

Cissus montana (Lauterb.) Jackes & Trias-Blasi, a newly recognised species of Vitaceae from New Guinea

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Summary

Jackes, B.R. & Trias-Blasi, A. (2023). *Cissus montana* (Lauterb.) Jackes & Trias-Blasi, a newly recognised species of Vitaceae from New Guinea. *Austrobaileya* **13**: 16–19. *Cissus montana* (Lauterb.) Jackes & Trias-Blasi comb. & stat. nov. from New Guinea was initially described by Lauterbach in 1925 as *C. adnata* var. *montana* Lauterb. A comparison of herbarium material indicated that this variety was distinct from *C. adnata* Roxb. and should be recognised at species rank. The newly recognised species is fully described with notes provided on distribution, habitat, phenology and typification. It is easily distinguished by a carpet-like indumentum of rusty-brown 2-armed hairs on the abaxial leaf surface. A lectotype is selected for *C. adnata* var. *montana*.

Key Words: Vitaceae; *Cissus*; *Cissus adnata* var. *montana*; *Cissus montana*; flora of Indonesia; flora of Papua; flora of Papua New Guinea; new species; new combination and status

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Introduction

Cissus L. is the largest genus in the Vitaceae, with over 350 species occurring throughout tropical and subtropical regions of the world (POWO 2022). Most of the species are in the core *Cissus* group with several in *Cissus* II (Lu *et al.* 2018). Species referred to *Cissus* II by Lu *et al.* (2018) have a neotropical-Australian distribution (Lui *et al.* 2013), although the more recent molecular phylogenetic study sampled only a few taxa.

The last overall account of *Cissus* in New Guinea was nearly 100 years ago (Lauterbach 1925). Revisionary work in adjacent regions such as Australia (Jackes 1988) has meant that many of the New Guinea taxa are relatively well known, although several remain known only from few collections or just type material with continuing uncertainty to their taxonomic status.

An examination of species with similar morphological features indicated that *Cissus adnata* var. *montana* Lauterb., should be treated as a separate species, thus requiring

a new combination and change in status to be made. The importance of hair morphology in differentiating between species in the Vitaceae, has been shown by Jackes (1987a, b) and has been critical in the recognition of *Cissus montana*.

Eighteen species of *Cissus* are now recognised for New Guinea (up from POWO 2022).

Materials and methods

Herbarium specimens were examined at A, BISH, BRI, E, K and L, plus additional duplicates available on the JSTOR Global Plants website; many of these specimens were duplicates of relatively few collections. Herbarium acronyms follow those of Thiers (continuously updated).

The foliage hairs were examined by Scanning Electron Microscopy (SEM) in the Advanced Analytical Centre at James Cook University. Images of the lectotype and isolectotype specimens are available on

the JSTOR Global Plants website (<https://plants.jstor.org/stable/viewer/10.5555/al.ap.specimen.k000736439>; <https://plants.jstor.org/stable/viewer/10.5555/al.ap.specimen.s11-22390>). Images of cited specimens at the Herbarium of the Netherlands are available online via their website (<https://www.naturalis.nl/en/collection>) and are accessible via the given accession numbers.

Taxonomy

Cissus montana (Lauterb.) Jackes & Trias-Blasi, **comb. et stat. nov.**

Cissus adnata Roxb. var. *montana* Lauterb., *Bot. Jahrb. Syst.* 59: 522 (1925). **Type citation:** [Papua New Guinea.] “Nordostl. Neu-Guinea: Walder des Kani-Gebirges, 1000m (SCHLECHTER n. 16676!, in Knospe 9. Okt. 1907)”. **Type:** Papua New Guinea. in der Wäldern des Kani-Gebirges [Kani Range], 9 October 1907, R. Schlechter 16676 (lecto [here designated]: S 11-22390; isolecto: K 000736439).

Vine; stems striate, reddish 2-armed hairs common; tendrils bifid, angular, pubescent. Stipules prominent to 4 × 3 mm, pubescent. **Leaves** simple, firm, petiole 2–6 cm long; lamina ovate to broadly ovate, 6–10 × 3–8 cm, apex acute, base truncate to weakly cordate, margins bristly-serrate; at maturity upper surface sparsely pubescent, usually drying greyish, lower surface densely tomentose, the rusty-brown 2-armed hairs appearing as though brushed (similar to a shag pile carpet), rather than randomly arranged, arms relatively short, stalk minute; veins raised above the surface. **Inflorescence** to 2.5 cm long when flowering, 3 cm long when fruiting. Flowers to 2.5 mm long, pedicel to 3 mm long; calyx and corolla densely rusty-pubescent on the outside. Corolla 2 mm long, ovary glabrous. **Berry** globular, 4–6 mm diameter, black. Seed 1 per fruit; endosperm in transverse section almost twice divided by the thin endotesta. **Figs. 1, 2.**

Additional specimens examined: **Indonesia.** PAPUA: Rouffaer [Tariku] River, Aug 1926, *Docters van Leeuwen 10084* (A, K, L [L.2333595]); *ibid.*, Nov 1926, *Docters van Leeuwen 11095* (A, K, L [L.2334484]); Nassau Mountains, Oct 1926, *Docters van Leeuwen 10645* (K, L [L.2345252, L.2345253]). **Papua New**

Guinea. CENTRAL PROVINCE: Track from Mt Kumme, E of Waitape, Jan 1965, *van Royen NGF20358* (BRI, K); Near landing paddock Mt Ehuhu, Mt Lamington area, Nov 1984, *Kuduk & Naoni 6198* (L [L.2334433]). NEW BRITAIN PROVINCE: Gasmata subdivision, Torlu River, Mar 1965, *Sayers NGF24206* (A, BISH, BRI, CANB, E, L [L.2334487]).

Distribution and habitat: *Cissus montana* is endemic to New Guinea in Indonesian Papua and Papua New Guinea, occurring in rainforest communities along the northern coastline from Jayapura to New Britain, usually above 300 m altitude.

Phenology: Only four of the seven collections of *Cissus montana* were flowering, the dates of collection indicated that flowering occurs between August and March. The specimen *Docters van Leeuwen 10845* was fruiting when collected in October.

Typification: Collections made by Rudolf Schlechter were deposited at the Botanic Garden and Botanical Museum Berlin-Dahlem (B) with duplicates distributed elsewhere. At the time of Lauterbach’s account, it was not specifically stated where the cited specimens were deposited; however, the inference was that they were at that institution. Most type specimens at B were destroyed during an Allied bombing raid during World War Two. Duplicates of the type collection are present at K and S. The collection at S is the more complete and is selected here as the lectotype.

Notes: The importance of indumentum for differentiating species of Vitaceae has been previously emphasised (Jackes 1987a, b). *Cissus montana* is distinguished from other New Guinea species by the greyish, glaucous adaxial leaf surface and the dense carpet-like indumentum of rusty-red 2-armed hairs on the abaxial surface. These hairs appear as though they are brushed rather than randomly arranged, as found in *C. aristata* Blume and *C. conchigera* Ridley (**Fig. 2**). The veins on the abaxial surface are raised above the surface and are also covered with rusty-brown 2-armed hairs. This species is readily distinguished from *C. adnata* Roxb. by the dense covering of hairs, particularly on the abaxial leaf surface, the pubescent stipules, and the calyx and corolla being densely pubescent on the outside.

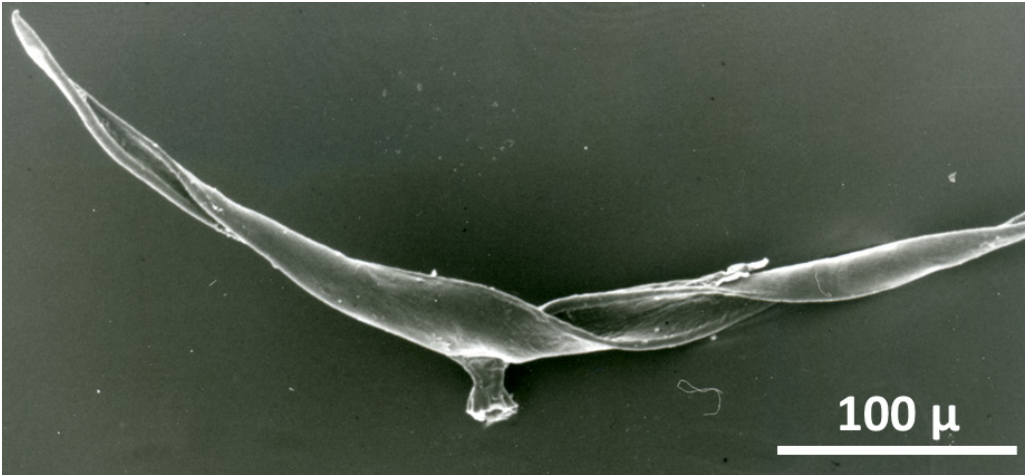


Fig. 1. *Cissus montana*. Single 2-armed or T-branched hair. From Sayers NGF24206 (BRI).

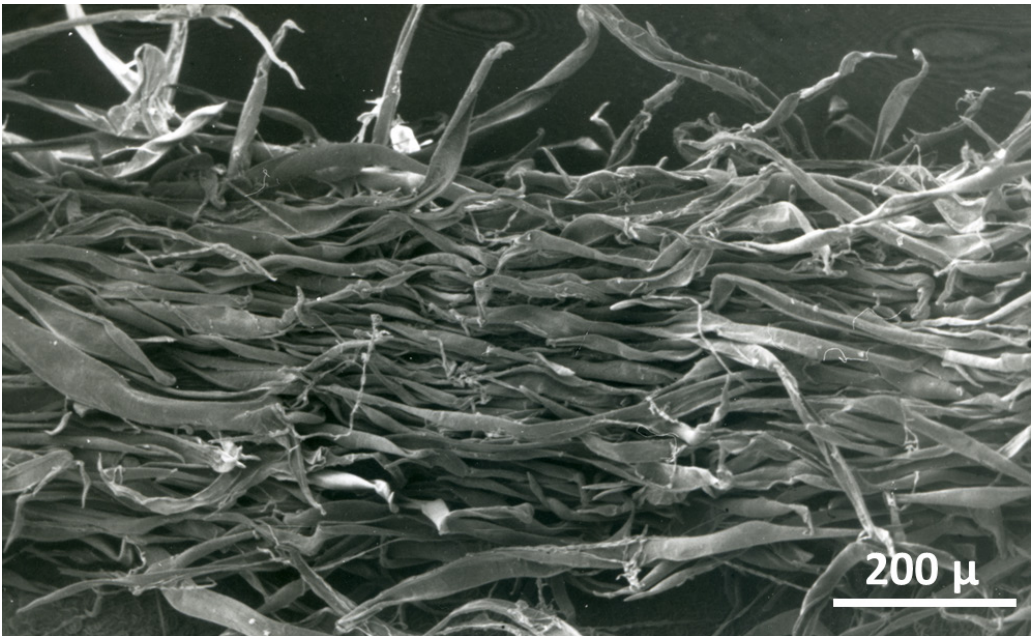


Fig. 2. *Cissus montana*. Dense carpet-like indumentum of 2-armed or T-branched hairs. From Sayers NGF24206 (BRI).

Acknowledgments

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