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A new subspecies of *Pomaderris pilifera* (Rhamnaceae: Pomaderreae) from eastern Tasmania

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Abstract

Pomaderris pilifera N.A.Wakef. subspecies *talpicutica* A.M.Gray & M.Wapstra is a new endemic subspecies from near Hobart and the north-east of the State. The new subspecies is distinguished by its velvety upper leaf surface (compared to virtually glabrous in subsp. *pilifera*) and an emarginate-retuse leaf apex (compared to acuminate to acute in subsp. *pilifera*). Both subspecies are illustrated with photographs. The new subspecies *talpicutica* is restricted to two very small populations and so far is known only from the type locality, at the East Risdon Nature Reserve, and from an isolated hill top in the north-east of the island.

Introduction

Pomaderris pilifera N.A.Wakef. is a small shrubby species widespread in eastern and north-eastern Tasmania, occurring as well in some parts of eastern Victoria and south-eastern New South Wales. Small populations are common in open woodland and shrubland on most of the drier, low hills of the River Derwent estuary. On a dry stony hillside just above the Derwent shoreline, in the East Risdon Nature Reserve, a small discrete group of between 150 to 200 plants has been identified occurring immediately adjacent to a larger population of *P. pilifera sens. str.* Plants of the former population have a distinctive indumentum on the adaxial leaf surface, all but obscuring the lateral veins and with the leaf apex distinctly emarginate-retuse, whereas plants of typical *P. pilifera* have leaves with the adaxial surface glabrous except near the midrib, distinctive lateral venation and acute-acuminate apices. The two subspecies are otherwise similar. The consistent presence of an adaxial leaf surface indumentum in this small but homogenous population and the absence of any intermediate forms between the two populations in the field warrants recognition at subspecific rank for these plants.

Taxonomy

Pomaderris pilifera N.A.Wakef. subsp. ***talpicutica*** A.M.Gray & M.Wapstra subsp. nov.

A subspecie typica foliis supra trichomatibus brevissimis sessilibus stellatis vestitis et nervis lateralibus fere obscurantibus, apicibus foliorum distincte emarginato-retusis et costa saepe breviter mucronato, pilis hypanthii et calycis et ovarii brevioribus et sparsioribus differt.

Type: Tasmania, East Risdon Nature Reserve, *A.M.Gray 1581*, 3 Oct. 2005 (holotype HO 533348; isotypes AD, CANB, MEL, NSW).

A small diffuse *shrub*, to 1.5 m high with numerous stems arising from a single rootstock. *Leaves* alternate, petiolate, broadly oblong to rarely oblong-ovate, 10–30 mm long, 8–15 mm wide, the widest part usually at the middle; margins very shortly recurved; bases rounded; apices emarginate-retuse and usually with a small mucro at the base of the notch; adaxial surfaces dull grey, velvety, with dense, short, sessile stellate hairs, (the rays 60–75

µm), venation indistinct; abaxial surfaces pale, dull white, velvety, with short, densely matted hairs, the veins prominent and bearing a few well dispersed long, simple white or rusty hairs, particularly nearer the base and onto the petiole and with some scattered, larger stellate hairs interspersed between the simple hairs. *Inflorescences* dense, rounded cymose panicles; flowers subtended at first by broad, brown caducous bracts; *sepals* 1.5–3 mm long, broadly triangular, erect at first then strongly recurved, the outer surfaces with short, dense stellate hairs and scattered, longer simple hairs; *petals* 1.5–2 mm long, erect, clawed, the upper portion slightly hooded and at first enclosing the stamens, then spreading widely and ± flat, often deciduous at or immediately after anthesis; *stamens* 2–3 mm long, longer than the style; *style* 1.5–2 mm long, 3- (rarely 4-) cleft, the lobes 1/3 or less than the length of the style; stigmas capitate; hypanthium and summit of the ovary with short, dense stellate hairs and well dispersed, longer simple hairs; fruit not seen. Flowering period: Sept. –Nov. Figure 1.

Figure 1. Leaf surface detail and detail of leaf apices (inset) of *P. pilifera* subsp. *talpicutica*. Note the distinct *retuse* leaf apex and the velvety upper leaf surface (dull appearance in plates).

Additional specimens examined (all HO plus as indicated): *Pomaderris pilifera* subsp. *talpicutica*: East Risdon Nature Reserve, *F.Coates 407991*, 30 Oct. 1992 (MEL); East Risdon Nature Reserve, above Tommys Bight, *A.M.Gray 1651*, 10 Mar. 2006; The Pimple, E of Evercreech, NE Tas., *A.M.Gray 1656*, 11 Apr. 2006; The Pimple, small dolerite hill in forestry area, near Pimple Road, *A.C.Rozefelds 1443*, 1 Oct. 1999 (right hand specimen of two on sheet); Ridge S of Tommys Bight, East Risdon Nature Reserve, *M.Visoiu 535890*, 4 Oct. 2005; Tommys Bight, East Risdon Nature Reserve, *H. & A.Wapstra 537579*, 4 Oct. 2005; Risdon, just N of Bedlam Walls, *M.Wapstra 532274*, 23 Jul. 2005.

Distribution: This subspecies is restricted to two very small populations and so far is known only from the type locality, at the East Risdon Nature Reserve, and from The Pimple, an isolated hill top in the north-east of the island. A sheet of a collection by A.C.Rozefelds (HO 500868) bears two specimens, one assignable to *P. pilifera* subsp. *pilifera*, the other to *P. pilifera* subsp. *talpicutica.* A recent re-examination of the area of these collections brought to light only *two plants* of the species. One, a small shrub in reasonable condition which was clearly subsp. *pilifera*, the other a browsed and possibly diseased plant, which had a few remaining leaves with a discernible upper leaf indumentum. From the material available, this plant is tentatively assigned to subsp. *talpicutica,* although it differs in the detail of the leaf apex, which is rounded to sub-apiculate, not distinctly retuse, a condition which is apparent in both the Gray and the Rozefelds collections from The Pimple.

Notes: *P. pilifera* subsp. *talpicutica* is similar to *P. pilifera* subsp. *pilifera* but differs in the indumentum of the upper (adaxial) leaf surface (which has a distinct, *densely matted indumentum* of very *short, sessile, stellate trichomes*, giving the surface a dull grey velvety appearance and almost obscuring the lateral veins), the leaf apices (which are distinctly *emarginate-retuse*, with the mid vein often terminating in a very *short, blunt mucro*) and the indumentum of the hypanthium, calyces and summit of ovary (which have *shorter and less dense simple hairs*).

Ecology: At Risdon, the small discrete population of about 200 plants occurs on the western slope of a hill overlooking the River Derwent, at an altitude of approx. 35 metres. The soils are skeletal and very well drained, on Permian mudstone, and there are the remains of an Aboriginal midden site a little further uphill with much broken and weathered shell debris scattered about. The associated vegetation consists of an open, shrubby woodland of *Eucalyptus risdonii* Hook.f. and *E. amygdalina* Labill., both fire damaged and impoverished, and with an open, shrubby mixed understorey of *Dodonaea viscosa* subsp. *spatulata* (Sm.) J.G.West, *Exocarpos cupressiformis* Labill., *Bursaria spinosa* Cav. subsp. *spinosa, Allocasuarina littoralis* (Salisb.) L.A.S.Johnson and *Acacia dealbata* Link. ssp. *dealbata*. Smaller associated shrubs include *Olearia hookeri* (Sond.) Benth., *Ozothamnus obcordatus* DC., *Correa reflexa* (Labill.) Vent. var. *reflexa*, *Philotheca verrucosa* (A.Rich.) Paul G.Wilson, *Acacia myrtifolia* (Sm.) Willd., *Acacia genistifolia* Link, *Pultenaea pedunculata* Hook. and *Spyridium eriocephalum* Fenzl var. *eriocephalum.* Grasses and other tussocks include *Austrodanthonia, Austrostipa* and *Poa* spp., *Lomandra longifolia* Labill., *Lepidosperma laterale* R.Br. and *Dianella revoluta* R.Br. *Pomaderris pilifera* subsp. *pilifera* is common to scattered on the midden and elsewhere at a marginally higher altitude and extends around the slope, over a wider area than subsp. *talpicutica*.

The Pimple is a small dolerite hill of approx. 470 metres altitude, some 21 km north-east of Fingal, just within the eastern boundary of a large tract of land which has, in the past few decades, been largely cleared of native vegetation and replanted to plantation forest. The vegetation on The Pimple consists of remnant and natural regrowth with *Eucalyptus*

obliqua L'Herit. as the major tree species and a very sparse, remnant understorey of *Olearia stellulata* (Labill.) DC., *Notelaea ligustrina* Vent., *Lomatia tinctoria* (Labill.) R.Br., and very scattered *Pomaderris aspera* DC.; the sparse ground-cover consists of *Lomandra longifolia* Labill. and *Pteridium esculentum* (G.Forst.) Cockayne. Despite a thorough search only one plant each of *Pomaderris pilifera* subsp. *pilifera* and *P. pilifera* subsp. *talpicutica* were located, within approx. 50 metres of each other.

Conservation status: As far as is presently understood, this novelty is known only from a single population at the East Risdon Nature Reserve, on Hobart's 'eastern shore' (the type locality), and two collections (Gray and Rozefelds, from the same plant) from a locality in the north-east of the State. Prior to the collection of the latter specimens, the area had been severely alienated and the natural vegetation compromised by forestry operations and it is possible that other populations of *Pomaderris*, once present, may have now been eliminated.

Figure 2. Leaf surface detail and detail of leaf apices (inset) of *P. pilifera* subsp. *pilifera*. Note the distinct *acute* leaf apex and the virtually *glabrous* upper leaf surface (glossy appearance in plates).

Although presently 'protected' within the boundaries of a State Reserve the population of *P. pilifera* subsp. *talpicutica* may be subject to inappropriate management regimes (e.g. too frequent and intense fires, woody weed invasion) and stochastic events (e.g. wildfire, unknown diseases). The East Risdon Nature Reserve also supports two other significant threatened species, namely *Eucalyptus risdonii* and *Spyridium eriocephalum* var. *eriocephalum*, both of which co-occur with *P. pilifera* subsp. *talpicutica*. The *Spyridium* is a shrub of very restricted and disjunct occurrence (listed as 'endangered') in southern Tasmania (at this locality) and formerly near Launceston in the north (not since 1880), providing added impetus to appropriately manage the reserve. It is noted that *S. eriocephalum* is more common and widespread in southern mainland Australia.

Given that the total number of individuals of *P. pilifera* subsp. *talpicutica* is less than 250 and all individuals are restricted to just one population, plus one disjunct, remote, possibly solitary plant, the subspecies qualifies as 'endangered' under both the Tasmanian *Threatened Species Protection Act* 1995 and the *Commonwealth Environment Protection and Biodiversity Conservation Act* 1999.

Etymology: talpicutica - from *talpa*, Latin for the European mole and *cutis*, skin (animal). This epithet refers to the soft, dense, very short indumentum on the upper (adaxial) surface of the leaves, rather similar to the fabric termed "moleskin", and a common name of "moleskin dogwood" is suggested.

Key to the subspecies of *Pomaderris pilifera*:

1 Leaf upper surface green, glabrous, (except sometimes along and immediately adjacent to the midrib), lateral veins distinct, impressed; apex of leaf distinctly acuminate or acute (Fig. 2) ..... *P. pilifera* subsp. *pilifera*

1: Leaf upper surface greyish, very shortly felty – tomentose, lateral veins obscure; apex of leaf retuse or emarginate, often with a very short mucro at the base of the notch (Fig. 1)..... *P. pilifera* subsp. *talpicutica*

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