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Dendrobium schettleri



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**Eight new orchid species from
Bukidnon, Mindanao, Philippines**

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

Summary: Two new species of *Bulbophyllum* are described as *Bulbophyllum anascaputum* and *Bulbophyllum migueldavidii*; three new species of *Dendrobium* are described as *Dendrobium derekcabactulanii*, *Dendrobium reypimentelii* and *Dendrobium schettleri*; a new species of *Dendrochilum* is described as *Dendrochilum geigeri*; a new species of *Glomera* is described as *Glomera gastrodioides*; a new species of *Thrixspermum* is described as *Thrixspermum fernandeziae*.

Keywords: Philippines, *Bulbophyllum anascaputum*, *Bulbophyllum migueldavidii*, *Dendrobium derekcabactulanii*, *Dendrobium reypimentelii*, *Dendrobium schettleri*, *Dendrochilum geigeri*, *Glomera gastrodioides*, *Thrixspermum fernandeziae*.

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Eight new orchid species from Bukidnon, Mindanao, Philippines

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

Abstract: Recent expeditions conducted by Miguel David De Leon and his team in the province of Bukidnon, Mindanao, Philippines, have revealed two species of *Bulbophyllum* from sections Polymeres and Stachysanthes, three species of *Dendrobium* from section *Calcarifera*, a unique velvet-leaved species of *Dendrochilum* from section *Platyclinis*, a *Glomera* species from section *Glomera*, and a *Thrixspermum* species from section *Dendrocolla*. A review of the relevant botanical literature on species from the Philippines and her neighboring countries has not found any match for these spectacular, cool-growing species. We take this opportunity to name *Bulbophyllum anascaputum* Cootes, Cabactulan, Pimentel & M.D. De Leon, *Bulbophyllum migueldavidii* Cootes, Cabactulan, & Pimentel, *Dendrobium derekcabactulanii* COOTES, PIMENTEL & M.D. DE LEON, *Dendrobium reypimentelii* COOTES, CABACTULAN & M.D. DE LEON, *Dendrobium schettleri* COOTES, CABACTULAN, PIMENTEL & M.D. DE LEON, *Dendrochilum geigeri* COOTES, CABACTULAN, PIMENTEL & M.D. DE LEON, *Glomera gastrodioides* COOTES, CABACTULAN & M.D. DE LEON, and *Thrixspermum fernandeziae* COOTES, CABACTULAN, & M.D. DE LEON, as species new to science.

Bulbophyllum anascaputum COOTES, CABACTULAN, PIMENTEL & M.D. DE LEON **sp. nov.**

Type: Philippines: Mindanao: Bukidnon. Collected 12/3/2016 MDL 001/2017 (Holotype: CMUH 00010950)
Section: Polymeres (BLUME) J.J. VERM. & O'BYRNE

Comparison: *Bulbophyllum anascaputum* is similar to the Bornean *Bulbophyllum rutilans* J.J. VERM. & LAMB, but differs in the hirsute edges to the floral segments, the longer inflores-

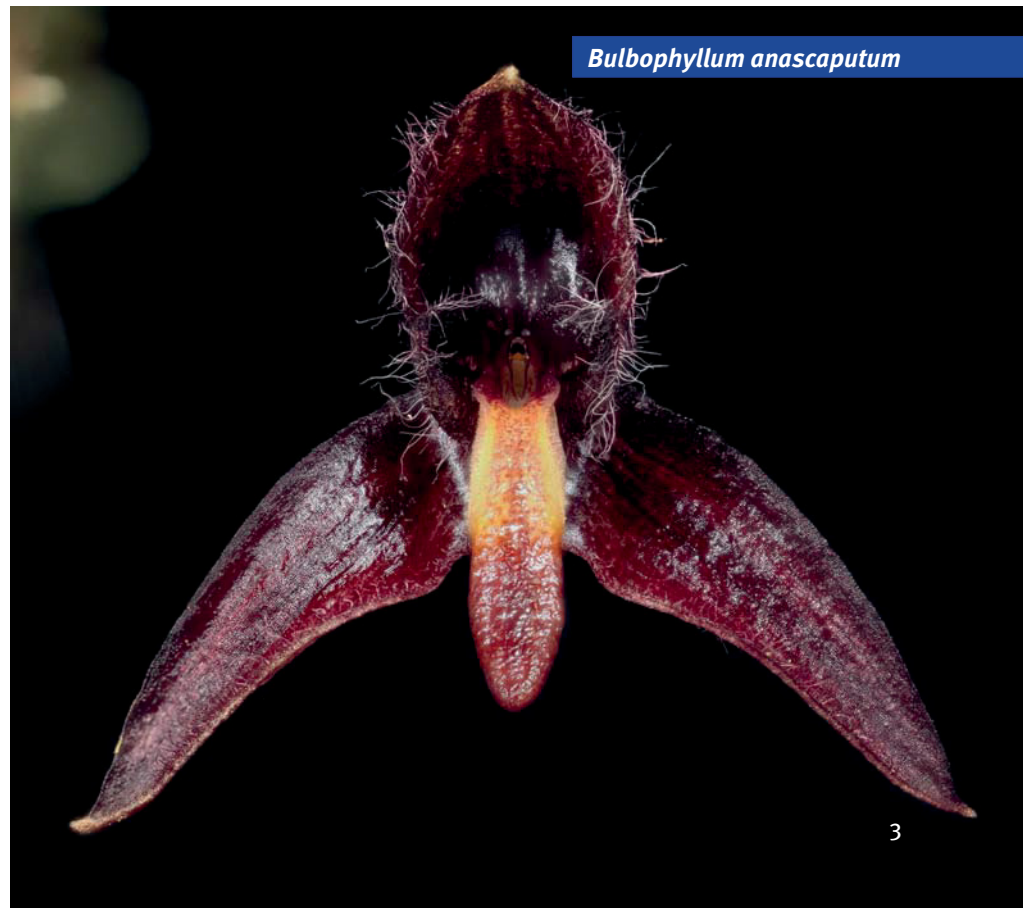
cence, 3 cm vs 5 cm, and the papillate abaxial surface of the labellum.

Growth Habit: upright, sympodial, epiphyte. **Pseudobulbs:** conical, slightly grooved, clustering, 1.1 cm in height by 7.5 mm in diameter; internodes short, terete, 1 mm by 1 mm wide; unifoliate. Leaves: oblong-lanceolate, entirely glabrous, subsessile, 2.8-3.2 cm long by 1 cm wide. **Inflorescences:** single-flowered, arising from the base of the pseudobulb, up to 5 cm long. Peduncle: slender, 5 cm long, with conical bract about 0.40 mm long and 0.70 mm in diameter. **Flower colour:** sepals and petals are dark wine red; labellum interior yellow, exterior red; trichomes white. **Pedicel:** cylindrical 1.5 cm long by 0.45 mm in diameter. Dorsal Sepal: ovate, concave, apex acuminate, 3-nerved, nerves green, prominently raised abaxially, margins densely hirsute, adaxially minutely papillose, 10.5 mm long by 4.3 mm wide. **Lateral Sepals:** lanceolate, apex acuminate, 5-nerved, nerves green, prominently raised abaxially, upper margin glabrous and lower margin hirsute,



Bulbophyllum anascaputum

adaxially minutely papillose, 11.5 mm long by 4.3 mm wide. **Petals:** obtuse-oblique, single-nerved, nerve purple to wine-colored, slightly raised abaxially, shallow groove at the adaxial mid-



Bulbophyllum anascaputum

Section: **Stachysanthes** (BLUME) J.J.
VERM. & P. O'BYRNE

Comparison: *Bulbophyllum miguel-davidii* is very similar to *Bulbophyllum lancipetalum* AMES but it differs by the size of the plant, the shape of the leaves, the length of the inflorescence, the much larger size of the flowers and the size and shape of the pseudobulbs.

Growth Habit: upright, sympodial, epiphyte. **Pseudobulbs:** oblate-ovoid, glabrous, covered by cataphylls, 5 mm in diameter and 3 mm in height; internodes cylindrical, 8-11.5 mm long by 4 mm in diameter. **Leaves:** leathery, thick, oblong-lanceolate, adaxially and abaxially glabrous, 8.5 cm long by 2.8 cm wide, midvein adaxially depressed and abaxially raised as a single ridge; petiolate, petiole terete, canaliculate, 4 cm long by 2 mm in diameter. **Inflorescence:** cylindrical, racemose, upright, up to 20 cm with 20 flowers, rachis up to 10 cm long by 1.5 cm in diameter; flower 1.4 cm in diameter when not flattened and 2.1 cm in diameter when flattened, citrus-scented. **Bracts:** ovate, glabrous, apically acuminate, 5-nerved, floral bracts 7 mm long by 4.7 mm wide and 5 non-floral bracts, 12 mm long by 6 mm wide. **Flower colour:** yellow. **Peduncle:** terete, erect, glabrous, 18 cm long by 1.5 mm in diameter. **Pedice and ovary:** cylindrical, glabrous, grooved, recurved at the base, 4.5 mm long by 1.5 mm in diameter from



Bulbophyllum anascaputum

line, margins hirsute, adaxially and abaxially minutely papillose, 3.5 mm long by 2.6 mm wide. Labellum: oblongate, shoe-shaped (duck head-shaped in profile), fleshy, basally thickened, adaxially glabrous, abaxially papillate, interior channeled, 2 acute extensions present at the lower labellum about 0.5 mm long; lateral lobes rectangular, 2 mm by 1.1 mm; mid-lobe oblong, flattened, 4.6 mm long by 2.3 mm wide. **Column:** flattened rectangular, 0.90 mm long by 0.60 mm; stelidia subulate, apically incurved about 1.3 mm long. **Column foot:** rectangular, with broadly, blunt triangular keel at the midline about 0.3 mm long and 0.10 mm high. **Ovary:** cylindrical, grooved, glabrous, 2 mm long by 0.90 mm in diameter. **Anther Cap:** oblong, convex, 0.90 mm long by 0.30

mm wide, apically fimbriate. Pollinia: 2, oblong, 0.40 mm long and 0.20 mm diameter. **Infructescence:** not seen.

Habitat and distribution: *Bulbophyllum anascaputum* is endemic to the Philippines and is only known from the province of Bukidnon on Mindanao island. It grows as an epiphyte at elevations of about 1,600 meters above sea level.

Etymology: Named for the resemblance of the labellum, when viewed in profile, to the head (**caput**) of a duck (*Anas* sp.).

Bulbophyllum miguel-davidii COOTES, CABACTULAN & PIMENTEL **sp. nov.**
Type: Philippines: Mindanao: Bukidnon. Collected 10/17/2016 MDL 002/2017 (Holotype: CMUH 00010951)

Bulbophyllum miguel-davidii



*Bulbophyllum migueli*

the base of column and 1 mm in diameter from the base of the rachis. **Dorsal Sepal:** ovate, apically acuminate, glabrous, 3-nerved, 10.3 mm long by 4.8 mm wide. **Lateral Sepals:** ovate, apically acuminate, glabrous, posteriorly curved, 3-nerved, 11.8 mm long by 5 mm wide, fused at the basal 1 mm. **Petals:** lanceolate, adaxially scabrous, abaxially glabrous, margins recurved, 6.3 mm long by 1.8 mm wide. **Labellum:** cordate, recurved at the base, adaxially and abaxially glabrous, 5.5 mm long by 2.8 mm wide; anterior 2/3 of the labellum with ciliated margins with trichomes about 0.50 mm at the middle third and 0.10 mm anteriorly; with two-prominent triangular keels on both sides of the label-

lum about 0.80 mm long by 0.30 mm high; 3 prominent nerves running the length of the labellum; midline canaliculate at the base of the labellum; mentum short about 0.3-0.5 mm long. **Column:** short, thickened, 1.3 mm long including the column wings; column wings truncate, anteriorly acuminate. Column foot: rectangular, glabrous, 4.5 mm long by 1.5 mm wide at the base of the stigma and 0.60 mm wide at the base of the mentum; middle keel at the base of the stigma about 2.2 mm long and 0.6 mm high. **Anther Cap:** ovate, concave, 0.90 mm long by 0.50 mm wide. **Pollinia:** paired, rounded, 0.40 mm by 0.30 mm in diameter. **Infructescence:** not seen. **Habitat and distribution:** *Bulbophyl-*

*Bulbophyllum migueli*

lum migueli is endemic to the Philippines and is only known from the province of Bukidnon on Mindanao island. It grows as an epiphyte at elevations of about 1,600 meters above sea level.

Etymology: This species is named in honor of Dr. Miguel David De Leon, a vitreoretina surgeon and a wildlife and plant conservationist in the Philippines.

Dendrobium derekcbactulanii

COOTES, PIMENTEL & M.D. DE LEON

sp. nov.

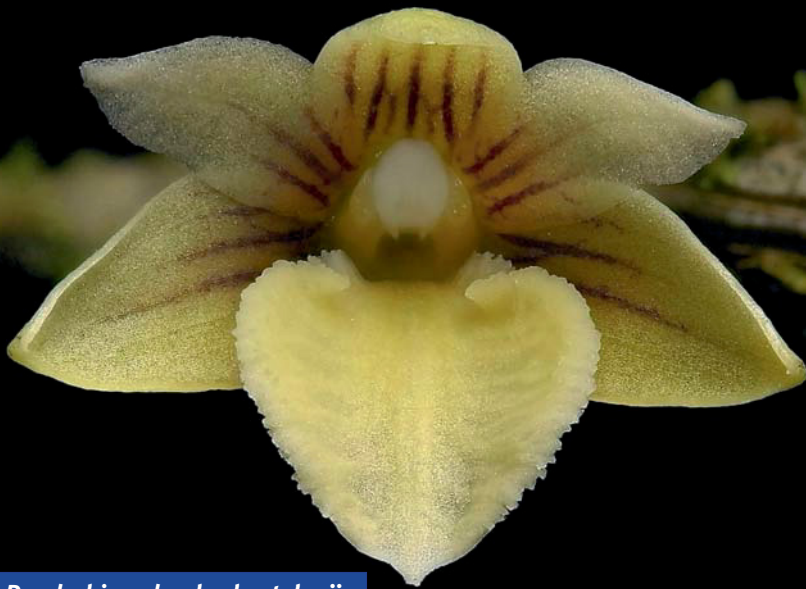
Type: Philippines: Mindanao: Bukidnon. Collected 11/4/2016 MDL 003/2017 (Holotype: CMUH00010952)

Section: Calcarifera J.J. Sm.

Comparison: *Dendrobium derekcbactulanii* is very similar to *Den-*

Dendrobium derekcbactulanii

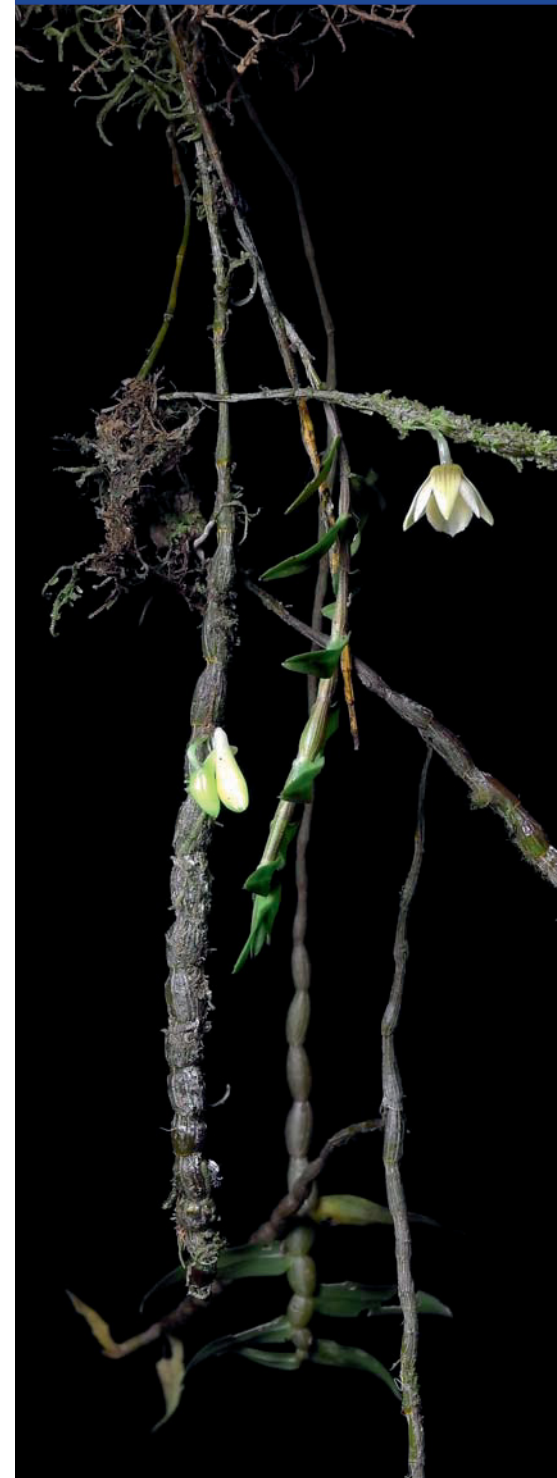


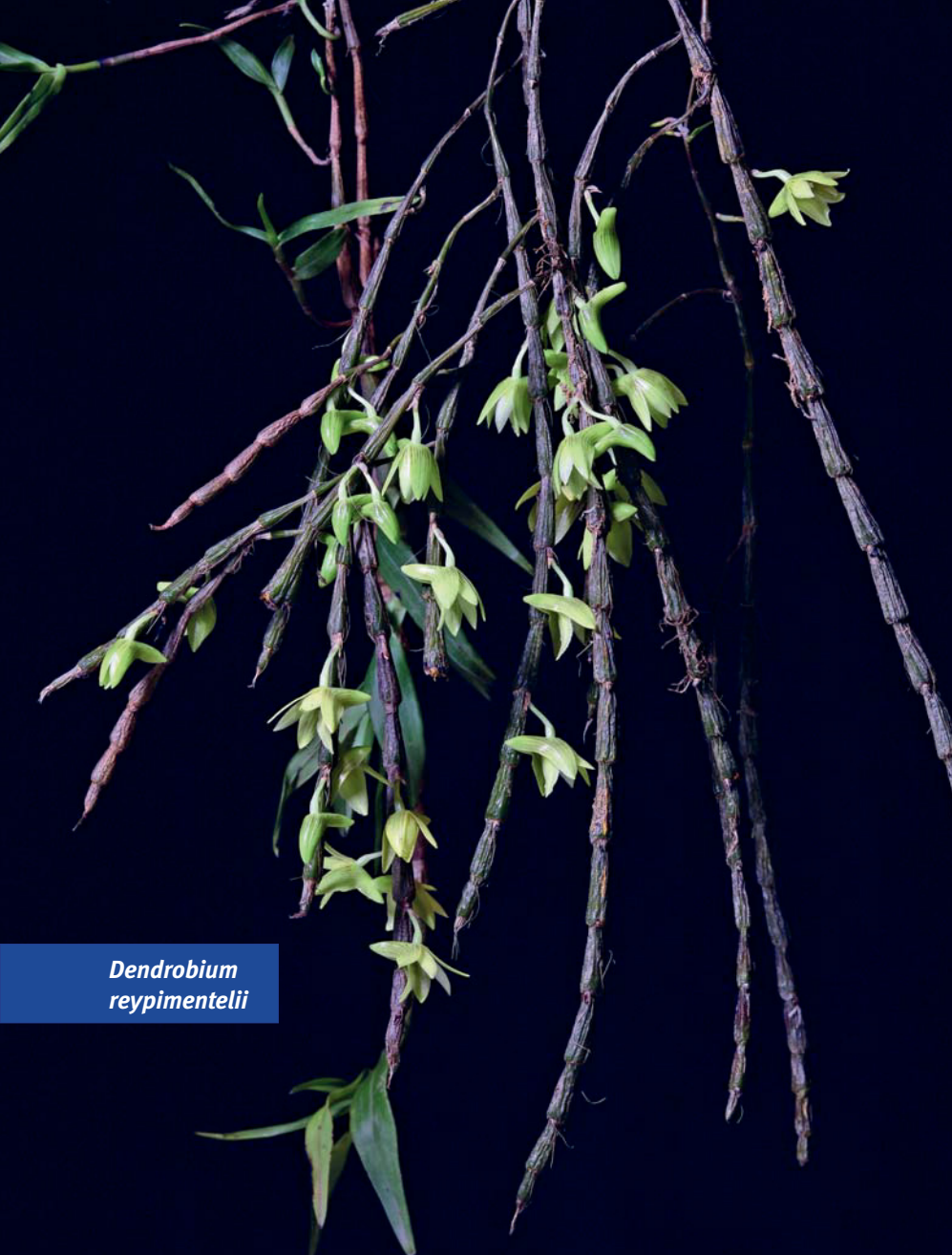
*Dendrobium derekcabactulanii*

drobium boosii COOTES & W. SUAREZ, and is separated from the latter by its broadly flattened stelidia, presence of paired concave depressions on its column wings, saccate rostellum, bidentate-fimbriate anther cap margins, trilobed labellum, undulate lateral sides of the labellum, and the flower colour. **Growth Habit:** sympodial, pendent, with secondary and tertiary stems that characteristically branch rather horizontally. **Stems:** cylindrical near the base (1.5 cm long and 3-4 mm in diameter), barrel-shaped towards the middle of the cane and oblate (5 mm long and 6 mm in diameter) before tapering apically in newer or leafy stems, up to 1 metre in length by 1 mm in diameter at the base of the primary branch, 1.1 mm at the base of the secondary branches, nodes more closely-spaced to-

wards the distal portions of the stems, internodes 5-15 mm by 3-6 mm in diameter. **Leaves:** 3-15, thinly-textured, entirely glabrous, lanceolate, oblong-lanceolate, elliptic-lanceolate, subsessile, 0.90-2.7 cm long by 3-8 mm wide. **Inflorescence:** short, axillary, entirely glabrous, subsessile, bearing up to 62 flowers with 3 flowers per node, 20 flowers per cane, invariably borne on leafless canes. **Flower colour and shape:** two color forms have been observed: one with green petals and sepals with 5 prominent red veins at the base; the other with plain pale green petals and sepals with a white labellum; opening widely, 2 cm in diameter. Flowers mildly scented. **Peduncle:** short, 0.5 mm long and 0.7 mm in diameter. **Pedicel:** terete, glabrous, green, 7.5 mm long by 1.4 mm in diam-

eter. **Ovary:** cylindrical, grooved, 2.3 mm long by 1.3 mm diameter. **Bracts:** short, thin, lanceolate, 4, persistent, overlapping at the base of the peduncle, 4.5 mm long by 1.7 mm wide. **Dorsal Sepal:** fleshy, flattened, obovate, 9 mm long by 4 mm wide, margins entire. **Lateral Sepals:** falcate, broadly ovate, 9 mm long by 4 mm wide, fused at the basal 1.5 mm of the spur. **Petals:** fleshy, flattened, oblong-lanceolate, margins entire, base rounded, apex acute, 8 mm long by 3 mm wide. **Labellum:** fleshy, spathulate, trilobed. **Lateral lobes:** fleshy, oblong, margins roughly dentate, 1.5 mm long by 0.50 mm wide, margins of lobes roughly dentate, internal surface undu-

Dendrobium derekcabactulanii*Dendrobium derekcabactulanii*



Dendrobium reypimentelii

late. **Midlobe:** flattened, broadly cordate, abruptly acuminate, 13 mm long by 5 mm wide, pointing forwards and downwards, margins roughly dentate, lateral perpendicular undulating ridges on its interior surface, 2 closely adjacent to fused, low midline ridges run the length of the midlobe adaxially, a midline groove runs the length of the midlobe abaxially. **Mentum:** short, truncate, horizontally oriented, 5 mm long. **Column:** flattened, rectangular, 2 mm long by 2.3 mm in diameter, column wings broadly flattened, rectangular, concavity above, 1 mm long, rostellum saccate 0.1 mm in diameter **Column foot:** green, rectangular, flattened, 7 mm long by 2.7 mm wide, nectary gland present above the base of the labellum, minutely, sparsely papillose. **Anther cap:** ovate, cucullate, 1.6 mm long by 1.3 mm wide, bidentate, fimbriate at the anterior margins. **Stigma:** ovate, about 1-1.2 mm in diame-

ter. **Pollinia:** 2-paired, oblong-elliptic, 1 mm long by 0.3 mm diameter.

Habitat and Distribution: *Dendrobium derekcabactulanii* is known from only two isolated localities in the mossy cloud forests of Bukidnon. It grows as an epiphyte hanging from tree trunks and branches covered with mosses in deep shade, at elevations of 900 to 1,600 meters above sea level.

Etymology: The species is named in honor of Derek D. Cabactulan, who first discovered this species in 2011. Mr. CABACTULAN is a nursery man and Philippine native flora enthusiast and researcher.

Dendrobium reypimentelii COOTES, CABACTULAN & M.D. DE LEON **sp. nov.**
Type: Philippines: Mindanao: Bukidnon. Collected 12/9/2016 MDL 004/2017 (Holotype: CMUH00010 953)
Section: *Calcarifera* J.J. SM.



Dendrobium reypimentelii

Comparison: *Dendrobium reypimentelii* is very similar to *Dendrobium jimcootesii* CABACTULAN & M.D. DE LEON, *Dendrobium derekcabactulanii* COOTES, PIMENTEL & M.D. DE LEON, *Dendrobium boosii* COOTES & W. SUAREZ and *Dendrobium diffusum* L.O. WILLIAMS. *Dendrobium reypimentelii* is distinct from the four species, mentioned above, by its plant size, the more evenly cylindrical internodes, the presence of three prominent ridges in the labellum, the bidentate steldia and the colour.

Growth Habit: sympodial, pendent, with branching stems, up to 45 cm long. **Stems:** cylindrical with internodes slightly wider in diameter at the distal end of each internode, up to 33 cm in length by 1 mm in diameter at the base, 1.1 mm at the base of the secondary branches, with somewhat regularly spaced nodes, internodes up to 1.4 cm long with each internode approximately 3 mm in diameter proximally and 4 mm in diameter distally, stems are covered with dried leaf sheaths. **Leaves:** thinly-textured, entirely glabrous, linear to lanceolate, subsessile, apex notched, un-

Dendrobium reypimentelii



equally bifid, 1.7 to 6 cm long by 4 to 12 mm wide. **Inflorescence:** short, axillary, entirely glabrous, bearing up to 32 flowers with 1 to 3 flowers borne on the nodes of leafless stems. Flower **colour and shape:** green petals and sepals with narrow, red stripes, labellum green; opening widely, 1.8 cm in diameter. **Peduncle:** short, 1 to 2 mm long and 1.0 to 1.5 mm in diameter. **Pedicel:** terete, glabrous, green, 9.5 mm long by 0.9 mm in diameter. **Ovary:** cylindrical, grooved, 5 mm long by 1.8 mm in diameter.

Bracts: five, overlapping, short, persistent, broadly ovate, 2.5 mm long by 2 mm wide. **Dorsal Sepal:** fleshy, flattened, ovate, 5-nerved, 11 mm long by 5 mm wide, margins entire. **Lateral Sepals:** falcate, lanceolate, 3 nerved, 15.5 mm long by 5 mm wide, adnate to the base of the column foot. **Petals:** fleshy, flattened, lanceolate, 3-nerved, margins entire, base rounded, apex acute, 10.5 mm long by 3 mm wide. **Labellum:** hastate, trilobed, 16.5 mm long including midlobe. Midlobe: ovate, 8.5 mm long by 6.5 mm wide, margins minutely dentate; two ridges running from the base of the lateral lobe to the midlobe, and one midline ridge running from the base of the midlobe; the 3 ridges fuse towards the apex. **Mentum:** rectangular, horizontally oriented, 3 mm long by 2.3 mm wide. Column: flattened, ovate, 1.8 mm long by 2.8 mm in diameter, column wings flattened, bidentate, 0.7 mm long by 0.7 mm wide. **Column foot:** green, rectangular, flattened, 12 mm long by 3.5 mm wide, with a crescent shaped, bicornuate projections at the base, 6 mm long by 3 mm wide. **Anther cap:** broadly ovate, cucullate, 2 mm long by 1.5 mm wide, minutely fimbriate. Stigma: oblong, about 0.5 mm in diameter. **Pollinia:** 2-paired, obliquely elliptic, 1.1 mm long by 0.6 mm diameter.

Habitat and Distribution: *Dendrobium reypimentelii* is only known from an isolated locality where it grows in company with *Dendrobium jimcootesii* CABACTULAN & M.D. DE LEON. *Dendrobium reypimentelii* is found in partial to deep shade, in the mossy cloud forests of Bukidnon. It grows as an epiphyte, hanging from tree trunks and branches covered with moss, at elevations of 1,600 meters above sea level.

Etymology: The species is named in honor of Reynold Pimentel, fruit and ornamental plant breeder, and horticulturist in the Philippines.

Dendrobium schettleri Cootes, CABACTULAN, PIMENTEL & M.D. DE LEON sp. nov.

Type: Philippines: Mindanao: Bukidnon. Collected 12/3/2016 MDL 005/2017 (Holotype: CMUH00010 954)

Section: Calcarifera J.J. SM.

Comparison: *Dendrobium schettleri* is similar to *Dendrobium jimcootesii* CABACTULAN & M.D. DE LEON, *Dendrobium derekcabactulanii* COOTES, PIMENTEL & M.D. DE LEON, *Dendrobium boosii* COOTES & W. SUAREZ and *Dendrobium diffusum* L.O. WILLIAMS. *Dendrobium schettleri* is differentiated from the four species mentioned above by the size of the plant and flowers, the absence of lateral lobes on the labellum, the bidentate stelidia, the prominent red reticulations on the labellum, and the colour.

Growth Habit: sympodial, pendent, with branching stems, up to 90 cm long. **Stems:** cylindrical to barrel-shaped, up to 30 cm in length by 1.5 mm in diameter at the base, 2.2 mm at the base of secondary branches, stems are slightly wrinkled with dried leaf sheaths appearing as persis-

tent bristles, nodes relatively equally spaced, internodes 3.5 cm, 0.4 to 1.2 cm in diameter. **Leaves:** thinly-textured, entirely glabrous, linear-lanceolate, subsessile, 3-9 cm long by 5-15 mm wide. **Inflorescence:** short, axillary, entirely glabrous, bearing up to 2 flowers per node, appearing on leafless canes. **Flower colour and shape:** green on petals and sepals with red spots and streaks on its base, with distinct, prominent red reticulation on labellum, opening widely, 3.5 cm in diameter. **Peduncle:** terete, covered with overlapping bracts, 3 mm long by 1.3 mm in diameter. **Pedicel:** terete, glabrous, green, 9.5 mm long by 0.90 mm in diameter. **Ovary:** cylindrical, grooved, 5 mm long by 1.8 mm diameter. **Bracts:** short, persistent, broadly ovate, 3.2 mm long by 2.5 mm wide. **Dorsal Sepal:** fleshy, flattened, ovate, 13.5 mm long by 7.3 mm wide, margins entire. **Lateral Sepals:** fleshy, falcate-lanceolate, 3 nerved, 20 mm long by 7.3 mm wide, margins entire, fused at the basal 5 mm to form a short mentum. **Petals:** fleshy, flattened, elliptic-ovate, 3 nerved, margins entire, base rounded, apex acute, 13.9 mm long by 12.3 mm wide. **Labellum:** fleshy, spatulate, 22 mm long including basal midlobe up to its attachment. **Midlobe:** broadly obovate, 13.5 mm long by 12.3 mm wide, a low ridge with a midline groove runs the length of the adaxial surface of the midlobe. **Men-**



Dendrobium schettleri



Dendrobium schettleri



Dendrobium schettleri

tum: short, truncate, horizontally orientated, 8.5 mm long. **Column:** cylindrical, 3 mm long by 3.3 mm in diameter, stelia bidentate, 0.80 mm long by 0.80 mm wide. **Column foot:** green rectangular, flattened, 12 mm long by 3.5 mm wide. **Anther cap:** ovate, convex, 1.8 mm long by 1.7 mm wide, minutely fimbriate. **Stigma:** ovate, about 1.3 to 2.0 mm in diameter. **Pollinia:** 2-paired, oblong, 1.5 mm long by 1 mm diameter.

Habitat and Distribution: *Dendrobium schettleri* is known only from an isolated locality where it grows in company with *Dendrobium derekcabactulanii*. *Dendrobium schettleri* grows in deep shade in the mossy cloud forests of Bukidnon. It grows as an epiphyte hanging from tree trunks and branches covered with mosses, 1 to 5 metres above ground, at elevations of 1,600 meters above sea level.

Etymology: The species is named in honor of Roland SCHETTLER, editor and publisher of ORCHIDEENJOURNAL.

Dendrochilum geigeri COOTES, CABACTULAN, PIMENTEL & M.D. DE LEON sp. nov.

Type: Philippines: Mindanao: Bukidnon. Collected 12/9/2015 MDL 006/2017 (Holotype: CMUH00010 955)

Section: *Platyclinis* (BENTH.) PFITZER

Comparison: *Dendrochilum geigeri* is similar to *Dendrochilum diabloviride* COOTES and R. BOOS. It differs however by the two prominent ridges on the adaxial surface of the labellum, the longer and wider posterior projections of the labellum, the more prominent bilateral saccate feature at the base of the labellum and the thicker, stiffer petals and sepals. *Dendrochilum geigeri* appears to be unique within the genus because of its velvety leaf surfaces, which we have not observed in any other Philippine *Dendrochilum* species.

Growth habit: upright, sympodial. **Pseudobulbs:** clustered, conical ovate, 2.9-3.7 cm long by 1-1.1 cm in diameter, unifoliate, covered with cataphylls extended to petiole base about 4 cm long, internodes 1 mm long by 1 mm in diameter. **Leaves:** petiolate, petiole brown, glabrous, 1.5-4.9 cm long by



Dendrochilum geigeri



0.15 cm in diameter, leaf blade elliptic-lanceolate, apex acute, base unequally rounded, velvet-glabrous on adaxial and abaxial surfaces with dense papillae observed under the microscope, margins entire semi-undulate with prominent white edges without papillae, 5-nerved on both sides of the leaf; 7.4-12.7 cm long by 2.7-3.9 cm wide, chartaceous. **Inflorescence:** synanthous, upright, up to 25 cm long by 1.5 cm diameter, rachis pendent; bearing up to 34 blooms, 10 mm diameter across the lower sepals; flowers first open in the middle of the rachis; flow-

ers mildly fragrant. **Peduncle:** slender, 17 cm long by 1 mm in diameter. Flower color: green. **Floral bracts:** ovate, 9-nerved, persistent, with sparsely stellate trichomes on its outer surface, 4 mm long by 6 mm wide when flattened, 6 basal bracts. **Pedicel including ovary:** conical, grooved, glabrous, 3 mm long by 0.5 mm in diameter at the base and 1 mm diameter the base of the sepals. **Dorsal sepal:** elliptic-ovate, flattened, 5 mm long by 3 mm wide, single-nerved. Lateral sepals: ovate, flattened, 5 mm long by 3 mm wide, single-nerved. **Petals:**



Dendrochilum geigeri, Detail



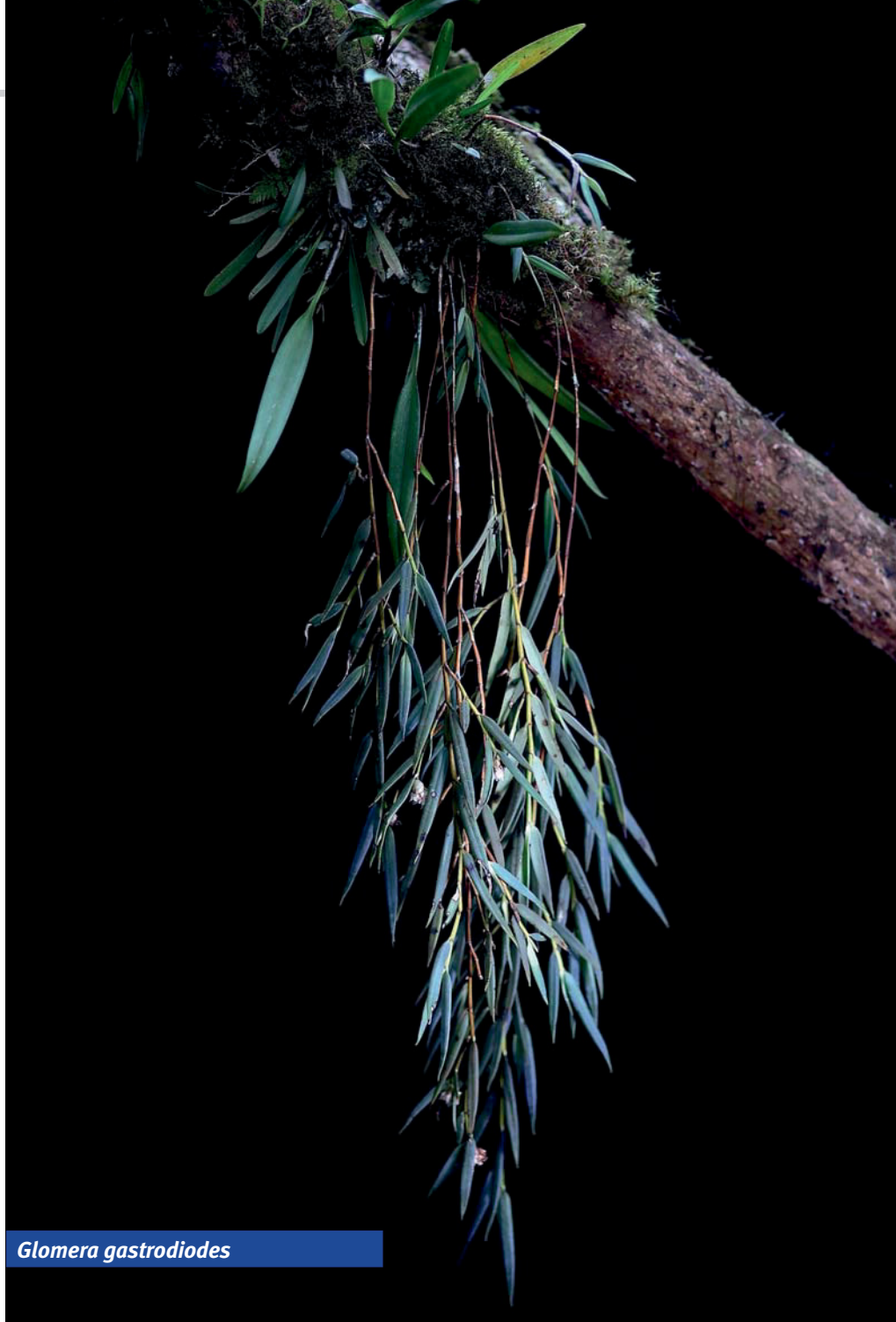
Dendrochilum geigeri

ovate, flattened, 4.5 mm long by 2.2 mm wide, single-nerved. **Labellum:** truncate-crescent, 2.5 mm long by 4 mm wide, bilaterally, prominently and deeply saccate at the posterior base, grooved subapically up to the base; 2 prominent arcuate keels, rounded anteriorly and with a bluntly triangular projection posteriorly, 0.9 mm long by 0.30 mm high; sidelobes rounded-rectangular blunt, 0.7 mm long by 0.8 mm wide. **Column:** trapezoid, 0.9 mm long by 0.8 mm wide basally and 1.2 mm apically; column hood dentate; stelidia triangular, about 0.3 mm long. **Anther cap:** triangular, 0.75 mm long by 1 mm wide. **Pollinia:** clavate, two-paired, 0.43 mm long by 0.2 mm wide, stipe 0.35 mm long. **Stigma:** oblong, 0.5 mm long by 0.3 mm wide. Inflorescence: not seen.

Habitat and Distribution: Found in shady, mossy dipterocarp forests in Bukidnon Province, at 840 metres above sea level.

Etymology: It is our great pleasure to name this species in honor of Daniel L. GEIGER, known for his expertise in orchid photography, *Oberonia*, abalone, and micro-snails. Geiger is a curator of the Malacology Department of Invertebrate Zoology at Santa Barbara Museum of Natural History, and a Visiting Research Scholar at the Huntington Botanical Gardens in California, USA.

Glomera gastrodioides COOTES, D. CABACTULAN & M.D. DE LEON **sp. nov.** Type: Philippines: Mindanao: Bukidnon. Collected 12/27/2016 MDL 008/2017 (Holotype: **CMUH00010 957**)
Section: Glomera



Glomera gastrodioides

Comparison: There is only one species of *Glomera* recorded in the Philippines, namely, *Glomera merrillii* AMES. *Glomera gastrodioides* differs from *Glomera merrillii* by its tertiary branching growth; smaller size of flowers, the shape of petals and sepals; the papery bracts surrounding the flowers; the column wings are long acuminate; and column foot is adnate to the ovary.

Growth Habit: pendulous, sympodial, epiphyte. **Stems:** flattened, rectangular, up to 50 cm in length by 3 mm wide, stems are slightly wrinkled and dried leaf sheaths persistent, with sparsely stellate hairs spreading in the surface. **Leaves:** olive green, some-

what stiff and leathery, adaxially glabrous, abaxially sparsely stellate, linear-lanceolate, subsessile, 3.9-8.0 cm long by 0.50-1.80 cm wide. **Inflorescence:** short, terminally, capitate, bracteate; rachis 0.40 mm by 1.2 mm in diameter; bracts bearing up to 13 flowers that are conglutinate. **Flower:** petals and sepals white, 4 to 4.5 mm mm across. **Peduncle:** stout, 1 mm long by 1 mm in diameter. **Bracts:** basal bracts large chartaceous, 2 unequal, 27-nerved, persistent, broadly triangular, concave, abruptly acuminate, adaxially covered by sparsely stellate hairs, abaxially glabrous, 12-14 mm long by 10-14 mm wide; interior bracts thinned, ovate, concave, 3-nerved,

*Glomera gastrodioides*

apex acuminate, 8.4 mm long by 4.5 mm wide. Dorsal Sepal: thinned, elliptic-ovate, apically slightly recurved 5.5 mm long by 2.4 mm wide, margins entire. **Lateral Sepals:** thinned, triangular-ovate, 6.8 mm long by 3.5 mm wide, fused two-thirds of the entire length. **Petals:** elliptic-ovate, margins entire, 5-nerved, 5.5 mm long by 3 mm wide. **Labellum:** rectangular anteriorly, conical-saccate posteriorly, adnate to the ovary, 5.2 mm long including the midlobe. Midlobe: rectangular with a truncate, obtuse apex, 3.8 mm long by 2 mm wide, pointing forwards and downwards. **Column:** trap-ezoid, 2 mm long by 1.7 mm in diame-

ter, column wings acuminate, 0.5 mm long. **Column foot:** adnate to the ovary, white, rectangular, flattened, 3 mm long by 0.5 mm wide. **Anther cap:** bilaterally ovate, concave, 1 mm long × 1.1 mm wide. **Stigma:** rounded concave, with a prominently elevated rim, about 1.3 to 1.7 mm in diameter. **Pollinia:** 2-paired, ovate, 0.6 mm long by 0.45 mm wide. **Pedicel and ovary:** cylindrical grooved, glabrous, green, 7 mm long by 1.65 mm in diameter. **Infructescence:** not seen.

Habitat and Distribution: *Glomera gastrodioides* grows in partial shade in the mossy cloud forests of Bukidnon. It grows as an epiphyte hanging

from tree trunks and branches, at elevations of 1,600 meters above sea level.

Etymology: The specific epithet refers to the *Gastrodia*-like appearance of the flowers when not fully opened.

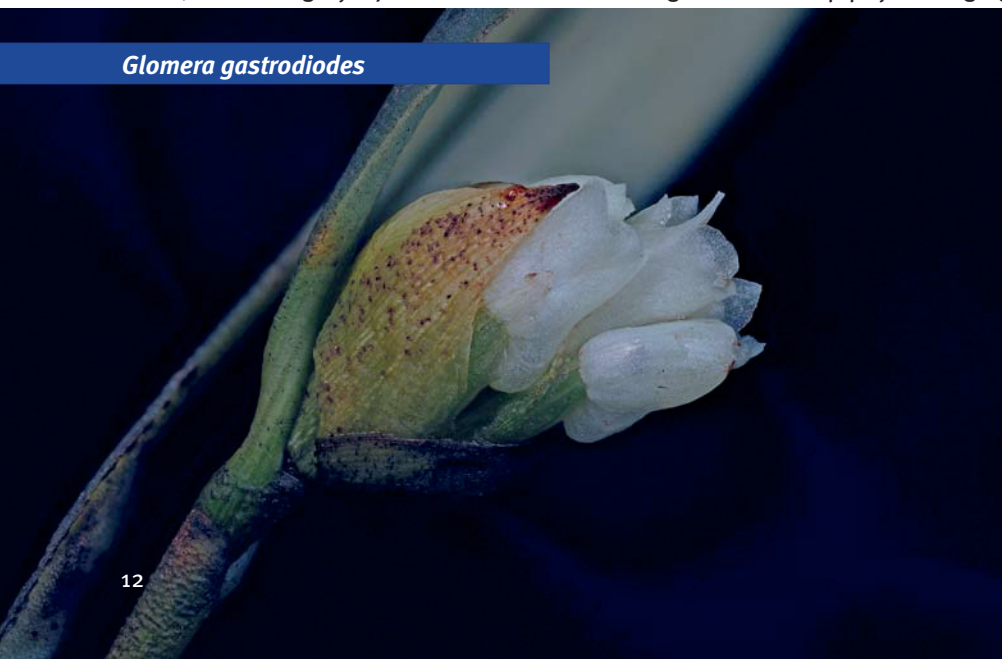
Thrixspermum fernandeziae COOTES, CABACTULAN & M.D. DE LEON sp. nov.

Type: Philippines: Mindanao: Bukidnon. Collected 12/3/2016 MDL 007/2017 (Holotype: **CMUH00010956**)

Section: Dendrocolla (BLUME) J.J. SMITH

Comparison: *Thrixspermum fernandeziae* is similar to *Thrixspermum merguense* (Hk.f.) Ktze., but differs in the shape and size of the plant, particularly the leaves, the presence of 2 fringed appendages with bulbous tips from both sides of the midlobe margins, bicornuate callus and a tuft of orange papillae with bulbous tips at the base of the midlobe.

Growth Habit: upright to semi-pendulous, monopodial, epiphyte. **Stem:** flattened, glabrous, 7 cm long by 4 mm in diameter. **Leaves:** semi-terete, linear-lanceolate, curved, sessile, apex emarginated, 4.5-6.0 cm long by 2.5 mm wide; cataphylls covering the stem, 1 cm long by 1.8 mm wide. **Inflorescence:** cylindrical, upright, axillary, bearing at each internode succeeding short-lived blooms, up to 3 flowers, rachis up to 1.8 cm long by 4 mm in diameter; flower up to 10 mm in diameter. **Bracts:** floral bracts aristate, whorled, stout, glabrous, 2-4 mm long by 0.5 mm wide; non-floral bracts three, triangular, about 0.50 mm long by 0.10 mm wide. **Flower colour:** petals and sepals are gleaming white; labellum is white, with thick prominent purple stripes from the side lobes down to the base of the labellum; midlobe is white with purple markings at the apex. **Peduncle:** terete, erect, glabrous, 2.5-4.0 cm long by .4 mm in diameter. **Pedicel and ovary:** cylindrical, glabrous, grooved, 5 mm long by 0.70 mm in diameter. Dorsal Sepal: broadly ovate, glabrous, concave, margins entire, 6 mm long by 3.7 mm wide. **Lateral Sepals:** broadly ovate, glabrous, concave, margins entire, 6 mm long

Glomera gastrodioides

Thrixspermum fernandeziae



by 3.7 mm wide. **Petals:** elliptic-ovate, glabrous, concave, margins entire, 5.3 mm long by 3.2 mm wide. **Labellum:** three-lobed, saccate, thickened and notched anteriorly; side lobes triangular-ovate, upright, 1.9 mm long by 1.6 mm wide; midlobe short, 1.5 mm long by 2.7 mm wide, with a bicornuate callus located just posterior to the anterior margin the labellum whose horns measuring about 6 mm project upwards and curve postero-laterally; two distinct appendages, fringed and with bulbous tips at the anterior margins of midlobe, appendage is white

and about 0.30-0.50 mm long; tuft of orange papillae with bulbous tips directed anteriorly and measuring 1.0 mm long by 0.6 mm wide at the base of the midlobe. **Column:** slightly flattened, oblong, 1.8 mm long by 1 mm in diameter; column wings are acute-acuminate, 0.70 mm long, curved towards the anther cap with a distance spacing of 0.30 mm wide. **Column foot:** rectangular, glabrous, 0.8 mm long by 0.30 mm wide. **Anther Cap:** ovate, concave, 0.50 mm long by 0.35 mm wide. **Stigma:** oblong, 0.40 mm long by 0.20 mm wide. **Pollinia:** oblong, 0.25 mm by

Thrixspermum fernandeziae



Thrixspermum fernandeziae

0.10 mm in diameter. **Infructescence:** not seen.

Habitat and distribution: *Thrixspermum fernandeziae* is endemic to the Philippines and is only known from the province of Bukidnon on Mindanao island. It grows as an epiphyte at elevations of about 1,600 meters above sea level.

Etymology: The uniquely and stunningly beautiful *Thrixspermum fernandeziae* is named in honor of Yvette FERNANDEZ, editor in chief of **Town & Country** magazine, bestselling children's book author, and advocate for children's welfare in the Philippines.

Member of the collectors team.





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