

# *Vrydagzynea albostriata* Schltr. (Orchidaceae) – new to the flora of Australia, with notes on the identity of *V. grayi* D.L.Jones & M.A.Clem.

B. Gray & P. Ormerod

## Summary

Gray, B. & Ormerod, P. (2018). *Vrydagzynea albostriata* Schltr. (Orchidaceae) – new to the flora of Australia, with notes on the identity of *V. grayi* D.L.Jones & M.A.Clem. *Austrobaileya* **10(2): 273–281**. *Vrydagzynea albostriata* Schltr. (Orchidaceae) is newly recorded for the flora of Australia from northern Queensland and a lectotype selected for the name. *V. grayi* Jones & M.A. Clem. is found to be a synonym of *V. elongata* Blume. A key to the genus *Vrydagzynea* in Australia is provided, along with a description and illustration based on the recently discovered material of *V. albostriata*.

Key Words: Orchidaceae, *Vrydagzynea*, *Vrydagzynea albostriata*, *Vrydagzynea elongata*, *Vrydagzynea grayi*, Australia flora, Queensland flora, new record, taxonomy, identification key

B. Gray, Australian Tropical Herbarium, James Cook University, Cairns Campus, McGregor Road, Smithfield, Queensland 4878, Australia; P. Ormerod, P.O. Box 8210, Cairns, Queensland 4870, Australia. Email: wsandavel@bigpond.com

## Introduction

*Vrydagzynea* Blume is a genus of small, tender, shade-loving, terrestrial orchids with about 40 species distributed from northeast India to Samoa. It has two centres of diversity, one in Borneo where 16 species are recorded (Wood & Cribb 1994; Wood *et al.* 2011), and another in New Guinea from where about 10 taxa are recorded (Ormerod 2017). In Australia, a single species of *Vrydagzynea* has been reported, firstly as *V. paludosa* J.J.Sm. (Jones 1988), then reidentified as *V. elongata* Blume (Ormerod 1994), before finally being described as an endemic taxon, *V. grayi* D.L. Jones & M.A. Clem. (Jones & Clements 2004). We find that *V. grayi* is

conspecific with *V. elongata*, and here reduce it to synonymy. At the same time we add *V. albostriata* Schltr. to the flora of Australia, based on recent collections from tropical northern Queensland. Thus two species are to be found in Australia, both shared with the island of New Guinea.

## Materials and methods

This study is based on the examination of living specimens, dried materials, and spirit collections held at A, AMES, BM, BRI, C, CNS, K, LAE, and NSW. Measurements were taken from dried specimens, flowers of which were rehydrated, and from material in spirit.

## Taxonomy

### Key to Australian *Vrydagzynea* species

- 1 Leaves dark green above with a central white stripe; flowers with a pubescent ovary and base of sepals; dorsal sepal 4–5 mm long . . . . . **V. albostriata**
1. Leaves pale to dark green above, unicoloured; flowers with a glabrous ovary and sepals; dorsal sepal *c.* 3 mm long . . . . . **V. elongata**

**Vrydagzynea albostrata** Schltr., in Schum. & Laut., *Nachtr. Fl. Deutsch. Schutzgeb. Südsee*, 2: 83 (1905). **Type citation**: “Papua New Guinea – Schumann River, 200 m, January 1902, R. Schlechter 13835; New Ireland, near Punam, 600 m, July 1902, R. Schlechter 14694”. **Type**: Papua New Guinea. Schumann River, 200 m, January 1902, R. Schlechter 13835 (lecto [here designated]: K; isolecto: BM, P image!).

**Plants** terrestrial. **Rhizome** terete, creeping, rooting at nodes. **Roots** terete, pubescent. **Stem** erect, laxly 3–9-leaved, up to 70 mm tall. **Leaves** obliquely oblong-lanceolate, acute, shortly petiolate, 15–60 × 5–19 mm, dark green above with a central white stripe; petiole and sheath up to 20 mm long. **Inflorescence** terminal, racemose, pubescent, 30–32 mm long; peduncle 18–19 mm long; rachis densely flowered, 12–13 mm long; floral bracts lanceolate, acute, pubescent, up to 6 mm long, green. **Flowers** with green sepals, white petals and labellum, and a greenish spur. **Pedicel with ovary** narrowly fusiform, pubescent, c. 4 mm long. **Dorsal sepal** oblong-lanceolate, obtuse, thickened apically, externally pubescent in lower half, forming with the petals a galea 5–5.5 × c. 2.5 mm. **Lateral sepals** obliquely oblong-lanceolate, obtuse, externally pubescent in lower half, 4.5–5 × 1.8–2 mm. **Petals** obliquely oblong-lanceolate, shortly clawed basally, obtuse, c. 3 × 0.8–1 mm. **Labellum** oblong, obtuse, calceolate, medially with a low bicarinate ridge, c. 3 × 1.2 mm; spur obliquely fusiform, obtuse, inside with two stalked glands, c. 1.3 mm long. **Column** short, c. 1.2 mm long. **Figs. 1 & 2.**

**Additional specimens examined**: **Papua New Guinea**. WEST SEPIK PROVINCE: Torricelli Mountains, near Miwaute Village, Aug 1961, *Darbyshire 178* (LAE); Lumi District, East Au Census Division, Torricelli Mountains, Mt Sulen, near Sikel, Jul 1981, *Reeve 3828* (K, NSW); Torricelli Mountains, Lipan Pass, Aug 1981, *Reeve 4066* (K); Carpentaria Exploration Base Camp, from K1 to K8 helipad, Jan 1978, *Hoover 824* (A). **NEW IRELAND PROVINCE**: near Punam, Jul 1902, *Schlechter 14694* (AMES, BRI, K). **ORO PROVINCE**: Kokoda, May 1936, *Carr 17173* (BM). **MILNE BAY PROVINCE**: Raba Raba Subdistrict, junction of Ugat and Mayu Rivers, near Mayu 1, Jul 1972, *Streimann & Katik NGF34035* (K). **Australia. Queensland**. COOK DISTRICT: Whyanbeel

Creek N of Mossman, *Gray BG9970*, Hawkes & de Groot (CNS).

**Distribution and habitat**: *Vrydagzynea albostrata* has been recorded in Indonesia (Papua Province), Papua New Guinea and Australia (northeast Queensland). In New Guinea this species is found growing amongst leaf litter in shady lowland and lower montane rainforest, occasionally near stream margins, from 30–945 m. In Queensland, this species has been found growing in wet lowland rainforest near creeks (**Map 1**).

**Phenology**: Flowering and fruiting has been observed in January, May, July, and August in New Guinean material of *Vrydagzynea albostrata*. It is likely however that these reproductive events are year-round in the less seasonal rainforests of New Guinea. In Queensland, *V. albostrata* is currently known to flower December to March.

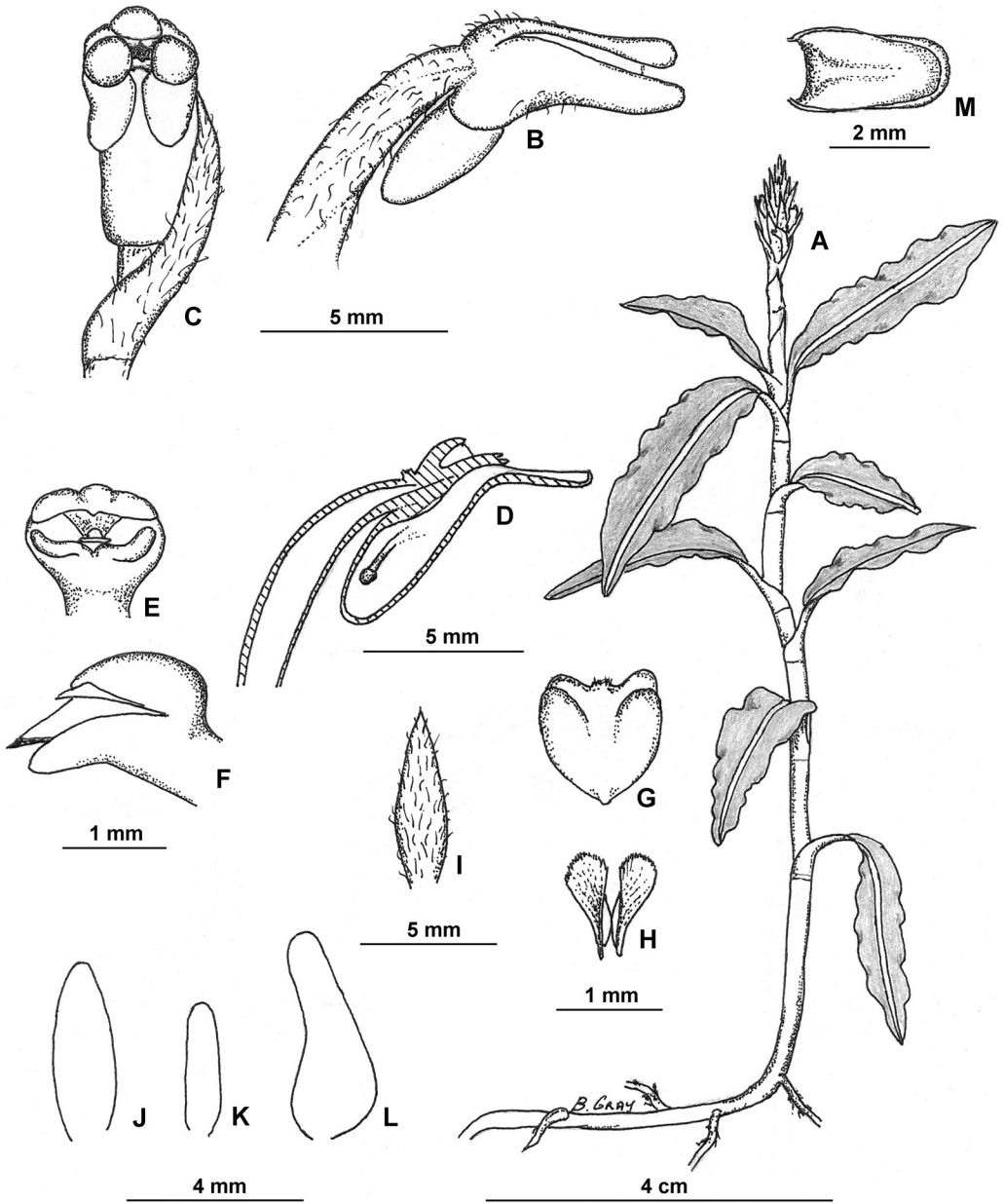
**Typification**: The protologue for *Vrydagzynea albostrata* lists two Schlechter collections, both of which are extant. The Kew specimen of *Schlechter 13835* is chosen as lectotype because it is the best of the available syntypes and is a fertile (flowering) specimen.

**Notes**: *Vrydagzynea albostrata* is distinctive among taxa found in New Guinea and Australia in having pubescent ovaries and flowers, whereas the nine other known species have glabrous (or rarely papillate) ovaries and flowers.

**Vernacular name**: Wubungu (Wapi Language, Miwaute, West Sepik Province, Papua New Guinea).

**Vrydagzynea elongata** Blume, *Fl. Javae Ins. Adj.* n.s. 1: 61 (1858); *Coll. Orch. Arch. Ind.* 74 (1858). **Type**: Indonesia. **PAPUA PROVINCE**: Triton Bay, *s.dat.*, *E.J.F. Le Guillou s.n.* (holo: L, image!).

*Vrydagzynea grayi* D.L.Jones & M.A.Clem., *Orchadian* 14, 8 (Scientific Suppl.): xii (2004), **syn. nov.** **Type**: Australia. Queensland. COOK DISTRICT: Stewart Creek, Portion 24, Parish of Whyanbeel, 16 July 1983, *B. Gray 3162* (holo: CNS).



**Fig. 1.** *Vrydagzynea albostrata*. A. habit of mature flowering plant. B. lateral view of flower. C. face view of flower. D. longitudinal section through flower. E. face view of column. F. lateral view of column. G. face view of anther. H. pollinia. I. floral bract. J. dorsal sepal. K. petal. L. lateral sepal. M. face view of labellum. Scale as indicated. All from Gray BG9970, de Groot & Hawkes (CNS). Del. B. Gray.



**Fig. 2.** *Vrydagzynea albostriata*. Whole plant with flowering inflorescence (Gray BG9970, de Groot & Hawkes, CNS)

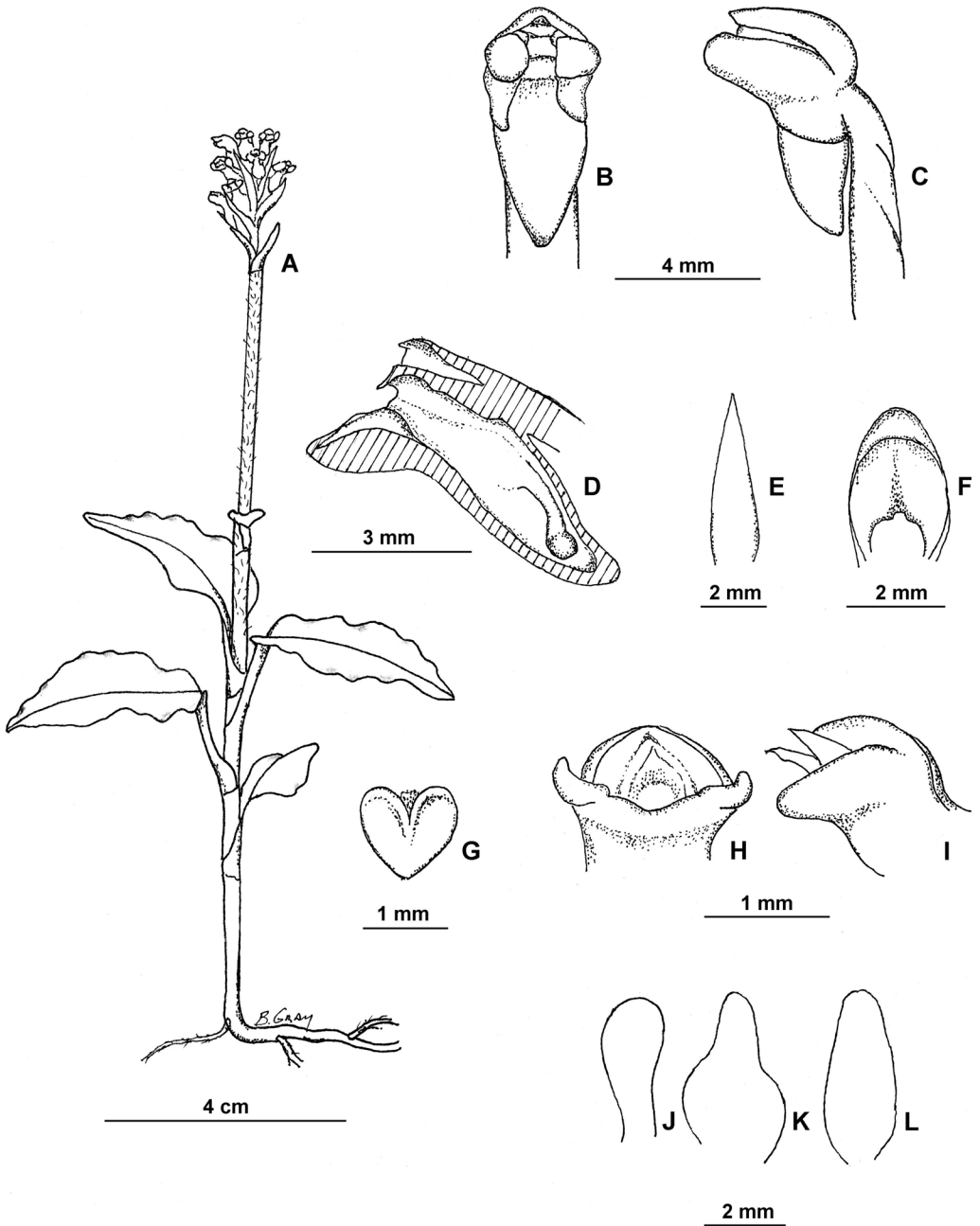
*Vrydagzynea* sp., D.L.Jones, *Nat. Orch. Austral.* 351 (1988).

*Vrydagzynea paludosa* auct. non J.J. Sm.: D.L.Jones, *Nat. Orch. Austral.* 637 (1988); M.A. Clem., *Austral. Orch. Res.* 1: 147 (1989); Dockr., *Austral. Indig. Orch.* ed. 2, 1: 42 (1992); Lavarack & B.Gray, *Austral. Trop. Orch.* 22 (1992).

For further synonymy see Ormerod (2017). **Figs. 3–5.**

**Additional specimens examined: Indonesia.** MALUKU PROVINCE: Aru Islands, Pulau Kobroor, upstream from Kampong Jierlai, Apr 1993, *Nooteboom* 5720 (A, C). PAPUA PROVINCE: Arfak Range, ridge behind Roon

Village, Jan 1914, *Gibbs* 6240 (K). **Papua New Guinea.** WEST SEPIK PROVINCE: near Sumo Village, on Rahinbrum River, Jul 1961, *Darbyshire & Hoogland* 8075 (LAE); Leitre Village, Mar 1964, *Sayers* NGF18089 (LAE). EAST SEPIK PROVINCE: Victoria Bay, Jul 1840, *Barclay* 3567 (BM). MADANG PROVINCE: Kaulo Base, Jan 1908, *Schlechter* 17188 (NSW); Bismarck Range, Jan 1902, *Schlechter* 14039 (BM, K, NSW); on the way from the Ramu River to the coast, Mar 1902, *Schlechter* s.n. (AMES); Erimahafen, Dec 1901, *Schlechter* s.n. (AMES); Josephstaal FMA area, near Guam River, Aug 1999, *Takeuchi et al.* 13886 (A). MOROBE PROVINCE: Markham River, 1890, *Weinland* 203 (BRI, NSW); Markham River mouth, Aug 1964, *van Royen* NGF20073 (A, BRI, LAE); *ibid.*, Oct 1974, *Clunie* LAE63004 (A, BRI, K, LAE); 12 km NW of Lae, Markham Swamp, Aug 1982, *Streimann* 8512 (LAE); Huon Gulf, Cape Arkona, Aug 1890, *Lauterbach* 644 (BRI). EAST NEW



**Fig. 3.** *Vrydagzynea elongata*. A. habit of mature flowering plant. B. face view of flower. C. lateral view of flower. D. longitudinal section through flower. E. floral bract. F. face view of labellum. G. face view of anther. H. face view of column. I. lateral view of column. J. petal. K. lateral sepal. L. dorsal sepal. Scale as indicated. All from Gray BG9691, de Groot & Hawkes (CNS). Del. B. Gray.



Fig. 4. *Vrydagzynea elongata*. Whole plant with flowering inflorescence (Gray BG9691, de Groot & Hawkes, CNS).



Fig. 5. *Vrydagzynea elongata*. Inflorescence with flowers and buds (Gray BG9691, de Groot & Hawkes, CNS).

BRITAIN PROVINCE: Hoskins Subdistrict, Nuau Logging Area, Feb 1971, *Lelean & Stevens LAE51274* (BRI, K, LAE); Sabuite Creek, SW of Rikau Village, Apr 1959, *White NGF10499* (BRI); Kapiura River, c. 1 km from confluence with Aum River, May 1979, *Sohmer et al. LAE75288* (BRI, K, LAE). ORO PROVINCE: Isuarava, Feb 1936, *Carr 10362* (BM, K). MILNE BAY PROVINCE: Sudest (=Tagula) Island, Apr 1898, *Micholitz s.n.* (K). **Australia. Queensland.** COOK DISTRICT: Daintree area, upper Stewart Creek, Aug 1986, *Gray BG4327* (CNS); *ibid.*, May 2017, *Gray BG9782* (CNS); Whyanbeel, N of Mossman, Sep 2015, *Gray BG9691* (CNS).

**Distribution and habitat:** *Vrydagzynea elongata* has been found in Indonesia (Maluku and Papua Provinces), Papua New Guinea and Australia (northeast Queensland). In New Guinea this species is found in lower montane forest and lowland forest, including forest in swamps near the mouths of rivers, from 0–1220 m. In Queensland it is found in wet lowland rainforest near streams in the Mossman to Daintree area (**Map 1**). A sterile collection from Moa Island, Torres Strait (*Jones 3615*, BRI) is a good match for this species on foliage characters and indicates that it may have a wider distribution in Australia.

**Phenology:** Flowering and fruiting has been observed in January, February, March, April, July, August, October, and December in New Guinean specimens of *V. elongata*. This indicates that reproductive events are year-round for the New Guinean plants. In Australia *V. elongata* has been found to flower in May, July, August and September, which corresponds to late autumn through to late winter in northern Queensland.

**Notes:** *Vrydagzynea elongata* may be distinguished from its congeners in New Guinea and Australia by its small flowers (dorsal sepal 3 mm long versus 5 mm long), and labellum lamina that forms a right angle (versus obtuse to 180°) with the spur. *V. brassii* Ormerod is the only other New Guinean species with a 3 mm long dorsal sepal, but it differs in having two divergent, pubescent, laminate ridges (versus two low, close, broadly rounded ridges) on the labellum, and the labellum lamina is at an obtuse angle to the spur.

In describing *Vrydagzynea grayi*, Jones & Clements (2004) noted that it did not match any species described from New Guinea. Their comments are partly correct because the descriptions of *V. elongata* and its synonyms are somewhat general, and the only published floral analysis by Schlechter (1923–1928; 1982, of the synonym *V. pachyceras* Schltr.) is not wholly correct in its depiction of the labellum. This analysis shows the labellum to have involute margins but we find it to be calceolate with two flaps covering a cavity (see **Fig. 3**). Nevertheless, the confusion surrounding *V. elongata* was clarified by Smith (1929), who identified the critical characters of the species, and added *V. pachyceras* and his own *V. rectangulata* J.J. Sm. to the synonymy.

We have studied material of *V. elongata* from throughout its range, and have no doubt that *V. grayi* is a synonym of this widespread taxon. The species exhibits some variability, especially in leaf number (3–11 per stem), leaf shape (obliquely ovate to almost symmetrically lanceolate), flower number (few to many), and shape of the spur in lateral view (oblong-elliptic to fusiform).

**Vernacular names:** Lai tutur (Aru Islands, Maluku Province, Indonesia); Tume (Pogatumo Language, Sumo Village, West Sepik Province, Papua New Guinea).

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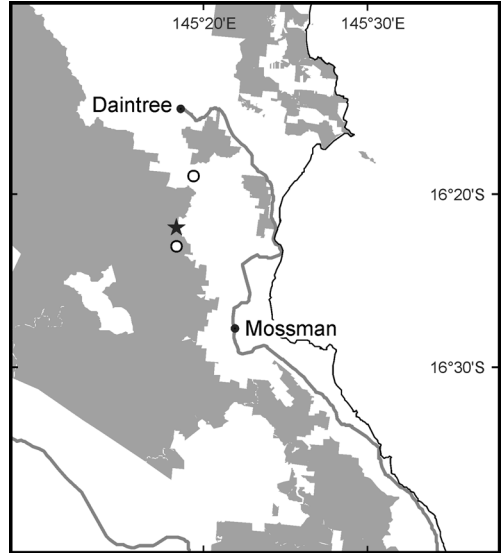
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**Map 1.** Distribution of *Vrydagzynea albostriata* ★ and *V. elongata* ○ in Queensland, Australia.