

## NEW SPECIES OF ORCHIDS FROM VIETNAM<sup>1</sup>

LEONID V. AVERYANOV

Komarov Botanical Institute of the Russian Academy of Sciences, Prof. Popov Str., 2, St. Petersburg, 197376, Russia

**ABSTRACT:** Expeditions during 1997–1998 to Vietnam resulted in the discovery of six new endemic species, which are described here: *Bulbophyllum arcuatilabium* (B. section *Micromonanthe*), *Cheirostylis marmorata*, *Dendrobium khanhoaense* (D. section *Conostalix*), *Eria lactiflora* (E. section *Cylindrolobus*), *Hemipilia bidupense*, and *Pholidota pachyglossa* (P. section *Articulatae*).

THIS PAPER continues recent descriptions of new orchid species discovered in previously inaccessible mountain regions of both northern and southern Vietnam (Averyanov, 1996, 1997). Vietnam continues to yield many new orchid species including some with great horticultural potential. Herbarium material collected on expeditions as part of the “Highland flora of South Vietnam” are marked with prefix VH (“Vietnamese Highlands”) and “Limestone flora of Cao Bang province of North Vietnam” with prefix CBL (“Cao Bang Limestones”).

***Bulbophyllum arcuatilabium*** Aver., *sp. nov.* (B. section *Micromonanthe* Schltr.). TYPE: N. Vietnam, Cao Bang Province, Tra Linh District, Quoc Toan Municipality, vicinity of Thang Hen and Lung Tao villages near Thang Hen lake. Dry, closed, broad-leaved evergreen primary forest on steep slopes and bluffs of limestone ridges and mesas at 650–750 m elev., 25–27 May 1997, L. Averyanov, N. T. Hiep, VH 4899 (holotype: LE!; isotypes: AAU, HN, MO, P!). Fig. 1.

Ab omnibus speciebus sectionis *Micromonanthe* planta nostra labello arcuato, angusto, basi denso papilloso differt.

**Epiphyte** with long, thin, creeping rhizomes

and widely spaced small pseudobulbs. **Pseudobulbs** unifoliate, broadly ovoid or subglobose, 2–3(4) mm high, 2 mm wide. **Leaf** rigid, broadly ovate, acute at the apex, 4–11 mm long, 3–6 mm wide. **Inflorescence** 1-flowered, developing from nodes along the rhizome; scape, pedicel and ovary 3–5 mm long, covered with scale-like bracts. **Flowers** not opening widely, pale yellowish purple. **Dorsal sepal** narrowly ovate, narrowed to an acute apex, 2.0–2.5 mm long, 0.4 mm wide. **Lateral sepals** triangular, narrowed from the wide base to the acute tip, 2.0–2.5 mm long, 1.0–1.4 mm wide. **Petals** narrowly ovate, with sharply acute apex, 1.0 mm long, 0.3 mm wide. **Lip** slender, ligulate, narrowly lanceolate, strongly curved, arcuate, densely papillose near the base, glabrous at the apex, about 0.8–1.0 mm long, 0.1–0.2 mm wide, attached to the upturned apex of column foot. **Column** short and broad, with a small obtuse lateral pair of stelidia, the anther cap cup-shaped, with long attenuate, apical and small, lateral, triangular, obtuse bosses.

**ETYMOLOGY:** From the Latin *arcuatus*, “curved like a bow,” and *labium*, lip, referring to the characteristic form of the lip.

*Bulbophyllum arcuatilabium* is distinguished from other species of B. section *Micromonanthe* by the characteristic arcuate, papillose lip. Only one plant was collected. This rare and easily overlooked species is probably endemic to limestone areas in extreme northern Vietnam and southern China. It occurs epiphytically in wet, shady broad-leaved or mixed forests on steep slopes of limestone mesas and ridges on elevations about 600–750 m. Flowering in nature was observed in May.

<sup>1</sup> Field studies in Vietnam, the results of which are presented in this paper, were funded in part by grants from the American Orchid Society (“Exploration of endangered calcium dependent orchid flora in inaccessible rocky limestone areas of the North Vietnam”) and the U. S. National Geographic Society (grants #5094-93, 5803-96, 6383-98 “Flora of Highlands of South Vietnam” and #6300-98 “Limestone flora of Cao Bang province of North Vietnam”). I also would like to thank Dr. Eric A. Christenson for his kind help in correcting my use of English.

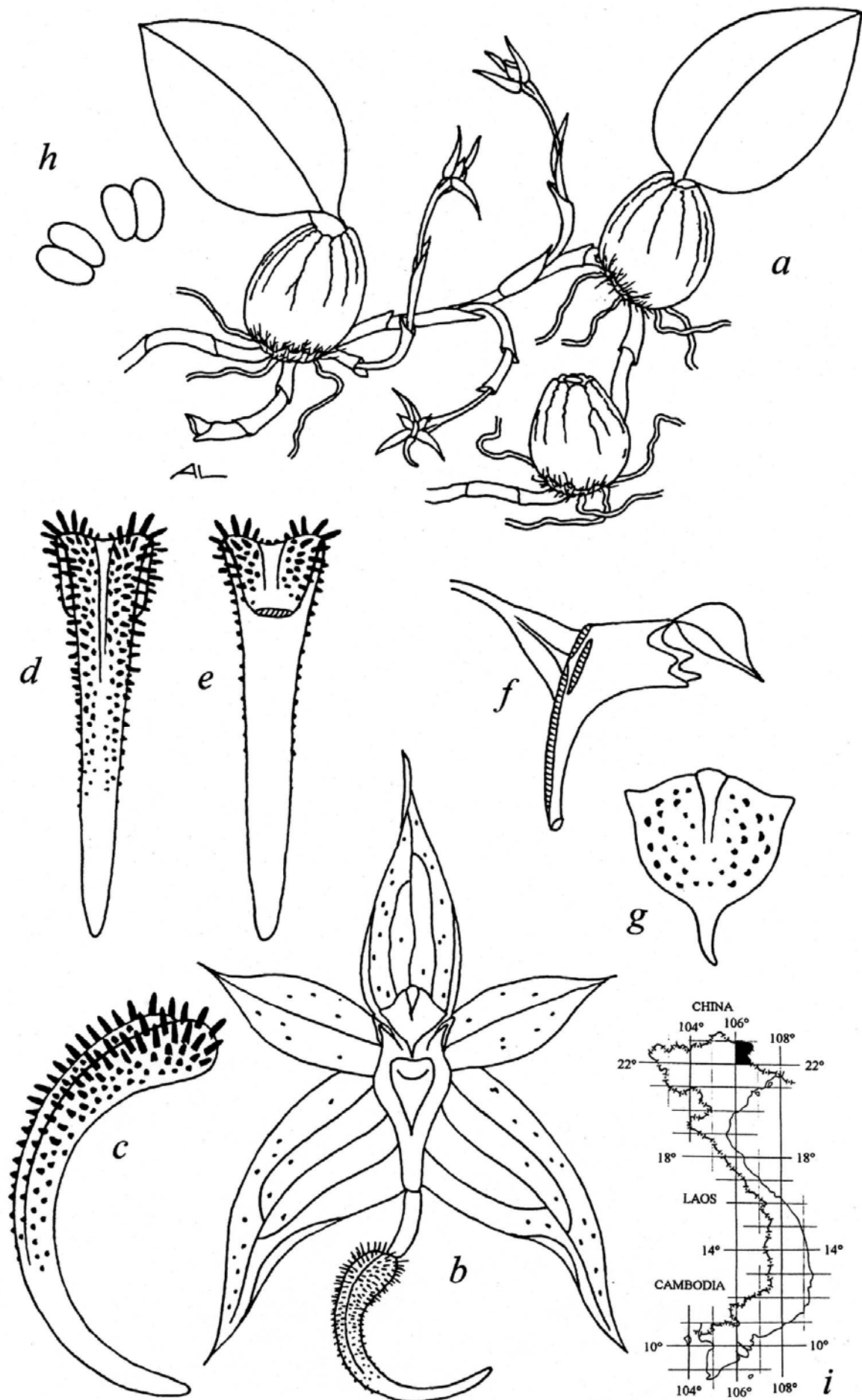


Fig. 1. *Bulbophyllum arcuatilabium* Aver. (drawn from Averyanov & Hiep VH-4899). a. Flowering plant. b. Flower with flattened sepals and petals. c-e. Lip, side, front, and back views. f. Column and anther cap, side view. g. Anther cap, from above. h. Pollinia. i. Map of Vietnam indicating area of probable distribution of the species.

**Cheirostylis marmorata** Aver. sp. nov. TYPE: N. Vietnam, Cao Bang Province, Ha Lang District, Thanh Nhat Municipality (N 22°41' E 106°40'), about 42 km E of Cao Bang. Primary evergreen broad-leaved closed forest on steep slopes of remnant limestone ridges at 600 m. Lithophyte on shady rocks. Leaves silvery white with dark green veins. Rare. 27 November 1998, L. Averyanov, P. K. Loc, N. X. Tam, CBL s.n. (holotype: LE!). Fig. 2.

Species nova *Cheirostylidi moniliformi* probabiler appropinquato a qua inflorescentia uniflora, hypochilio carina longitudinali carnosa et papillis numerosis instructo necnon foliis rigidis marmoratis differt.

**Lithophyte** with the creeping fleshy basal part of the stem divided into cylindric (bottle-like) segments 5–10 mm long, 2–4 mm wide, covered below by root ridges with root hairs, the apical leafy portion up to 6 mm long with 2–4 leaves. **Leaf** ovate, rigid, silvery white with contrasting dark green veins, up to 18 × 11 mm, shortly petiolate, the petiole and sheath 2–3 mm long. **Inflorescence** an erect, one-flowered scape, peduncle pubescent, 6–8 cm long, with 2–3 bracts; floral bracts pubescent at the base, light yellowish, 3–4 mm long, shorter than the ovary. Pedicel and ovary 4 mm long, densely pubescent. **Sepals** externally pubescent at the base, olive green, about 5 mm long, connate for their lower two-thirds forming a tube. **Petals** free, white, falcate, 5.5 × 1.5 mm, glabrous. **Lip** 8.0 mm long, hypochile concave, white, with a fleshy central keel and numerous fleshy glands on each side, epichile white with a bright green spot to each side of the basal curved part, apically bilobed, lobes deeply fringed, with 6–7 finger-like teeth. **Column** 2.5 mm long, with one stigma. **Anther** orange. **Cap-sule** ovoid ca. 4 mm long.

ETYMOLOGY: From the Latin *marmor*, marble, referring to the marble-like tessellation of the leaves.

PARATYPE: N. Vietnam, Cao Bang Prov., Tra Linh District, Quoc Toan Municipality, vicinity of Thang Hen and Lung Tao villages near Thang Hen lake. Remnant closed, evergreen, primary, broad-leaved forest on steep slopes and bluffs of limestone ridges and mesas near karst lake at 500–550 m. Lithophyte in crevices of shady rocks. Leaves whitish gray with deep-green veins.

Rare. 27 May 1997, L. Averyanov, N. T. Hiep, VH s.n. (LE!).

*Cheirostylis marmorata* is similar to *Cheirostylis moniliformis* (Griff.) Seidenf. but distinguished by having a one-flowered inflorescence, a fleshy longitudinal ridge and numerous papillae on the hypochile, and rigid leaves with a marbled pattern. It is a rare plant in nature where it grows in small crevices and hollows of highly eroded karst rocks in wet, shady, primary, evergreen, broad-leaved forests at 500–600 m. Plants flowered in February of the first year of cultivation in St. Petersburg. This miniature orchid, with finely colored ornamental leaves, should be an excellent addition to connoisseur collections of “jewel orchids.”

**Dendrobium khamhoense** Aver., sp. nov. (D. sect. *Conostalix* Kränzl.). TYPE: S. Vietnam, Khanh Hoa Province, Khanh Son District, 42 km NE of Dalat. Primary, closed, broad-leaved evergreen forest along bluffs of giant waterfall in upper reaches of Lieng Ly river on the eastern macroslope of Nui Hon Giao ridge at 1300 m. (N 12° 12', E 108° 44'). Epiphyte. Not rare. 24 April 1997, L. Averyanov, N. Q. Binh, N. T. Hiep, VH 4288 (holotype: LE!; isotypes: AAU, HN, MO, P!). Fig. 3.

Ab omnibus speciebus affinis sectionum *Conostalix* et *Distichophyllon* planta nostra labelli forma trilobo, lobo medio apice profundo emarginato et floribus brunnei nervis coloratione differt.

Caespitose **epiphyte**. **Stems** slender from a briefly swollen base, erect or subpendulous, flexuous, covered with sheaths near the base, leafy throughout the upper part, 40–60 cm long, with 40–100 internodes, 0.5–2.5 cm long each. **Leaves** thin, grass-like, distichous, straight, at a narrow angle to the stem, curved and spreading toward the stem apex, narrowly lanceolate, broadened at the base, narrowly pointed and unequally bilobed at the apex, 2.0–8.0 cm long, 0.2–0.6 cm wide, leaf sheaths covered with fine black hairs. **Inflorescences** axillary, 2–3-flowered, to 1.5 cm long, with small triangular scale-like floral bracts. Pedicel and ovary 1.0–1.5 cm long, dull orange. **Flowers** rigid, about 1.8 cm long from the apex of the dorsal sepal to the apex of the mentum, odorless, the sepals and petals white or yellowish white with a distinct irregular network of orange-

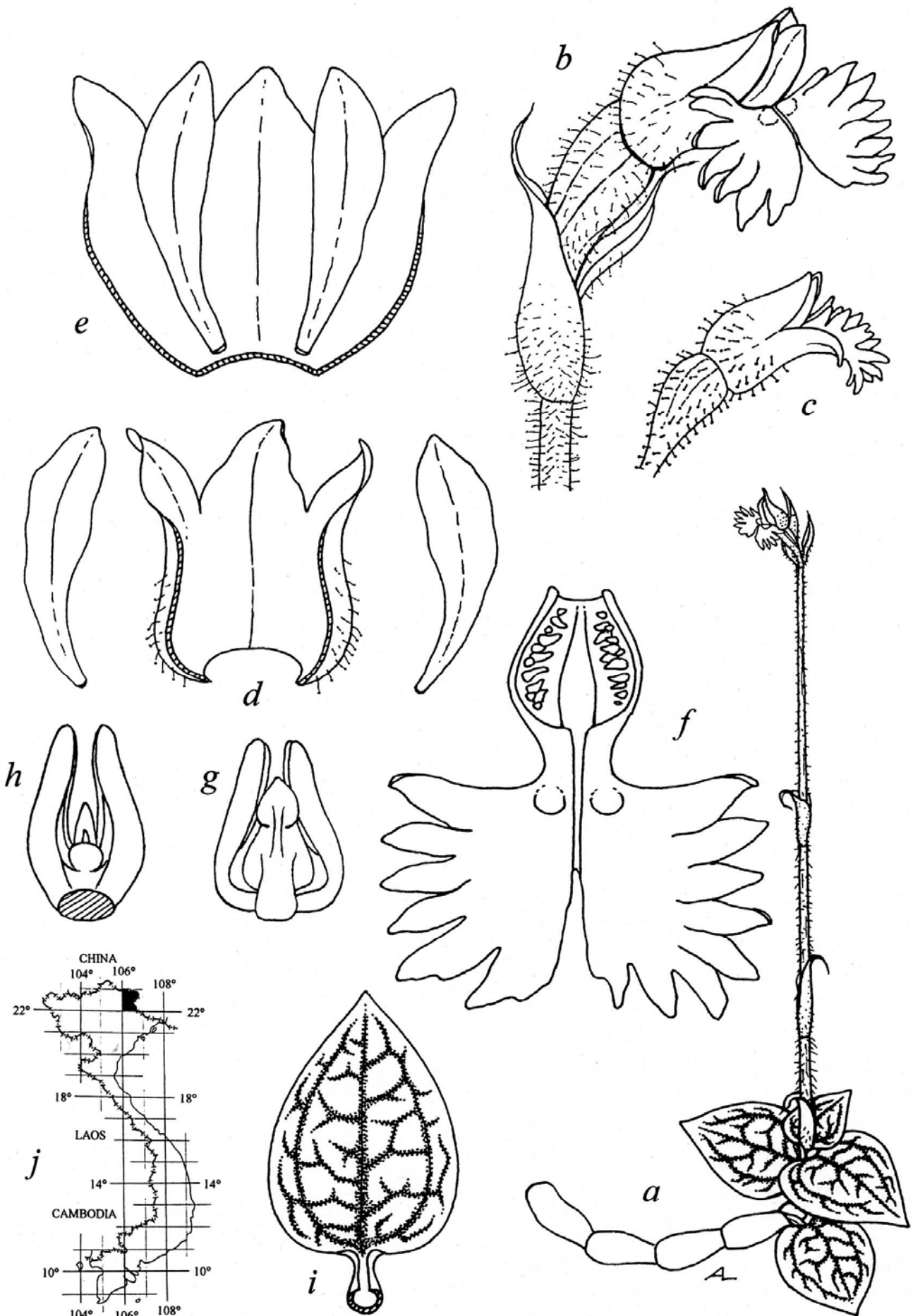


Fig. 2. *Cheirostylis marmorata* Aver. (drawn from Averyanov et al. CBL s.n., November 1998). **a.** Flowering plant. **b.** Inflorescence. **c.** Flower, side view. **d, e.** Flattened sepals and petals. **f.** Unfolded lip. **g-h.** Column, view from above and from below. **i.** Leaf. **j.** Map of Vietnam indicating area of probable distribution of the species.

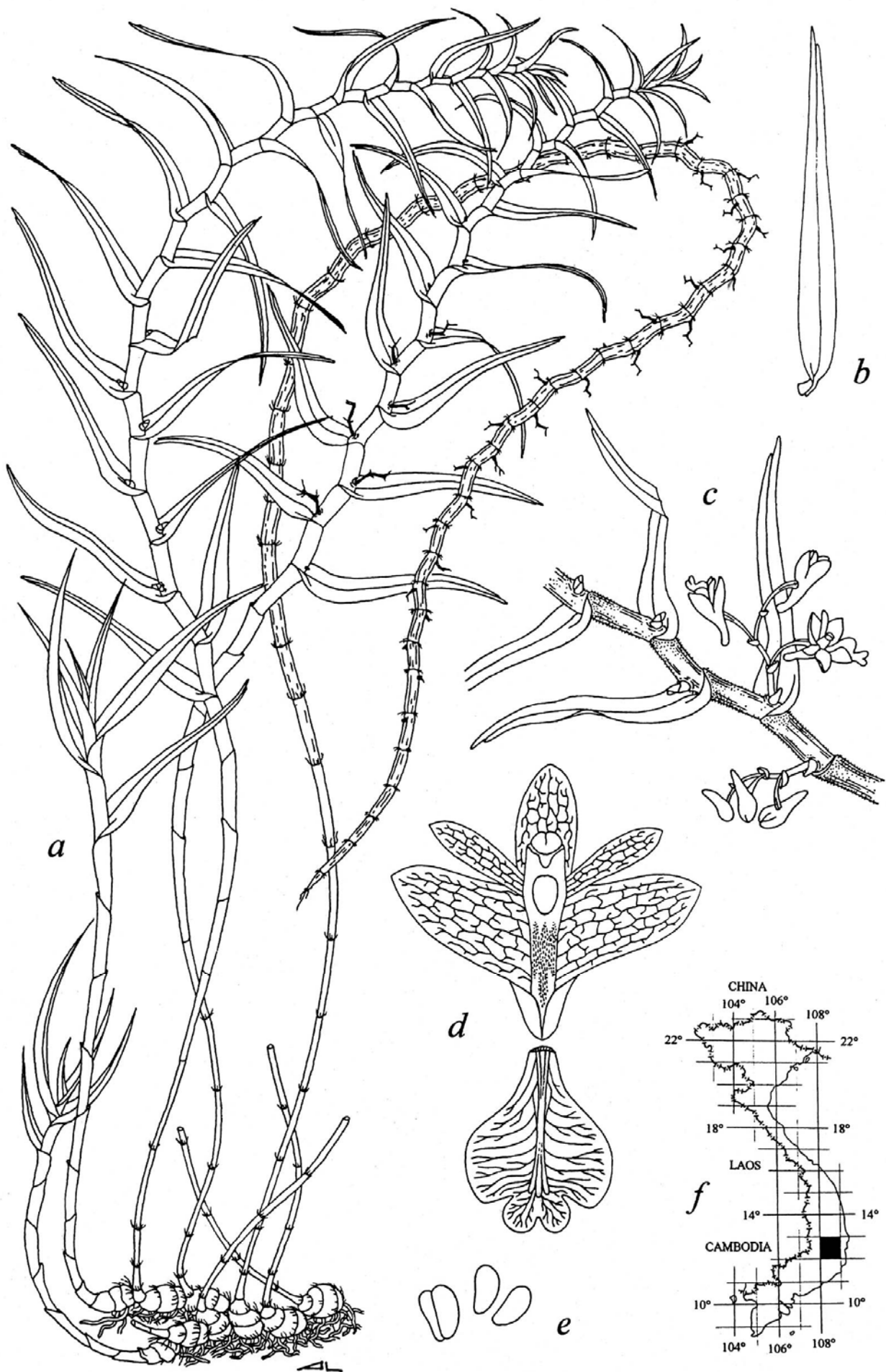


Fig. 3. *Dendrobium khamhoense* Aver. (drawn from Averyanov et al. VH-4288). **a**. Mature plant. **b**. Leaf. **c**. Portion of flowering stem. **d**. Flower with flattened sepals, petals, and lip. **e**. Pollinia. **f**. Map of Vietnam indicating area of probable distribution of the species.



brown nerves, lip hypochile white, side lobes white with orange-brown nerves, keels at the base purple, becoming white toward the apex, epichile orange-brown. **Dorsal sepal** narrowly ovate from a broad base, curved forward, 8–9 mm long, 4 mm wide, acute at the apex. **Lateral sepals** oblong, widened at the base, broadly acute, 10–11 mm long, 4–5 mm wide near the base. **Mentum** cylindric, 5–6 mm long, white or yellowish white, saccate at the apex. **Petals** lanceolate, acute, 9.0–10.0 mm long, 1.5–2.0 mm wide. **Lip** directed forward, pandurate, narrowed to the base, 13–15 mm long, 12–13 mm wide; side lobes erect, broad, 6–7 mm wide, 4 mm long, mid-lobe reniform or bilobed with two semicircular halves, 3–4 mm long, 6–7 mm wide, disc with 3 median keels from the base to the proximal part of hypochile, lateral keels rising slightly near the base of the lip. **Column** short, 3 mm long, pale yellowish orange, with foot 6–7 mm long, yellowish white, suffused with brownish gray, anther cap dark violet.

**ETYMOLOGY:** From Khanh Hoa Province, the type locality.

This new species is similar to *Dendrobium pachyglossum* C.S.P. Parish & Rehb.f. (*D.* sect. *Conostalex* Kränzl.) and some species of *D.* sect. *Distichophyllum* Hook.f. (*D. trinervium* Ridl. and *D. metachilinum* Ridl.) from which it differs in the morphology of the lip. It occupies a distinctly intermediate taxonomic position between the two sections. *Dendrobium khamhoaense* was observed as a locally abundant epiphyte on tall trees in primary, wet, closed, broad-leaved mountain forests on the eastern macroslope of the Bi Dup mountain system at elevations 1200–1500 m. This species is probably endemic to Khanh Hoa Province. Material flowered from September to January under cultivation in St. Petersburg. The individual flowers last up to three months.

**Eria lactiflora** Aver., sp. nov. (*E.* sect. *Cylindrobolus* (Blume) Lindl.). **TYPE:** S. Vietnam, Lam Dong Province, Lac Duong District, Da Chay Municipality, 29–31 km NNE of Dalat. Old, open, secondary, dry coniferous mountain forest dominated by *Pinus kesiya* Royle ex Gordon at 1550–1700 m elev., 8–10 km W of the Bi Dup main peak (N 12° 07', E 108° 36'). Epiphyte mostly on *Lyonia* sp. and *Lithocarpus* sp. Flowers white, epichile tip yellow, floral bracts bright yellow.

low. Uncommon. 14 April 1997, L. Averyanov, N. Q. Binh, VH 3955 (holotype: LE!; isotypes: AAU, HN, MO, P!). Fig. 4.

A species proxima *Eria bidupensi* et *E. carunculosa* planta nostra labello indiviso, valde tomentoso et florum albo concoloris coloratione difert.

**Epiphyte** with short creeping rhizomes and numerous thin, fine-haired axillary roots. **Stems** dense, stout, slender, erect, 12–20 cm long, covered with sheaths throughout, leafy at the apex, with 12–16 nodes. **Leaves** normally 2, rigid, coriaceous, usually narrowly elliptic, sometimes broadening to the base, 5.0–8.8 (10.0) cm long, 0.8–1.5 cm wide. **Inflorescences** subterminal (appearing terminal), 1–2-flowered, 1.5–2.0 cm long, inflorescence bracts paired, rigid, straight, oblong-obovate, pale yellowish brown, 1.5–2.0 cm long, 0.6–0.8 cm wide, floral bracts normally 1 sterile and 2 fertile, thin, reflexed, ovate to broadly elliptic, bright yellow, 1.2–1.8 cm long, 0.5–0.8 cm wide. Pedicel and ovary 1.5 cm long. **Flowers** about 2 cm wide, never opening widely, odorless, pure white, epichile tip sometimes yellowish. **Dorsal sepal** ovate, curved forward, 10–15 mm long, 5–7 mm wide. **Lateral sepals** ovate, widely broadening to the base, 12–15 mm long, 6–7 mm wide. **Mentum** short, broad, 4–6 mm long. **Petals** ovate or obovate, 10–14 mm long, 5–6 mm wide. **Lip** strongly curved, obovate-rhomboid, 8–11 mm long, 6–7 mm wide, obscurely 3-lobed, side lobes erect, apex acute or pointed into small central acute tip, disc covered with dense white glandular hairs arranged in 3 broad irregular rows. **Column** 4–5 mm long, white.

**ETYMOLOGY:** From the Latin *lactis*, milky white, referring to the pure white color of the flowers.

**PARATYPES:** S. Vietnam, Lam Dong Province, Lac Duong District, Da Chay Municipality, 32.5 km NE of Dalat (N 12° 07', E 108° 41'). Old, open, secondary, mossy, mixed cloud forest dominated by *Pinus kesiya*, *Lyonia* sp., and *Lithocarpus* sp. along ridge on NNW macroslope of Bi Dup mountain system at 1700–1800 m. Epiphyte. Perianth pure white, floral bracts bright yellow. Uncommon. 28 March 1997, L. Averyanov, N. Q. Binh & P. K. Loc, VH 3306 (AAU, HN, LE, MO, P); S. Vietnam, Ninh Thuan Province, Ninh Son District, Phuoc Binh Municipality, 37 km NE of Dalat. Closed, primary, broad-

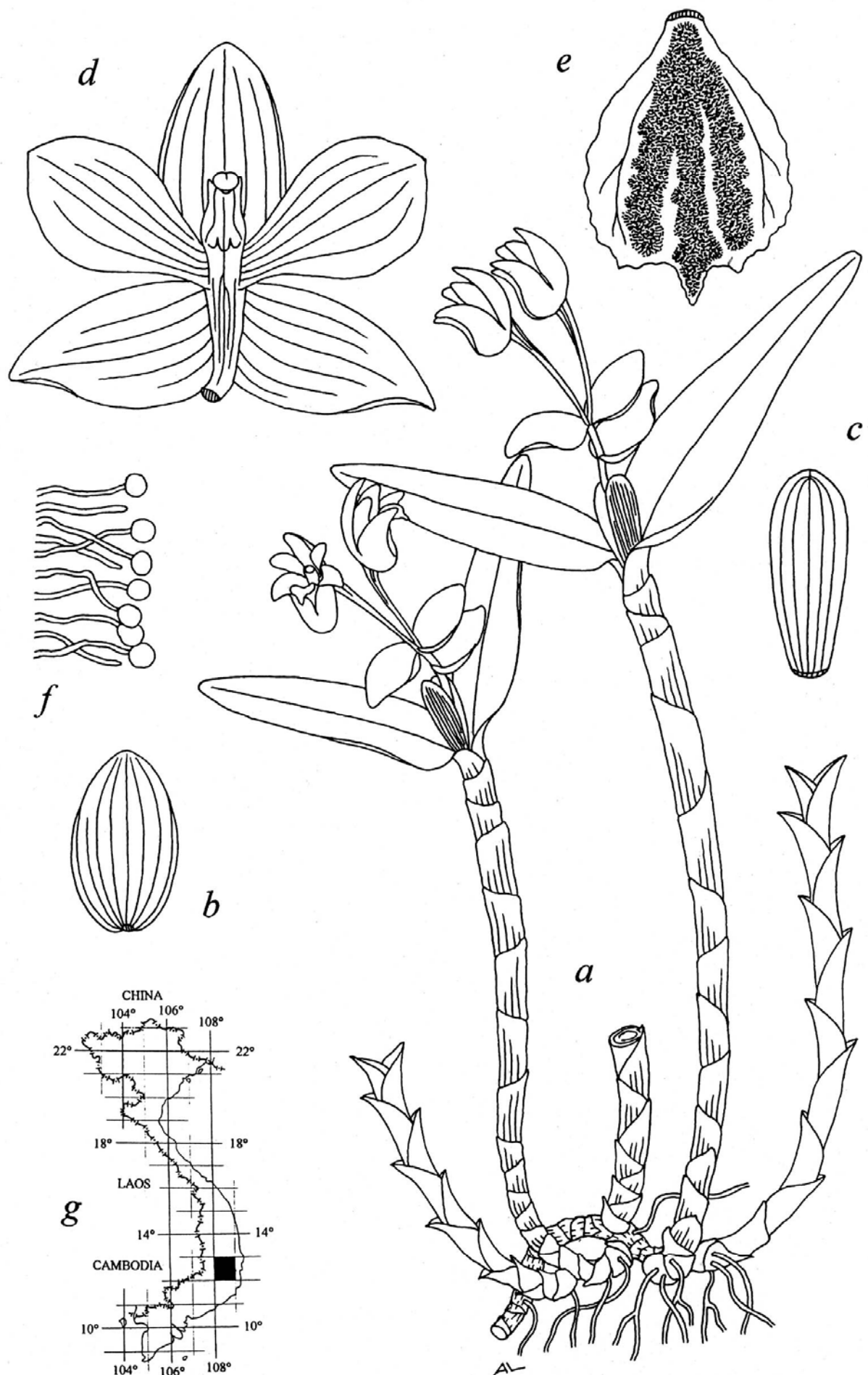


Fig. 4. *Eria lactiflora* Aver. (drawn from Averyanov & Binh VH-3955). a. Flowering plant. b. Floral bract. c. Inflorescence bract. d. Flower with flattened sepals and petals. e. Flattened lip. f. Lip keels showing pubescence. g. Map of Vietnam indicating area of probable distribution of the species.

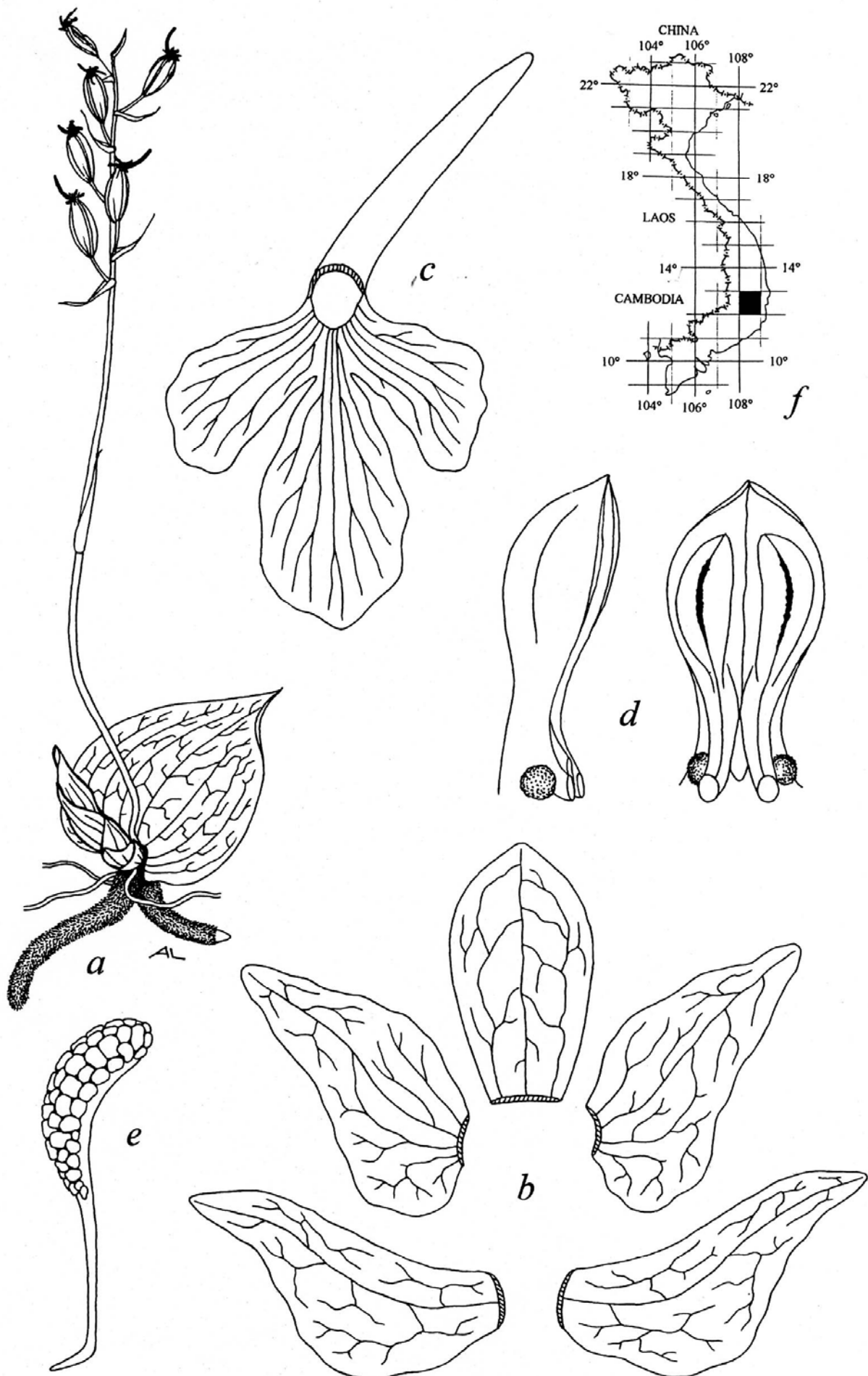


Fig. 5. *Hemipilia bidupense* Aver. (drawn from Averyanov et al. VH-4471). **a**. Fruiting plant. **b**. Flattened sepals and petals. **c**. Lip. **d**. Column, side and front views. **e**. Pollinarium. **f**. Map of Vietnam indicating area of probable distribution of the species.



leaved, wet mountain forest on E macroslope of Noi Gia Rin ridge at 1700–1800 m. (N 12° 06', E 108° 43'). Epiphyte on tall tree. Flowers white, floral bracts bright yellow. Rare. 1 April 1997, L. Averyanov, N. Q. Binh & P. K. Loc, VH 3517 (AAU, HN, LE, MO, P); S. Vietnam, Lam Dong Province, Lac Duong District, Da Chay Municipality, 35 km NE of Dalat. Closed, primary, broad-leaved, evergreen mountain forest with *Pinus krempfii* Lecomte on W macroslope of Noi Gia Rin ridge at 1700–1800 m elev. (N 12° 09', E 108° 41'). Epiphyte on tall trees. Flowers white, floral bracts bright yellow. Uncommon. 18 April 1997, L. Averyanov, N. Q. Binh & P. K. Loc, VH 4056 (AAU, HN, LE, MO, P).

*Eria lactiflora* is closely related to *E. bidupensis* (Gagnep.) Seidenf. ex Aver. and *E. carunculosa* (Gagnep.) Seidenf. ex Aver. but differs in the form and ornamentation of the lip and flower coloration. *Eria lactiflora* is a not-uncommon epiphyte in primary and old secondary cloud forests and broad-leaved, mixed, and coniferous mossy forests with *Pinus kesiya* and *P. krempfii* throughout the mountains of Khanh Hoa, Lam Dong, and Ninh Thuan provinces of southern Vietnam at elevations between 1550 and 1800 m. It is especially common along the tops of mountain ridges. Flowering in nature was observed during March–April.

**Hemipilia bidupense** Aver., *sp. nov.* TYPE: S. Vietnam, Lam Dong Province, Lac Duong District, Da Chay Municipality, 29 km NE from Dalat. Primary, mixed cloud forest with *Fokienia hodginsii* A. Henry & H. H. Thomas on peaks of Bi Dup ridge at 2150 m, 1.5 km N of the main peak of the mountain system (N 12° 06', E 108° 39'). Lithophyte on shady, mossy, vertical granite bluffs. Rare. 1 May 1997, L. Averyanov, N. Q. Binh, N. T. Hiep, P. K. Loc & P. Lowry, VH 4471 (holotype: LE!; isotypes: AAU, HN, MO, P!). Fig. 5.

A specie proxima *Hemipilia cruciata* Finet planta nostra folio cordato, apice acutato et labello lobi lateralia magni, obovato, apice truncato valde differt.

Terrestrial or lithophytic herb with 1–2 basal leaves and 1–2 long narrowly cylindrical, densely villose tubers. Leaves thin, adpressed to the ground, broadly elliptic or broadly ovate, with broad or slightly attenuate base, acute at the apex,

2.5–5.5 cm long, 2.0–3.5 cm wide. **Inflorescence** a pedunculate raceme, peduncle erect, 8.0–16.0 cm long, leafless or sometimes with one insignificant, narrowly acute, bract-like leaf, rachis to 4.0 cm long, pedicels 1–3 mm long, floral bracts narrowly triangular, acute, 5–8 mm long, 1 mm wide near the base. **Flowers** 3–8, color not recorded. **Dorsal sepal** obovate, with a broad base and a broadly acute apex, 3.5–4.0 mm long, 1.5–2.0 mm wide. **Lateral sepals** obliquely ovate-lanceolate, subfalcate, broadly acute and slightly attenuate at the apex, 4.0–5.0 mm long, 1.3–2.0 mm wide. **Petals** ovate, with an asymmetrically broadened lower proximal part, narrowing to an obtuse apex, 3.5–4.0 mm long, 2.0–2.2 mm broad near the base. **Lip** deeply three-lobed, spurred, 3.5–5.5 mm long, 4.0–6.0 mm wide, mid-lobe obovate, widening from a narrow base, obtuse at the apex, 2.5–4.0 mm long, 1.0–2.0 mm wide, side lobes widening from the base, truncate at the broad asymmetric apex, 2.0–3.5 mm long, 1.5–2.0 mm wide across the apex, spur straight, narrow, with an acute-conical tip, 4.0–8.0 mm long, 1.0 mm wide. **Column** obovate, about 1.5–2.0 mm long, 1.0–1.3 mm wide; anther loculi pointing forward, rostellum small, pollinarium asymmetrically clavate, with a long caudicle and individual small viscidium. **Capsule** broadly spindle-shaped, 8.0–10.0 mm long, 3.5–4.5 mm wide.

ETYMOLOGY: From the name of expected distribution area (Bi Dup mountain system).

PARATYPE: S. Vietnam, Lam Dong Province, Lac Duong District, Da Chay Municipality, 29 km NE of Dalat. Primary, mixed cloud forest with *Fokienia hodginsii* on peaks of Bi Dup ridge at 2150 m elev., 1.5 km N of the main peak of mountain system (N 12° 06', E 108° 39'). Lithophytic herb on open, mossy, vertical granite bluffs. Rare. 22 March 1997, L. Averyanov, N. Q. Binh, P. K. Loc, VH 3021 (AAU, HN, LE, MO, P).

*Hemipilia bidupense* may be compared with the endemic Chinese species *Hemipilia cruciata* Finet from which it differs in cordate, acuminate leaves and large, obovate lip side lobes truncate at the apex. *Hemipilia bidupense* was observed as a rare plant on open and shady, mossy granitic bluffs along the top of the main Bi Dup mountain ridge. This rare species is probably endemic to the Bi Dup mountain area, hence the specific epithet. *Hemipilia bidupense* inhabits rather open,

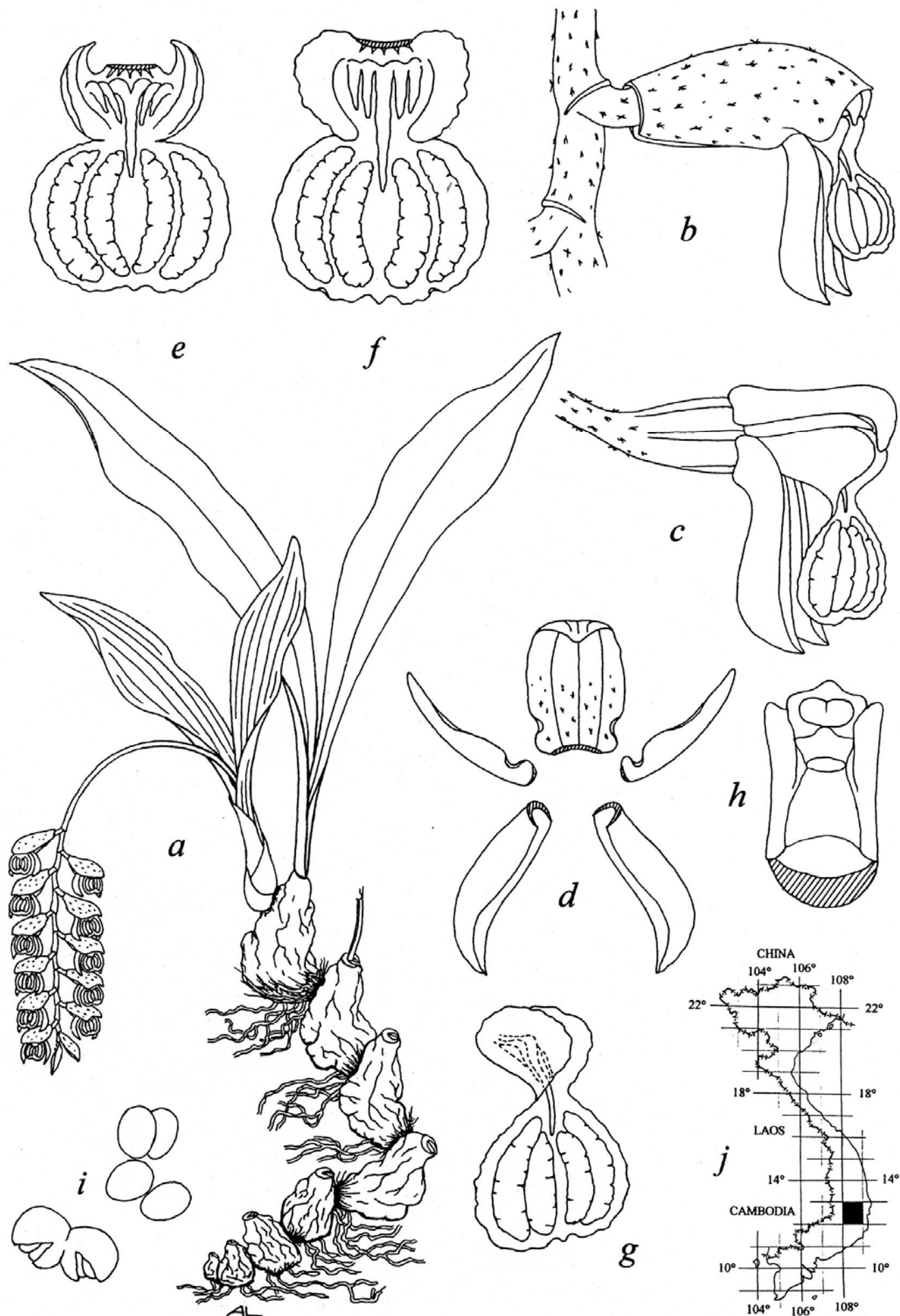


Fig. 6. *Pholidota pachyglossa* Aver. (drawn from Averyanov et al. VH-4096). **a.** Flowering plant. **b.** Flower with floral bract. **c.** Flower without floral bract. **d.** Flattened sepals and petals. **e-g.** Lip (front unflattened, front flattened, and side unflattened views). **h.** Column, front view. **i.** Anther cap and pollinia. **j.** Map of Vietnam indicating area of probable distribution of the species.

mossy places on wet granite rock outcrops in mixed cloud forests dominated by *Fokienia hodginsii* (Cupressaceae) at elevations of 2100–2200 m. Ripe capsules were observed during March–May.

**Pholidota pachyglossa** Aver., *sp. nov.* (*P. sect. Articulatae* (Rchb.f.) Pfitzer). TYPE: S. Vietnam, Lam Dong Province, Lac Duong District, Da Chay Municipality, 26–28 km NE of Dalat. Old, open, secondary, dry coniferous mountain forest dominated by *Pinus kesiya* at 1600–1750 m, 8–10 km from Bi Dup main peak to the NW (N 12° 07', E 108° 36'). Epiphyte on mossy trunks of old trees on tops of hills. Flowers brownish olive, lip reddish brown, anther yellow. Rare. 19 April 1997, L. Averyanov, N. Q. Binh, N. T. Hiep, VH 4096 (holotype: LE!; isotype: HN!). Fig. 6.

Ab omnibus speciebus congeneribus planta nostra labello carnoso rigido et epichilii carinis carnosus magnis differt.

**Epiphyte** with creeping or suberect stems, forming superposed chains of pseudobulbs. **Pseudobulbs** bifoliate, ovoid to cylindric-ovoid, rather swollen in the lower part, irregularly wrinkled, 1.5–3.0 cm high, 0.8–1.5 cm wide near the base, each arising from the apical portion of the previous pseudobulb. **Leaves** 4.0–7.0 cm long, 0.8–1.5 cm wide, narrowly elliptic, herbaceous or coriaceous, many-nerved, attenuate to the short petiole, acute at the apex. **Inflorescence** synanthous, produced with the young leaves about halfway developed, few- to many-flowered, peduncle slender, drooping, 3.0–5.0 cm long, rachis 2.0–4.0 cm long, pendulous, slightly fractiflex, floral bracts papyraceous, broadly obovate, 5.0 mm long, 4.5–5.0 mm wide, slightly oblique, caducous but not falling away, rachis and floral bracts sparsely pubescent with brownish stellate hairs. **Flowers** distichous, opening more or less simultaneously, not widely opening, enveloped at the base by the floral bract, sepals

and petals brownish olive, epichile reddish brown. Pedicel and ovary 2.0–2.5 mm long. **Dorsal sepal** 3.0–3.5 mm long, 2.0 mm wide, directed forward, concave, ovate-oblong, with broad base and an obtuse to acuminate incurved apex. **Lateral sepals** 3.5–4.0 mm long, 1–1.5 mm wide, oblong-lanceolate, with a broad base and acute apex, deeply conduplicate-channeled, subfalcate, strongly downward deflexed from the base. **Petals** 3.0–3.5 mm long, 0.4–0.5 mm wide, narrowly lanceolate to linear, slightly asymmetric, acute. **Lip** rigid, fleshy, three-lobed, 2.5–3.0 mm long and wide, with the hypochile distinctly divided from the epichile, hypochile concave, boat-shaped, about 1.0 mm long, 2.5 mm wide, with 5 distinct keels (the median one much longer) and broadly rounded, semi-orbicular, erect side lobes, epichile strongly downward deflexed, rounded or reniform-emarginate with small central apicule, 1.5–2.0 mm long, 2.5–3.0 mm wide, with 4 large rigid fleshy keels. **Column** short and broad, 1.5–2.0 mm high, about 1.2 mm wide, yellowish. Anther cap yellow.

**ETYMOLOGY:** From the Greek *pachys*, thick, fleshy, and *glossa*, tongue, referring to the characteristically thick, fleshy ridges on the lip.

*Pholidota pachyglossa* belongs to *P. section Articulatae* (Rchb.f.) Pfitzer. It differs from all known species of the section by its rigid fleshy lip with large fleshy keels on the epichile. This new species was observed as a rare epiphyte in old, rather open, secondary cloud forests of *Pinus kesiya* in the western foothills of the Bi Dup mountain system at elevations of 1600–1800 m. Plants were found predominantly on mossy branches of old, gnarled, broad-leaved trees of the second forest stratum. Flowering in nature was observed in April.

#### LITERATURE CITED

- Averyanov, L. V. 1996. New species of orchids (Orchidaceae) from Vietnam. *Bot. J. (St.-Petersburg)* 81: 73–83.  
 —. 1997. New species of orchids (Orchidaceae) from Vietnam. *Bot. J. (St.-Petersburg)* 82: 131–148.