

***Geostachys smitinandii* K. Larsen (Zingiberaceae), a new species from Thailand**

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ABSTRACT. A new species of *Geostachys* (Zingiberaceae), *G. smitinandii* K. Larsen from Thailand is described and illustrated.

The genus *Geostachys* has its main distribution on the Malay Peninsula where most of the species are endemic and found at high altitudes. The author has previously described three species from southern Thailand, Larsen 1962, 1986. In 1966 a species, which could not be matched with any other species, was collected by Tem Smitinamd and the author in the Khao Yai National Park. As the material was in fruit it was laid aside for later study. In 1979, J.E. Vidal and C. Niyomdham visited Khao Yai and again collected the species from the same locality also as fruiting material. Finally in 2000 Mr. P. Triboun, from the Sirindhorn Herbarium, Bangkok (BK), collected complete material of flowering specimens.

***Geostachys smitinandii* K. Larsen species nova** *Geostachys annamensi* Ridl. affinis a qua differt lamina folii longiore et latiore, glabra, inflorescentiis 2–3 ad quoque surculum foliosum, rachide inflescentii interdum ramosa, labello integro margine crispata (non trilobato), crista antherae irregulariter lobata et crispata. Figs. 1–2.

Type: *Larsen, Smitinand & Warncke* 55, Khao Khiao 1200 m among rocks in evergreen hill forest, 7. 7. 1966 (holo AAU, iso BKF, fruiting specimens).

Rhizomatous, stilt-rooted herb, rhizome rised up to 25 cm above the ground. Stiltroots stout, 8–9 mm diam; rhizome to 2 cm diam, densely covered with leaf bases. Aerial shoots tufted, at base densely covered with imbricate leaf bases, up to 3 cm diam. Leafy shoot to 170 cm. Leaves 10–12 in upper part of the pseudostem, glabrous, lanceolate, 30–50 by 6–8 cm, base tapering to the petiole, apex acuminate, upper side green, lower side on some shoots deep purple on others green with a faint reddish tint; petiole 5–12 mm; ligule bilobed, 4–7 mm long. Inflorescences 2–3 at base of the pseudostem, glabrous, slender, mostly erect, the largest inflorescences slightly drooping; lower part of axis without flowers, covered by up to 12 reddish-brown bracts, 1–5 cm long increasing in length upwards, in dry state longitudinally striate. Cincinnae uni-flowered spreading evenly to all sides. Flowers only in the part extending from the involucre bracts. Bracts subtending the cincinnae lanceolate, acute, 10–13 by 4–6 mm,

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peduncle 3–4 mm; floral bract ca. 1 cm, slightly inflated, ovary 2–3 mm, calyx tubular with 12–14 mm long, split down 4 mm on one side; corolla tube slightly longer than calyx, lobes lanceolate about 15 by 5 mm, obtuse; labellum spreading, triangular, 2–2.5 cm long with crinkled margin, distal part pale pink with red veins, at base and along the side margins red-spotted; filament ca. 4 mm; anther ca. 12 mm, opening by longitudinal slits; anther crest short, red, 6 mm broad, irregularly lobed and crinkled. Stigma obconical with mouth horizontal at apex. Fruiting pedicel 6–10 mm. Capsule glabrous, ellipsoid to almost globose, pale green with 3 red lines along the sutures, 12–13 by 14–15 mm, crowned by the persistent, tubular, bright red calyx, 12–15 mm long, 5 mm wide at apex. Seeds 4–6 in each locule, trigonous, brown with a lacerate arillus in lower half.

The species has been named in honour of the late Professor Dr. Tem Smitinand, the most prominent Thai botanist in the 20th century.

Material other than type: *Vidal & Niyomdham* 6375. Khao Khiao 1000 m, evergreen hill forest, 8. 6. 1979 BKF, P); *Pramote s.n.* 15. 5. 2000, flowering material from type locality (spirit and photo in AAU, BK).

Note. *Geostachys smitinandii* represents the northern limit of distribution of the genus *Geostachys* as the Khao Yai Nat. Park is situated at about 14° 30' northern latitude. It is most similar to *G. annamensis* Ridley described from the Dalat Plateau, Vietnam at 16–1700 m alt., c 12° northern latitude. Two other collection from Thailand of *Geostachys* have been made about 200 km south-east of the Khao Yai locality, in the Kitchakut National Park: Newman 882, Khao Kitchakut, alt. 900 m 12° 50' 31" N, 102° 09' 43" E (AAU, BKF, E) and Pholsena s. n. Aug. 1999 from the same locality, 6. July 1999 (AAU, BKF). This material is very similar to *G. smidtinandii* but the inflorescence axis is somewhat coarser, the leaves smaller and the fruits are said to be black. Further study of this plant is, however, necessary to establish its status; it may be another new species or a variety of *G. smitinandii*.

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Figure 1. *Geostachys smitinandii* K. Larsen: A. holotype with infructescens; B–C. Triboun s.n. B. anther with style and stigma, C. distal part of style with stigma.



Figure 2. *Geostachys smitinandii* K. Larsen— Upper: apex of inflorescence with two branches, lower left: infructescence; lower right: specimen with stiltroots and an infructescence with a short flowering branch. Photo by Pramote Triboun.