



Pseuderia samarana (Orchidaceae), a new species and genus record from the Philippines

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ABSTRACT: A new species of orchid, *Pseuderia samarana* Z.D. Meneses & Cootes (Orchidaceae: Podochileae, Eriinae) from Samar Island, Philippines is described and illustrated. This is also a new generic record for the country. It is distinguished from other known species by the combination of the following characters: relatively smaller lanceolate leaves, minutely cuspidate bracts, 2-flowered raceme borne on short peduncle, narrower labellum, and entire clinandrium margins. Notes on its habitat and ecology, distribution, conservation status, and comparison with other closely related New Guinean species are also presented.

KEY WORDS: Eriinae, Orchidaceae, Philippines, Podochileae, *Pseuderia samarana*, Samar Island.

INTRODUCTION

Pseuderia Schlechter (Orchidaceae: Podochileae, Eriinae) comprises of approximately 20 species of climbers distributed from Moluccas, New Guinea, Micronesia, the Solomon Islands, and Fiji (www.plantlist.org; Pridgeon 2014; Mabberley 2008). It is primarily found on the island of New Guinea where the genus reaches its centre of diversity with 15 recorded species. After checking the consolidated list of flowering plants in the Philippines (Pelsner *et al.* 2011 onwards), it revealed that this is also the first record for the genus *Pseuderia*.

Photographs and herbarium specimens of an interesting species belonging to the genus *Pseuderia* were taken during an ecological study of orchids in the forest over limestone formations of Samar Island. Review of available protologue, descriptions and images of herbarium specimen of related species available online at K were examined (Ormerod 2005; <http://www.orchidsnewguinea.com/> last accessed 07 January 2019; and <http://www.kew.org/herbcat> last accessed 19 February 2019) and revealed that this taxon does not match any of the known *Pseuderia* species. In this paper, *Pseuderia samarana*, a new species from the Greater Mindanao Pleistocene aggregate island complex (Heaney 1986; Brown & Diesmos 2009) with a scented 2-flowered raceme thriving in forests over limestone of Samar Island, Philippines is described and illustrated. The holotype was collected under Gratuitous Permit number R08-2016-11 and submitted to recognised herbaria.

TAXONOMIC TREATMENT

Pseuderia samarana Z.D. Meneses & Cootes, *sp. nov.*

Figs 1 & 2

Type. PHILIPPINES. Samar Island: Samar Province,

Municipality of Paranas, 11.80981°N, 125.16564°E, 388 m elevation, forest over limestone substrate, open flowers, 21 July 2016, Z.D. Meneses 213 (holotype PNH; isotypes EBL, LBC, TAI).

Diagnosis. *Pseuderia samarana* shares similarity with both *P. frutex* and *P. floribunda* but the new species significantly differs in its 2-flowered inflorescence (vs. 3–5-flowered in other two species), much narrower labellum (2.5 mm wide vs. 4.5–5 mm) and entire clinandrium margins (vs. serrulate in *P. frutex* and dentate in *P. floribunda*).

Description. Terrestrial during seedling stages, then becoming epiphytic upon maturity **Stem** erect, terete, branching, laxly foliose, reaching lengths of up to 1 m, up to 2.2 mm in diameter in the leafless part and 2–3.1 mm in diameter in the leafy part. **Leaves** lanceolate, thinly textured, 4.8–9.5 × 1.5–1.7 cm. There are two secondary veins on both sides of the mid-vein, but with numerous finer veins in between. **Inflorescence** two-flowered, peduncle terete, 5–6 mm long, bracts oblong, glabrous, apex minutely cuspidate. **Flowers** yellow in color with reddish-purple markings; blooms 1.5–1.6 × 1.1–1.4 cm. **Dorsal sepal** linear-lanceolate, apex acute, hooded, 1.1–1.5 × 0.2–0.5 cm, tri-nerved. **Lateral sepals** falcate, 6.5–10 × 2.5–3 mm apex acute, tri-nerved. **Petals** sub-falcate, curved forward, apex rounded, 7.5–8.5 × 1–1.5 mm. **Labellum** curved, elliptic-rhombic, sparsely puberulous, up to 7–8 × 2–2.5 mm in natural posture. Column distinctly arcuate, 5.5–6 mm long, column-foot well-developed, 1.5–1.8 mm wide; **clinandrium** with entire margin. **Ovary** cylindrical, ridged, glabrous, 12.5–13 mm long. **Fruit** capsule, ridged, glabrous up to 40 × 5 mm.

Habitat and Ecology. *Pseuderia samarana* is a vigorous climber, clinging to spindly trees growing over thin soils of forests over limestone formation in the land-locked municipality of Paranas (Fernando *et al.* 2008). The limestone hills where the specimens were collected

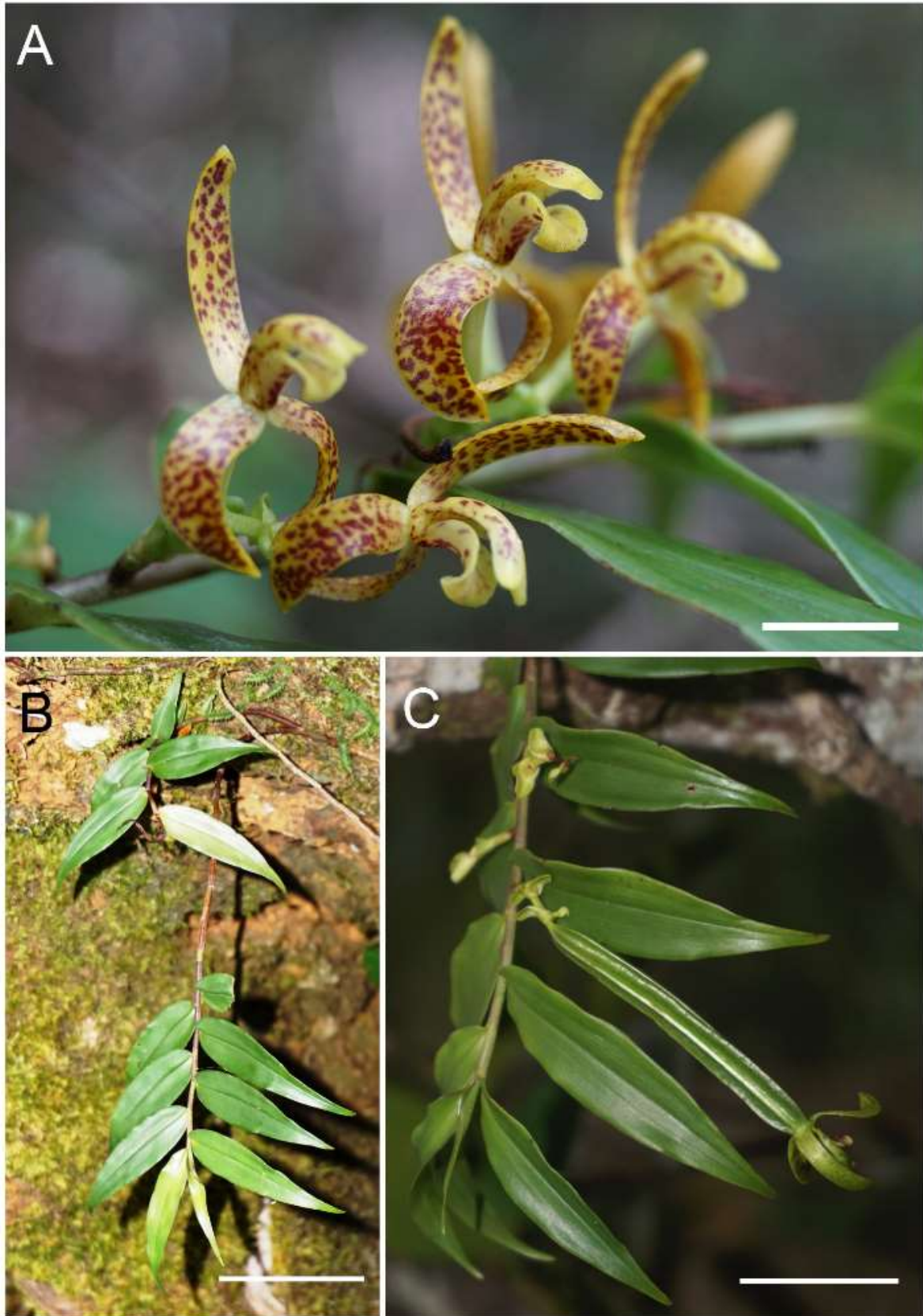


Fig. 1. *Pseuderia samarana* Z.D. Meneses & Cootes. **A:** Inflorescences bearing 2 flowers borne on short peduncles **B:** Habit of *Pseuderia samarana* **C:** Fruits. Photos A–B by Zhereeleen D. Meneses, photo C by Jiro T. Adorador. A = 1 cm, B = 6 cm, C = 2 cm

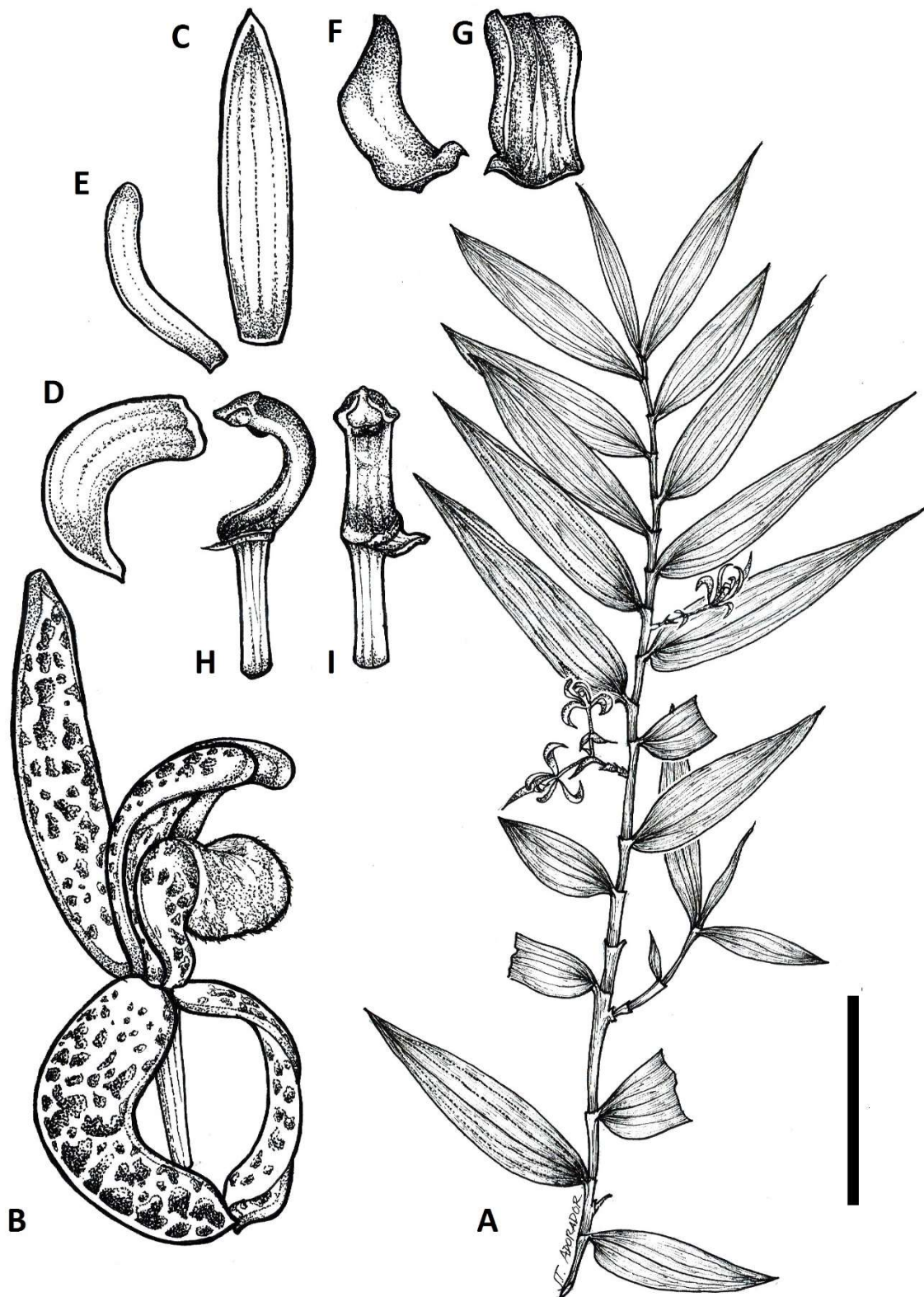


Fig. 2. *Pseuderia samarana* Z.D. Meneses & Cootes **A:** Flowering branch **B:** Flower at anthesis. Detached floral parts **C:** Abaxial surface of dorsal sepal **D:** Abaxial surface of lateral sepal **E:** abaxial surface of Lateral petal **F:** Labellum side view, showing adaxial surface **G:** Abaxial surface of labellum **H:** Column side view **I:** Column, front view. Drawn from the holotype (Z.D. Meneses 213). Scale bar: A = 6 cm, B = 0.8 cm, C–I = 1 cm. Drawn by Jiro T. Adorador.



reaches up to 300 m elevation. Species of *Pandanus* sp. (Pandanaeae), *Radermachera* sp. (Bignoniaceae) and *Syzygium* sp. (Myrtaceae) are the observed phorophytes of *Pseuderia samarana*. The observed flowering period starts from July and a fruiting population was observed during December.

Distribution. Currently, this new species is only known from the type locality in Paranas, Samar Island. Its occurrence in the Philippines is the first known record for the genus *Pseuderia* which has the center of diversity in New Guinea. It may have reached the Philippines through Moluccas-Halmahera- Greater Mindanao via Talaud arc (Heaney 1986, Brown & Dismos 2009, Vallejo 2011). The type locality is part of the Samar Island Natural Park (SINP), the country's largest terrestrial protected area. It is among the newly proclaimed protected areas under Republic Act 11038, also known as the expanded National Integrated Protected Area System Law.

Etymology. This new orchid species is named after the type province, Samar. The province forms a large portion of the Samar Island Natural Park. It has several rolling limestone formations which supports a distinct forest type. Samar also houses the headquarters of the park's Protected Area Management Board which is the governing and managing office of the natural park.

Conservation status. *Pseuderia samarana* is an endemic species known only from forests over limestone formations in Samar at 250–388 m elevation with lithological characterization of sedimentary rocks and has major mineral deposits of copper and gold (Yumul *et al.* 2009). Using the online *GeoCAT* conservation assessment tool (Bachman *et al.* 2011), last accessed 08 February 2019, with the IUCN default cell width 2 by 2 km grid calculated an area of occupancy (AOO) of 8 km² with an extent of occurrence of 0.166 km². Based on *in situ* observations, land use conversion and timber poaching threatens the small population (ca. 20–30 mature individuals) of *P. samarana* which could only be found in the top portion of forests over limestone in Paranas. Considering these factors that fall under Section V, criteria B and D of the IUCN Red List Categories and Criteria version 3.1, *P. samarana* is assessed as Critically Endangered (B2ab(iii, iv, v); C2a(i); D).

Additional notes. Aside from the diagnostic characters of the floral parts, *P. samarana* further deviates from *P. floribunda* in its lanceolate leaves (elliptic in *P. floribunda*), and from *P. frutex* in its much smaller leaf dimensions (up to 9.5 × 1.6 cm vs. up to 16 × 2.8 cm in *P. frutex*). Furthermore, the bracts of this species differs from the two species in its apex being minutely cuspidate (acuminate in *P. frutex* and subobtusate in *P. floribunda*).

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