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A New Species of *Hedychium* (Zingiberaceae) from Southern Laos

Pornpimon Wongsuwan[1,2]

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ABSTRACT: A new species of *Hedychium* (Zingiberaceae), *H. chayanianum* Wongsuwan, from southern Laos, is described and illustrated. This new taxa can be differentiated from *H. villosum* Wall. by its hairy lower leaf surface, longer calyx and corolla tubes, 1-3-flowered bracts, and the 2-cleft labella. Relationship with other related species is also discussed.

KEY WORDS: new species, *Hedychium chayanianum*, Zingiberaceae, southern Laos.

INTRODUCTION

The genus *Hedychium* J. König is one of the ethnobotanically and economicly important genera of the family Zingiberaceae. Some species are well recognized ethnopharmacologically, *Hedychium coronarium* J. König, *H. coccineum* Buch.-Ham. ex Sm., to mention a few. Several taxa, especially those with showy and fragrant flowers, have or may have horticultural potential.

Gagnepain (1908) listed five species and four varieties from Indochina: *H. coronarium* J. König (var. *maximum* Rosc., var. *flavum* Roxb., var. *flavescens* Carey, and var. *chrysoleucum* Hook.), *H. coccineum* Buch.-Ham., *H. bousigonianum* Pierre ex Gagnep., *H. yunnanense* Gagnep., and *H. villosum* Wall. Three more taxa were later added by Larsen (1965): *Hedychium boloveniorum* K. Larsen (from Laos), *H. poilanii* K. Larsen (from Vietnam), and *H. forrestii* Diels var. *latebracteatum* K. Larsen (from Vietnam). More recently, seven taxa were listed for Laos: *H. boloveniorum* K. Larsen, *H. bousigonianum* Pierre ex Gagnep., *H. coccineum* Buch.-Ham. ex Sm., *H. coronarium* J. König, *H. coronarium* J. König var. *flavescens* (Rosc.) Baker, *H. ellipticum* Sm., and *H. stenopetalum* Lodd. (Newman et al., 2007)

In this paper a new species from Champasak province in southern Laos is described and illustrated.

TAXONOMIC TREATMENT

Hedychium chayanianum Wongsuwan, sp. nov.
Figs. 1 & 2

Type: *Picheansoonthon 856*, Dan Nong Luang, the Bolaven Plateau, Champasak province, Laos PDR, N 15° 04.330′, E 106° 42.152′, alt 932 m, 15 June 2005 (holotype BKK, isotypes BK, SING).

Hedychium boloveniorum similis, herba terrestri, foliis sessilis, ligula breviore (ad c. 4 cm longa versus c. 7 cm), inflorescentia erecta, bracteis 1-3-floris, staminodiis lateralibus anguste lanceolato-oblongis vel spathulatis, abello suborbiculari ad orbiculari, anthera brevi (5-6 versus 3-4 mm) differt

Terrestrial, perennial herb. Pseudostems 56.7-110.3 cm high, leaf sheaths red, bladeless sheaths 2-4. Leaves sessile; blade elliptic, 16.5-32.4 by 7.2-12.0 cm, base cuneate, apex acute, margin entire, upper surface glabrous, lower surface hairy; ligule reddish, oblong, membranous, 2.3-4.0 by 1.3-2.8 cm, pubescent, apex bilobe, lobes rounded. Inflorescence a terminal spike, erect, 12.8-20.6 cm long; peduncle 8.4-12.6 cm long, hairy; bracts lax, folded, reddish, elliptic, 4.6-6.4 by 1.5-1.9 cm, pubescent, each subtending a cincinnus of 1-3 flowers, apex acute; primary bracteole greenish or reddish, ovate to broadly ovate, 2.6-4.8 by 1.6-1.8 cm, apex acute; secondary bracteole ovate, 2.8-2.9 by 1-1.5 cm, apex acute; tertiary bracteole, ovate, membranous, 2-2.6 cm by 8-9 mm. Flowers white to pale yellow, fragrant; calyx tubular, 4-4.4 cm by 3-4 mm, apex acute; corolla tube slender, some twisted, 5.2-8.4 cm by 2-3 mm, 3-lobed, lobes linear, apex hooded, yellowish, 3-4.1 cm by 2-3 mm; lateral staminodes narrowly lanceolate-oblong or spathulate, 3.3-3.5 cm by 6-8 mm, base attenuate into a 5-7 by 2-3 mm claw; labellum suborbicular to orbicular, white with pale greenish patch at base, 2.2-2.8 by 2.3-2.9 cm, apex 2-cleft, 4-7 mm, base attenuate into a 5-9 by *c.* 4 mm claw; filament salmon red, 3.9-5.0 cm long, anther dorsified, base divaricate, yellowish, 5-6 by 3-4 mm; ovary pubescent, 3-4 by *c.* 3 mm, 3-loculed, placentation axile, epigynous

1. Pharmaceutical Botany and Pharmacognosy Research Unit, Faculty of Pharmaceutical Sciences, Khon Kaen University, Khon Kaen 40002, Thailand.
2. Corresponding author. Email: pornpimonwong@yahoo.com

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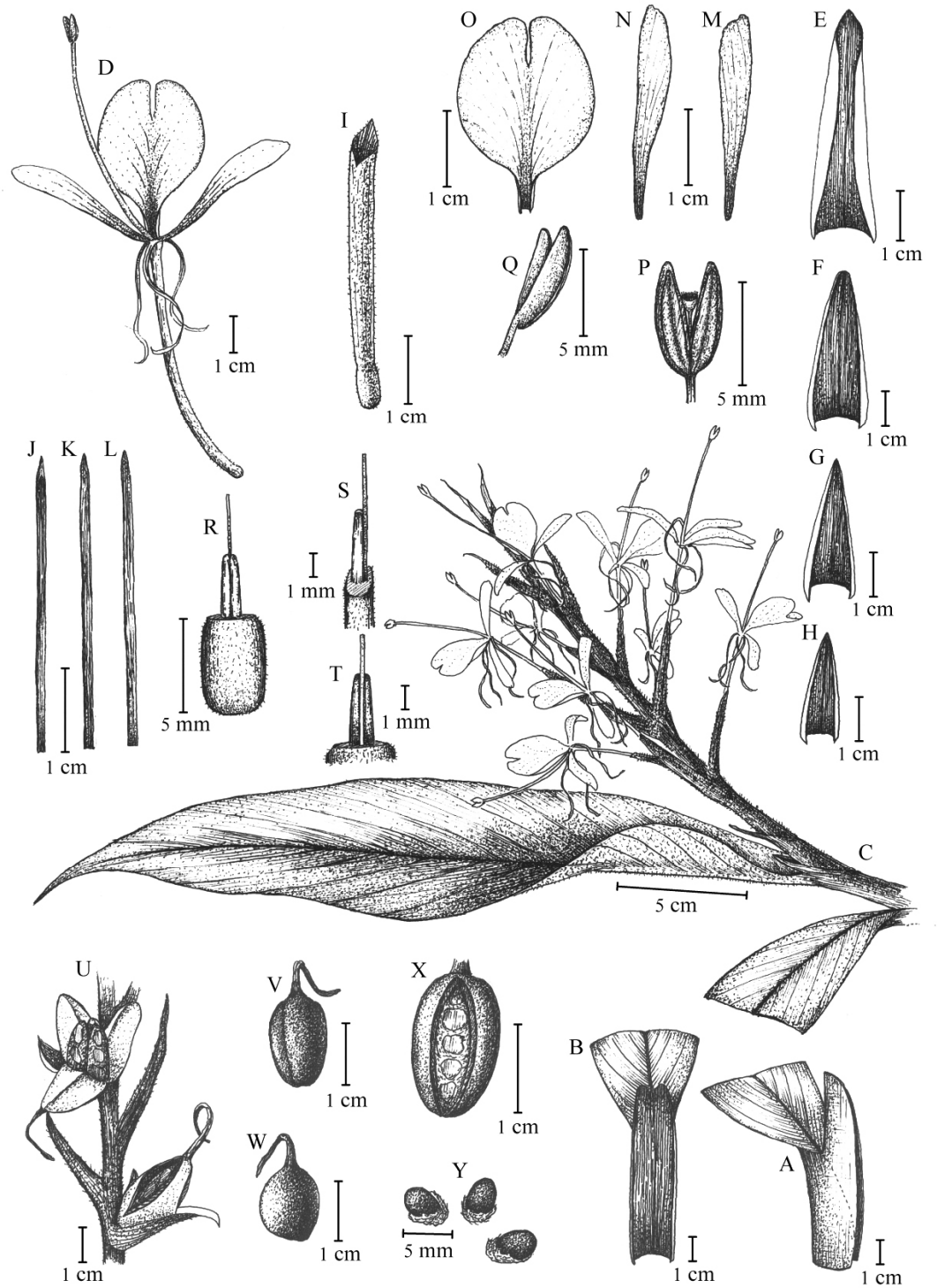


Fig. 1. *Hedychium chayanianum* Wongsuwan. A, B: Part of a leaf showing a ligule (A: Side view, and B: Front view). C: Flowering top showing a leaf and an inflorescence. D: A flower. E: Bract. F: Primary bracteole. G: Secondary bracteole. H: Tertiary bracteole. I: Calyx tube with an ovary. J: Dorsal corolla lobe. K, L: Lateral corolla lobes. M, N: Staminodes. O: Labellum. P, Q: Anther (side and front views). R: Ovary and epigynous glands. S, T: Epigynous glands (S: Side view, and T: Back view). U: Infructescence with a dehiscing fruit and a partially dehiscing fruit. V, W: Fruit. X: A partially dehiscing fruit with seeds inside. Y: Seeds (line drawing by Chalermchoke Boonchit).

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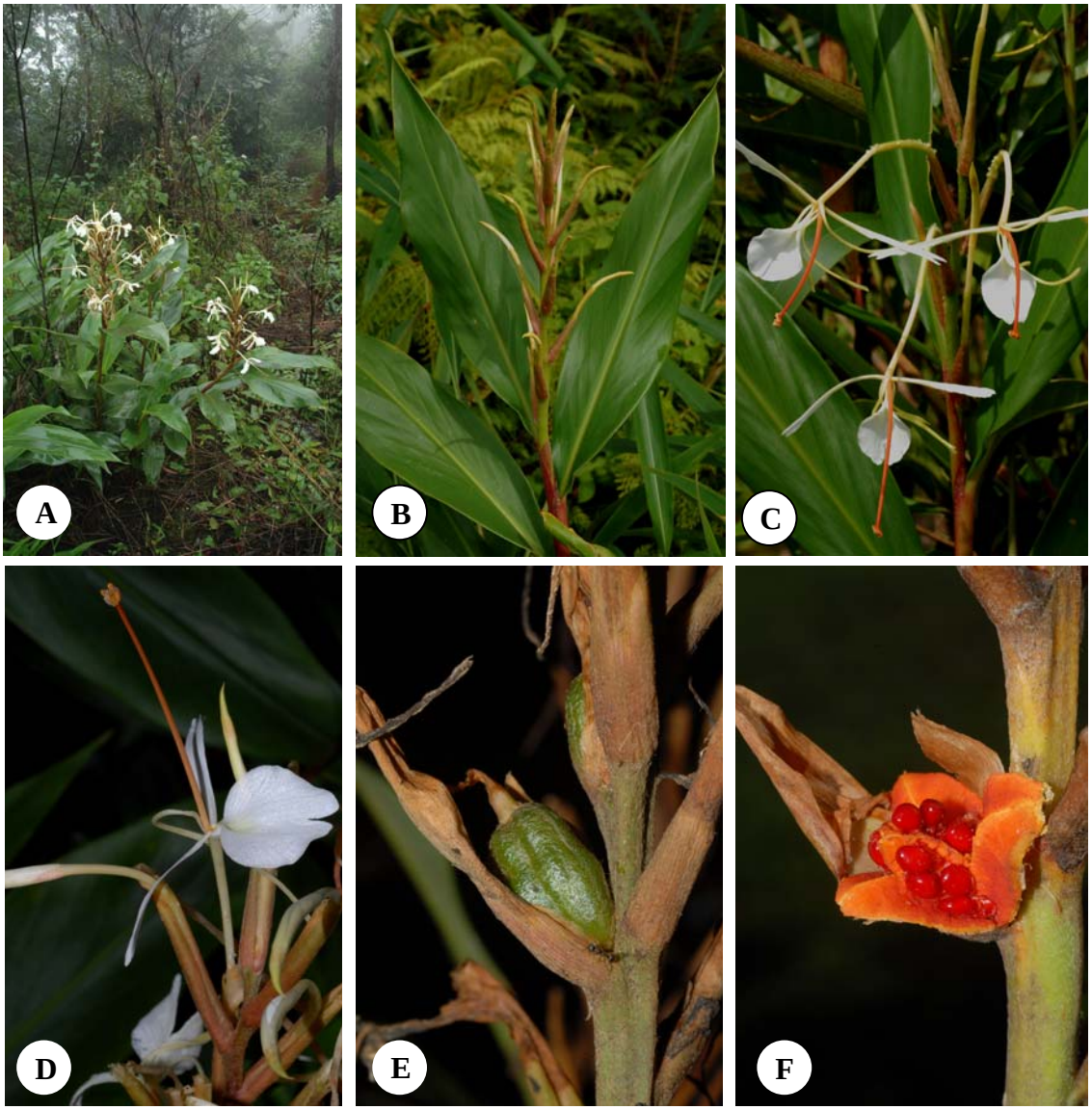


Fig. 2. *H. chayanianum*. A: Habit and habitat. B: The sessile leaves and the lax inflorescence. C: An inflorescence and flowers. D: The detail of a flower. E: Infructescence and fruits. F: A dehiscing fruit (Photo: Chayan Picheansoonthon).

glands 2, slender, yellowish, *c.* 3 by *c.* 0.5 mm, stigma green, densely ciliate. Fruits ovate to oblong, 1.3-1.6 by 1.3-1.4 cm, greenish, pubescent. Seeds many, reddish orange, elliptic to orbicular, 0.4-1.0 cm by 4-5 mm. Flowering June-August, fruiting July-September.

Distribution: The Bolaven Plateau, Champasak Province in southern Laos.

Ecology: This new species grows along the edge of the lower montain scrub and in the open areas of the gap wetland (blanket marsh) vegetation, at the altitude of 930-1,230 m.

Vernacular names: Sai-hoen Pa, Wan Sai-hoen.

Use: Medicinal.

Ethymology: The specific epithet of this new taxa is named to honor Dr.Chayan Picheansoonthon, fellow of the Royal Institute of Thailand, in recognition of his contribution to our knowledge of the family Zingiberaceae in Thailand and Laos.

Note: This new species is similar to *H. boloveniorum* K. Larsen but can be easily distinguished by its terrestrial habit, sessile leaves with shorter ligules (2.3-4 cm versus *c.* 7 cm), erect and lax inflorescences, 1-3-flowered bracts, and sub-orbicular to orbicular labella. This new species, with *H. villosum* Wall. and *H. boloveniorum* K. Larsen, belongs to the short-anther group. Both *H. chayanianum* and *H. boloveniorum*

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Table 1. Comparison of key morphological characters of some short-anthered *Hedychium* species in Thailand and Laos.

Characters \ Taxon	*H. chayanianum*	*H. collinum*	*H. villosum*	*H. bousigonianum*	*H. boloveniorum*
Leaf shape	elliptic	elliptic, or elliptic-oblong	oblong, or elliptic-oblong	linear-lanceolate	lanceolate
Ligule	oblong, 2.3-4 cm long	oblong, 1.5-2 cm long	oblong, 3-4(-6) cm long	ovate, 1.1-2 cm long	oblong, c. 7 cm long
Petiole	- (sessile leaves)	- (sessile leaves)	to 2 cm long	1-5 cm long	*c.* 1 cm long
Inflorescence	lax-flowered	lax-flowered	dense-flowered	lax-flowered	dense-flowered
No. of flower(s) per bract	1-3	3-4	up to 6	3	4
Bract	ovate, the apex acute, hairy	oblong, the apex acute (rarely round), hairy	oblong, the apex rounded, hairy	ovate, the apex obtuse	oblong, the apex acuminate, hairy
Calyx tube	shorter than bract	longer than bract	about the same as a bract	longer than bract	shorter that the bract
Staminodes	narrowly lanceolate-oblong, or spathulate	linear, broadest to the apex	linear, the apex acute	linear-lanceolate	linear
Labellum	sub-orbicular to orbicular, apex 2-cleft	obovate, deeply bilobed	deeply bilobed, each lobe obovate-oblong	ovate, 2-cleft, the apex of each lobe acuminate	obovate-cuneate, bilobe, c. 7 mm.
Length of anther (mm)	5-6	*c.* 3	2-3	*c.* 6	*c.* 6

K. Larsen have larger anthers compared with *H. villosum* Wall. (5-6 mm vs. 2-3 mm). However, this new species can be readily distinguished from both *H. villosum* Wall. and *H. boloveniorum* K. Larsen by its lax inflorescences. Moreover, *H. chayanianum* can be easily distinguished from *H. villosum* Wall. by its hairy lower leaf surface, longer calyx and corolla tubes, 1-3-flowered bracts, and the 2-cleft labella (not deeply divided).

Key characters of this new taxon with *H. collinum* Ridl., *H. villosum* Wall., *H. bousigonianum* Gagnep. and *H. boloveniorum* K. Larsen are compared and shown in Table 1. Molecular study on all Thai and Laos taxa is on the way.

Other specimen examined: *Picheansoonthon & Wongsuwan 021*, same location; *Picheansoonthon & Wongsuwan 044*, Dan Sawan, the Bolaven Plateau, about 40 km from Pangsong town, Champasak Province, Lao PDR (N 15° 19.804′, E 106° 04.393′, altitude 1,066 m); *Picheansoonthon & Wongsuwan 044*, Dan Thung-sed, the Bolaven Plateau, Champasak Province, Lao PDR (N 15° 11.325′, E 106° 15.482′, altitude 1,230 m)

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寮國南部薑科蝴蝶薑屬新種－*Hedychium chayanianum* Wongsuwan

Pornpimon Wongsuwan[1,2]

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摘　　要

本文描述寮國南部蝴蝶薑屬 (薑科) 新種－*Hedychium chayanianum* Wongsuwan，並提供圖片。此一新種可以其葉下表面被毛、較長的花萼及花冠筒、苞片中具 1-3 朵花以及二裂的唇瓣等特徵與 *H. villosum* Wall.區分，與其他相關種的關係也一併予以討論。

關鍵詞：新種、*Hedychium chayanianum*、薑科、寮國南部。

1. Pharmaceutical Botany and Pharmacognosy Research Unit, Faculty of Pharmaceutical Sciences, Khon Kaen University, Khon Kaen 40002, Thailand.
2. 通信作者。Email: pornpimonwong@yahoo.com

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