



วารสารราชบัณฑิตยสถาน  
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# Taxonomic Revision of the Genus *Hedychium* J. König (Zingiberaceae) in Thailand (Part 2)

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## Abstract

The genus *Hedychium* J. König (Zingiberaceae) in Thailand is taxonomically revised, result of which 21 species and 6 varieties are enumerated. In Part 1, description of the genus with key to species were given, and 10 species and 4 varieties were listed. *H. forestii* Diels were recognized as one of the 4 varieties of *H. coronarium* J. König in this first part. In continuation of the first part, 11 species and 2 varieties are listed, of which descriptions, ecological data, geographical distributions and some illustrations are provided. Diagnostic characters of each taxon are also discussed. Two new synonyms, *H. samuiense* Sirirugsa (synonymous to *H. roxburghii* Blume) and *H. thaianum* Mookamul & Picheans. (synonymous to *H. pauciflorum* S.Q. Tong), are proposed.

**Key words:** taxonomic revision, Zingiberaceae, *Hedychium* J. König, Thailand

**11. *Hedychium muanwongyathiae*** Picheans. & Wongsuwan, J. Jpn. Bot. 84: 330-337. 2009 [Type: Thailand: Northtern, Chaing Mai, Doi Angkhang, N 19° 50' 48", E 99° 03' 004", alt. 1,044 m, 10 August 2008; *Picheansoonthon & Wongsuwan* 064 (holotype BKF, paratypes BK, SING)]. Figures 6A, 6B and 6C.

Terrestrial, perennial herb. Pseudostems 0.7-1.3 m high, bladeless sheaths 2-4. *Ligule* oblong, 2.4-3.1 by 3.3-4.6 cm, apex round, membranous, pubescent, reddish. *Leaves* sessile; lanceolate-oblong, 38.3-48.5 by 17.8-19.4 cm, base cuneate, apex acuminate-caudate, margin entire, upper surface glabrous, lower surface pubescent. *Inflorescence* a terminal spike, erect, 21.6-28.2 cm long; peduncle 5.5-7.6 cm long, glabrous; bracts lax, folded, oblong, 4.3-4.5 by 1.4-1.8 cm, apex acute, glabrous, greenish, each subtending a cincinnus of 2-4 flowers; primary bracteole tubular, 2.4-2.9 by 1.3-1.9 cm, apex acute, membranous, glabrous except apex hairy; second bracteole tubular, ca. 2.2 by 0.1-1.1 cm, apex acute, glabrous except apex hairy; third brac-



teole tubular, 1.5-1.8 cm. by 7-9 mm, apex acute, membranous, glabrous except apex hairy; fourth bracteole tubular, 1-1.4 cm by 4-5 mm membranous. *Flowers* white to pale yellow, fragrant; calyx tubular, 3.9-4.45 cm by 4-5 mm, apex acute to 3-dented, hairy; corolla tube slender, 5-7.6 cm by 2-3 mm, 3-lobed, lobes linear, 3.6-4.6 cm by 4-6 mm, apex hooded, yellowish; lateral staminodes linear-oblong, 4.2-4.3 cm by 4-5 mm, base attenuate into a 1-1.2 cm by 3-4 mm claw, pale salmon; labellum elliptic-obovate, *ca.* 4.3 by 2.5-2.8 cm, base attenuate into a 1-1.1 cm by 4-5 mm claw, apex deeply divided, 2.2-2.5 cm, white with pale salmon red patch at base; filament 3.2-3.4 cm long, salmon red; anther dorsified, 1.3-1.5 cm by 2-3 mm, base divaricate, yellowish; ovary 5-6 by 3-4 mm, 3-loculed, placentation axile, villose; epigynous glands 2, slender, 3-4 by 2-3 mm yellowish; stigma densely ciliate, green. *Fruits* not seen.

Thailand.—NORTHERN: Chiang Mai [Doi Angkhang]; Mae Hong Son [Doi Keiw Lom].

Distribution.—Endemic to Thailand.

Ecology.—Lower montane scrub at the altitude of 1,000-1,500 m.

Phenology.—Flowering from August-September, fruiting from October- November.

Vernacular name.—Ta Hoen Pa (ตาเหินป่า).

Note.—Four taxa of the *Hedychium* in Thailand, *H. muanwongyatiae*, *H. phuluangense*, *H. spicatum* var. *acuminatum* and *H. spicatum* var. *spicatum*, possess white elliptic-obovate labella and filaments shorter or as long as labella. *H. muenwongyatiae* is distinguished by its 2-4-flowered bracts, hairy calyx tubes and villous ovaries.

**12. *Hedychium neocarneum*** T.L. Wu, K. Larsen & Turland, *Novon* 10: 91. 2000 [Type: China : Yunnan, Simao, alt. 1000-1900 m; *Y.Y. Qian* 1832 (holotype SMAO)]; T.L. Wu & K. Larsen in Z.L. Wu & P.H. Raven, *Fl. China* 24: 376. 2000.—*H. carneum* Y.Y. Qian, *Acta Bot. Austron Sin.* 9: 48. 1994; Not Loddiges, *Bot. Cab.* 7: t. 693. 1823. Figures 6D, 6E and 6F.

Terrestrial, perennial herb. *Pseudostems* 0.6-1.5 m high, leaf sheaths greenish, bladeless sheaths 2-4. *Ligule* oblong, 2.3-4.0 by 1.3-2.8 cm, apex bilobed-rounded, membranous, pubescent, greenish. *Leaves* sessile; blade elliptic-oblong, 16.5-32.4 by 7.2-12 cm, base cuneate, apex acute-acuminate, margin entire-slightly undulate, upper surface glabrous, lower surface pubescent. *Inflorescence* a terminal spike, erect, 11.2-24.5 cm long; peduncle 3.3-4.8 cm long, hairy; bracts, folded, green, obovate-lanceolate, 3.4-4.2 by 1.6-2.8 cm, apex acute, pubescent, each subtending a cincinnus of 2-4 flowers; first bracteole ovate-broadly ovate, 2.3-3 cm by 6-7 mm, apex acute, pubescent, greenish; second bracteole ovate, 1.3-1.6 cm by 4-8 mm, apex acute, pubescent; *Flowers* white to pale yellow, fragrant; calyx tubular, 3.9-4.6 by 0.3-0.4 cm, apex 3-dented, pubescent except apex; corolla tube slender, 5.3-5.8 cm by *ca.* 3 mm, 3-lobed, lobes linear, 3.7-5 cm by 2-3 mm,



apex hooded, yellowish; lateral staminodes oblanceolate, 2.8-3.3 cm by 4-5 mm, base attenuate into a 3-5 by 2-3 mm claw, apex rounded; labellum elliptic-suborbicular, 2.4-2.6 by 1.5-2.4 cm, base attenuate into 6-8 by 3-4 mm claw, white with yellow-red patch at base, apex 2-cleft, 0.4-1 cm; filament pale salmon red, 4.1-5.3 cm long; anther dorsifixed, base divaricate, 1.1-1.2 cm by 2-3 mm, yellowish; ovary 4-5 by 3-4 mm, 3-loculed, placentation axile, pubescent; epigynous glands 2, slender, ca. 3 by 1 mm, yellowish; stigma densely ciliate, green. *Fruits* ovoid to oblong, 2.7-3 by 2.1-2.2 cm, pubescent, green. *Seeds* numerous, ellipsoid to globose, 4-9 by 4-6 mm, reddish orange.

Thailand.-NORTHERN: Nan [Doi Phu Kha National Park]; Pitsanulok [Phu Hin Rong Kla]; NORTH- EASTERN: Loei [Phu Luang Wildlife Sanctuary; Phu Ruea National Park].



Figure 6

A. B. & C. *H. muanwongyathiae* Picheans. & Wongsuwan (A. Ligule B. Inflorescence C. Close-up flowers).  
D. E. & F. *H. neocarneum* T.L. Wu (D. Inflorescence E. Close-up flowers F. Infructescence). Photographed by  
Pornpimon Wongsuwan.



Distribution.—China (Simao Xian) and Laos (Champasak).

Ecology.—Lower montane scrub, at the altitude of 1,000-1,500 m.

Phenology.—Flowering from June-August, fruiting from July-September.

Note.—This species can be recognized by its oblanceolate staminodes, elliptic-suborbicular labellum with yellow-red patch at base, 2-cleft apex and pale salmon red filament, twice as long as the labellum.

**13. *Hedychium pauciflorum*** S.Q. Tomg, Acta Bot. Yunnan. 8: 43. 1986; T.L. Wu & K. Larsen in Z.L. Wu & P.H. Raven, Fl. China 24 : 55. 2000.—*H. thianum* Mookamul & Pichens., Folia Malaysiana 6: 18-19, 21, 24-25; Figs. 1, 3-6. 2005 [Type: Thailand: Chiang Mai, Doi Inthanon; Mookamul & Pichensoonthon 588 (holotype BKF, paratypes SING, PEK)].

Epiphytic, perennial herb. *Pseudostems* 35.5-60 cm high, leaf sheaths green, bladeless sheaths 2-3. *Ligule* shortly oblong, 2-7 mm long, apex bilobed, lobe rounded, membranous, glabrous, greenish. *Leaves* sessile, blade elliptic-oblong, 24.9-31.7 by 7-7.2 cm, base cuneate, apex acuminate, margin slightly undulate, both surfaces glabrous. *Inflorescence* terminal spike, erect, 7.4-15.3 cm long, laxly few-flowered; peduncle 3.7-5.1 cm long, glabrous; bract lanceolate-oblong, 1.6-2 by 0.9-1 cm, apex acute or rounded, glabrous, green, each subtending a cincinnus of 1 flower; bracteole oblong, 1.3-1.5 cm by 5-6 mm, apex acute, membranous. *Flowers* white to pale yellow; calyx tubular, 1.7-1.8 cm by 2-3 mm, apex emarginate-acute membranous; corolla tube, 3.9-4.1 cm long, 3-lobed, lobe linear, 2.1-2.4 cm by 2-3 mm; lateral staminodes narrowly lanceolate-oblong, 1.6-1.7 cm by 2-4 mm; labellum narrowly elliptic-oblong, 1.5-1.7 cm by 3-4 mm, apex deeply divided to the base, lobe narrowly oblong, ca. 2 mm wide; filament yellowish, 1.9-2 cm long; anther dorsifixed, 0.8-1 cm long, base divaricate, yellowish; ovary, ca. 3 by 2 mm, glabrous, green; epigynous glands 2, ca. 2 mm long, yellowish; stigma densely ciliate, orange. *Fruits* globose, 1.2-1.5 by 1.2-1.3(-1.5) cm, trilocular, glabrous, green. *Seeds* numerous, aril reddish.

Thailand.—NORTHERN: Mae Hong Son [Pang Mapha, Ban Mae Aumong]; Chiang Mai [Doi Suthep, Sahn Goo-Puping area; Doi Suthep-Pui National Park]; Tak [Mae Moei National Park, road to Mon Kra Ting]; NORTH- EASTERN: Loei [Phu Luang Wildlife Sanctuary].

Distribution.—China (W Yunnan).

Ecology.—Lower montane pine-oak forest or lower montane scrub, at the altitude of ca. 1,000 m.



Phenology.—Flowering from June-July, fruiting from July-September.

Note.—This species can be easily distinguished by its lax, few-flowered-or-1-flowered bracts; deeply divided labellum with narrowly oblong lobes and the thoroughly glabrous plant.

**14. *Hedychium phluangense*** Picheans. & Wongsuwan, J. Jpn. Bot. 84: 330-337. 2009 [Type: Thailand: Northeastern, Changwat Loei, Phu Luang Wildlife Sanctuary, N 17 ° 16'36.18", E 101 ° 31'5.70", alt. 1,474 m, 26 July 2007; *Picheansoonthon & Wongsuwan* 060, (holotype BKF, isotypes BK, SING). Figure 7.

Terrestrial, perennial herb. *Pseudostems* 1.14-1.56 m high, bladeless sheaths 2-4. *Ligule* oblong, 1.8-2.1 by 1.2-1.6 cm, apex acute, membranous, pubescent, reddish. *Leaves* sessile, blade lanceolate-oblong, 42.1-50.3 by 9.8-13.4 cm, base cuneate, apex acute-acuminate, margin entire, both surfaces glabrous. *Inflorescence* a terminal spike, erect, 11.6-18.2 cm long; peduncle 5.4-10.6 cm long, glabrous; bracts lax, folded, oblong, 2.9-3.1 by 0.8-1.1 cm, apex acute, glabrous, greenish, each subtending a cincinnus of 1 flower; bracteole, oblong, 1.4-1.6 by 0.9-1.1 cm, apex acute, membranous. *Flowers* white to pale yellow, fragrant; calyx tubular, 2.7-2.8 cm by 3-4 mm, apex 3-lobed, glabrous; corolla tube slender, 5.2-6.1 by 0.2-0.3 cm, 3-lobed, lobes linear, 3.4-4.7 cm by 4-5 mm, apex hooded, yellowish; lateral staminodes oblanceolate-linear, 3.8-4.8 cm by 4-5 mm, base attenuate into a 1.6-1.9 cm by 2-3 mm claw; labellum elliptic, 2.9-3.5 by 1.5-1.6 cm, base attenuate into a 1.1-1.3 cm by 3-4 mm claw, apex bifid, 6-7 mm, white with pale salmon red patch at base; filament 3.3-4.1 cm long, salmon red; anther dorsifixed, 1.5-1.6 cm by 3-4 mm, base divaricate, salmon red; ovary 2-4 by 2-3 mm, 3-loculed, placentation axile, glabrous; epigynous glands 2, slender, 2-3 by ca. 0.5 mm, yellowish; stigma densely ciliate, green. *Fruits* suborbicular, 1.2-1.6 by 1.2-1.5 cm, glabrous, green. *Seeds* numerous, ellipsoid to orbicular, 4-5 by ca. 3 mm, reddish orange.

Thailand.—NORTH-EASTERN: Loei [Phu Luang Wildlife Sanctuary].

Distribution.—Endemic to Thailand.

Ecology.—Lower montane scrub, at the altitude of 1,000-1,500 m.



**Figure 7** *Hedychium phuluangense* Picheans. & Wongsuwan

A. Plant habit B. Inflorescence C. Infructescence. Photographed by Pornpimon Wongsuwan.

Phenology.—Flowering from July-August, fruiting from August-September.

Vernacular name.—Hong Hoen (หงส์เหิน).

**15. *Hedychium roxburghii*** Blume, Enum. Pl. Javae, 1 : 57. 1827 [Type: Indonesia: Java; *C.L. Blume* s.n. (Type L)]; Miq. Fl. Ind. Bat. 3 : 609. 1854; Horan. Monogr. 26. 1862; K. Schum. in Engl., Bot. Jahrb. 27 : 340. 1899, in Engl., Pflanzenr. 4(46) : 58. 1904; Fl. Java 3 : 64-67. 1968.—*H. spanogheanum* Wall., in Hook. J. Bot. Kew Gard. Misc. 5 : 375. 1853.—*Gandasulium roxburghii* (Blume) Kuntze, Revis. Gen. Pl. 2 : 690. 1891.—*G. spanogheanum* (Wall.), Kuntze, Revis. Gen. Pl. 2 : 690. 1891.—*H. samuiense* Siriruga & K. Larsen, Nord. J. Bot. 15: 301, Fig. 1 A-D. 1995. [Type : Thailand : Surat Thani, Koh Samui, on rocks in stream through evergreen forest, alt. *ca.* 100 m, 8 April 1927, *Kerr* 12540 (holotype K, isotypes AAU, BM, C, L)]. Figures 8, 9A, 9B and 9C.

Lithophytic or epiphytic, perennial herb. *Pseudostems* 50.1-133.5 cm high, leaf sheaths green, bladeless sheaths 1-2. *Ligule* oblong, 5.7-6.9 by 2.1-3.4 cm, apex obtuse-acute, membranous, pubescent, greenish. *Leaves* sessile to petiolate, 0.7-2.2 cm; blade oblong, 38.9-49.7 by 8.6-14.2 cm, base cuneate, apex acute, margin slightly undulate, lower surface glabrous. *Inflorescence* a terminal spike, erect, 10.6-45.2 cm long; peduncle 3.5-9.2 cm long, pubescent; bracts lax, folded, triangular 2.2-2.5 by 1.1-1.4 cm,



apex acute, pilose, green, each subtending a cincinnus of 2-4(-8) flowers; primary bracteole, triangular, 1.5-1.8 by 1.1-1.2 cm, apex acute, membranous, pubescent, yellowish to brownish; second bracteole, triangular, 1.4-1.6 cm by 7-8 mm, apex acute to 2-dentate, membranous, pubescent, yellowish or brownish; third bracteole, triangular, 1.2-1.3 cm by 5-6 mm, apex acute, membranous, pubescent, yellowish or brownish; fourth bracteole, triangular, 0.8-1 cm by 2-4 mm, apex acute, membranous, pubescent, yellowish or brownish. *Flowers* white to pale yellow, fragrant; calyx tubular, 3.8-5.3 cm by 3-4 mm, apex acute to 3-dentate; corolla tube slender, 6.5-8.3 cm by *ca.* 3 mm, 3-lobed, lobes linear, 4.7-5.3 cm by 3-4 mm, apex hooded, yellowish; lateral staminodes narrowly lanceolate-oblong or spatulate, 4.8-5.2 cm by 5-8 mm, base attenuate into a 0.6-1.4 cm by 2-3 mm claw; labellum ovate to suborbicular, white with pale greenish patch at base, 4.1-4.3 by 1.9-2.2 cm, base attenuate into *ca.* 7.5 by 3-4 mm claw, apex 2-cleft, 2.5-2.6 cm; filament 5.2-8.9 cm long, salmon red; anther dorsifixed, 6-8 by 3-4 mm, base divaricate, salmon red; ovary oblong, 3.5-5 by 2-3 mm, 3-loculed, placentation axile, pubescent; epigynous glands 2, slender, *ca.* 3 by 0.5 mm, yellowish; stigma densely ciliate, green. *Fruits* obovoid to oblong, 2.8-3.2 by 1.3-1.5 cm, pubescent, scarlet. *Seeds* numerous, ellipsoid to oblong, 0.4-1 cm by 4-5 mm, aril reddish.

Thailand.-PENINSULAR: Phang-Nga [Kapong]; Ranong [Khlung Naka Wildlife Sanctuary]; Suratthani [Ko Samui].

Distribution.-Indonesia (Java).

Ecology.-On rocks or trees near stream in tropical evergreen rain forest, at the altitude of *ca.* 141 m.

Phenology.-Flowering from April-May, fruiting from May-June.

Vernacular name.-Wan Chai Dam (ว่านใจดำ)

Note.-The flowers of this plant appear earlier in summer to early rainy season.

**16. *Hedycium siamense*** Picheans. & Wongsuwan [Type: Thailand: Ranong, Klong Naka Wildlife Sanctuary, Mueng Chone, N 09° 19.082', E 98° 30.943', alt. 943 m, 21 November 2008; *Picheansoonthon & Wongsuwan* 73, in spirit no. 32 (holotype BKF)]. Figures 9D, 9E and 9CF.

Epiphytic, perennial herb with tuberous rhizomes. *Pseudostems* 48-81 cm high, leaf sheaths green, bladeless sheaths 1-2. Ligule oblong, 5.7-6.4 by 2.2-2.8 cm, apex acute-acuminate, membranous, glabrous, pale greenish. *Leaves* elliptic-lanceolate, 22.2-27.5 by 9.9-10.5 cm, base cuneate, apex acute to shortly acuminate, margin slightly undulate, both surfaces glabrous.



*Inflorescence* a terminal spike, cylindrical, erect, *ca.* 14.5 cm long, hairy; peduncle *ca.* 5.3 cm long, hairy; bracts imbricate, overlapping, broadly ovate, 5.5-5.6 by 3.7-4.1 cm, apex obtuse-acute, green with brownish, lower half sparsely hairy, each subtending a cincinnus of 1 flower; bracteoles tubular, 5.2-5.4 by 2.1-2.3 cm, apex acute, split on one side to a depth of 1.3-1.5 cm, hairy, greenish. *Flowers* white; calyx tube slender 4.4-4.6 cm long, apex acute or 2-dented, hairy; corolla tube 9.4-10.5 cm by 3-4 mm, 3-lobed, lobe linear, 4.4-5.4 cm by 4-5 mm, apex hooded, lower half hairy; lateral staminodes narrowly lanceolate-oblong, 3.8-4.5 cm by 5-6 mm. apex emarginate; labellum shorter than staminodes, obovate, 3.2-3.4 by 1.9-2.2 cm, base attenuate into a 0.8-1.2 cm by *ca.* 3 mm claw, apex bilobed; filament 4.6-5.5 cm long, anthers dorsifixed, 0.9-1 cm long, base divaricate, yellowish; ovary *ca.* 1.3 cm by 7-8 mm, brownish, hairy; epigynous glands 2, *ca.* 3 mm long, yellowish; stigma densely ciliate, greenish. *Fruits* broadly ellipsoid to broadly ovoid, (3.1-) 3.3-4.4 by (1.9-)2.2-2.8 cm, trilobed, hairy, greenish, crowned with persistent calyx. *Seeds* numerous, oblong *ca.* 5 by 2-3 mm, reddish aril.

Thailand.—NORTHERN: Tak [Mae Sot]; PENINSULAR: Ranong [Khlung Naka Wildlife Sanctuary, Mueng Chone].

Distribution.—Peninsular Malaysia, Indonesia (Sumatra).

Ecology.—Tropical evergreen rain forest, at the altitude of *ca.* 900 m.



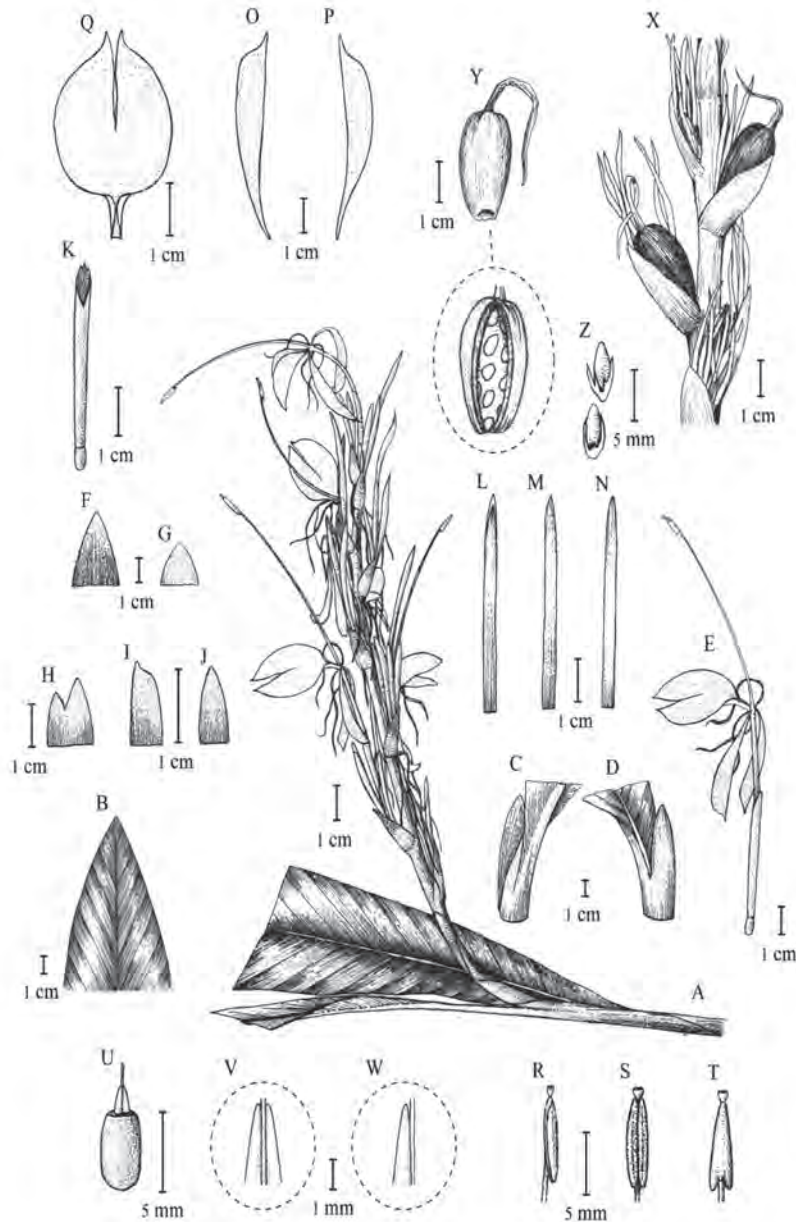


Figure 8 *Hedychium roxburghii* Blume

A. a flowering top with a leaf and an inflorescence. B. leaf apex. C. & D. ligule (side and rear views). E. flower. F. bract. G. first bracteole. H. second bracteole. I. third bracteole. J. fourth bracteole. K. calyx tube and ovary. L. dorsal corolla lobe. M. & N. lateral corolla lobes. O. & P. staminodes. Q. labellum. R., S. & T. anther and stigma (side, front and rear views). U. ovary and epigynous glands. V. & W. epigynous glands (rear and side views). X. inflorescence. Y. fruit. Z. seeds. Drawn by Chalermchoke Boonchit.

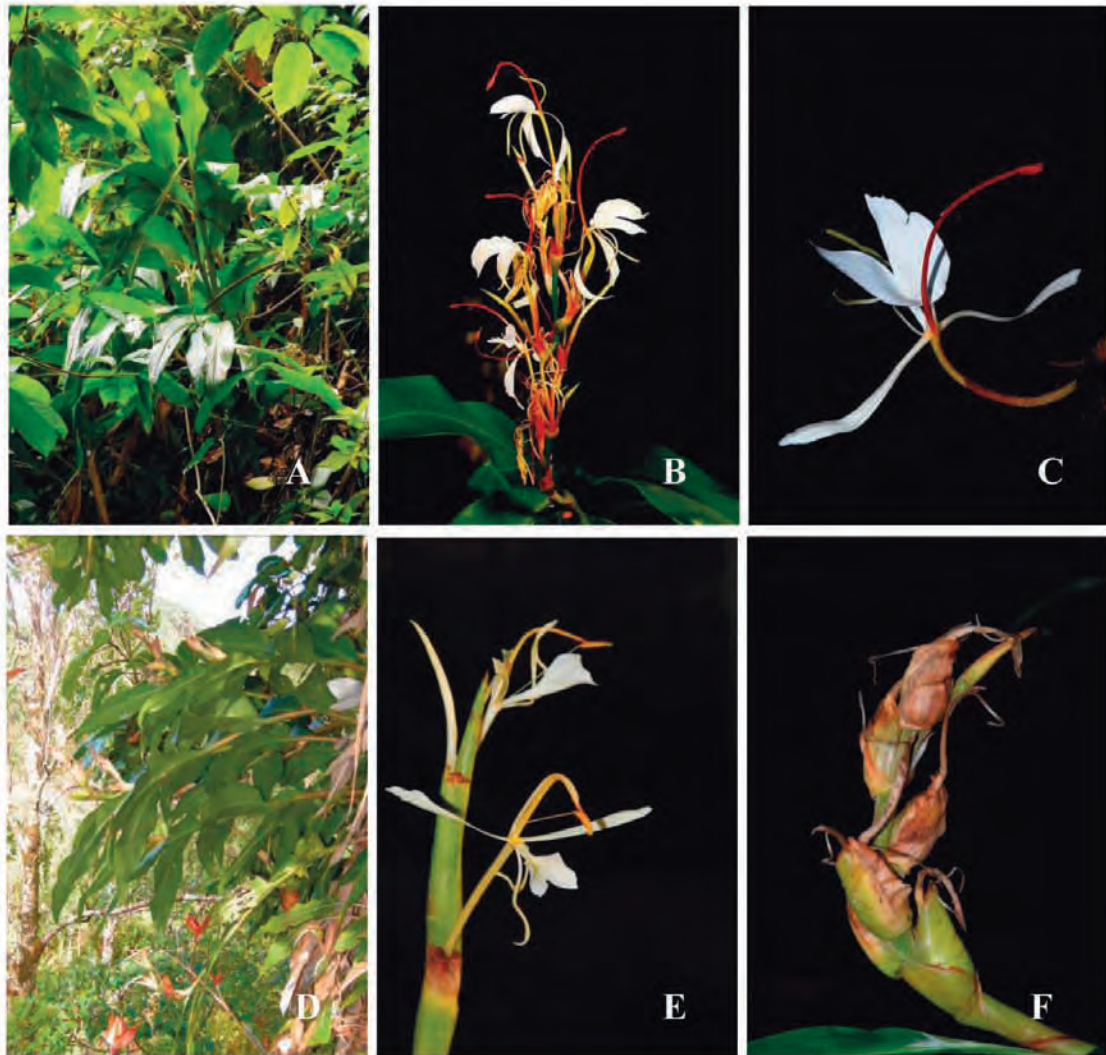


FIGURE 9

A, B. & C. *H. ROXBURGHII* BLUME (A. PLANT HABIT. B. INFLORESCENCE. C. CLOSE-UP FLOWER). D, E. & F. *H. SIAMENSE* PICHEANS. & WONGSUWAN (A. PLANT HABIT. B. INFLORESCENCE. C. INFRUCTESCENCE). PHOTOGRAPHED BY PORNPIMON WONGSUWAN (A - C AND E - F) AND SUPACHAI KOONTERM (D).



Phenology.—Flowering in November, fruiting from November-December.

Vernacular name.—

Note.—This species can be easily recognized by its cylindrical, imbricate bract, strictly 1-flowered bract and hairy ovary.

**17. *Hedychium speciosum*** Wall. in Roxb., Fl. Ind. 1 : 13. 1820 [Type : India : Silhet, Gomez; in Wallich Cat. no. 6550 (lectotype K)]; in Pl. As. Rar. 3 : 51. t. 285. 1832; Baker in Hook.f., Fl. Br. Ind. 6: 231. 1894; K. Schum. in Engl., Pflanzenr. 4(46) : 54. 1904.—*H. gardnerianum* Wall. in Kew J. Bot. 5: 369. 1853.—*H. gardnerianum* var. *bitoran* Monogr. 25. 1862.—*Gamochilus speciosus* (Wall.) Lestib. in Ann. Sc. Nat. 2. ser. 15: 341. 1841.—*Gandasulium speciosus* (Wall.) Kuntze, Revis. Gen. Pl. 2 : 690. 1891.

Terrestrial, perennial herb. *Pseudostems* 1.1-1.5 m high, bladeless sheaths 2-3. *Ligule* oblong, 2.4-2.8 by 1.9-2.3 cm, apex obtuse-acute, membranous, hairy, reddish. *Leaves* sessile or petiolate 1.5-2 cm; blade lanceolate-oblong, 35.7-41.9 by 10.9-11.4 cm, base cuneate, apex acuminate, margin slightly undulate, upper surface glabrous, lower surface hairy along midrib. *Inflorescence* a terminal spike, erect, 6.6-9.8 cm long; peduncle 3.4-3.7 cm long, glabrous; bracts dented, folded, oblong, 2.5-2.8 by 0.8-1 cm, apex acute, pubescent, greenish, each subtending a cincinnus of 1-2 flowers; bracteole oblong, 1.2-1.5 cm by ca. 8 mm, apex acute, membranous, pubescent, second bracteole oblong, 1-1.2 cm by ca. 4 mm, apex acute, membranous, pubescent. *Flowers* white; calyx tubular, 3.1-3.2 cm by 3-4 mm, apex acute to 2-3-dented, pubescent; corolla tube slender, ca. 4.4 cm by 3 mm, 3-lobed, lobes linear 4.4-4.7 cm by 2-3 mm, apex hooded, yellowish; lateral staminodes oblanceolate, 3.6-3.7 cm by ca. 5 mm; labellum elliptic, 3.7-3.9 by 1.1-1.3 cm, base attenuate into a 7-1 cm by ca. 2 mm claw, apex bifid ca. 9 mm; filament 6-6.3 cm long, yellowish; anther dorsifixed, 1.4-1.6 cm by 3-4 mm, base divaricate, yellow; ovary 3-4 by ca. 2 mm, 3-loculed, placentation axile, hairy; epigynous glands 2, slender, ca. 2 by 1-2 mm yellowish; stigma densely ciliate, green. *Fruits* subglobose, 1.1-1.3 by ca. 1.2 cm, glabrous, green. *Seeds* numerous, ellipsoid, 3-4 by ca. 2 mm, aril reddish.

Thailand.—NORTHERN: Chiang Mai [Doi Suthep-Pui National Park, Pang Ku]; Nan [Doi Phu Kha National Park, Phu Wae].

Distribution.—India (Silhet).

Ecology.—Lower montane scrub, at the altitude of 1,000-1,750 m.

Phenology.—Flowering from July-August, fruiting from August-September.

Vernacular name.—



Note.—*H. speciosum* can be easily recognized by its 1-2-flowered bracts, hairy calyx tubes, elliptic labellum with emarginate-bifid apex, filament twice as long as the labellum and hairy ovary.

**18. *Hedychium spicatum*** Sm. in A. Ress Cycl. 17: 8. 1811 [Type: Nepal; *Wallich* s.n.]; Monandr. Pl. t. 48. 1828; Wall. in Kew J. Bot. 5: 328. 1853; Horan., Monogr.: 24. 1862; Baker. in Hook.f., Fl. Br. Ind. 6: 227. 1892; K. Schum. in Engl., Pflanzenr. 4(46): 50. 1904; T.L. Wu & K. Larsen in Z.L. Wu & P.H. Raven, Fl. China 24 : 54. 2000.—*H. roxburghii* Sieb. ex Lindl. in J. Hort. Soc. 7: 281. 1852;—*H. sieboldii* Wall. in Kew J. Bot. 5: 371. 1853;—*H. album* Buch.-Ham. ex Wall. in Kew J. Bot. 5: 328. 1853;—*H. flavescens* Lodd. ex Lindl., J. Hort. Soc. London, 7 : 281. 1852;—*H. tavoyanum* Horan., Prodr. Monogr. Scitam.: 26. 1862.—*Gandasulium sieboldii* (Wall.) Kuntze, Revis. Gen. Pl. 2: 690. 1891;—*G. simile* (Blume) Kuntze, Revis. Gen. Pl. 2: 690. 1891.

#### KEY TO THE VARIETIES

- |                                         |                        |
|-----------------------------------------|------------------------|
| 1. Inflorescences densely many-flowered | var. <b>spicatum</b>   |
| 1. Inflorescences laxly few-flowered    | var. <b>acuminatum</b> |

#### var. **spicatum**

Terrestrial, perennial herb. *Pseudostems* 48.6-166.3 cm high, bladeless sheaths 2-4. *Ligule* oblong, 1.0-2.2 by 2.2-2.8 cm, membranous, pubescent to sparsely pubescent, apex emarginate or acute. *Leaves* elliptic-oblong, 28.1-46.4 by 9.4-12.2 cm, base cuneate, apex acute-acuminate, margin slightly undulate, upper surface glabrous, lower surface glabrous or sparsely hairy. *Inflorescence* a terminal spike, erect, 23.1-34.2 cm long; peduncle 6.6-12.2 cm long, glabrous; bracts lax, folded, greenish, lanceolate-oblong, 2.4-4.6 by 1.0-1.9 cm, apex acute, glabrous or sparsely hairy, each subtending a cincinnus of 1 flower; bracteole tubular, (1.3-)2.1-2.9 cm by 4-6 mm, apex acute, membranous, glabrous or sparsely hairy. *Flowers* white to pale yellow, fragrant; calyx tubular, (2.8-)3.1-4.9 cm by 4-5 mm, apex acute to 3-lobed, glabrous or sparsely hairy; corolla tube slender, 5.2-7.3 (-8.1) cm by 2-3 mm, 3-lobed, lobes linear, 3.5-4.8 cm by 3-6 mm apex hooded, yellowish; lateral staminodes oblanceolate-oblong, (4.6-)5.4-5.9 cm by 3-6(-7) mm, base attenuate into a 0.9-1.2 cm by 2-3 mm claw; labellum obovate, 5-5.3(-6) by (1.9-)3-3.1 cm, base attenuate into a 0.9-2 cm by 3-4 mm claw, apex bilobed, each lobe elliptic, white with pale salmon red patch at base; filament 1.9-2.4 cm long, salmon red; anther dorsifixed, 1.2-1.8 cm by 3-4 mm base divaricate, salmon red; ovary 4-5 by 3-5 mm, 3-loculed, placentation axile, hairy; epigynous glands 2, slender, ca. 2 by 1 mm, yellowish; stigma densely ciliate, green. *Fruits* ellipsoid-oblong, 1.8-2.9 by 1.3-1.9 cm, hairy, greenish. *Seeds* numerous, ellipsoid-orbicular, 4-5 by ca. 3 mm, reddish orange.



Thailand.-NORTHERN: Mae Hong Son [Pai, Doi Kiew Lom; Pai, Doi Phak Kood]; Chiang Mai [Doi Chiang Dao Wildlife Sanctuary]; Chiang Rai [Doi Hua Chang].

Distribution.-Nepal, Bhutan, India (Sikkim; Nagaland, Zunheboto, Naltoqa), China (Guizhou, Sichuan, Xizang, Yunnan) and Myanmar.

Ecology.-Upper montane scrub or lower montane scrub at the altitude of 900-2,084 m.

Phenology.-Flowering from July-August, fruiting from September-November.

Note.-*H. spicatum* possesses distinctive filaments shorter than the labella, white flower with pale salmon red patch at base, obovate labellum with deeply divided apex.

var. **acuminatum** (Roscoe) Wall. in Hooker's J. Bot. Kew Gard. Misc. 5: 328. 1853; T.L. Wu & K. Larsen in Z.L. Wu & P.H. Raven, Fl. China 24 : 54. 2000.-*H. acuminatum* Roscoe, Monandr. Pl. Scitam. t. 47. 1824 [Type : Kumnon to Sikkim, alt. ca. 2300 m];-*H. spicatum* var. *khasianum* C.B. Clarke ex Baker. in Hook.f., Fl. Br. Ind. 6: 227. 1894 [Type: India: Khasia Hills; Clarke s.n.];-*H. spicatum* var. *trilobum* (Wall. ex Roscoe) Wall. in Hooker's J. Bot. Kew Gard. Misc. 5: 328. 1853;-*H. trilobum* Wall. ex Roscoe, Monandr. Pl. Scitam. t. 48. 1826 [Type: Nepal; Wallich s.n.].

Epiphytic, perennial herb. *Pseudostems* 63.4-86.6 cm high, bladeless sheaths 2-4. *Ligule* oblong, 1.8-2.1 by 1.2-1.6 cm, apex acute, membranous, pubescent, reddish. *Leaves* sessile or petiolate, 0.9-1.3 cm long; blade elliptic, 33.1-34.3 by 8.3-8.6 cm, base oblique-cuneate, apex acuminate, margin slightly undulate, both surfaces glabrous. *Inflorescence* a terminal spike, erect, 11.6-18.2 cm long; peduncle 5.4-10.6 cm long, glabrous; bracts lax, few-flowered, folded, oblong, 1.7-4.2 by 1.1-1.7 cm, apex acute, glabrous, greenish, each subtending a cincinnus of 1 flower; bracteole oblong, 1.3-2.9 cm by 4-6 cm, apex acute, membranous. *Flowers* white to pale yellow, fragrant; calyx tubular, 3.1-5.8 cm by 4-5 mm, apex acute to 3-lobed, glabrous; corolla tube slender, 5.2-8.6 cm by 2-3 mm, 3-lobed, lobes linear 4-5.6 cm by 4-5 mm, apex hooded, yellowish; lateral staminodes oblanceolate-linear, 3.8-4.8 cm by 4-5 mm, base attenuate into a 1.6-1.9 cm by 2-3 mm claw; labellum obovate-elliptic, 2.9-3.5 by 1.5-1.5 cm, base attenuate into a 1.1-1.3 cm by 3-4 mm claw, apex deeply divided, 6-7 mm, white with pale salmon red patch at base; filament 3.3-4.1 cm long, salmon red; anther dorsifixed, 1.5-1.6 cm by 3-4 mm, base divaricate, salmon red; ovary 2-4 by 2-3 mm, 3-loculed, placentation axile, glabrous; epigynous glands 2, slender, 2-3 by ca. 0.5 mm yellowish; stigma densely ciliate, green. *Fruits* suborbicular, 1.2-1.6 by 1.2-1.5 cm, glabrous, greenish. *Seeds* numerous, ellipsoid-orbicular, 4-5 by ca. 3 mm, reddish-orange.



Thailand.—NORTHERN: Mae Hong Son [Pai, Doi Kiew Lom]; Chiang Mai [Doi Suthep-Pui National Park]; Nan [Doi Phu Kha National Park, Doi Phu Wae].

Distribution.—Nepal, Bhutan, India (Sikkim), China (Xizang, Yunnan).

Ecology.—Lower montane scrub, at the altitude of 900-1,000 m.

Phenology.—Flowering from August-September.

Note.—This species is similar to *H. spicatum* var. *spicatum* but differs in its lax and few-flowered inflorescens, and its epiphytic habit.

**19. *Hedychium stenopetalum*** Lodd., Bot. Cab. 20: t. 1902. 1833; Baker in Hook.f., Fl. Br. Ind. 6: 231. 1894; K. Schum. in Engl., Pflanzenr. 4(46): 58. 1904.—*H. barbatum* Wall. in Kew J. Bot. 5: 373. 1853.—*H. elatum* Horan. Monogr. 25. 1862.—*H. coccineum* Wall. in Kew J., l.c.—*H. elatum* R. Br. var. *oryale* Horan., Monogr 25. 1862.

Terrestrial, perennial herb. *Pseudostems* 0.7-2.5 m high, leaf sheaths greenish, bladeless sheaths 2-4. *Ligule* oblong, 4.3-5.9 by 5-5.8 cm, apex rounded—emarginate, membranous, hairy, greenish or reddish. *Leaves* petiolate, blade lanceolate-oblong, 36.2-48.3 by 24.1-32.4 cm, base cuneate, apex acuminate to caudate, margin entire to slightly undulate, upper surface glabrous, lower surface hairy. *Inflorescence* a terminal spike, erect, 36.7-52.3 cm long, hairy; peduncle 12.5-21.1 cm long, hairy; bracts lax, folded, green, lanceolate to obovate, 6-6.9 by 2.3-3 cm, hairy, each subtending a cincinnus of (2-3)-7-11 flowers, apex acute; first bracteole, triangular, 4.9-5.3 by 1.7-2.2 cm, apex acute, membranous, pubescent; second bracteole triangular, 3.5-3.8 by 1.3-1.5 cm, apex acute, membranous, pubescent; third bracteole triangular, 2.7-2.9 by 1.5-1.7 cm, apex acute, membranous, pubescent; fourth bracteole triangular, 2.7-2.8 by 1.4-1.6 cm, apex acute, membranous pubescent; fifth bracteole triangular, 2.2-2.8 by 1.3-1.4 cm, apex acute, membranous pubescent; sixth bracteole triangular, 2.2-2.7 cm by 8-9 mm, apex acute, membranous pubescent; seventh bracteole triangular, 1.9-2.5 cm by 7-9 mm, apex acute, membranous pubescent. *Flowers* white; calyx tubular, 6-6.2 cm by 3-4 mm, pubescent, apex 3-dent; corolla tube slender, 6.2-6.4 cm by ca. 3 mm, 3-lobed, lobes linear, apex hooded, thorn-like, white, 5.4-5.6 cm by 4-5 mm; lateral staminodes oblanceolate-oblong, 3.2-4.2 by 0.5-1 cm; labellum sub-orbicular to orbicular, 3-4.2 by 2.5-3.4 cm, base attenuate into a 0.7-1.4 cm by 4-6 mm claw, white with pale greenish patch at base, apex 2-cleft, 1.3-1.5 cm; filament 4.9-7.4 cm long, yellowish; anther dorsifixed, 1.2-1.5 cm by 2-3 mm base divaricate, yellowish; ovary pubescent, 4-5 by 6-8 mm, 3-loculed, placentation axile, epigynous glands 2, slender, 5-6 by ca. 1 mm, yellowish; stigma densely ciliate, green. *Fruits* ovoid to oblong, 3.2-3.9 by 1.4-1.8 cm, green, hairy. *Seeds* numerous, ellipsoid to sub-globose, 5-6 by 4-5 mm, reddish orange.



Thailand.—NORTHERN: Mae Hong Son [Pang Mapha; Pai, Doi Kiew Lom]; Chiang Mai [Doi Suthep-Pui National Park; Doi Angkhang; Doi Chiang Dao Wildlife Sanctuary; Doi Inthanon National Park].

Distribution.—Nepal, Bhutan, India (Assam), China (Yunnan), Myanmar, Vietnam.

Ecology.—Lower montane scrub or lower montane pine-oak forest, at the altitude of 1,000-1,500 m.

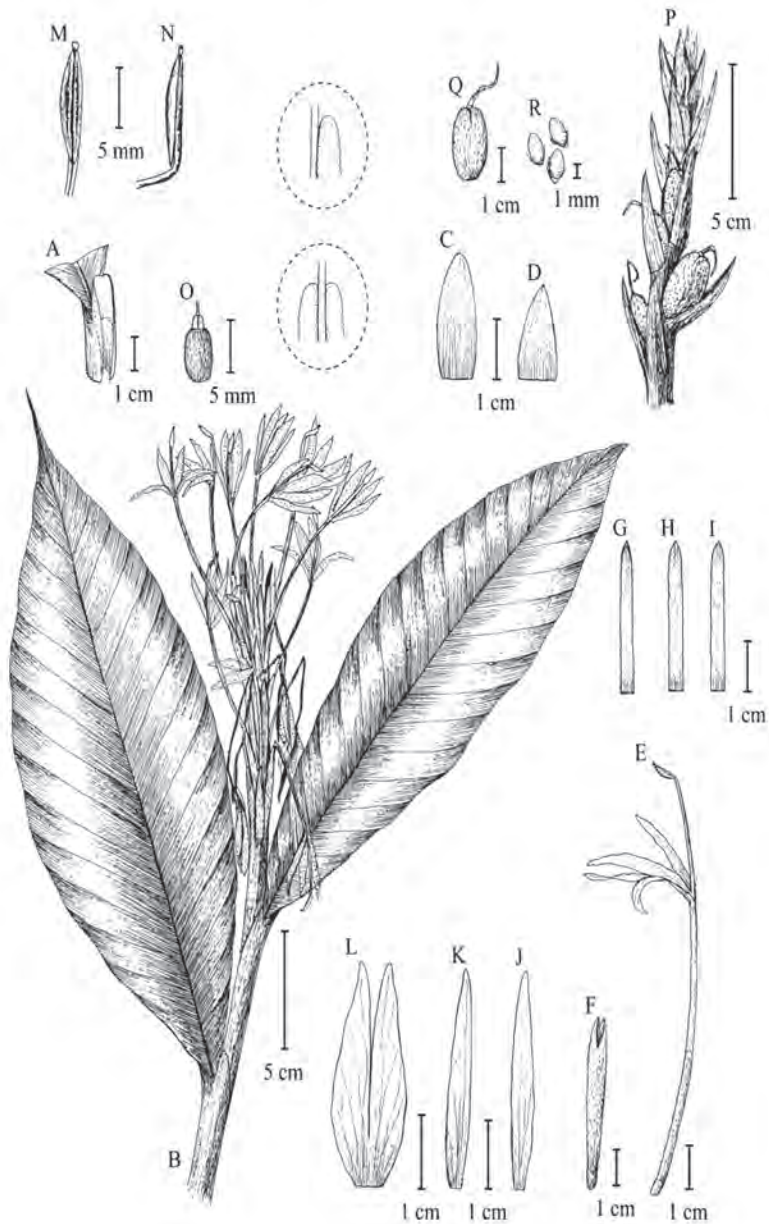
Phenology.—Flowering from August-September, fruiting from September-November.

Vernacular name.—Kaw Ya-ea (คอย่าอี), (Mae Hong Son).

Note.—This taxon is one of the *Hedychium* species which can grow well up to 1.5-2.5 m high. The inflorescence is exceptionally long (up to 52.3 cm) with a hairy rachis and 7-11 white flowers per bract. Young inflorescence is edible.

**20. *Hedychium tomentosum*** Sirirugsa & K. Larsen, Nord. J. Bot. 15: 303, Fig. 1 E-I. 1995 [Type: Thailand: Chiang Mai, Doi Chiang Dao; *Beusekom & Phengkklai* 1348 (holotype C)]. Figures 10 and 11.

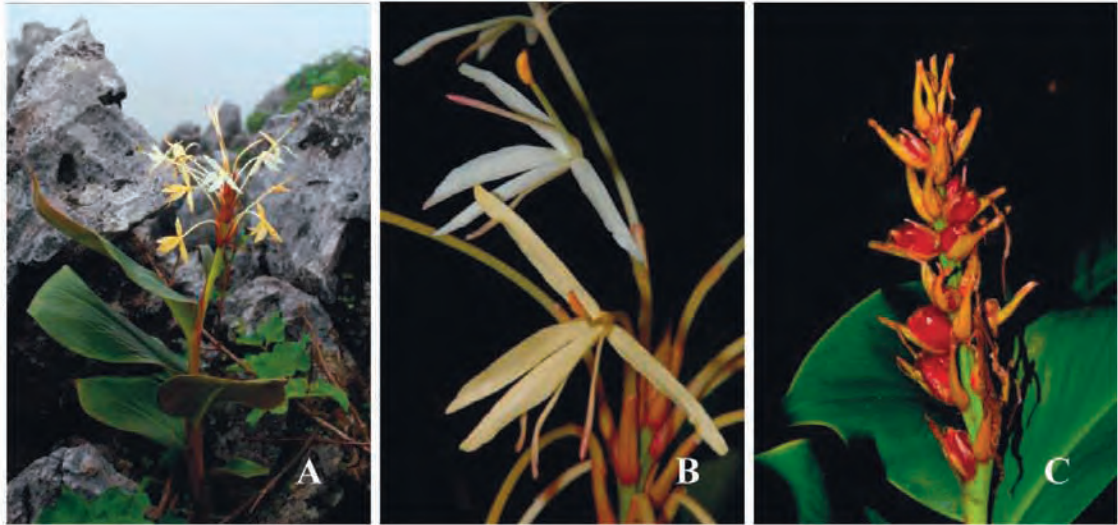
Epilithic, perennial herb. *Pseudostems* 15.0-58.4 cm high, leaf sheaths red, bladeless sheaths 2-3, tomentose. *Ligule* oblong, 1.4-2.2 by 1.2-3.1 cm, apex rounded, membranous, tomentose, reddish. *Leaves* sessile, blade elliptic-broadly elliptic, 18.9-32.8 by 9.2-15.1 cm, base cuneate-obtuse, apex acute-acuminate, margin entire-slightly undulate, upper surface glabrous, lower surface tomentose. Inflorescence a terminal spike, erect, 9.4-16.2 cm long, glabrous-pubescent; peduncle 5.2-6.8 cm long, glabrous-pubescent; bracts dense, folded, reddish or greenish, lanceolate-oblong, 2.3-2.9 cm by *ca.* 8 mm, apex acute-rounded, tomentose, each subtending a cincinnus of 1 flower; bracteole lanceolate-oblong, 1.3-1.7 cm by 7-9 mm, apex acute, tomentose, greenish or reddish. *Flowers* white to pale yellow, fragrant; calyx tubular, 3.2-3.7 cm by 3-4 mm, apex 2-3-dented, tomentose; corolla tube slender, 7.2-7.9 cm by 2-3 mm, 3-lobed, lobes linear, 3-3.2 cm by 4-5 mm, apex hooded, white-yellowish, sometime reddish; lateral staminodes lanceolate-oblong, 2.8-3.3 cm by 4-5 mm; labellum elliptic-lanceolate, 2.9-3.1 by 1.1-1.3 cm, apex deeply divided, margin entire to slightly undulate, white-yellowish; filament 3-3.2 cm long, white-pale yellow; anther dorsifixed, 7-8 by 3-4 mm, base divaricate, yellowish; ovary 4-5 by 2-3 mm, 3-loculed, placentation axile, tomentose; epigynous glands 2, *ca.* 3 mm long, yellowish; stigma *ca.* 1 by 1 mm, densely ciliate, green. *Fruits* ovoid-oblong, 2.1-2.5 by 1.5-1.8 cm, hairy, scarlet. Seeds numerous, ellipsoid, 3-4 by *ca.* 2 mm, aril white.



**Figure 10** *Hedychium tomentosum* Sirirugsa & K. Larsen

A. part of a leaf with a ligule. B. leaves and an inflorescence. C. bract. D. bracteoles. E. a flower with calyx and ovary. F. calyx tube and ovary. G. dorsal corolla lobe. H. & I. lateral corolla lobe, J. & K. staminodes. L. labellum. M. & N. anther and stigma (front and side views). O. ovary, epigynous glands and part of a style. P. inflorescence. Q. fruit. R. seeds. Drawn by Chalermchoke Boonchit.





**Figure 11** *Hedychium tomentosum* Sirirugsa & K. Larsen

A. a flowering top with a leaf and an inflorescence. B. Close-up flowers. C. Infructescence. Photographed by Pornpimon Wongsuwan.

Thailand.-NORTHERN: Chiang Mai [Doi Chiang Dao Wildlife Sanctuary].

Distribution.-Endemic to Thailand.

Ecology.-Lower montane oak forest or upper montane scrub at the altitude of 1,500-2,084 m.

Phenology.-Flowering from June-July, fruiting from July-August.

Vernacular name.-Ta Hoen Chiang Dao (ตาเหินเขียงดาว).

Note.- This species can be easily recognized by its tomentose lower leaf surface, elliptic-lanceolate labella with deeply divided apices, entire to slightly undulate margin and white-yellowish flowers.

**21. *Hedychium villosum*** Wall. in Roxb., Fl. Ind. 1: 12. 1820; Monandr. Pl. 6: 54. 1828; Wall. in Kew J. Bot. 5 : 329. 1853; Horan., Monogr.: 25. 1862; Baker in Hook.f., Fl. Br. Ind. 6: 228. 1894; K. Schum. in Engl., Pflanzenz. 4(46): 51. 1904; Gagnep. in Lecomte, Fl. Gén. I.-C. 6: 74. 1908; T.L. Wu & K. Larsen in Z.L. Wu & P.H. Raven, Fl. China 24: 375. 2000.

Terrestrial, epilithic or epiphytic, perennial herb. *Pseudostems* 24.1-143 cm high, leaf sheaths red, bladeless sheaths 3-5. *Ligule* oblong, 3.3-8.3 by 1.1-1.8 cm, apex acute, membranous, villous to pubescent, reddish. *Leaves* sessile or shortly petiolate, 4-7 mm long; blade lanceolate-oblong, 13.8-37.5 by 4.2-8.8 cm, base cuneate-oblique, apex acute, margin entire to slightly



undulate, upper surface glabrous, lower surface pubescent along midrib. *Inflorescence* a terminal spike, erect, 8.3-28.3 cm long; peduncle 1.8-2.6 cm long, hairy; bracts lax, folded, elliptic, 4.6-6.4 by 1.5-1.9 cm, apex acute, pubescent, reddish, each subtending a cincinnus of 1-3 flowers; first bracteole ovate-broadly ovate, 2.6-4.8 by 1.6-1.8 cm, apex acute, greenish or reddish; second bracteole ovate, 2.8-2.9 by 1-1.5 cm, apex acute; tertiary bracteole ovate, 2-2.6 cm by 8-9 mm, membranous. *Flowers* white to pale yellow, fragrant; calyx tubular, 4-4.4 cm by 3-4 mm, apex acute; corolla tube slender, 5.2-8.4 cm by 2-3 mm, 3-lobed, lobes linear, 3-4.1 cm by 2-3 mm, apex hooded, yellowish; lateral staminodes narrowly lanceolate-oblong, 3.3-3.5 cm by 6-8 mm, base attenuate into a 5-7 by 2-3 mm claw; labellum suborbicular to orbicular, 2.2-2.8 by 2.3-2.9 cm, base attenuate into a 5-9 by ca. 4 mm claw, apex 2-cleft, 4-7 mm, white with pale greenish patch at base; filament 3.9-5 cm long, salmon red; anther dorsifixed, 5-6 by 3-4 mm base divaricate, yellowish; ovary 3-4 by ca. 3 mm, 3-loculed, placentation axile, pubescent; epigynous glands 2, slender, ca. 3 by 0.5 mm yellowish; stigma densely ciliate, green. *Fruits* ovoid-oblong, 1.3-1.6 by 1.3-1.4 cm, pubescent, greenish. *Seeds* numerous, ellipsoid-orbicular, 0.4-1 cm by 4-5 mm, aril reddish orange.

Thailand.—NORTHERN: Chiang Rai [Doi Khun Nam Nang Non]; Chiang Mai [Doi Inthanon National Park; Doi Chiang Dao Wildlife Sanctuary, Doi Sam Phi Nong; Doi Suthep-Pui National Park]; Nan [Doi Phu Kha National Park, Phu Wae]; Pitsanulok [Phu Soi Dao National Park; Phu Hin Rongkla National Park]; NORTH-EASTERN: Loei [Phu Kradueng National Park Tham Tai waterfall; Phu Luang National Park; Phu Ruea National Park].

Distribution.—India, China (Guangdong, Guangxi, Hainan, Yunnan), Myanmar, Vietnam.

Ecology.—In lower montane rain forest or lower montane scrub on sand stone, at the altitude of 1,000-1,500 m.

Phenology.—Flowering from November-February.

Note.—*H. villosum* is related to *H. collinum* in its small anther (3-5 mm long) but differs in its villous ligules, bracts and bracteoles.

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# Art Therapy: Theory and Practice

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## **Historical Backgrounds**

Art therapy is a form of expressive therapy that uses art materials, within a professional relationship, for people who experience illness, trauma, or challenges in living, and people who seek personal development. Its psychotherapeutic modality is based on the disciplines of ‘art’ and ‘psychology’ involving Sigmund Freud’s psychoanalytic theory, relying on the human person’s symbolic expression as a means of communication as an alternative to verbal communication.

Albeit most art therapists regarded Margaret Naumburg, a psychologist in the United States, a person who coined the term art therapy in 1947<sup>(1)</sup>, Adrian Hill in Great Britain had already conceived the same oddity earlier in 1945<sup>(2)</sup>. And as well that the credit given to Nolan D.C. Lewis as a pioneer in initiating the practice of art as therapy for special cases of mentally disturbed subjects while working at the New York State Institute of Psychiatry of Columbia University in New York since 1925<sup>(3)</sup>; it was possibly that in 1922 Hans Prinzhorn introduced the development of art therapy beginning with the pictorial works of a mental patient and documented in a paper named “Artistry of the mentally ill” published by the Springer-Verlag company at New York, USA<sup>(4)</sup>. Edith Kramer,<sup>(5)</sup> another pioneer in the field of art therapy, worked mostly with children. Her work laid significant foundation for this field, which has grown significantly in the United States over the past 50 years.

At present, art therapy is included as a modality in alternative medicine in the treatment section of mentally disturbed subjects in most professional health institutions, especially in the Western countries. As for Thailand, it is rather amazing that almost all the pioneers in this particular field had been initiated by a number of lady psychologists, such as Umporn Prabgree,<sup>(6)</sup> Primprou Disyavanich<sup>(7)</sup>, and Somsri Kittipongpisal,<sup>(8)</sup> whose works appeared since 1977 onwards.



## Concepts and Theories

Literally, art therapy encompasses the use of art media and images, the creative process, and patient response to the products created for the treatment of psychiatric and psychological conditions, often as an adjunct to psychotherapy or rehabilitation. The term art therapy includes the usage of a wider spectrum of art media, e.g., music and drama, as therapeutic tools.

According to Edith Kramer, a renowned American art therapist, art therapy is conceived primarily as a means of supporting the ego, and constitutes an element in the therapeutic milieu that complements or supports psychotherapy.

While Nolan D.C. Lewis wrote in a foreword to the first edition of Margaret Naumburg's book, *An Introduction to Art Therapy: Studies of the "Free" Art Expression of Behavior Problem Children and Adolescents as a means of Diagnosis and Therapy (1947)* that "Spontaneous drawings as products of wishes: this manifest content in some respects covers or disguises unconscious underlying motives. A certain amount of freedom or release of tension is achieved in this way; it is an impulse to express to the self and to communicate to others by means of a special language a partial satisfaction of the underlying wish." Margaret Naumburg's concepts followed closely Nolan Lewis's ideology under the notion that the development of such "free" art expression is always associated with a planned use of the *transference* relationship. The transference content may not express the whole personality situation, but are filled with the neurotic suppression products of hostility or affection connected with one or more symptomatic trends and historical images which may amuse, haunt or distress the conscious mind of the patient. The transitional stages as well as the general progress of the emotional disorder are often presented in an interesting manner, becoming intelligible by means of the study of periodic or serial drawings. Through the analysis of the contents of these productions, ways are found of bringing into consciousness the underlying difficulties in a manner that shows the basic drives striving to satisfy the instinctive life, and thus objectification and socialization of previously poorly understood feelings and behavior become possible.

In brief, Naumburg concluded that "art therapy enables the patient to translate the interior images of his unconscious into pictorial projections; the creation of such symbolic forms establishes a primary basis of communication with the therapist" (1953).

Communication in the art therapy setting has a specific feature: the presence of the art object in the room creates a triangular relationship, where the patient and the therapist are on two corners of an imaginary triangle, and the image made by the patient is on the third corner. This



feature makes communication very flexible. In fact, the patient may communicate with the image itself (creative-expressive dimension) or the patient may communicate with the therapist through the symbolic space of the image (expressive-interactive dimension) or the patient may relate verbally and directly with the person of the art therapist (interactive-analytic dimension). Different art therapy training schools, and different art therapy interventions emphasize and use the three communicative dimensions in different ways.

Patients' creation of visual art, leading to non-verbal self disclosure, helps them get in touch with thoughts and feelings that are hidden from the conscious mind, the discipline of so-called expressive art therapy.

As of the present authors' understanding, art therapy is a form of psychotherapy that developed out of two main roots: art on one side, and psychoanalysis on the other side. It belongs to the group of "expressive-creative therapies" together with music therapy, dance-movement therapy, and drama therapy. Its objectives are both the strengthening of individual creativity and the expression and elaboration of the patients' thoughts and emotions.

On the other hand, the mechanism of art therapy action may be like the psychotherapy methodology of Edna Faa "the long exposure"<sup>(9)</sup> based on medical practice of homeopathy cum hormesis.

### **Art Therapy in Practice**

Art therapy is a form of expressive therapy that uses art materials, such as paints, chalk and markers. Art therapy combines traditional psychotherapeutic theories and techniques with an understanding of the psychological aspects of the creative process especially the affective properties of different art materials.

Nowadays, art therapy is practised in many countries, especially in the West, as an alternative means for treating mentally traumatized persons. The main objectives of treatment are the strengthening of individual creativity and the expression and elaboration of the patients' thoughts and emotions. The visual arts of drawing and painting are the most commonly practiced; sculpturing is a practical therapeutic form for dealing with blind patients.

In order to facilitate the expression of the internal world, art therapy practice involves offering the patient a white page and the freedom to choose any art material, and to work within a silent and peaceful environment. Regarding the art therapeutic process, the three elements, namely, image-making, the elaboration of images, and the relationship with the art therapist, are interconnected. They should never be used in isolation, and none of them



should be forgotten in clinical practice. It must be stressed that the results of treatment rely upon the process of creation and not the finished art product.

### **Methodology**

The objectives of art therapy and the conventional art practice are different. Art therapy focuses mainly on therapeutic benefit and not on the artistic achievement or personal skills; it emphasizes on the therapeutic process within the art. For effective practice, art therapists must follow the following framework.

1. Art Therapy Settings; either group or individual art therapy.

The settings should be easily accessible by the community experiencing natural disaster. A temporary room must be set up equipped with tables, chairs, and art materials.

2. Art Therapy Materials

Art materials such as pencils, charcoals, chalks, pastels, color markers, paints, brushes, palettes, drawing papers, scissors, etc., should be fully accessible during the art therapy sessions.

3. Art Therapy Sessions

Art therapists have to present art materials to their clients, and give directive to them and better is to let them draw or paint freely from their minds. Listen to the clients' narrative or stories about their art products. Responses to art making process and product, and verbal interactions of the clients.

4. Art Therapy Evaluations

Art therapists must observe the process, the client's dynamic behavior, and make notes about them, and the responses of the client during the art therapy session. Art products (drawings and paintings) are then use for interpretation analysis by art therapists after each sessions.

As for this practicing modality, techniques may vary from one practitioner to another. For a standard practice, clients would usually apply for art therapy services through appointments. In the first encounter, clients must be introduced to art materials that are available for them. Next, they should explore any art materials that they find comfortable with in making their artworks. Each art making session takes about one to one and half hour and the session includes the client's expression of internal world through symbolic





images, the narrative part on the art work, and more drawings or paintings if the client wishes. These art therapy visits continue as long as they like, or may be ended by the therapists based on the on-going evaluations, in particular at times when the therapists have made the decision that their clients should take other form of treatments.

### **A Case Study:**

Lertsiri Bovornkitti et al.(10) in 2006 took the opportunity of a catastrophic event that occurred in Uttaradit Province, which caused vast destruction of most citizens' houses and farmland and caused great mental trauma among the residents. Study samples comprised eight school children aged 7-14 years (five boys and three girls) whose property and relatives' lives were lost; the subjects were selected by the psychiatrist member of the team of those children with symptoms that were not so severe that they would require conventional psychiatric therapy. There were follow-up weekly for 12 weeks by the same psychiatrist to observe the progress of their illness.

The artists also attended the weekly sessions and provided the children with the supplies necessary for doing art work and urged them to draw anything they wanted to on the paper provided every week. Their weekly products were photographed for interpretation of their mental progress. At the end of the research session, their mental progress was judged by comparing the results of the psychiatrist's opinion about the interpretation of the drawings. It was concluded that the art therapy practice in this group of children yielded considerable success as evidenced in seven of the eight subjects (87.5 %), and that art therapy is effective for managing children suffering from mental trauma caused by disasters.

### **How art therapy works:**

The general concept of mechanism regarding how art therapy achieves effective treatment for mentally traumatized persons, involves the provision of symbolic language as a means of communication alternative to verbal communication, through creative expression such as drawing and painting, which is much the same as a psychological method of 'exposure therapy'<sup>(9)</sup> in assisting trauma survivors to re-experience distressing memories; according to the author's opinion the two therapeutic interventions exercise with the same mechanism of homeopathy cum hormesis.<sup>(11)</sup>



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