



The Genus *Hemiorchis* Kurz (Zingiberaceae) in Thailand

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Abstract

Two species of the genus *Hemiorchis* Kurz (Zingiberaceae), *H. burmanica* Kurz and *H. rhodorrhachis* K. Schum., are enumerated for Thailand. Descriptions and illustrations of both taxa are given.

Key words: *Hemiorchis* Kurz, Thailand, *H. burmanica* Kurz, *H. rhodorrhachis* K. Schum.

Introduction

The Zingiberaceae is one of the ethnobotanically important plant families. Several members of the family are of economic and medicinal values. Taxonomically, the family was previously classified into 4 tribes: Alpinieae, Globbeae, Hedychieae, and Zingibereae (Schumann, 1904). However, based on molecular evidence, the family was recently separated into 4 subfamilies: Zingiberoideae (2 tribes), Alpinioideae (2 tribes), Tamijioideae (only 1 species), and Siphonochiloideae (1 genus) (Kress et al, 2002). In this recent classification, the tribes Zingibereae and Globbeae are placed in the subfamily Zingiberoideae. The tribe Globbeae consists of 3 genera: *Gagnepainia* K. Schum., *Globba* L., and *Hemiorchis* Kurz.

The genus *Hemiorchis* was first established with one species, *H. burmanica* Kurz, based on the specimen collected from Martaban, Myanmar (Kurz, 1873). The second species, *H. pantlingii* King, was added to the genus based on the type specimen collected from Sikkim, India (King, 1896). Baker (1890) gave a detailed description



with an excellent illustration of the plant introduced from Khasia to Kew under the name "*Hemiorchis burmanica*". His taxon was later recognized as a new species, *H. rhodorrhachis* K. Schum. (Schumann, 1904).

Extension of the distribution range of this genus to Thailand was reported for the first time from an incomplete specimen identified as *H. rhodorrhachis* K. Schum., collected from northern Thailand (Larsen & Triboun, 2000). Resulting from our intensive fieldwork to collect the medicinal taxa of the ginger and aroid families, we encountered two taxa of this genus, *H. burmanica* Kurz and *H. rhodorrhachis* K. Schum. Both species are known locally by traditional healers under the same vernacular names with the same medicinal use. These two rare and endangered species are accounted in this publication with complete descriptions and illustrations. The occurrence of *H. burmanica* Kurz in Thailand is reported here for the first time.

HEMIORCHIS

Kurz, J. As. Soc. Beng. 42(2): 108. t. 8. 1873; Benth. & Hook. f., Gen. 3: 641. 1884; Baker in Curtis's Bot. Mag. 116: t. 7120. 1890; in Hook. f., Fl. Br. Ind. 6: 207. 1890; O. G. Peper in Engl. Nat. Pflanzenfam. 2.6: 30.1889; K. Schum. in Engl. Pflanzenr. 4(46). 20 Heft: 127. 1904; Loesener in Engl., Nat. Pflanzenfam. 2. ed. 15a: 581. 1930; Larsen *et al.* in Kubitzki, Fam. Gen. Vasc. Pl. 4: 288. 1998; K. Larsen & P. Triboun, Thai. For. Bull. (Bot.) 28: 39-43. 2000.

Perennial herb, rhizomes short, creeping. Leafy shoots produced after the flowering stem, leaves petiolate, oblong or oblong-lanceolate. Flowers in pedunculate spikes, usually concentrated at the tips of elongating tomentose rhachis; calyx tubular, lobes ovate, apex acute; corolla tube slightly dilated at the mouth, lobes oblong-lanceolate; staminodes oblong-obovate, obovate, or suborbicular; labellum broader than long, emarginate; filament shorter than the labellum, curved; anther linear; ovary 1-celled; placenta 3, parietal. Capsules subglobose to ovate.

Three species are distributed in the Himalaya (Assam & Sikkim of India, Nepal, and Bhutan), Myanmar, and Western Thailand. Two species are native to Thailand.

KEY TO SPECIES

1. Lower leaf surface hairy, lateral staminode reflex1.**H. burmanica**
 1. Lower leaf surface glabrous, lateral staminode succate2.**H. rhodorrhachis**



1. *Hemiorchis burmanica* Kurz, J. As. Soc. Beng.42(2). 108. t. 8. 1873; K. Schum.in Engl. Pflanzenrch. 4(46). 20 Heft:128 1904.

Small perennial herb. *Leafy shoots* with 3-6 sheaths at base, hairy, 2.3-12.1 by 1.6-1.8 cm, the lower pale green, the upper greenish with purple margin. *Leaves* petiolate, 2.1-3.6 cm long; lamina ovate to ovate-elliptic, tapering towards petiole; upper surface green, hairy, lower pale green, pubescent, 9.2-18.7 by 5.5-9.1cm. *Flowering shoots* 10.3-17.7 cm; peduncle and rachis hairy; spike 4.5-10.3 cm. *Flowers* ebracteate; calyx tubular, 4-7 mm long, apex 3-lobed, the lobes acute; corolla tube 7-9 mm; dorsal corolla lobe 15-17 by 10-11 mm, apex hooded; lateral corolla lobes slightly shorter, flat, 14-16 by 6-8 mm; lateral staminodes broadly obovate to suborbicular, 8-9 by 7.5-8 mm, yellowish, reflex; labellum yellowish with purple dots, broadly obovate to suborbicular, emarginate with a fleshy raised midvein, 7-8 by 7-8 mm; filament 5-6 mm long; anther 3-3.5 by ca. 2 mm long, thecae diverging toward apex, opening with longitudinal slits; styles 2, filiform, ca. 3 mm long; ovaries sessile, tomentose, ellipsoid, ca. 4 mm long. *Fruits* capsule, ovoid-fusiform, 2-2.5 by 1-1.5 cm, with 8-12 costate, hairy, crowned with the persistent calyx. *Seeds* globose, ca. 2 mm diam, greenish, aril white.[Figures 1, 2 and 5A]

Thailand.—NORTHERN [Tak, Amphoe Mae sot, Noen Pisawong], SOUTH-WESTERN [Kanchanaburi, Amphoe Thong Phaphum, Pong Phu Ron].

Distribution.—India (Khasia Hills), Myanmar (Pegu, Martaban, Tenasserim - Type).

Ecology.—Dry deciduous and bamboo forests, at the altitude of 235-357 m.

Vernacular name.—Wan Nang Nuan (วันนางนวล), No Nang Nuan (หนอนางนวล).

Use.—Medicinal.

2. *Hemiorchis rhodorrachis* K. Schum. in Engl. Pflanzenrch. 4(46). 20 Heft :128 1904; Loesener in Engl., Nat. Pflanzenfam. 2. ed. 15a: 581. 1930; K. Larsen & P. Triboum, Thai. For. Bull. (Bot.) 28:39-43. 2000. —*H. burmanica* auct. non Kurz; Baker in Curtis's Bot. Mag. T. 7120. 1890; et in Hook. f, Fl. Brit. Ind. 6:207. 1890.

Small perennial herb. *Leafy shoots* with 3-6 sheaths at base, hairy, 1.9-11.6 by 1.4-1.6 cm, the lower pale, the upper green with purple margin. *Leaves* petiolate, 4.2-7.9 cm long; lamina obovate to obovate-oblong, tapering towards petiole; upper surface

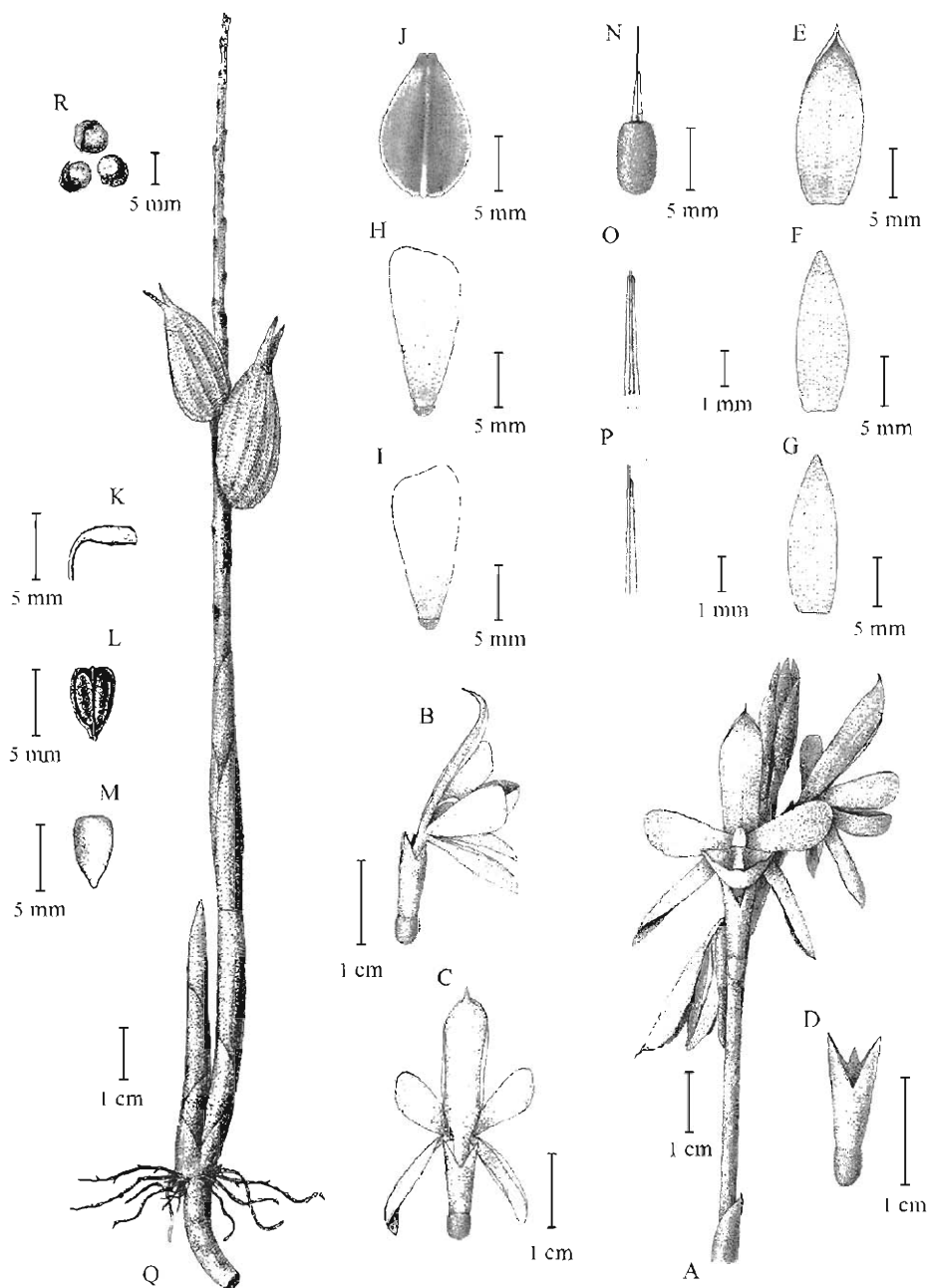


Figure 1. *Hemiorchis burmanica* Kurz

A: an upper part of flowering stem, showing an inflorescence with front view of flowers; B & C: flower, side view (B), rear view (C); D: calyx tube; E: dorsal corolla lobe; F & G: lateral corolla lobe; H & I: lateral staminode; J: labellum; K, L & M: anther, side view (K), front view (L), rear view (M); N, O & P: stylodial glands, front view (N), rear view (O), side view (P); Q: flowering stem with infructescence; R: seeds. Drawn by Chalermchoke Boonchit.

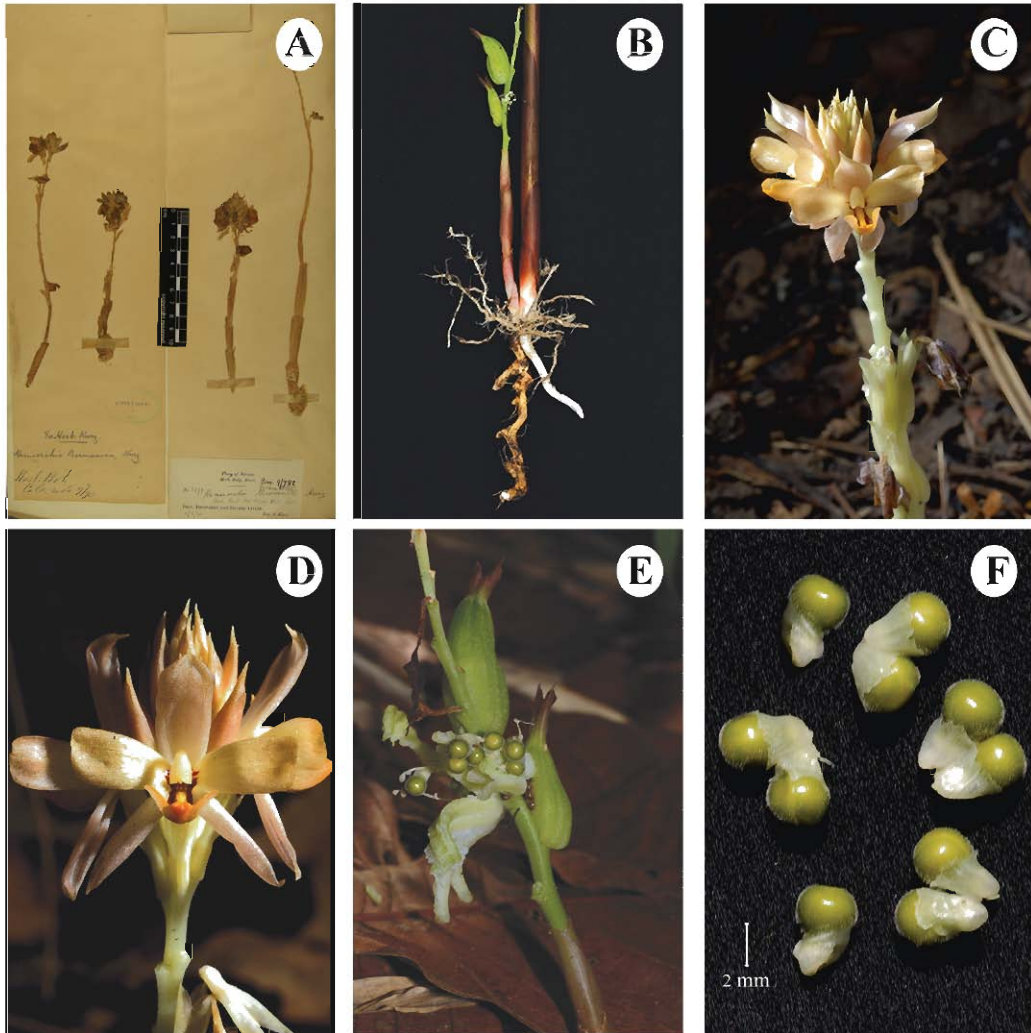


Figure 2. *Hemiorchis burmanica* Kurz

A: Type, Kurz 3299 (K); B: a leafy shoot and an infructescence; C: an inflorescence; D: close-up view of a flower; E: an infructescence with fruits and seeds; F: seeds. Photographed by Supachai Koonterm (A) and Chayan Picheansoonthon (B-F)

green, hairy, lower pale green, glabrous, 15.3-24.2 by 8-11.4 cm. *Flowering shoots* 12.3-20.7 cm; peduncle and rachis hairy; spike 6.5-12.3 cm long. *Flowers* ebracteate; calyx tubular, 7-10 mm long, apex 3-lobed, the lobes acute; corolla tube \pm as long as calyx tube; dorsal corolla lobe 17-18 by 7.5-8 mm, apex hooded; lateral corolla lobes slightly shorter, flat, 15-16 by 6-8 mm; lateral staminodes oblanceolate, 14-15 by 5.5-6 mm, yellowish; labellum yellowish with purple dots, obovate, succate, emarginate with a fleshy raised midvein, 12-13 by 9-10 mm; filament 4.4-5 mm long; anther

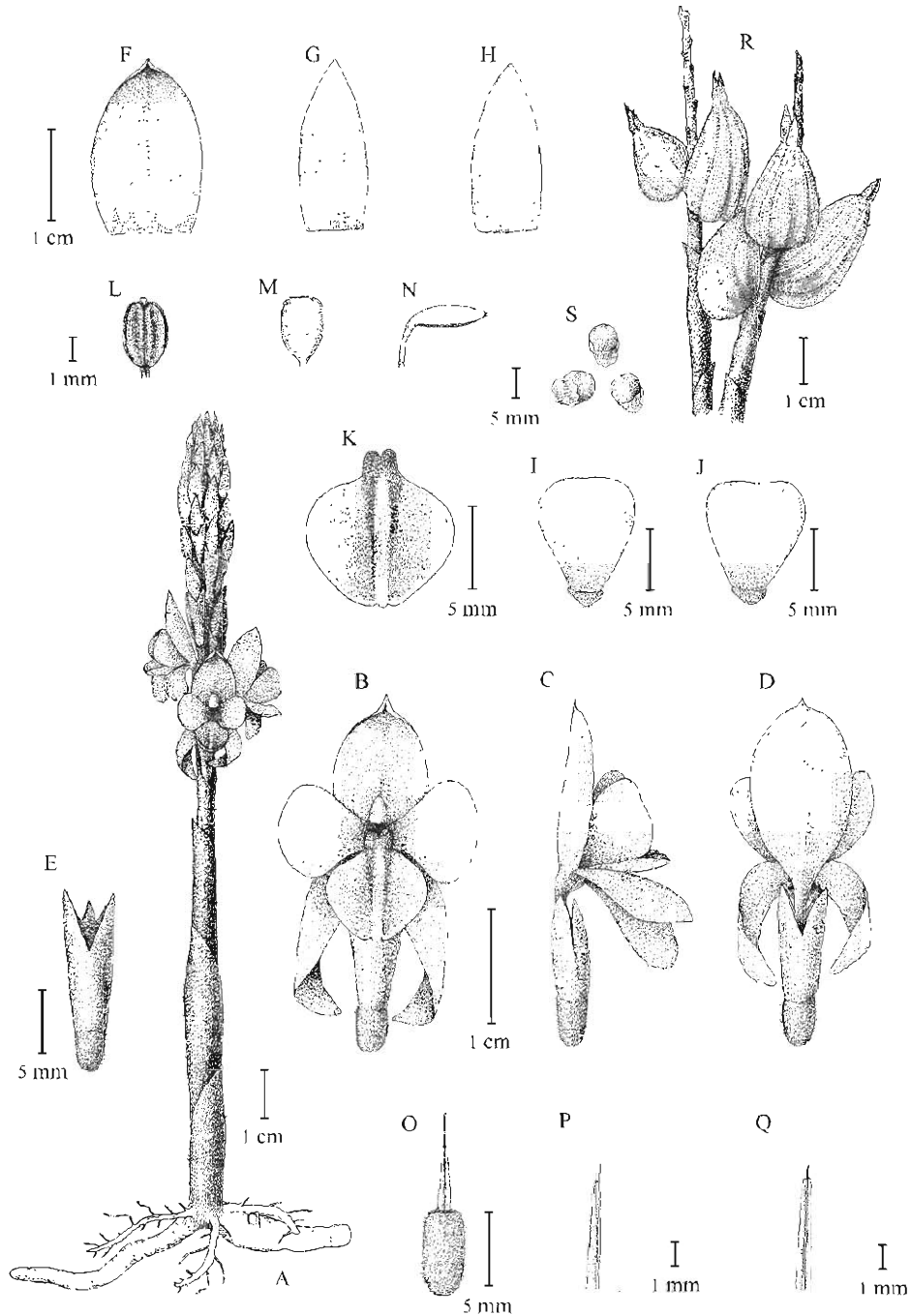


Figure 3. *Hemiorchis rhodorrachis* K. Schum.

A: inflorescence; B, C & D: flower, front view (B), side view (C) rear view (D); E: calyx tube; F: dorsal corolla lobe; G & H: lateral corolla lobe; I & J: lateral staminode; K: labellum; L, M & N: anther, front view (L), rear view (M), side view (N); O: ovary and stylodial glands (front view); P & Q: stylodes, side view (P), rear view (Q); R: infructescence; S: seeds. Drawn by Chalermchoke Boonchit.

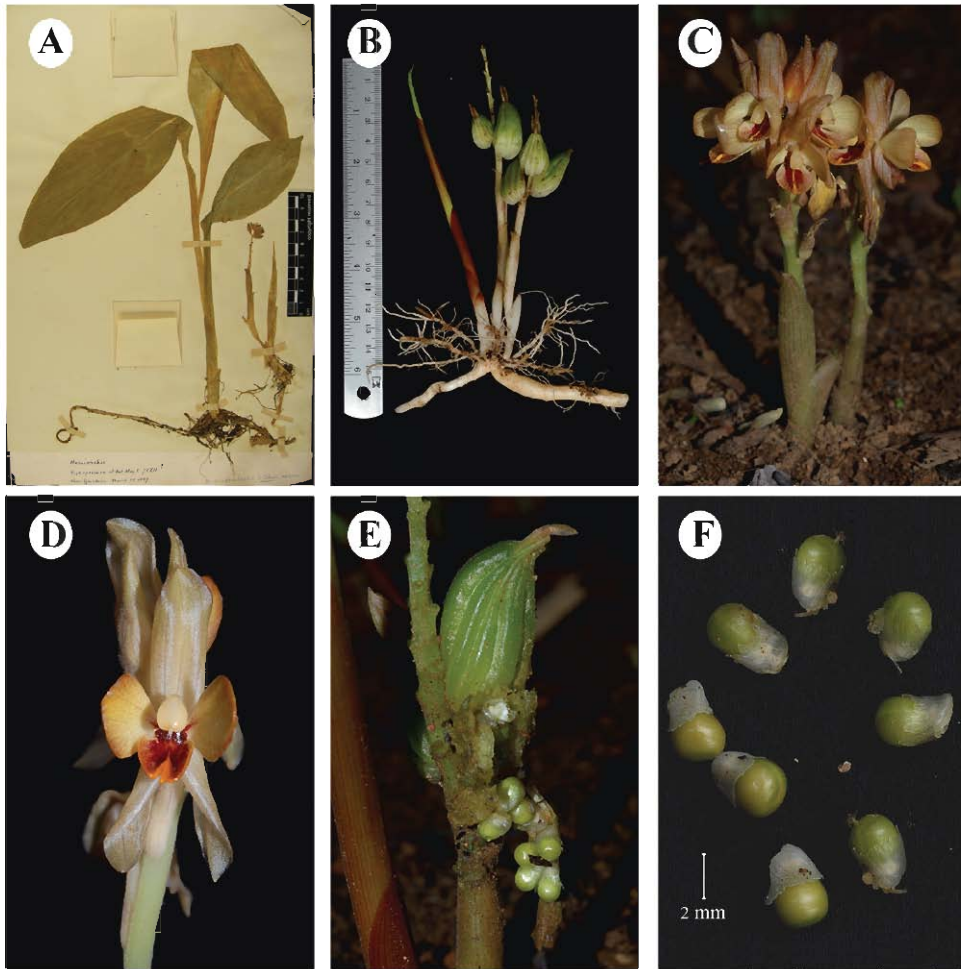


Figure 4. *Hemiorchis rhodorrachis* K. Schum.

A: Type, *Mann* s.n. (K); B: two infructescences and young leafy shoot; C: two inflorescences; D: an inflorescence, showing close-up view of flower; E: an infructescence, with fruit and seeds; and F: seeds. Photographed by Supachai Koonterm (A) and Chayan Picheansoonthorn (B-F)

3-3.5 by *ca.* 3 mm long, thecae diverging toward apex, opening with longitudinal slits. *Style* 2, filiform, *ca.* 4.5 mm long; ovaries sessile, velutinous, ellipsoid, *ca.* 5 mm long. *Fruits* capsule ovoid-fusiform, 2-2.7 by 1-1.4 cm, hairy, with 9-12 costate, crowned by persistent calyx. *Seeds* globose *ca.* 2 mm diam, aril white. [Figure 3, 4 and 5B]

Thailand.—NORTHERN [Mae Hong Son, Amphoe Mae Sariang, Salawin Wildlife Sanctuary; Amphoe Mueang Mae Hong Son, Huai Suea Tao; Amphoe Pang Mapha, Tham Nam Bo Phee]

Distribution.—Northeastern India (Khasia Hills - Type) and Myanmar (Pegu, Martaban, Tenasserim).



Ecology.—Mixed evergreen and bamboo forests, at the altitude of 270–450 m.

Vernacular name.—Wan Nang Nuan (วานนางนวล), No Nang Nuan (หน่อนางนวล).

Use—Medicinal.



Figure 5. Floral comparison of *H. burmanica* (A) and of *H. rhodorrhachis* (B)

Photographed by Chayan Picheansoonthon

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