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## VARIATION IN *LENBRASSIA* G.W. GILLETT (GESNERIACEAE)

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### Abstract

Variation is documented in *Lenbrassia australiana* (C.T. White) G.W. Gillett, and a new variety described, var. *glabrescens*. Additional specimens of var. *australiana* are listed and described, together with line drawings of both taxa.

### Introduction

In 1974 Gillett described the genus *Lenbrassia* (Gesneriaceae), with *Coronanthera australiana* C.T. White (1936), being basionym for the new combination *Lenbrassia australiana* (C.T. White) G.W. Gillett. The new genus commemorated Leonard Brass who collected the holotype: *Brass 2087* on Mt Demi, Queensland (BRI 011304), and also collected extensively in the south-western Pacific area.

Gillett described *Lenbrassia* because these Queensland plants have fleshy fruits unlike *Coronanthera*, (tribe *Coronanthereae*), which is characterised by capsular fruits and wind dispersed seed. *Lenbrassia* also has a larger cylindrical corolla making "it a strongly discordant element in the *Coronanthereae*", as Gillett noted. He related *Lenbrassia* to *Fieldia* A. Cunn., see Hooker (1858), in the tribe *Mitrarieae*, so giving Australia two genera in this tribe, with another three, *Asteranthera* Kl. & Hanst., *Mitraria* Cav., and *Sarmienta* Ruiz & Pav., (Munoz Pizarro, 1966 : t. 47, 44 & 43 respectively), found in South America. The recognition of *Lenbrassia* consequently strengthens a phytogeographical concept of the tribe *Mitrarieae* having a disjunct distribution between Australia and South America, a distribution found in other groups such as the genera *Lomatia* R. Br. (Proteaceae), *Eucryphia* Cav. (Eucryphiaceae) and *Nothofagus* Blume (Fagaceae). Recognition of *Lenbrassia* also requires that *Coronanthera* be regarded as not indigenous to Australia, see Gillett (1967).

### Variation

Gillett carried out fieldwork in northern Queensland in August 1973 making it possible for him to examine both flowers and fruit and to collect specimens, *Gillett 2606* (A, BRI, E, K, L, UC) from between Mt Lewis and Mt Demi on which his figure (Gillett, 1974 : figure 1) is based. It is therefore surprising that the copious filament hairs shown in our accompanying illustration are not represented in Gillett's drawing, and that the band of hairs at the mouth of the corolla tube in our live specimens are apparently confined to the inside of the lobes in Gillett's illustration. The *Gillett 2606* collection has been examined closely and the filaments bear hairs as shown in our illustration, (Fig. 1). Gillett also described the filaments as "twisted and curved", but in bud, at which time the protandrous anthers have released their pollen, the filaments are not contorted but only upcurved as shown in our illustration. The stigma projects above the adherent anthers at bud stage. Only when the corolla expands do the filaments become twisted and anthers often part company. The pollen is pale cream in colour. While observations are lacking, the flowers appear to be animal pollinated and outcrossing.

Gillett does not mention the somewhat narrower, virtually glabrous adaxial leaf surfaces of specimens *White 10548*, *Brass and White 220* and *Merrotsy 27*, all of which he saw, nor their pedicels 2-4 cm long on peduncles about 1 cm long, exceeding the dimensions of the smaller, more typical organs seen and quoted by Gillett. Since Gillett's (1974) paper, the Queensland Herbarium has acquired another specimen, *Hyland 7084*, and the Atherton Herbarium of the C.S.I.R.O. Division of Forest Research (QRS) holdings have been inspected, all specimens having almost glabrous upper leaf surfaces. When these collections are compared with other available *Lenbrassia* material, they stand apart on the above characters, and also because the vestiture on the pedicels, abaxial leaf veins and midrib tends

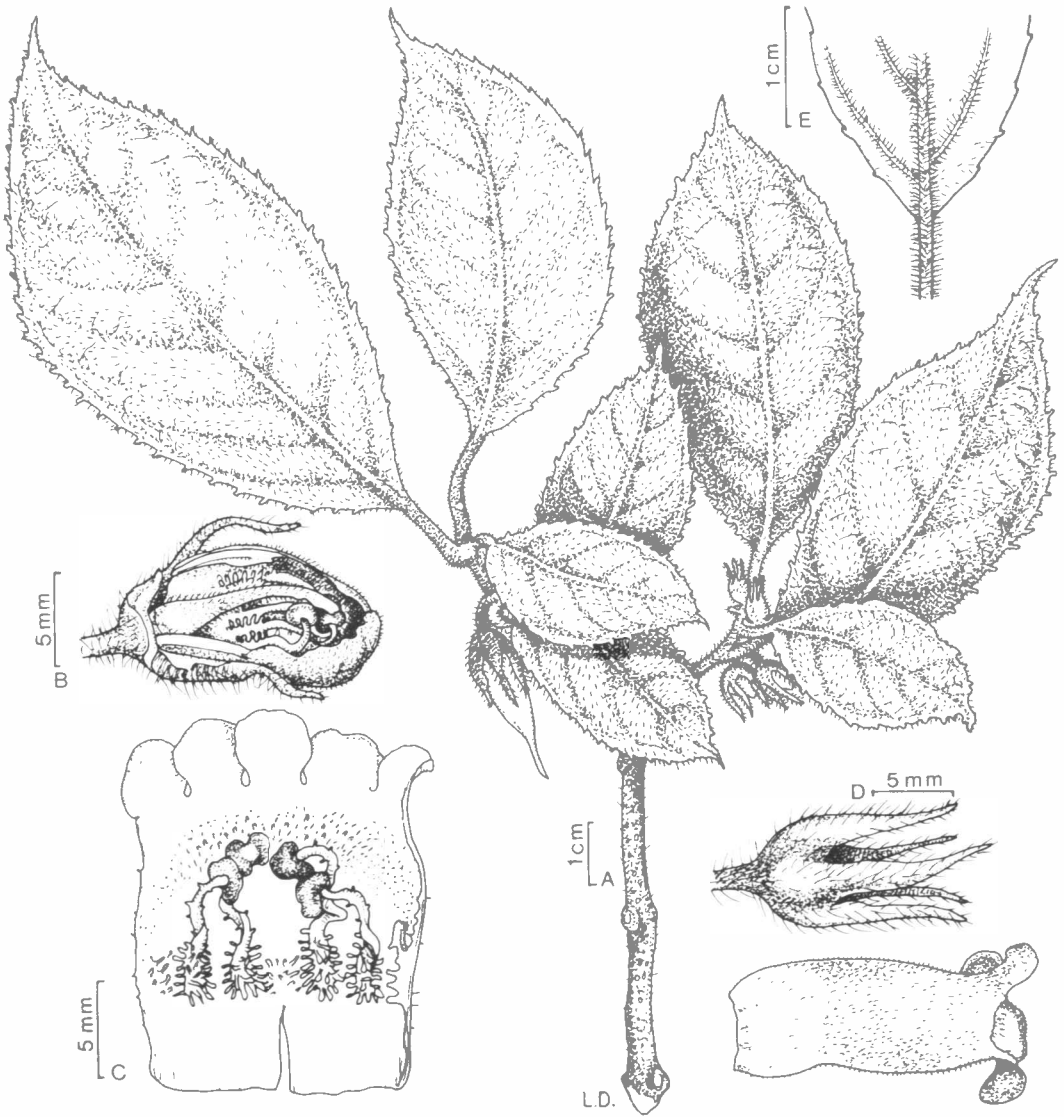


Fig. 1. *L. australiana* var. *australiana*, Harman s.n., a. shoot in fruit; b. dissected bud; c. dissected corolla; d. calyx and corolla in profile; e. detail of abaxial leaf base to show vestiture. Illustration by L. Dutkiewicz.

to be addressed, not erect and at right angles to the tissue surfaces as in more typical specimens. On the basis of specimens available, it also seems that the inflorescence develops only one flower, unlike more typical material which develops three per peduncle in a cymose arrangement, and this may also explain why these atypical collections with solitary flowers appear to have longer and broader mature fruits.

Nothing is known of the breeding system of either typical or atypical plants of *Lenbrassia*, but the morphological differences do not seem to intergrade to any appreciable extent in the apparently similar rainforest habitat shared by the two sorts of plant. Whatever the factors responsible for these differences it seems worthwhile to give taxonomic recognition to the variation, but this raises a problem of taxonomic judgement.

All genera in the tribe *Mitrarieae* are monotypic, on the basis of present taxonomic understanding, including the Australian representatives *Fieldia* and hitherto *Lenbrassia*. The patterns of variation produced by evolutionary change within such monotypic genera are unknown, although there are large-flowered forms of the Chilean *Mitraria coccinea* Cav. in cultivation in European gardens sometimes known as 'Dr. Clark's form', yet *Sarmienta*, *Fieldia* and *Asteranthera* seem to lack significant variation. Responsible delimitation of new (polytypic) taxa is consequently made difficult, there being no precedent in the tribe.

### Taxonomy

Trinomial nomenclature has its physical disadvantages, but seems to accommodate the present situation best, where there is a need to document variation in the absence of a thorough systematic knowledge of the tribe. Consequently, I propose the following new variety:

***Lenbrassia australiana* (C.T. White) G.W. Gillett var. *glabrescens* var. nov.**

- varietas a typo divergens foliis angustioribus, super glabriusculis, pedicellis longioribus, pilis adpressis.
- variety diverging from the type by the narrower leaves, above almost glabrous, by the longer pedicels with hairs adpressed.

*Type:* Hyland 8297, V.C.L. Noah, 16°10' S, 145°25' E, 600 m in rainforest (QRS 007754, holotype; QRS 007753, isotype).

*Habit* a multi-stemmed shrub or tree to 6.5 m high, young growth adpressed villose, older growth becoming glabrescent; *leaves* opposite, dark green above, paler below, midrib sometimes reddish, glabrous or rarely glabrescent above, glabrescent below (veins with 3-5-celled adpressed transparent hairs, lamina glabrous or sparsely pilose); *petiole* 6-13 mm long, finely adpressed pilose, blade oblanceolate to lanceolate, apex acute-acuminate, base cuneate, 7.6-15.4 cm long, 2.2-5.1 cm wide, primary veins 6 to 8 on either side, curving towards margin, subsidiary venation more obscure, margin more conspicuously serrate nearer apex; *inflorescence* adpressed pilose, single-flowered, peduncle axillary 3-10 mm long, terminated by a pair of caducous, linear bracts 1-3 mm long, bracts subtending a pedicel 1.3-4.2 cm long; *calyx* persistent, tube clasping base of mature fruit, calyx c. 12 mm long at anthesis, 5 free lobes, c. 8.5 mm long, linear-acuminate, adpressed pilose, hairs 3-4 celled, c. 0.5 mm long; *corolla* orange-yellow, cylindrical, externally puberulent, 1.9-2.5 cm long, dissected c. 6 mm into 5 unequal rounded lobes, posterior pair shorter, c. 3 mm long; *stamens* 4, borne as 2 lateral pairs, anthers coherent, filaments yellow, c. 10 mm long, pale pilose at and near point of insertion on corolla tube, adnate c. 5 mm above base of corolla tube; *ovary* and *style* c. 18 mm long at late anthesis, sparsely pubescent with small, erect, eglandular hairs, ovary tapering uniformly and concavely into style, placentation parietal, disk annular and cupular, small; *stigma* glabrous, dilated, stomatomorphic, entire; *fruit* c. 2 cm long, obclavate, glabrescent to glabrous, tipped by c. 1.2 cm long persistent style base; *seeds* ovoid, brown, c. 0.6 mm long, testa longitudinally striate, (Fig. 2).



Fig. 2. *L. australiana* var. *glabrescens*, White 10548: a. flowering shoot; b. detail of abaxial leaf base to show vestiture. Illustration by L. Dutkiewicz.

*Distribution*

QUEENSLAND: Thornton Peak, *Brass & White 220* (BRI 220046, K); Zarda — Root's Creek Track, *Flecker 1202* (QRS 007750); T.R. 150, Zarda Logging Area, *Hyland 4932* (QRS 007752); N.P.R. 164, Thornton Peak, *Hyland 7084* (BRI 208037); Mount Spurgeon, *Merrotsy 27* (BRI 220047, K); Mount Spurgeon, *White 10548* (BRI 220044 & 220045, K).

Recognition of *L. australiana* var. *glabrescens* makes it desirable to redefine *L. australiana* var. *australiana* as follows:

***Lenbrassia australiana* (C.T. White) G.W. Gillett var. *australiana***

*Type: Brass 2087*, Mount Demi, N. Queensland, 760 m in rainforest (BRI 011304, holotype).

*Habit* a branching tree to 13 m high, young growth densely pilose-pubescent (i.e. hairs erect), coloured purple, older growth becoming pilose to glabrous with age; *leaves* pilose to scabrous above and below (veins with 5-7 celled, erect, transparent hairs, lamina pilose to scabrous); *petiole* 5-27 mm long, densely pilose with erect, transparent hairs, base cuneate, 5.0-20.5 cm long, 2.5-6.5 cm wide, primary veins 7 to 9 on either side, margin sharply serrate, teeth to 2 mm long; *inflorescence* scabrous-pilose, cymose, usually with 3 flowers, peduncle axillary 5-20 mm long, linear bracts 3-10 mm long, bracts subtending pedicels each 5-15 mm long; *calyx* 10-12 mm long at anthesis, free lobes c. 8 mm long, erect scabrous-pilose, hairs 3-6 celled; *corolla* orange, externally pubescent, hairs erect, corolla 1.6-2.0 cm long, dissected 2-4 mm into 5 unequal rounded lobes; *stamens* 4, filaments 9-10 mm long; *ovary* and *style* 15-16 mm long at late anthesis, pubescent-pilose with erect hairs; *fruit* 1.5-2.0 cm long, pubescent-pilose, tipped by 7-12 mm long persistent style base, (Fig. 1).

*Distribution*

QUEENSLAND: 13 km N.W. Julatten P.O., *Coveny & Hind 7231* (BRI 208161, QRS 007751); Mount Lewis, *Irvine 611* (BRI 208804, QRS 007743, 007744, 007745); S.F.R. 143, North Mary Logging Area, *Hyland 5705* (BRI 160724) and *6736* (BRI 209539); S.F.R. 143, South Mary Logging Area, *Hyland 6730* (BRI 209540); Mount Lewis, *Risley 144* (BRI 206607, QRS 007747, 007748, 007749); Mount Lewis, North Mary Logging Area, *Risley 84* (BRI 207366, QRS 007746); Mount Lewis, *Harman s.n.* (AD Herb. Pl. Cult. 6993); Mount Lewis *Lothian s.n.* (AD Herb. Pl. Cult. 6991); Mount Lewis, *Smith & Pedley 10099* (BRI 188039); Mount Lewis, *Schodde 4151* (AD 96706101, BRI, L, A, K, CHR); Mount Misery, *Balgooy 1594* (BRI, K, UC, none seen); between Mount Lewis and Mount Demi, *Gillett 2606* (BRI 187127, A, E, K, L, UC).

Material of *L. australiana* var. *australiana* presently growing at the Adelaide Botanic Garden was introduced to cultivation by Mr C.W. Harman on June 30, 1976; he collected it on June 26, from Mount Lewis in northern Queensland at an altitude of about 900 m in dense rainforest. The area receives about 2500 mm of rain per annum. His notes read, "Compact much branched shrub or small tree on edge of clearing, but forming close growing community within the rainforest — still much branched but not as compact as when growing in more light. Favouring sloping banks of small rainforest creeks, prominently favouring the eastern banks of these streams. Not widespread but plentiful in its area. Soil deep, decomposed granite and clay and very little top soil." Harman continues "Seed was setting freely . . ." and "the plant definitely has a colonising habit. Within the area where I collected the specimens, regeneration was good and quite obvious, as I found plenty of seedlings from a few inches high and upwards . . . Some plants had their roots severed (by a road)" and "Vigorous growth had started from the severed root ends." Another living plant collected by Noel Lothian on Mount Lewis is also growing at Adelaide.

*Lenbrassia australiana* has considerable interest to the student of Gesneriaceae being the only tree in the tribe *Mitrarieae*. Although it is floriferous and var. *australiana* has attractive purplish vegetative parts when young, it remains to be seen how well it takes to pruning and pot culture. Other than herbarium sheet data, little is known about *L. australiana* var. *glabrescens*: it is not in cultivation.

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