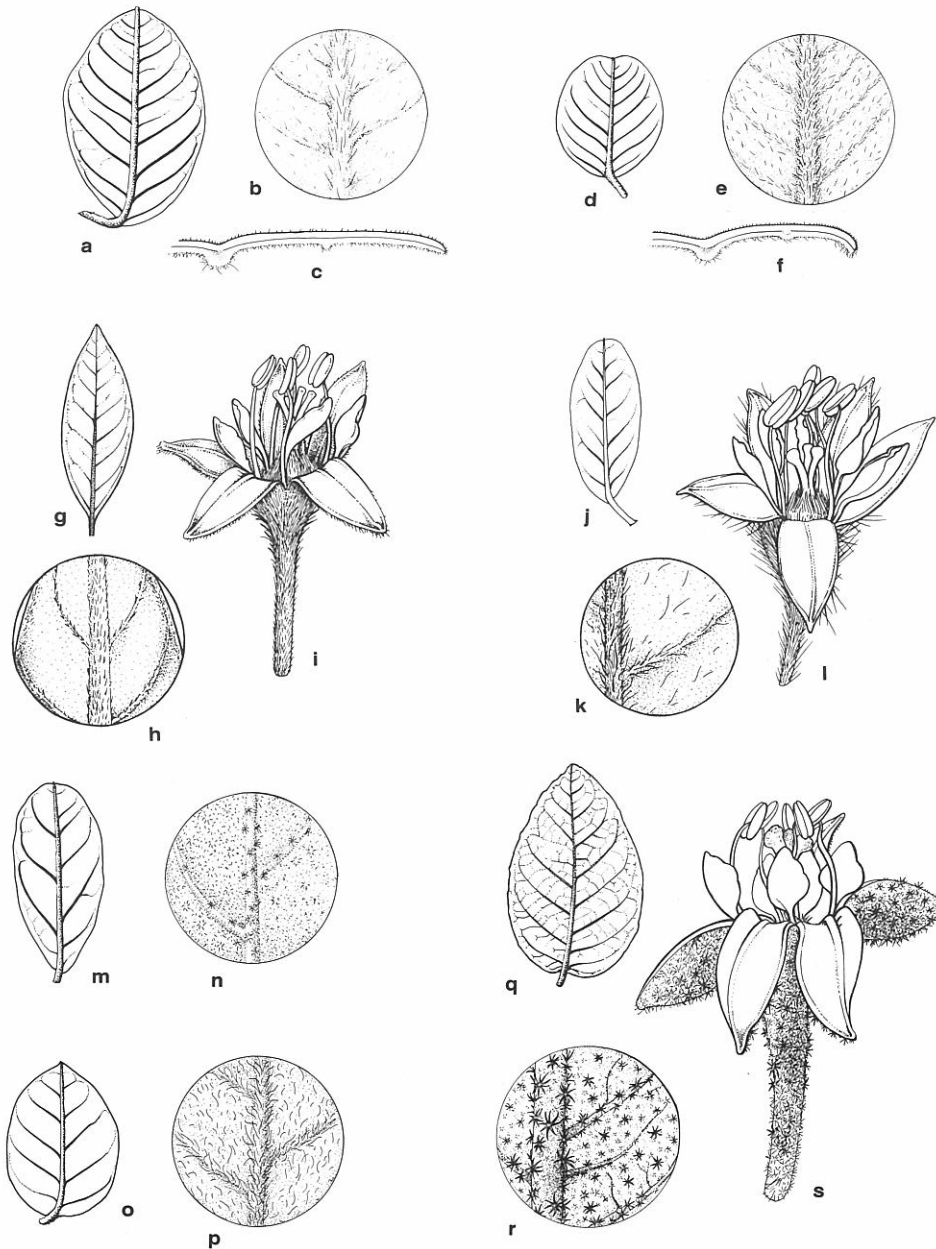
NEW SOUTH WALES: Rylstone, 3 miles (5 km) along Bylong Rd, *R.O. Cross*, 29.ix.1938 (MEL, NSW); Bylong Rd, c. 5.5 miles (9 km) N of Rylstone, *J.H. Willis*, 6.x.1969 (MEL); Sir Johns Point, Mt Gundangaroo, 15 miles ENE of Capertree, *E. F. Constable 7223*, 18.x.1966 (NSW).

*Distribution and Conservation Status*

Apparently confined to the Rylstone area, in the Central Tablelands and/or Central Western Slopes of New South Wales (Anderson 1961, 1968). Recorded from a roadside and adjacent private property, and at St Johns Point, Wollemi National Park (but not collected from this latter area since 1966). Conservation Code (Briggs and Leigh 1989) 2VC-.

*Habitat*

Skeletal or gravelly soils derived from sandstone (Hawkesbury Sandstones) on rocky ridges or below cliffs in shrubland or dry eucalypt woodland. Altitude range c. 700–900 m.



**Fig. 3.** a–c *Pomaderris precaria* (Walsh 3906): a leaf, x1; b undersurface detail, x3; c transverse section, x3. d–f *P. reperta* (Jobson 3872): d leaf, x1; e undersurface detail, x3; f transverse section, x3. g–i *P. argrophylla* subsp. *granitica* (Walsh 3883): g leaf, x1; h undersurface detail, x3; i flower, x7. j–l *P. andromedifolia* subsp. *confusa* (Pullen 2893): j leaf, x1; k undersurface detail, x3; l flower, x7. m–n *P. betulina* subsp. *actensis* (Canning 5042): m leaf, x1; n undersurface detail, x3. o–p *P. ligustrina* subsp. *latifolia* (Coveny 2210): o leaf, x1; p undersurface detail, x3. q–s *P. elliptica* var. *diemenica* (Hemsley 6276): q leaf, x0.5; r undersurface detail, x3; s flower, x7.

### Phenology

Flowers: September–October. Fruits: December.

### Etymology

From the Latin meaning precarious, pertaining to the insecure roadside situation of the only recently-collected population.

### Notes

*Pomaderris precaria* appears to be most closely related to *P. cocoparrana* and *P. reperta* (see below), both localised species that occur on the western fall of the Great Dividing Range in New South Wales. Shared characters include medium-sized leaves having a rather stiff texture and a very fine indumentum on the adaxial surface, and a general similarity in the nature (but not density or distribution) of the abaxial indumentum. *Pomaderris precaria* differs from both species in having regularly petalous flowers (rarely a few petals present in *P. reperta*). It differs further from *P. cocoparrana* in having scattered simple hairs in the internerves of the leaf abaxial surface. It differs from *P. reperta* in having leaves with a sparser adaxial indumentum and far fewer simple hairs on the abaxial surface. *Pomaderris lanigera* and *P. aurea*, both petalous species, are superficially similar, but both have leaves with a sparser, longer adaxial indumentum and denser, non-appressed simple hairs abaxially. *Pomaderris aurea* is not known to occur in New South Wales.

***Pomaderris reperta*** N.G. Walsh & F. Coates, sp. nov.

*Pomaderridi cocoparranae* N.G. Walsh affinis sed floribus majoribus, foliis pagina supra indumento sparsiori et grossiori differt.

*Type*: New South Wales, 2 km E of Denman, *P.C. Jobson* 3872, 22.ix.1995 (holotype MEL; isotypes BRI, CANB, HO, K, NSW).

*Shrub* 1–3 m high. *Young stems* densely villous with rusty simple and stellate hairs. *Leaves* ovate to broad-ovate, elliptic to broad-elliptic or obovate to broad-obovate, 10–35 mm long, 8–20 mm wide; base obtuse; margins entire, flat to recurved; apex obtuse, or commonly, shallowly emarginate; adaxial lamina velutinous with very short (c. 0.1 mm long), dense, erect simple hairs; lateral veins often strongly impressed; abaxial lamina pubescent with mid-dense, loosely appressed or spreading pale and rusty simple hairs overlaying dense white or greyish stellate hairs; midrib and lateral veins clearly visible, more densely indumented than internerves; petiole 3–10 mm long. *Stipules* narrow-triangular or narrow-ovate, acute 3–5 mm long, deciduous. *Inflorescences* of 1–several globoid clusters each of c. 10–30 flowers, often forming a loose hemispherical panicle, terminal, 3–4 cm long, 3–4 cm wide; bracts deciduous; pedicels 1.5–3 mm long. *Flowers* cream; externally villous with spreading silvery or pale rusty simple hairs overlaying greyish stellate hairs; hypanthium c. 1.5 mm in diameter, 1–1.5 mm long; sepals 2.3–2.8 mm long; petals absent (rarely some flowers with 1–3 petals to c. half as long as the sepals); stamens 2–2.5 mm long; anthers 1.3–1.5 mm long; ovary inferior, summit villous with simple and stellate hairs; style glabrous or simple-pubescent near base, 1.4–1.6 mm long, branched in middle third or from near base. Fruit c. 3.5 mm long, obovoid, dark grey-brown, apex obtuse; torus c. equatorial; operculum slightly more than half pyrene length; seed c. 2 mm long (only 1 sparsely fruiting specimen seen). (Fig. 3d–f)

### Other Specimens Examined

NEW SOUTH WALES: Timber Reserve 62282, Parish of Denman, County of Brisbane, *J. Kennedy*, ix.1961 (NSW); Denman, *C.F. Cameron*, vii.1924 (NSW); Denman, *C.R. Stafford*, 25.v.1945 (NSW); type locality, *T. Turner*, 10.x.1995 (MEL), *N.G. Walsh* 4070, 19.xii.1995 (MEL).

*Distribution and Conservation Status.*

Narrowly endemic to the Denman area, New South Wales, Central Western Slopes botanical subdivision (Anderson 1961, 1968), and currently known from only the type locality where shrubs are scattered over an area of c. 1 ha. Conservation Code (Briggs and Leigh 1989) is assessed at 2V.

*Habitat*

Occurs in dry *Eucalyptus crebra*-*E. blakelyi* woodland, on brown sandy loam derived from sandstone (Hawkesbury Sandstones). Altitude c. 300 m.

*Phenology*

Flowers: October. Fruits: December (1 record).

*Etymology*

From the Latin *reperta*, to rediscover, or find after searching. The species was rediscovered following a targeted search of the type area, after not having been collected since 1961.

*Notes*

Related to *P. cocoparrana*, a species confined to the Cocoparra Range (near Griffith in New South Wales), but the adaxial indumentum of the leaves is sparser and coarser and the flowers are larger (sepals 2.0–2.2 mm long in *P. cocoparrana*). See also notes following *P. precaria*. Specimens at NSW had been determined as *P. vellea*, a rare species of scattered distribution from the New England area of New South Wales to near Sydney, but that species has larger flowers (with sepals often shortly united near base and forming a short tube), finer and shorter adaxial indumentum, and simple hairs on young branchlets and leaf undersurfaces that are extremely dense, rusty and flexuose or curled. Possibly also related to *P. subcapitata* and *P. eriocephala*, but differs in the floral bracts falling prior to anthesis, and in the absence of long, thread-like simple hairs on branchlets and leaf undersurfaces.

*Pomaderris argyrophylla* N.A. Wakef. subsp. *graniticola* N.G. Walsh & F. Coates, subsp. nov.

Differt a subspecie typica foliis minoribus obtusis plerumque, sepalis longioribus, petalis praesentibus plerumque.

*Type*: Queensland, Girraween National Park, c. 50 m W of Dr Roberts Waterhole, toward its southern reach, *N.G. Walsh* 3883, 15.ix.1994 (holotype MEL; isotypes BRI, CANB, NSW, UNE).

*Pomaderris* sp. 1 *sensu* E.M. Ross, Fl. South-eastern Queensland 2: 50 (1986).

*Shrub* 1.5–5 m high. *Young stems* with medium to dense, closely to loosely appressed, white-greyish or silvery (rarely golden) simple hairs and medium to dense, white-greyish stellate hairs. *Leaves* ovate or elliptic, 15–65 mm long; 8–30 mm wide; base cuneate or obtuse; margins entire, plane or slightly recurved; apex acute or obtuse; adaxial lamina glabrous, smooth; lateral veins not or slightly impressed; abaxial lamina pubescent with sparse to medium, closely to loosely appressed, white-greyish simple hairs (denser and sometimes yellowish on veins), and dense white-greyish stellate hairs; lateral veins clearly visible; petiole 4–10 mm long. *Stipules* ovate, acute, 3–5 mm long, soon deciduous. Inflorescence of 10–c. 100 flowers, pyramidal, terminal, 2–8 cm long

and wide; bracts deciduous; pedicels 1.5–3.5 mm long. *Flowers* cream or yellow; externally pubescent to villous with moderately dense, loosely appressed, white-greyish or silvery simple hairs and dense greyish, or silvery stellate hairs (sepals less densely indumented than hypanthium); hypanthium c. 0.8 mm in diameter, 1–1.3 mm long; sepals 2–2.5 mm long; petals, c. 1.5 mm long, spreading, spatulate, rarely absent; stamens 2–2.5 mm long; anthers 0.7–1 mm long; ovary inferior, summit simple-pubescent; style glabrous or simple-pubescent near base, 1.5–1.7 mm long, branched in upper or middle third. *Fruit* 3–4 mm long, ovoid, blackish, apex obtuse; torus c. equatorial; operculum c. half as long as pyrene; seed c. 1.8 mm long (only 1 fruiting specimen seen). (Fig. 3g–i)

#### *Representative Specimens* (35 specimens examined)

QUEENSLAND: Bald Rock Creek, Dr Roberts Waterhole, c. 10 km N of Wallangarra, *I. R. Telford* 10698, 7.ix.1988 (BRI, MEL, NSW, CANB). NEW SOUTH WALES: N of Bruxner Highway, 34 km WNW of Tenterfield, *G. J. White*, 24.v.1984 (BRI, NE, NSW, CANB, MEL); Gibraltar Ra., c. 67 km E of Glen Innes, on the Gwyder Highway, *R. Coveny* 2219, 2.x.1969 (NSW, BRI).

#### *Distribution and Conservation Status*

Occurs in south-eastern Queensland in the Stanthorpe and southern Darling Downs districts; and north-eastern New South Wales in the Gibraltar Range, Wyberba and New England regions. Not considered rare or threatened at present; conserved in Girraween, Sundown, Bald Rock and Gibraltar Range National Parks.

#### *Habitat*

Open forest and in scrub along water courses on alluvium, clay loam and sandy soils derived from granite. Altitude range 700–1000 m.

#### *Phenology*

Flowers: September–October. Fruits: January (1 collection only)

#### *Etymology*

From the Latin (*granites* = granite, *-cola* = dweller), referring to the subspecies' almost exclusive occurrence on granitic substrates.

#### *Notes*

The distinctions between *P. argyrophylla* subsp. *argyrophylla* and subsp. *graniticola* are outlined in the key below. At their extremes, the two subspecies are quite distinct, but in the range areas east of Stanthorpe, where their distributions overlap, plants may be difficult to assign to either subspecies. Small-leaved variants of subsp. *graniticola* (as represented by the type) resemble small-leaved variants of *P. andromedifolia* subsp. *andromedifolia* which occur in southern New South Wales and eastern Victoria. The simple hairs on the abaxial leaf surfaces of *P. argyrophylla* subsp. *graniticola* are shorter and sparser than those of *P. andromedifolia* and never rusty as in that species. *Pomaderris delicata* also resembles the type variant of *P. argyrophylla* subsp. *graniticola* but it has even fewer simple hairs on the abaxial surfaces of the leaves, and has exceedingly short (1–2 mm long) stipules that do not persist beyond expansion of the leaf blade. Larger-leaved variants of subsp. *graniticola* to the north of Girraween National Park (e.g. Amiens, Messines) resemble *P. queenslandica* but lack the large, broad-ovate stipules characteristic of that species.

*Key to subspecies of P. argyrophylla*

1. Leaves 50–120 mm long, acute to acuminate; sepals 1.3–2 mm long; petals usually absent, white or cream if present; from North Queensland (Atherton area) to Barrington Tops area, New South Wales ..... subsp. *argyrophylla*
1. Leaves 15–65 mm long, often obtuse; sepals 2–2.5 mm long; petals usually present, usually yellow, rarely white or cream; Granite Belt area of south-eastern Queensland and north-eastern New South Wales ..... subsp. *graniticola*

***Pomaderris andromedifolia*** A. Cunn. subsp. *confusa* N.G. Walsh & F. Coates, subsp. nov.

Differt a subspecie typica foliis pagina inferna in internervis pilis sparsioribus arcuato-patentibus, bracteis inflorescentiae persistentibus ad anthesin plerumque.

*Type:* Australian Capital Territory, Molonglo Gorge, Kowen District, *R. Pullen* 2893, 12.x.1961 (holotype MEL; isotypes A, AD, BH, BM, BRI, CANB, K, L, NSW, US).

*Pomaderris* sp. A *sensu* S.W.L. Jacobs & J. Pickard, *Pl. New South Wales* 185 (1981) p.p.; G.J. Harden, *Fl. New South Wales* 1: 362 (1990) p.p.

*Shrub* 1–2 m high. *Young stems* with medium, flexuose, loosely appressed to spreading, greyish or rusty simple hairs and dense, greyish or rusty stellate hairs. *Leaves* ovate, elliptic or obovate, 15–40 mm long, 10–15 mm wide; base cuneate; margins entire, recurved; apex acute or obtuse; adaxial lamina glabrous, smooth, veins not or slightly impressed; abaxial lamina pubescent with sparse to medium, curved to slightly flexuose, loosely appressed to spreading, yellow-grey simple hairs and dense, greyish stellate hairs, rusty on veins; lateral veins clearly visible; petiole 3–6 mm long. *Stipules* narrow-triangular to triangular, acute, 1.5–3.5 mm long, deciduous. *Inflorescences* >50-flowered, pyramidal, terminal, (1.5–)3–7(–10) cm long, (1.5–)3–5(–7) cm wide; bracts often persisting until anthesis; pedicels 1.5–3.5 mm long. *Flowers* cream, externally pubescent with dense, straight, loosely appressed to spreading, whitish simple hairs (sparse on sepals) and dense, whitish stellate hairs; hypanthium 1 mm in diameter, 1 mm long; sepals 2–2.5 mm long; petals 2–2.5 mm long, spatulate; stamens 2–2.5 mm long; anthers 1.2–1.5 mm long; ovary inferior, pubescent with simple hairs concealing a layer of stellate hairs; style glabrous, 1.5–2 mm long, branched in middle third. Fruit 3.5–4 mm long, brown to grey, obovoid; apex broadly obtuse but sometimes shortly beaked; torus c. equatorial; operculum c. half pyrene length; seed 1.5–2 mm long. (Fig. 3j–l)

*Representative Specimens* (32 specimens examined)

NEW SOUTH WALES: 4.6 km E of Snowy R. above its junction with Delegate R., *A. V. Slee* 2366, 27.x.1988 (MEL, CANB, NSW); Below Newtons Crossing picnic area, above bank of Wallagaraugh R., Yambulla State Forest, *M. Parris* 9872 and N. Fisher, 25.vi.1991 (CANB, NSW). AUSTRALIAN CAPITAL TERRITORY: near Gibraltar Creek, c. 3 km E of Woods Reserve, *P. Gilmour* 5939, 30.x.1986 (MEL); Molonglo R., Lower Molonglo Gorge, *P. Barrer*, 20.xi.1990 (CANB, K, MEL, NSW).

*Distribution and Conservation Status*

Occurs in the Australian Capital Territory at Molonglo Gorge and Gibraltar Creek, and in New South Wales at Mt Jerrabombera near Queanbeyan, extending south to the coast near the Victorian border. Currently not considered rare or threatened.

*Habitat*

Riparian scrub, ridge top shrubland, woodland and forest on shallow or skeletal soils. Altitude range 30–920 m.

*Phenology*

Flowers: September–October. Fruits: December.

*Etymology*

From the Latin meaning confused; a reference to the confusion surrounding this entity, having been regarded by Burbidge and Gray (1970) and Harden (1990) as intermediate (and possibly of hybrid origin) between *P. andromedifolia* and *P. betulina*. A re-examination of specimens suggests that the correct placement of specimens of this taxon had been complicated by the inclusion of another, partly co-extensive, undescribed taxon, described below as *P. betulina* subsp. *actensis*.

*Notes*

The distinctions between *P. andromedifolia* subsp. *confusa* and subsp. *andromedifolia* are outlined in the key below. *Pomaderris betulina* subsp. *actensis* (described as new below), which had in the past been confused with this taxon, differs in having virtually sessile, apetalous flowers (rarely some flowers with 1 or 2 small petals), and leaves lacking any simple hairs on the abaxial surface.

*Key to subspecies of P. andromedifolia*

1. Nerves and internerves on abaxial surface with straight, appressed or semi-appressed simple hairs, often appearing silky; bracts of inflorescence usually deciduous before anthesis .....subsp. *andromedifolia*
1. Nerves and internerves with spreading, curved to flexuose simple hairs; bracts of inflorescence persisting until anthesis .....subsp. *confusa*

***Pomaderris betulina* A. Cunn. subsp. *actensis* N.G. Walsh & F. Coates, subsp. nov.**

Differt a subspecie typica sepalis longioribus, foliis nervis lateralibus impressis leniter modo, marginibus recurvatis non vel vix.

*Type*: Australian Capital Territory, slopes near lower Gibraltar Ck, *P. Gilmour* 5926, 30.x.1986 (holotype CANB; isotype MEL).

*Pomaderris* sp. A *sensu* S.W.L. Jacobs & J. Pickard, *Pl. New South Wales* 185 (1981) p.p.; G.J. Harden, *Fl. New South Wales* 1: 362 (1990) p.p.

*Shrub* 1–4 m high. Young stems with dense, rusty stellate hairs. *Leaves* narrow-obovate, elliptic or obovate to oblong, 15–40 mm long, 8–22 mm wide; base cuneate; margins entire, plane to recurved; apex obtuse; adaxial lamina glabrous, smooth, lateral veins not or slightly impressed; abaxial lamina densely pubescent with greyish stellate hairs (occasionally a few scattered stalked rusty hairs); veins clearly visible; petiole 3–11 mm long. Stipules narrow-triangular, acute to acuminate, 2–3 mm long, deciduous. *Inflorescence* a panicle of several globular clusters of c. 10–20 flowers, terminal, 2–8 cm long, 2–4 cm wide; bracts persisting until (and usually beyond) anthesis; pedicels 0–1.5 mm long. *Flowers* cream; externally pubescent with medium to dense, loosely appressed to spreading, white or occasionally rusty simple hairs over dense, white or greyish stellate hairs (indumentum sparser on sepals than hypanthium); hypanthium 1.2–1.5 mm in diameter, 1–1.5 mm long; sepals 2–2.5(–3) mm long; petals usually absent, occasionally 1 or 2 (to 2 mm long) in some flowers; stamens 2–2.5(–3) mm long; anthers 1.2–1.5 mm long; ovary inferior, simple-pubescent; style glabrous, 1.5–2(–2.5) mm long, branched in upper to middle third. *Fruit* 3–4 mm long, brown, obovoid; apex obtuse; torus c. equatorial; operculum c. half pyrene length (sometimes poorly developed); seed 1.5–2 mm long. (Fig. 3m–n)

*Representative Specimens* (23 specimens examined)

NEW SOUTH WALES: Southern Tablelands, Burrinjuck, *E. Gauba s.n.*, 15.x.1952 (CANB). AUSTRALIAN CAPITAL TERRITORY: Paddys River, *E.M. Canning 5042*, 18.viii.1981 (CANB, MEL); near Gibraltar Creek, about 3 km ENE of Woods Reserve, *P. Gilmour 5936*, 30.x.1986 (MEL); 2.3 km N of Deadmans Hill, rocky knoll west of Bushfold Flat, *E. M. Canning 6654A*, 16.xi.1990 (MEL, NSW, CANB).

*Distribution and Conservation Status*

Occurs in the Australian Capital Territory at Gibraltar Creek, Paddys River, and Mts Tennent and Tharwa, and near the border with New South Wales at Burrinjuck. Conservation Code (Briggs and Leigh 1989) 2R.

*Habitat*

Shrubland, riparian scrub, woodland, and forest associated with rocky ridges, cliff lines and dry gullies; soils skeletal or shallow, derived from sediments or granite. Altitude range 500–1220 m.

*Phenology*

Flowers: October. Fruits: November–December.

*Etymology*

From the acronym for the Australian Capital Territory from where virtually all specimens have been collected.

*Notes*

Distinguished from the typical subspecies by features outlined in the key below. See also notes following the description of *P. andromedifolia* subsp. *confusa* (above).

*Key to subspecies of P. betulina*

1. Sepals 1.5–2 mm long; leaves with secondary veins strongly impressed above, margins usually distinctly recurved .....subsp. *betulina*
1. Sepals 2–2.5(–3) mm long; leaves with secondary veins hardly impressed above, margins not or hardly recurved .....subsp. *actensis*

*Pomaderris ligustrina* Sieb. ex DC. subsp. *latifolia* N.G. Walsh & F. Coates, subsp. nov.

Differt a subspecie typica foliis ovatis late vel subrotundatis (sub bis longioribus quam latioribus) et sepalis longioribus.

*Type*: New South Wales, Gibraltar Ra. National Park, c. 67 km E of Glen Innes, on the Gwydir Highway, *R. Coveny 2210*, 2.x.1969 (holotype NSW; isotypes BRI, W).

*Shrub* 0.4–4.5 m high. *Young stems* densely greyish stellate-pubescent, with scattered long simple hairs, but becoming glabrous by the second year of growth. *Leaves* broad-ovate to suborbicular, 17–30 mm long, 10–20 mm wide; base obtuse; margins entire, weakly recurved; apex broadly acute or obtuse; adaxial lamina glabrous, lateral veins slightly impressed; abaxial lamina villous with spreading golden to rusty simple hairs above fine whitish stellate hairs; lateral veins clearly visible but exceeded by the simple hairs; petiole 3–10 mm long. *Stipules* ovate, 2–4 mm long, acuminate, deciduous. *Inflorescence* a narrow panicle, 1–5 cm long, 1–3 cm wide, comprising several loose globular clusters each of c. 10–30 flowers, terminal and upper axillary; bracts deciduous; pedicels 1.5–2.5 mm long. *Flowers* cream; externally villous with longer grey or



yellowish simple hairs over fine stellate hairs; hypanthium c. 1 mm in diameter, 0.8–1 mm long; sepals 1.5–2 mm long; petals absent; stamens c. 1.5 mm long; anthers 0.5–0.7 mm long; ovary inferior, summit villous; style glabrous, 1–1.5 mm long, branched near base. *Fruit* 3–3.5 mm long, ellipsoid; apex obtuse; torus c. equatorial; operculum c. half pyrene length; seed c. 1.5–2 mm long. (Fig. 30–p)

*Representative Specimens* (4 specimens examined)

QUEENSLAND: Ballandean National Park, *M.S. Clemens*, xi.1944 (BRI). NEW SOUTH WALES: Pheasant Mountain, 25 miles (40 km) NE of Guyra, *H.J. Wissmann*, x.1971 (NE).

*Distribution and Conservation Status*

Localised in granite country in south-eastern Queensland near Stanthorpe and north-eastern New South Wales east of Glen Innes. Known from only four collections, the most recent being 1971. It is unquestionably rare but further surveys are required to ascertain if it is threatened. Conservation Code (Briggs and Leigh 1989) tentatively 2R.

*Habitat*

Ecological notes on the type specimen suggest a damp situation (perhaps a gully or slope above a watercourse), with associated species including *Acacia irrorata*, *Calochlaena (Culcita) dubia* and *Gahnia* sp. Soil is likely to be derived from granite. Altitude range 800–900 m.

*Phenology*

Flowers: October. Fruits: November.

*Etymology*

From Latin, meaning broad-leaved, referring to the trait most readily separating subsp. *latifolia* from the typical subspecies.

*Notes*

Distinguished from subsp. *ligustrina* by features outlined in the following key.

*Key to subspecies of P. ligustrina*

1. Leaves lanceolate to narrow-elliptic, more than twice as long as wide; margins usually distinctly recurved; sepals 0.8–1.4 mm long .....subsp. *ligustrina*
1. Leaves broad-ovate to suborbicular, less than twice as long as wide; margins plane to weakly recurved; sepals 1.5–2 mm long .....subsp. *latifolia*

*Pomaderris elliptica* Labill. var. *diemenica* N.G. Walsh & F. Coates, var. nov.

Differt a varietate typica indumento grossiori, sepalis et petalis longioribus.

*Type*: Tasmania, Mt Stronach, 4 km E of Scottsdale, *A. Moscal* 3528, 15.x.1983 (holotype HO; isotype MEL).

*Shrub* 1–4 m high. *Young stems* with dense, rusty stellate hairs. *Leaves* ovate, 35–100 mm long, 20–45 mm wide; base obtuse (rarely cordate); margins entire, plane; apex acute or obtuse; adaxial lamina glabrous; abaxial lamina densely pubescent with white, greyish or yellowish stellate hairs, sometimes with scattered larger, rusty hairs (c. 0.5 mm in diameter), lateral veins and midrib clearly visible, densely stellate pubescent with longer rusty, comb-like hairs, frequently with sparse, very short, rusty, simple hairs; petiole 8–15 mm long. *Stipules* narrow-ovate, 4–7 mm long, acute, deciduous. *Inflorescences* many-flowered, pyramidal or hemispherical, terminal, 4–10 cm long and

wide; bracts caducous; pedicels c. 3 mm long. *Flowers* yellow; externally densely pubescent with white or greyish (rarely rusty) stellate hairs (occasionally with a few very short, sparse simple hairs); hypanthium c. 1 mm in diameter, 1.5 mm long; sepals 2.2–2.8(–3.2) mm long; petals 2–2.5 mm long, spatulate or cordiform; stamens 2–2.5 mm long; anthers c. 1–1.4 mm long; ovary semi-inferior, summit stellate-pubescent; style glabrous, 1.5–2 mm long, slightly lobed, or branched in upper third. *Fruit* obovoid or ellipsoid, 3–4 mm long; apex obtuse (sometimes shortly beaked); torus c. equatorial; operculum c. half as long as pyrene; seed c. 2 mm long. (Fig. 3q–s)

*Representative Specimens* (34 specimens examined)

TASMANIA: Stumpys Bay, *A. Moscal* 3528, 15.x.1983 (HO, MEL); mouth of Derwent R., South Arm Rd at Gellibrand Rd, c. 4.5 km E of South Arm, *A.E. Orchard* 5023, 9.x.1978 (HO).

*Distribution and Conservation Status*

Endemic in Tasmania. Widespread but scattered, occurring in the east from near Hobart to Cape Barren Island. Conservation Code (Briggs and Leigh 1989) 3RCat.

*Habitat*

Scrub and open forest, frequently in damp places but also drier, rocky sites. Altitude range 10–500 m.

*Phenology*

Flowers: September–October. Fruits: November–December.

*Etymology*

The epithet refers to the taxon's restricted occurrence in Tasmania (van Diemens Land).

*Notes*

Distinguished from the typical variety by characters outlined in the key below. It is also close to *P. intermedia* Sieb. ex Fenzl and *P. pilifera* N.A. Wakef. (both occurring in Tasmania), but distinguished from both of these by the general absence of simple hairs. However, some plants have extremely short, sparse simple hairs on the sepals and leaf abaxial midvein. More particularly it differs from *P. intermedia* by the complete absence of simple hairs in the internerve area on the leaf abaxial surface, and from *P. pilifera* by the generally larger leaves and flowers.

*Key to varieties of P. elliptica*

1. Leaves ± evenly and minutely stellate-pubescent beneath (stellae to c. 0.2 mm in diameter); sepals 1.5–2 mm long, lacking simple hairs; petals 1.5–2 mm long; New South Wales to Tasmania .....var. *elliptica*
1. Leaves with sparse simple hairs along midvein and/or scattered larger stellate hairs (to c. 0.5 mm in diameter) on midvein or internerves beneath; sepals 2–2.8 mm long, sometimes with sparse, short, appressed simple hairs; petals 2–2.5 mm long; endemic in Tasmania .....var. *diemenica*

**New Combination**

*Pomaderris phycifolia* Lodd. ex Link subsp. *ericoides* (Maiden & Betche) N.G. Walsh & F. Coates, comb. nov.

*Pomaderris phyllicifolia* var. *ericoides* Maiden & E. Betcher, *Proc. Linn. Soc. New South Wales* 29: 737 (1905).

*Type*: New South Wales, Mongarlowe near Braidwood, *W. Baeuerlen*, xi.1898 (lectotype here selected, NSW; isolectotype MEL).

#### Remaining Syntypes

NEW SOUTH WALES: Tantawangelo Mountain, *J.H. Maiden*, xii.1896 (NSW); Barbers Ck, *H.J. Rumsey*, x.1898 (NSW); Mt Kosciusko, *J.H. Maiden and W. Forsyth*, i.1899 (NSW); Mt Wilson, *J. Gregson*, x.1890 (NSW).

#### Notes

The Baeuerlen specimen was chosen as lectotype above the others (although all are representative), because it is the only one for which a duplicate at another institution has been found.

*Pomaderris ericifolia* Hook. has often been regarded as a synonym for *P. phyllicifolia* subsp. *ericoides* (e.g. Moore 1961; Chapman 1991; Willis 1973), but examination of the type of *P. ericifolia* at K shows it to belong to a narrow-leaved form of *P. phyllicifolia* subsp. *phyllicifolia* (see typification for *P. phyllicifolia* below). Both (relatively) broad- and narrow-leaved plants of subsp. *phyllicifolia* often grow in the same area. Subsp. *phyllicifolia* and *ericoides* are generally allopatric, with the latter restricted to montane or subalpine areas, but they are known to occur together in the Wulgulmerang area of Victoria, and may also both occur in areas of the Southern Tablelands of New South Wales (imprecise geographical details on specimen labels makes the latter assertion difficult to prove). The two subspecies are distinguished by characters given in the following key.

#### Key to subspecies of *P. phyllicifolia*

1. Leaves narrow-ovate to narrow-obovate, 6–15 mm long, 1–6 mm wide; margins recurved to revolute but not entirely obscuring lower lamina .....subsp. *phyllicifolia*
1. Leaves linear, 3–8 mm long, 0.75–1.25 mm wide; margins revolute, entirely obscuring lower lamina .....subsp. *ericoides*

#### Typification

*Pomaderris betulina* Cunn. ex Hook., *Curtis's Bot. Mag.* 60: t. 3212 (1833).

*Type*: hort. Kew, Herb. Hooker, *s.d.* (lectotype here selected, K).

The figure in *Curtis's Bot. Mag.* is of a flowering branch. The accompanying protologue indicates that the species was 'introduced to the Royal Gardens at Kew, whence flowering specimens were ... communicated ... in April, 1832'. There are two sheets from Hooker's herbarium at K annotated as having been grown at Kew; one is a flowering branch, the other a branch in bud. The former is preferred as matching the protologue.

*Pomaderris discolor* (Vent.) Poir. in Lam., *Encycl. Mèth. Bot.* 8: 591 (1808). *Ceanothus discolor* Vent., *Jard. Malm.* t. 58 (1804).

*Type*: cultivated at Malmaison, France (lectotype here selected, G 8129 (herb. Ventenat); ?isolectotype FI).

Although G 8129 consists of separate branchlets in bud, flower and fruit (and doubtfully collected simultaneously), each is unmistakably *P. discolor*, and all elements are represented in both the figure (by P.J. Redoute) and description in *Jard. Malm.* The

whole sheet is therefore chosen as lectotype. A possible isolectotype is a fragment in bud (of the same degree of maturity as the branchlet on G 8129) pinned to the lower left corner of the type sheet of *P. elliptica* Labill. at FI (photo seen only).

***Pomaderris forrestiana*** F. Muell., *Fragm.* 9: 139 (1875).

*Type:* Western Australia, Point Dover, *Forrest* (lectotype here selected, MEL 55212).

Two localities, Point Dover and Port Eucla (both Forrest collections) are given in the protologue for *P. forrestiana* and these are matched by syntype specimens at MEL. Of these, the Point Dover one is the more complete, with several intact budding inflorescences and is therefore nominated as the lectotype. The remaining syntype (Port Eucla, MEL 55213) is fragmentary, with two near-naked twigs and a bag of leaf fragments and few buds and flowers. A sheet at K labelled 'Port Eucla, com. 10/(18)84, no collector indicated' (photo sent as possible type), in full flower is unlikely to be of the same gathering. It is uncertain whether the 'com.' date refers to the date of collection or communication to K, but it seems likely that it was collected later than the date of description of the species and is not regarded as a type.

***Pomaderris obcordata*** Fenzl, *Enum. Pl.* 23 (1837).

*Type:* N. Holl., *Ferd Bauer* (lectotype here selected, W).

*Trymalium bilobatum* F. Muell., *Defin. Austral. Pl.* 41 (1855); *Trans. Philos. Soc. Victoria* 1: 121 (1855).

*Type:* Port Lincoln, Wilhelmi (lectotype here selected, MEL 55371; isolectotype W).

*Trymalium biauratum* Reissek, *Linnaea* 29: 281 (1857). *Pomaderris biaurita* (Reissek) F. Muell. (as '*biauratum*'), *Fragm.* 3: 73 (1862).

*Type:* Austral. merid., *F. Mueller* (lectotype here selected, W).

The type sheet of *P. obcordata* consists of four twigs (1 flowering, 2 sterile, 1 fruiting). The two sterile twigs have rather long internodes like the flowering one and are likely to be part of the same collection. The fruiting specimen has distinctly shorter internodes. All twigs are genuine *P. obcordata*. Accompanying the specimens are two labels; one has '*P. obcordata* Fenzl, N. Holl. (Ferd. Bauer)' (i.e. agreeing with the protologue) and is mounted in the lower left corner below the flowering twig; the other, mounted closest to the fruiting specimen at lower right, has '*Trymalium bilobatum* Ferd. Mueller, Port Lincoln proper, legit. Carl Wilhelmi, exam. Dr Ferd. Mueller'. As the protologue for *P. obcordata* describes floral but not fruiting characteristics, it follows that the flowering (and probably sterile) twigs belong with the adjacent label (i.e. the Bauer label). These elements form the lectotype. The remaining material (i.e. fruiting twig and label at lower right) is of material forwarded by Mueller to Reissek at W and subsequently mounted with the Bauer collection. It is almost certainly part of the same collection as the sole specimen at MEL labelled by Mueller as *Trymalium bilobatum*.

The protologue of *T. bilobatum*, emphasises fruiting, not flowering, characteristics, so it appears the MEL and W material are appropriately regarded as lectotypes of that name. *Trymalium bilobatum* is here reduced to a synonym of *P. obcordata*.

The only type sheet of *Pomaderris biaurita* (another synonym of *P. obcordata*) to have been located is housed at W. It forms part of the Plantae Muellerianae collection, and is annotated in Reissek's hand. It is designated as the lectotype.

***Pomaderris phyllicifolia*** Lodd. ex Link, *Enum. Pl. Hort. Reg. Berol.* 1: 252 (1821).

*Type:* 'native of New Holland', t. 120 in *Lodd. Bot. Cab.* 2 (1818).

*Pomaderris ericifolia* Hook., *J. Bot.* 1: 257 (1834). *Pomaderris phyllicifolia* var. *ericifolia* (Hook.) L.B. Moore in H.H. Allan, *Fl. New Zeal.* 1: 423 (1961).

*Type:* Tasmania, Van Dms Land 1833, *Mr Gunn* (lectotype here selected, K (Herb. Hooker) *p.p.*).

Despite searches at several European herbaria (including BR, CGE, FI and K where G. Loddiges specimens have been located), no specimens in herbaria were detected to typify *P. phyllicifolia*. The illustration of the species in *Loddiges Botanic Cabinet* is sufficient for identification, so has been chosen as the lectotype. A specimen at G (DeCandolle 2: 34, no 9, hort. Kew) of *P. phyllicifolia* is dated 12.vi.1819, i.e. after Loddiges' publication, so is not a type but confirms that the species was in cultivation in Britain at the time, reinforcing the identity of Loddiges' illustration.

The type sheet of *P. ericifolia* (a synonym of *P. phyllicifolia*) consists of five pieces. All are *P. phyllicifolia*, but two are in bud and three in flower. Several annotations on the sheet ('Mr Gunn 1833, Van Dmns Land', 'N. Zealand, Dr Logan', 'Mersey River 231/1842' — the latter a Gunn label) further suggest the material is not of the one gathering. Two substantial flowering stems on the lower left of the sheet are separated by the first annotation given above, and are the preferred pieces for typification. The other, smaller, flowering twig is of a form with less villous indumentum on the young stems and is unlikely to have been collected from the same population as the larger flowering pieces. It is therefore rejected as part of the lectotype as are the two twigs in bud. These presumably relate to the other annotations on the sheet, but it is not possible to be certain to which each refers.

***Pomaderris prunifolia*** A. Cunn. ex Fenzl, *Enum. Pl.* 22 (1837).

*Type:* New South Walse, interior beyond Bathurst Ranges, *A. Cunningham*, 1822 (lectotype here selected, W *p.p.*).

The type sheet at W contains one flowering stem (mounted on the right of the sheet) and one fruiting stem (mounted to the left). These could not be from the same gathering. As the protologue describes floral characters only, the flowering specimen has been chosen as the lectotype. Three sheets at K have been regarded as types of *P. prunifolia*. Two of these are of fruiting specimens, one labelled '*P. betulina* ... Bathurst Dec 1825' (this separated from a mixed collection), and the other '*Pomaderris* sp., *P. elliptica* Labill. *aff.*, ranges of granite N from Bathurst' and are related to Cunningham's manuscript (entries on pp. 91 and 122, R. Melville *in sched.*). The third is a flowering specimen with the label '*Pomaderris betulina* roadside near Liverpool' and annotated '?coll. 1818' (later annotated by Hooker as *P. prunifolia*). The collector is not given, but the handwriting appears to be that of Cunningham. The three K sheets are unlikely to have been seen by Fenzl and none has been named by Cunningham as *P. prunifolia*. These are rejected as types.

***Pomaderris nitidula*** (Benth.) N.A. Wakef., *Victorian Naturalist*, 68: 142 (1951).  
*Pomaderris phillyreoides* var. *nitidula* Benth., *Fl. Aust.* 1: 418 (1863).

*Type:* Queensland, Mt Lindsay, *W. Hill* (lectotype K; isolectotype MEL, *fide* N.A. Wakefield, *Victorian Naturalist* 68: 142 (1951)).

In making the new combination for, and lectotypifying, *P. nitidula*, Wakefield had the choice of selecting from 2 syntypes listed by Bentham, viz Mt Lindsay, *W. Hill*, and New England, *C. Stuart*. He chose the former and selected a specimen (a single leaf!) removed from a sheet at MEL and forwarded to K as the lectotype, the MEL sheet then being the isolectotype. The remaining syntype for Bentham's variety, i.e. Mt Lindsay, *W. Hill*, of which there are two sheets at MEL, is of *P. argyrophylla* subsp. *graniticola* described as new in this paper, and is therefore not to be regarded as part of the type of Wakefield's *P. nitidula*.

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