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Bulbophyllum irianae

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***Bulbophyllum irianae* and *B. adolinae* (Orchidaceae: Dendrobiinae),
two new species of sections *Hoplandra* and *Peltopus*
from Indonesian New Guinea**

André SCHUITEMAN, Ed DE VOGEL, Charlie Danny HEATUBUN,
Jimmy Frans WANMA, Filep MAMBOR, Daawia SUHARTAWAN, Eline HOOGENDIJK _____ 3

Summary: Two new species of *Bulbophyllum* are described as *Bulbophyllum irianae* and *Bulbophyllum adolinae*

Key words: Orchidaceae, *Bulbophyllum irianae* and *Bulbophyllum adolinae*,
new species, Indonesian New Guinea

**Three new orchid species from the islands of Mindanao and Palawan,
Philippines**

Derek CABACTULAN, Miguel David DE LEON, Reynold PIMENTEL and Jim COOTES _____ 9

Abstract: A new *Bulbophyllum* species and a new *Dendrobium* species are
proposed from the province of Bukidnon, Mindanao, and a new *Dendrobium*
species from the island province of Palawan is also proposed.

Key words: *Bulbophyllum pyrrosifolium*, *Dendrobium annemariaeae*, *Dendrobium jyrddii*,
Bukidnon, Palawan, Philippines, new species.

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Bulbophyllum irianae and *B. adolinae* (Orchidaceae: Dendrobiinae), two new species of sections *Hoplandra* and *Peltopus* from Indonesian New Guinea

André SCHUITEMAN, Ed DE VOGEL, Charlie D. HEATUBUN, Jimmy F. WANMA, Filep MAMBOR, Daawia SUHARTAWAN, Eline HOOGENDIJK

With more than 2000 species, *Bulbophyllum* is at present by far the largest genus in the orchid family, Orchidaceae. Although it is found throughout the tropics, some parts of the world are much richer in *Bulbophyllum* species than others. The greatest hotspot of species diversity for the genus is New Guinea. About 655 species of *Bulbophyllum* are currently recorded from this vast and under-explored island. Not surprisingly, new species are still regularly discovered here; two examples are described in this paper.

In order to group related species together, taxonomists have divided *Bulbophyllum* into c. 100 sections (PRIDGEON et al., 2014), of which 34 occur in New Guinea, including sections *Hoplandra* and *Peltopus*.

It is interesting to note how many similarities there are between *Bulbophyllum* and the neotropical subtribe *Pleurothallidinae* (pleurothallids), especially the genera *Acianthera*, *Dresslerella*, *Lepanthes*, *Masdevallia*, *Stelis*, *Pleurothallis* and *Trichosalpinx*. Both groups are exceptionally species-rich and are predominantly pollinated by diptera (flies, mosquitos, gnats, etc.). The flowers of these otherwise distantly related orchids can often look remarkably similar. In the case of *Bulbophyllum* sections *Hoplandra* and *Peltopus*, to which the two species here described belong, parallels can be drawn especially with species of *Masdevallia*. The superficial resemblance is mainly due to the relatively large, often caudate sepals and insignificant petals in both. It is likely that the similarities reflect compara-

ble pollination syndromes and hence similar selection pressures, but nothing is known about the pollinators of *Bulbophyllum* sections *Hoplandra* and *Peltopus*.

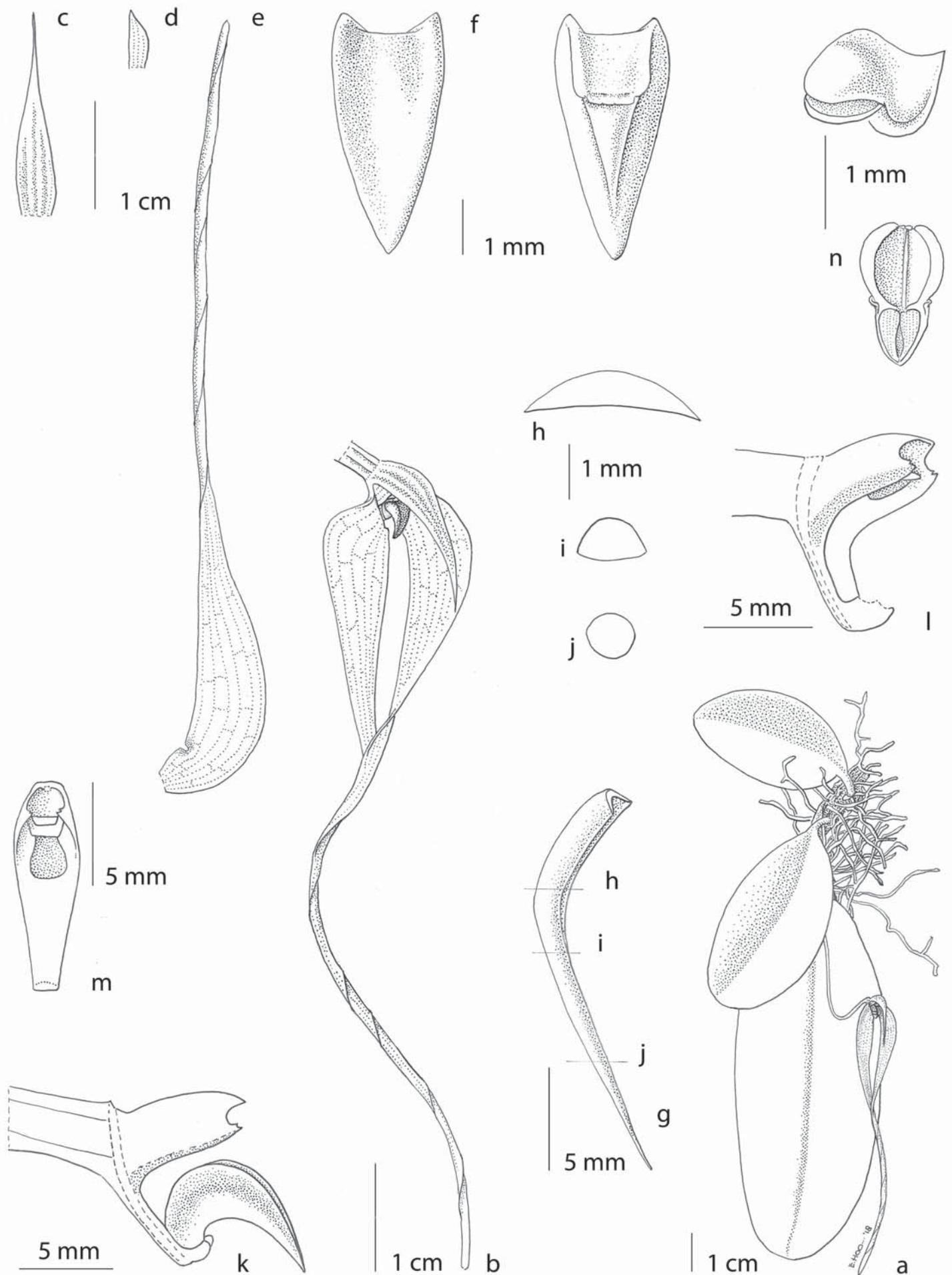
Another parallel between pleurothallids and New Guinea *Bulbophyllum* is that both groups are most species-rich in humid montane forests, where the trees are covered with mosses and lichens. One of the new species, *B. adolinae*, is such a cloud forest inhabitant; the other, *B. irianae*, occurs in tropical rainforest at much lower elevations.

Section *Hoplandra*

Bulbophyllum irianae DE VOGEL, SUHARTAWAN, HOOGENDIJK & HEATUBUN, **sp. nov.** Type: Indonesia, Tanah Papua, Papua Prov., Keerom Regency, Senggi district, *Keerom cult.* 20180091 (DE VOGEL, SUHARTAWAN & HOOGENDIJK) (holotype Yayasan Pendidikan Alam Papua, temporarily stored in Universitas Cenderawasih).

Bulbophyllum irianae.
Watercolour drawing after the type
by Eline HOOGENDIJK





Bulbophyllum irianae. **A.** Habit; **B.** Flower, oblique front view; **C.** Median sepal; **D.** Petal; **E.** Lateral sepal; **F.** Lip, view from above and below;

G. Median sepal, lateral view; **H–J.** Cross-sections through median sepal; **K.** Ovary, column and lip, lateral view; **L.** Ovary and column, oblique later-

al view; **M.** Column and column foot, front view; **N.** Anther, ventral and lateral view. Drawing after the type by Eline HOOGENDIJK.



Bulbophyllum irianae. Flowers.
Photo Eline HOOGENDIJK.

Diagnosis: *Bulbophyllum irianae* is most similar to *B. obovatifolium* J.J.Sm., but differs in the apex of the median sepal which is a long, solid, terete, subulate awl c. 0.8 cm long that is adaxially in the lower half flat, has no crest or keel, and narrows continuously and gradually into the very thin, narrowly acute tip (versus median sepal keeled, acute, concave, the top half in the middle conduplicate, laterally compressed); the lip from above slender narrowly triangular with a narrowly acute apex and a smooth upper surface without ornamentation (versus lip from above tongue-shaped with an obtuse apex and a channeled upper side with two ribs and a low small rib in the middle); lateral sepals c. 8.2 cm long and 6 times twisted around each other (versus lateral sepals c. 4.5 cm long and not twisted).

Epiphyte, creeping. Roots terete, minutely pustulate, c. 0.8 mm diam. Rhizome c. 3 mm diam.; rhizome scales not persistent. Pseudobulbs 0.6–1 cm apart, ascending, hardly narrowing to the top, dorsoventrally flattened, 6–10 × 2–4 mm, to c. 2 mm thick, finely irregularly longitudinally grooved. Leaf thick coriaceous, 4.7–10.2 × 2.1–2.6 cm; petiole 2–7 × 1.5–2 mm; blade elliptic, 4.5–10 by 1.4–2.6 cm (index 3.1–3.8), with rounded apex. Inflorescence c. 11.7 cm long, 1-flowered; peduncle 7.7 cm long; peduncle scales 3; tubular, the upper one with a long acuminate top; floral bract tubular, 7 mm long, with a long acuminate top. Pedicel and ovary 4 cm long from a 9 mm long displaced node; the ovary 6 mm long, with 6 grooves. Flower c. 9 cm long; median sepal reddish, the margins and top half lighter ochrish tinged reddish; lateral sepals warm red, the facing margins in the basal free part near the attachment lighter ochrish red, turning whitish tinged pale red, continuing to where the sepals connect; petals light ochrish tinged red, the nerves slightly darker red; lip on upper side and laterally above purplish red, the lower side lighter reddish tinged ochrish; column reddish, anther light ochrish. Median

sepal porrect, 1.6 cm × 3.5 mm (index 4.6), entirely glabrous; widened basal part elliptic, thin and convex, 8 mm long (index 2.3), with entire margins, nerves 3, raised, the lateral nerves with one branch from near the base; apex a long, solid, terete, subulate awl 8 mm long, which is adaxially in the lower half flat, without crest or keel, continuously and gradually narrowing in the very thin tip. Lateral sepals free, 8.2 cm × 6 mm (index 13.5), entirely glabrous but basal half on inner side slightly rugulose; basal part widened, oblique and somewhat falcate near the base, 2.5 cm long (index 4.2), long ovate, with upper margin minutely irregular, lower margin smooth, 4-nerved with the upper 2 nerves and the lowermost nerve branching at the very base; apical part long drawn-out, narrow, 5.5 cm × 0.7–1 mm, with almost parallel margins, its basal part thin, the top 4 cm subulate and almost semi-terete, spiralling around each other with c. 6 turns, with acute apex. Petals porrect, obovate-oblong, 5.2 × 1.7 mm (index 3.1), entirely glabrous; margins entire, smooth; apex acute to acuminate, curved downwards; 3-nerved, the median nerve more pronounced. Lip recurved over its entire length, narrowly ovate with a slightly widened base, c. 3.3 by 0.9 mm (index 3.7, without artificial spreading), entirely glabrous; margins entire, at the back of the lip elevated with sharp margins; upper side smooth, without ornamentation; below with a broad high base which is elevated where the ligament is attached and which narrows and lowers to near the top of the lip into a high crest; apex narrowly triangular, acute. Column 2.7 mm long; rostellum not protruding; stigma elliptic; column foot 2.5 mm long, its apex free for 1 mm, strongly curved upwards, somewhat widened; stelidia porrect, triangular, acute. Anther not seen. Fruit not seen.

Distribution: New Guinea: Indonesia (Papua Prov., Keerom Regency), endemic. Only known from the type.

Habitat and ecology: Crown epiphyte in slightly disturbed rain forest with trees up to c. 45 m tall, with much undergrowth. Terrain undulating to steep. Elevation c. 300 m. Flowering in the wild in February.



Bulbophyllum irianae. Flower detail.
Photo Daawia SUHARTAWAN.

Cultivation: Warm-growing epiphyte.

Etymology: *Bulbophyllum irianae* is named in honour of Lady Iriana Joko WIDODO, First Lady of Indonesia, at the occasion of the 2018 International Conference on Biodiversity, Ecotourism, and Creative Economy (ICBE), Manokwari, 2018, in recognition of her efforts to stimulate and support the development processes in Papua and West Papua Provinces.

Note: *Bulbophyllum harposepalum* SCHLTR. is often treated as a synonym of *B. obovatifolium*. It differs from *B. irianae* in the much smaller, not twisted sepals, the broader and obtuse lip with a median depression and obtuse apex, and in the median sepal which is towards the top conduplicate-compressed and keel-like, rather blunt, not gradually tapering.

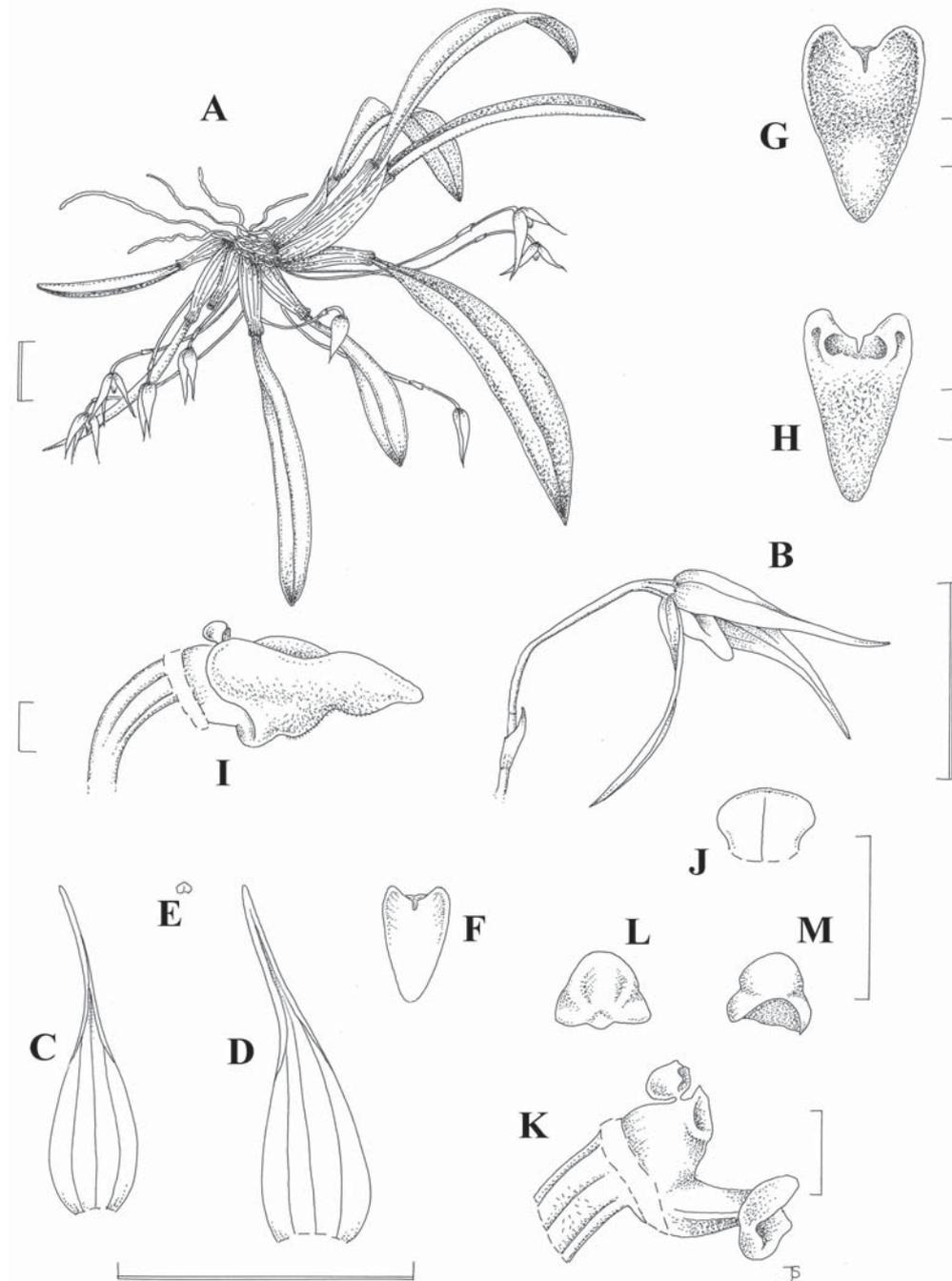
Section *Peltopus*

Bulbophyllum adolinae SCHUIT., WANMA, MAMBOR & HEATUBUN, **spec. nov.**

Type: Indonesia, Papua Barat Prov., Arfak Mountains, montane forest north of Anggi Giji Lake, Schuiteman 2014-38 (with Marie BRIGGS, Frantz Rumbiak PAWERE, Soetjipto MOELJONO, and Filep MAMBOR), 25 July 2014 (holotype **BO**; iso **K, MAN**).

Diagnosis: *Bulbophyllum adolinae* differs from *B. octarrhenipetalum* J.J.SM. in the terminal callus of the column-foot, which is bilobed, with one lobe pointing upwards and one, almost equally large, lobe pointing downwards (versus only one upwards-pointing callus in *B. octarrhenipetalum*); rostellum minute, erect (versus rostellum distinctly protruding, porrect); petals only 0.6 mm wide (versus petals 0.9–2.5 mm wide), sepals with glabrous, not ciliate, margins, and the bright yellow lip (versus lip white or purple).

Clump-forming epiphyte with a short, creeping and branching rhizome. Roots terete, smooth, 0.7 mm diam. Pseudobulbs crowded, cylindrical, slightly gradually widening towards the base, 1–2 × 0.4 cm, finely longitudinally grooved. Leaf thin coriaceous, 2–5.5 × 0.5–0.8 cm; peti-



ole 2–4 mm long; blade narrowly elliptic, 1.6–5.1 by 0.5–0.8 cm (index 3.2–6.4), apex subacute, minutely mucronate. Inflorescences patent, one or a few from each pseudobulb, 4.5–6 cm long, 1-flowered; peduncle 3.5–5 cm long, long persistent; peduncle scales 1 or 2, tubular, 3 mm long. Floral bract obliquely tubular, 3.4 mm long, acuminate. Pedicel and ovary 1.1 cm long from a 3 mm long displaced node; ovary 1.3 mm long, with 6 grooves, sparsely punctate. Flower not widely opening, facing downwards, c. 1.3 cm across, creamy white, the sepals with violet tips, lip bright yellow. Median sepal ovate, 11.6 × 3.0 mm, caudate, with the tail 4.7 mm long (index 2.3,

Bulbophyllum adolinae.
A. Habit; **B.** Flower; **C.** Median sepal; **D.** Lateral sepal; **E.** Petal; **F.** Lip; **G.** Lip adaxial side; **H.** Lip abaxial side; **I.** Ovary, column and lip; **J.** Petal; **K.** Column, showing the two veins in the column-foot; **L.** Anther, dorsal view; **M.** Anther, ventral view.
 Double scale bar = 1 cm; single scale bar = 1 mm.
 Drawing Judi STONE.

without the tail), 3-veined, glabrous. Lateral sepals obliquely ovate, 12.8 × 3.5 mm, caudate, the tail 4.7 mm long (index 2.3, without the tail), 3-veined, glabrous. Petals minute, transversely elliptic, 0.4 × 0.6 mm (index 0.7),

Bulbophyllum adolinae in situ.
Photo by André SCHUITEMAN.



1-veined, glabrous. Lip in outline triangular, 4.1×2.3 mm (index 1.8, without artificial spreading), with erect, broadly rounded margins in basal half, car-nose, finely papillose-pubescent on abaxial side in the centre, margins minutely papillose, apex obtuse. Column

short and thick, slightly tapering towards the apex, 1.0 mm long; rostellum minute, erect; stigma without protruding margins; column-foot 1.3 mm long, at the apex with a thick, shield-like, bilobed callus, with the lobes projecting upwards and downwards;

anther helmet-shaped, 0.5 mm long; pollinia not seen. Fruit not seen.

Distribution: Indonesia (West Papua Prov., Arfak Mountains), endemic. Only known from the type.

Habitat and ecology: Epiphyte on moss-covered tree trunks in montane forest. Elevation 1970 m. Flowering observed in July.

Cultivation: Cool-intermediate-growing epiphyte that should be kept under humid conditions throughout the year. Should do well when grown like a *Masdevallia*.

Etymology: *Bulbophyllum adolinae* is named at the occasion of the 2018 International Conference on Biodiversity, Ecotourism, and Creative Economy (ICBE), Manokwari, 2018, in honour of Juliana Adolina Kiriwenno Mandacan, chairwoman of the West Papua chapter of the Orchid Association of Indo-

Bulbophyllum adolinae, flowers.
Photo by André SCHUITEMAN.



nesia; she is the wife of the governor of West Papua Province, Dominggus Mandacan, who is a powerful driver of nature conservation efforts in West Papua Province.

Notes: A thorough revision of *Bulbophyllum* sect. *Peltopus* was published by VERMEULEN (1993). Among the 32 species recognized by him, only *B. octarrhenipetalum* J.J.Sm. is similar enough that a careful comparison is required to tell them apart; see the diagnosis above. In VERMEULEN's view, *B. octarrhenipetalum* is an extraordinarily variable species. Field studies are needed in order to establish if the variation is truly infraspecific and not caused by hybridization. *Bulbophyllum adolinae* was discovered in 2014 during a joint field trip in the Arfak Mountains, West Papua Province, Indonesia, carried out by staff of the Royal Botanic Gardens, Kew (André SCHUITEMAN and Marie BRIGGS) and the Universitas of Papua (Soetjipto MOELJONO, Jimmy Frans Wanma, Frantz Rumbiak PAWERE, Marthen JITMAU, Filep MAMBOR, Darius TRIRBO, Barselina INGGESI, and Victor SIMBI-AK), supported by Charlie D. HEATUBUN.

André SCHUITEMAN
Herbarium, Royal Botanic Gardens,
Kew, Richmond, Surrey, TW9 3AB,
United Kingdom.

Ed DE VOGEL
Yayasan Pendidikan Alam Papua
(YADIKAP),
Jl. Poros Arso 2 RT 001 RW 001,
Kampung Yuwanain Distrik Arso Kabu-
paten Keerom,
Papua Province, Indonesia,
and
Hortus Botanicus Leiden,
Leiden University, Rapenburg 73,
P.O. Box 9500, 2300 RA Leiden,
and
Naturalis Biodiversity Center,
P.O. Box 9517, 2300 RA Leiden,
The Netherlands.

Charlie D. HEATUBUN
Badan Penelitian dan Pengembangan
Daerah Provinsi Papua Barat,
Jl. Brig. Jend. Mar. (Pur.) Abraham . O.
Atururi,
Perkantoran Gubernur Papua Barat,
Arfai, Manokwari 98316,
and
Fakultas Kehutanan, Universitas Papua,
Jl. Gunung Salju, Amban,
Manokwari 98314,
Papua Barat, Indonesia,
and
Royal Botanic Gardens,
Kew, Richmond, Surrey, TW9 3AB,
United Kingdom.

Jimmy Frans WANMA
Fakultas Kehutanan Universitas Papua,
Kementerian Riset, Teknologi dan Pen-
didikan Tinggi,
Jl. Gunung Salju Amban,
Manokwari 98314,
Papua Barat, Indonesia.

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Filep MAMBOR
Biodiversity Research Center,
Universitas Papua,
Manokwari 98314,
Papua Barat, Indonesia.

Daawia SUHARTAWAN
Yayasan Pendidikan Alam Papua
(YADIKAP),
Jl. Poros Arso 2 RT 001 RW 001,
Kampung Yuwanain Distrik Arso Kabu-
paten Keerom,
Papua Province,
and
Universitas Cenderawasih,
Jurusan Biologi Uncen,
Jl. Kamp Wolker Waena,
Jayapura 99351,
Papua Province, Indonesia.

Eline HOOGENDIJK
Hortus botanicus Leiden,
Leiden University, Rapenburg 73,
P.O. Box 9500, 2300 RA Leiden,
and
Naturalis Biodiversity Center,
P.O. Box 9517, 2300 RA Leiden,
The Netherlands.

Three new orchid species from the islands of Mindanao and Palawan, Philippines

Derek CABACTULAN, Dr. Miguel David DE LEON,
Reynold PIMENTEL & Jim COOTES

Continuing studies, of the orchids of the Philippines, and in particular those of northern Mindanao, by the COOTES Orchid Research Group have revealed the following three species as new to science. A study of the relevant literature from the Philippines, and her neighbouring countries, has revealed no matches for the three species we have at hand. We hereby take this opportunity to name these three species as new to science.

Bulbophyllum pyrrisifolium CABACTULAN, COOTES, PIMENTEL and M.D. DE LEON **sp. nov.**

Section: **Brachystachyae** BENTHAM and HOOKER F.

TYPE: PHILIPPINES, Mindanao, Bukidnon, at 1,600 metres elevation above sea level. **HOLOTYPE:** MDL1803022 (March 11, 2018), **CAHUP073648**

Plant description

Growth habit: creeping, sessile, glabrous, epiphyte. Rhizome: 1.5 mm in diameter. Pseudobulbs: clustered

on rhizome; oblate to ovoid, 2.0 to 2.5 mm by 2.5 to 3.0 mm, unifoliate. Leaves: sessile, obovate to nearly orbicular, emarginate, curved, leathery, stiff, 1.3 to 1.5 cm wide by 1.5 to 2.5 cm long. Inflorescence: upright, arising from the base of the pseudobulbs, adjacent to previous inflorescences, cylindrical, racemose, rachis short, cylindrical, 10 to 11 mm long; bearing one to three-flowers, opening successively first from the base to apex of the rachis; flowers not opening fully, 2 mm in diameter across lateral sepals; three non-floral bracts are triangular, at the base of the peduncle, compact, papery, somewhat fibrous, purple, 1.1 mm wide by 1.7 mm long, floral bracts purple, triangular 1.5 mm wide by 2.1 mm long, non-fragrant. Flower colour: purple and white. Peduncle: short, cylindrical, glabrous, 2 mm long by 0.5 to 1 mm in diameter. Pedicel and ovary: short, conical, 0.6 mm long by 1.0 mm wide. Dorsal sepal: oblong, three-nerved, 3.0 to 3.5 mm long by 1.4 mm wide. Petals: linear-ovate, single-nerved, 1.3 mm long by 0.5 mm wide. Lateral sepals: ob-

long, three-nerved, 4.0 mm long by 1.7 mm wide. Labellum: unguiculate, 1.5 mm long by 0.7 mm wide, adaxially papillose, abaxially glabrous, with 2 ridges running the posterior two-thirds of the labellum, from the lateral edge of the base towards the middle, parallel to the midline. Column: short, rounded, 0.5 mm long by 0.3 mm in diameter, with a pair of short, obliquely squarish flattened stelia; column foot broadly triangular, 1.0 mm long by 0.3 mm wide, with a midline keel 0.3 mm long by 0.1 mm high. Anther cap: rounded, flattened, slightly papillose, 0.5 mm in diameter. Pollinia oblong, unequally paired, 0.2 mm long by 0.15 mm wide. Stigma deep, deltoid, 0.30 mm in diameter. Infructescence: not seen.

Comparison: The unusual and attractive foliage of *Bulbophyllum pyrrisifolium* is similar to the Bornean species *Bulbophyllum botryophorum* RIDLEY. Unlike the latter, the leaves of *B. pyrrisifolium* are emarginate and do not lay on the substrate. The pseudobulbs of *B. pyrrisifolium* are clustered on the rhizome whilst those of *B. botryophorum* are spaced at intervals of approximately 5 to 9 millimetres; also, *B. pyrrisifolium* has a few-flowered inflorescence whilst that of *B. botryophorum* is a many-flowered, compact inflorescence.

Habitat and Distribution: *Bulbophyllum pyrrisifolium* is only known from Bukidnon on Mindanao. It grows as an epiphyte, in partial shade in mossy dipterocarp forest, at 1,600 metres above sea level.

Etymology: The specific epithet refers to the shape of the leaves that resemble an infertile frond of the fern species *Pyrrisia piloselloides* (L.) M.G. PRICE.

Bulbophyllum pyrrisifolium



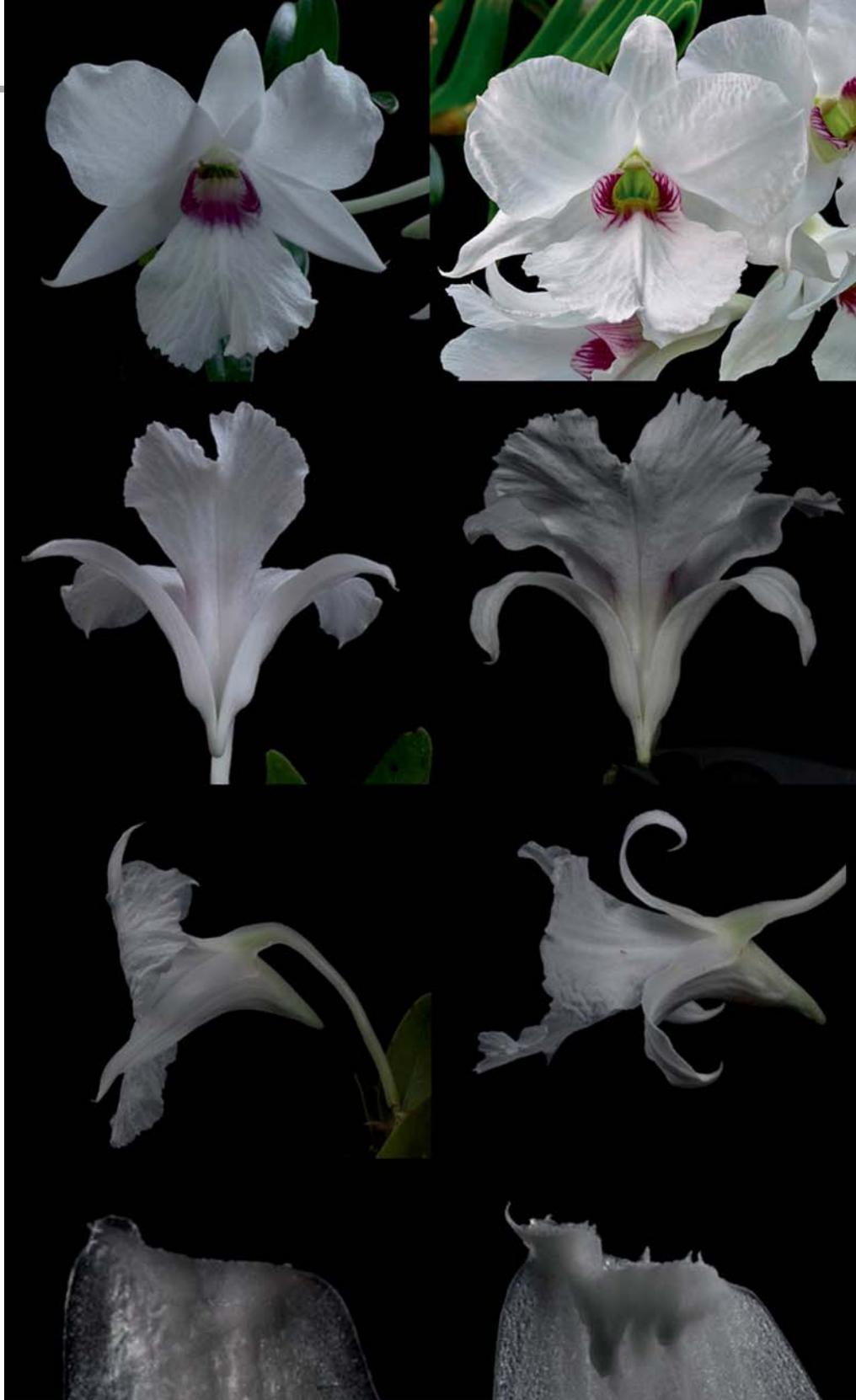
Dendrobium annemariaeae CABACTULAN, COOTES, M.D. DE LEON and PIMENTEL sp. nov.

Section *Formosae* (BENTHAM and HOOKER F.) HOOKER F.

TYPE: PHILIPPINES, Mindanao, Bukidnon, at 1,500 metres elevation above sea level. **HOLOTYPE:** MDL1803023 (March 3, 2018), **CAHUP073647**

Plant description

Growth Habit: upright, sympodial, forming clumps. Stems: cylindrical, conical, grooved, stiff, up to 45 cm in height by 6 mm in diameter, roots are white. Leaves: leathery, narrowly lanceolate, flattened, recurved, 3 to 6.5 cm long and 0.9 to 1.5 cm wide, base truncate, apex acute, unequally emarginate, alternate, overlapping each other, present on the upper half of the stems, bearing 5 to 20 leaves, internode distance of 1.23 to 2.3 cm, adaxially and abaxially glabrous, veins flattened, stem turns dark brown as it ages, old leaf sheaths present on the lower portion of stem. Inflorescence: short, apical-axillary, entirely glabrous, bearing up to 5 peduncles per stem, carrying up to 4 flowers per raceme, flower 4.8 to 6 cm in diameter across the lateral sepals. Flower color: petals and sepals white. Peduncle: subsessile, white, 2.5 mm in diameter. Pedicel and ovary: terete, triangular at the base of the sepals, slightly winged, white, 3.5 to 10 cm long by 2 to 6 mm in diameter. Bracts: short, ovate, persistent, involute, 4 mm long by 2.5 mm wide. Dorsal sepal: fleshy, flattened, slightly revolute, narrowly oblong-ovate, margins entire, base oblong, apex acute-acuminate, 2.89 to 3.5 cm long by 6 to 10 mm wide at the base of the column, 1 to 1.5 cm wide at the center, mid rib present from the base. Lateral sepals: fleshy, flattened, slightly revolute, lanceolate falcate, mid rib present from the base, apex acute-acuminate, base truncate, margins entire, 3.8 to 4 cm long from spur to apex, 3.3 to 3.5 cm long from column base to apex, 1.5 to 1.7 cm wide from column to spur, 1 to 1.2 cm widest, lower base at the spur broad, cup-shape. Petals: fleshy, flattened, slightly undulate, revolute, broadly obovate, margins entire; petal base with one or two irregularly triangular calli, rounded at the margins, and sparsely papillate surface, apex abruptly mucronate, 3.3 to 4 cm long by 5 mm wide at the base of the column, 2 to 2.5 cm wide at the center. Labellum: three lobed, with the lateral lobes upright-curved, surrounding the column; lateral lobes are short, oblong, basally green with purple markings spreading towards the exterior margins, 2.2 to 2.7 cm long by 6 to 8 mm wide, anteriorly mi-



Dendrobium annemariaeae left side, *Dendrobium deleonii* right side
Dr. Miguel David DE LEONE

nutely papillate, margins entire; midlobe is flabellate, revolute, bilobed and abruptly mucronate at the center at about 1 mm long, sparsely papillose towards the junction of the mid lobe and lateral lobes, purplish lines running towards the greenish base of the column, interior mid lobe raised with ridges where pigmented veins are located, lateral ridges are 4, about 3.8 to 4 cm long from mentum to bilobed

ed at the margins, and sparsely papillate surface, apex abruptly mucronate, 3.3 to 4 cm long by 5 mm wide at the base of the column, 2 to 2.5 cm wide at the center. Labellum: three lobed, with the lateral lobes upright-curved, surrounding the column; lateral lobes are short, oblong, basally green with purple markings spreading towards the exterior margins, 2.2 to 2.7 cm long by 6 to 8 mm wide, anteriorly mi-

center, 2.7 cm wide from the base of the lateral lobes, 2.4 to 3.3 cm wide at the center, margins undulate and slightly dentate. Spur: short, acute, conical straight, horizontally oriented, 1.5 cm long, apex of the spur fused at distal 3 mm. Column: flattened, tridentate, oblongate, two 2 mm stelia that are acute-acuminate, pointing forwards. Column foot: green, oblongate, concave, from mentum to column 1.2 to 1.5 cm long and 8 to 9 mm wide. Anther cap: squarish, concave, minutely papillose, anther margins below the stigma are fimbriate. Stigma: ovate, concave, 3.6 to 4 mm long by 3.5 mm wide. Pollinia: paired, linear-lanceolate, falcate, 2.5 mm long by 0.8 mm. Infructescence: not seen.

Comparison: *Dendrobium annemariae* is most similar to *Dendrobium deleonii* CABACTULAN, COOTES & PIMENTEL, but differs in the proportionately shorter, oblong sidelobes, the proportionately longer and narrower, flabellate midlobe. The lower base of the lateral sepals proximal to the apex of the spur is broad cup-like in *Den. annemariae* whereas that of *Den. deleonii* is narrow and funnel-like. The midlobe of *Den. deleonii* is straight or slightly curved whereas that of *Den. annemariae* is angled downwards at the junction of the sidelobes and midlobe. The apex of the spur of *Den. annemariae* is more acute, conically straight, whereas that of *Den. deleonii* is rounder and slightly curved. When flowers are viewed ventrally, the throat of *Den. annemariae* is broader. The leaves of *Den. annemariae* are also proportionately longer and recurved than those of *Den. deleonii*. The mature plants of *Den. annemariae* are patently smaller than those of *Den. deleonii*. A unique characteristic of the species is that plants as small as 6 cm can bear one to two full-sized flowers. The flowering season of the two species differs considerably too, with *Den. deleonii* flowering in February and March, whereas *Den. annemariae* blooms in July. The flowering seasons have remained constant over the three years the authors have been studying these two species, both in their natural habitat and in cultivation.

Habitat and Distribution: *Dendrobium annemariae* is known only from a single locality in the windy peaks of the

cloud forests of Bukidnon on Mindanao. It grows as an epiphyte in full sunlight, at elevations of between 1,300 to 1,500 meters above sea level.

Etymology: This most surprising and beautiful species is named in honor of Anne Marie ESPIRITU, wildlife photographer and conservation advocate in the Philippines.

Dendrobium jyratii D. CABACTULAN, COOTES, M.D. De Leon and PIMENTEL **sp. nov.**

Section: *Distichophyllae* HOOKER F.

TYPE: From cultivation, PHILIPPINES, Palawan, at 780 metres elevation above sea level. **HOLOTYPE:** MDL1804024 (April 30, 2018), **CAHUP073649**

Plant description

Growth Habit: Upright, sympodial, forming clumps. **Stems:** cylindrical, conical, deeply grooved, stiff, can reach over 1.5 meters in length by 6.5 mm in diameter, roots are white. **Leaves:** leathery, elliptic-oblong, ovate to lanceolate, 2 to 5 cm long by 1.2 to 1.7 cm wide, base truncate, apex emarginate, alternate, overlapping each other, present on the upper half of the stem, internode distance between 1 to 3.3 cm long, adaxially and abaxially glabrous, veins flattened, leaves borne on the upper two-thirds of the length of the stem, stem turns dark brown as it ages. **Inflorescence:** short, axillary, entirely glabrous, bearing succeeding single fra-



Dendrobium jyratii

grant flowers at each internode, up to 5 flowers per stem, flower 2.7 cm in diameter across the lateral sepals and labellum; floral bracts short, single, persistent, involute, ovate, 2 mm long and 2.3 mm wide when flattened. Flower color: white petals, sepals, and labellum, yellow in labellum keels and anther cap. Peduncle: short, thickened, terete, 2 mm long and 2 mm in diameter. Pedicel and ovary: cylindrical, white, slightly grooved, 25 to 30 mm long, 1 mm in diameter from the base of the peduncle and 3 mm in diameter from the base of the sepals. Dorsal sepal: fleshy, revolute, undulate, ovate, margins entire, 5-nerved, base oblong, apex acute-acuminate, 1.4 cm long by 0.85 cm wide. Petals: fleshy, revolute, undulate, lanceolate, margins entire, 3-nerved, base acute, sparsely minutely papillate at the base, apex acute-acuminate, 1.5 cm long by 6 mm wide. Lateral sepals: fleshy, revolute, undulate, triangular, margins entire, 5-nerved, 1.4 cm long from apex to the base of the column, 1.25 cm long from apex to the base of the spur, 0.79 cm wide. Labellum: is trilobed, with two lateral lobes laying flattened on the midlobe; lateral lobes are obliquely ovate, margins irregularly lobed, undulate, white, 1.9 cm long from apex to the base of the column foot, 1.1 cm long from apex to the base of the midlobe, 9 mm wide; midlobe is obcordate-orbicular when flattened, broadly revolute, margins irregularly dentate, undulate, 1.1 cm long from central apex to the central base of midlobe, 1.45 cm long from apex lateral margin to the central base of midlobe, 2.71 cm at its widest point. Spur: longer, cylindrical, saccate, curved downwards, 9 mm long by 4 mm in diameter, apex of the spur fused at 3.5 mm long. Column: flattened tridentate oblongate, 5 mm long by 4 mm wide, 2 stelidia on both sides that are triangular, forward-pointing, 2 mm long; column foot white, oblongate, concave, 2 mm long by 5 mm wide, with a pair of rounded, flattened keels at the center between the entrance of the nectary. Anther cap: ovate, cucullate, minutely papillose, anther margins below the stigma are fimbriate, 3 mm long by 2.3 mm in diameter. Pollinia: equally paired, oblong, curved, 2 mm long by 0.6 mm wide. Stigma: oblong,



Dendrobium jyrzii

concave, 4 mm long by 2 mm wide. Inflorescence: not seen.

Comparison: *Dendrobium jyrzii* is most similar to *Dendrobium uniflorum* GRIFF., but differs by the proportionately taller plant with broader floral segments. The margins of the midlobe and lateral lobes of *Den. jyrzii* are broad, irregularly lobed and undulate, whereas those of *Den. uniflorum* are entire and flattened. The spur of *Den. jyrzii* is longer, cylindrical, saccate, curved downwards whereas that of *Den. uniflorum* is short, conical saccate. The petals and sepals of *Den. jyrzii* are revolute, flattened whereas those of *Den. uniflorum* are fully revolute, curved. The leaves of *Den. jyrzii* are compact and broader whereas those of *Den. uniflorum* are widely spaced and narrower.

Habitat and Distribution: *Dendrobium jyrzii* is only known from the island province of Palawan.

Etymology: This beautiful and fragrant species is named in honor of Jyrd Vleck PASTORES, son of Ofelia PASTORES from the island province of Palawan. It was Ofelia PASTORES who first established the provenance of this previously widely-traded spe-

cies and she requested the authors to name this orchid after her ailing son.

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