

**THE GENUS *PYCNARRHENA* MIERS EX HOOK. F. & THOMSON
(MENISPERMACEAE) IN FLORA OF VIETNAM**

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The genus *Pycnarrhena* Miers ex Hook. f. & Thomson is represented by about 17 species distributed in tropical and subtropical Africa; two species in China (Luo, X.R. 2008). and two species in Vietnam (Pham, H. H. 1999, Nguyen, T. B. 2003).

In this paper, updated morphological description and illustrations are provided along with notes on distribution, ecology and phenology of the species have been provided.

I. MATERIALS AND METHODS

Specimens deposited in various herbaria of Vietnam (HN, VNM, HNU, NHNPI) China (KUN, SCBG & PE) Europe (K, P) Laos and Korea (KRIBB) were studied. The collected specimens of *Tiliacora* Colebr. genus were thoroughly processed using standard preservation methods and deposited in the herbarium of Institute of Ecology & Biological Resources (HN).

II. RESULTS AND DISCUSSION

PYCNARRHENA Miers ex Hook. f. & Thomson,

Miers ex Hook. f. & Thomson, Fl. Ind. 1: 206. 1855; Hook. f. & Thomson, Fl. Brit. Ind. 1: 105. 1872; Kurz, Fl. Brit. Buma 877. 1: 56. 1870; Diels, Pflanzenr. IV. 94: 48. 1910; Gagnep., Bull. Soc. Bot. France 85: 170. 1938. Back. & Bakh. f., Fl. Java 1: 151. 1963; Forman, Kew Bull. 33(4): 567. 1979; et. 43(3): 394. 1988; et., Fl. Thailand 5(3): 340. 1991; Pham., Illustr. Fl. Vietn. 1(1): 409. 1991; Kessler, Fam. Gen. Vac. Pl. 2: 409. 1991; Lo, S. H., Fl. Reip. Pop. Sin. 30(1): 6. 1996; Pham., Illustr. Fl. Vietn. 1: 339. 1999; Fu., L. G., et al., High. Fl. China 3: 598. 2000; Nguyen, T. B., Checkl. Pl. Sp. Vietn. 2: 146. 2003; Luo, X. R., et al, Fl. China 7: 13. 2008. - Type: *Pycnarrhena plenifolia* Hook. f. & Thomson, Fl. Ind. 1: 206. 1855.

Antitaxis Miers, Ann. Mag. Nat. Hist. 3. 20: 12. 1867.

Gabila Baillon, Adansonia, 10: 155. 1871.

Telotia Pierre, Bull. Soc. Linn. Paris 1: 754. 1888.

Pridania Gagnep. Bull. Soc. Bot. France 85: 170. 1938.

Vernacular name: Na hiên.

Lianas or scandent shrubs. Stems with cuplike petiole scars. Petiole usually short; leaf blade usually penninerved and elliptic, with lower nerves crowded at base and lanceolate; petioles swollen at the base and usually at apex, leaving a prominent cup-like scar on the stem. Inflorescences axillary or on old leafless stems, mostly cymose; the peduncles sometimes 1-flowered and fascicled. Male flowers: sepals 6-15 in 3 whorls, free, imbricate, the outer ones minute, inner ones usually largest, rotund and concave; petals 2-5, minute, mostly broadly obovate; stamens variable in number 4 -12, filaments usually connate for most of their length, but shortly connate (*P. lucida*) anthers subglobose, dehiscing transversely. Female flowers: sepals and petals as in male; staminodes 0; carpels 2-6, ovate, slightly swollen abaxially, stigmas ligulate and recurved. Drupes ± subglobose, style scar on adaxial side below apex, arising from margin of (subglobose) carpophore; endocarp papery, crustaceous, or subligneous; condyle usually inconspicuous. Seed similar to drupes in shape; endosperm absent; cotyledons large and thick, slightly curved, much longer than radicle.

About 17 species in the world: two species in Vietnam.

Key to species of *Pycnarrhena* in Vietnam

- 1A. Leaf blade elliptic-lanceolate or elliptic, pinnately nerved. Male inflorescences with 1-few-flowered; peduncles 0,3-0,5 (-1) cm long. Synandrium with 4 or 5 anther..... 1. *P. lucida*
- 1B. Leaf usually inconspicuously peltate, petiole slender, lateral veins 3(-5) sub-basal nerves. Male inflorescences of laxily branched cymes 2-3 cm long. Synandrium with 8 to 11 anther
..... 2. *P. poilanei*

1. *Pycnarrhena lucida* (Teijsm. & Binn.) Mip. Ann. Mus. Bot. Lugduno-Batavum 4: 87. 1868; Diels, Pflanzenr. IV. 94: 49. 1910; Back. & Bakh. f., Fl. Java 1: 54. 1963; Forman, Kew Bull. 26: 48. 1972; et., 43(3): 394. 1988; Forman, Fl. Malesia 1. 10: 147. 1986; et., Thailand 5(3): 340. 1991; Nguyen, T. B., Checkl. Pl. Sp. Vietn. 2: 146. 2003. -*Cocculus lucidus* Teijsm. & Binn. Nat. Tijd. Ned. Ind. 4. 397. 1853.-Type: Java. Bantam: *Teijsmann sn* (Holotype: L, Isotype: B photo!).

Antitaxis fasciculata Miers, Ann. Mag. Nat. Hist. III. 20: 14. 1867. - Type: Malaysia.: *Griffiths sn* (Syntype: BM photo!, K photo!).

Antitaxis calocarpa Kurz, Jour. Bot. 13: 324. 1875. - *Pycnarrhena colocarpa* (Kurz) Diels, Pflanzenr. IV. 94: 51. 1910. - Type: India. Nicobar is Katchall, Feb. 1875. *Kurz sn* (Syntype: K photo!).

Telotia nodiflora Pierre, Bull. Mens. Soc. Linn. Paris 1: 754. 1888. - *Antitaxis nodiflora* (Pierre) Gagnep. Bull. Soc. Bot. France 55: 35. 1908. - Type: Vietnam. Aug. 1868, *Pierre 2805* (Syntypes: P! K!), Cambodia, Mt. Cam Chay: near Kampiet, *Pierre 3799* (Isosyntype: P! K!).

Pycnarrhena montana Backer, Blumea 5: 493. 1945.-Type: Indonesia. 21 Jan. 1897, *Koorders 26732 B* (Syntype: K photo!).

Xanthophyllum kingii Chodat, Bull. Herb. Boissier 4: 255. 1896.-Type: Malaysia Mar. 1886, *King 8564* (Holotype: K photo!).

Vernacular name: Phi dăng sáng.

Woody climber, shrub 9 m long. Old stems grayish brown; young stems ferruginous pubescent. Petiole 1-3 cm long, swollen at apex, ferruginous puberulent; leaf blade elliptic-lanceolate or elliptic, glabrous, 8-15 by 3-4.5 cm, sometimes larger, thinly leathery, adaxially glossy, base broadly subcuneate or rounded, apex mucronate, acuminate, or subacute. Inflorescences axillary sometimes, fasciculate, cymose, base of peduncle puberulent, usually 1(or few)-flowered; male peduncle slender, filiform, 3-5 mm. Male flowers: outer whorl of sepals minute, obovate, puberulent, inner larger, ca. 1.5 mm, slightly fleshy, subrotund, saccate; petals usually 2(-5), broadly elliptic, ca. 0.6 by 1 mm, fleshy; synandrium with 4 or 5 anthers. Female flowers not seen. carpels 3. Drupes light dull, red, globose or slightly oblique, 1.3-1.7 cm; endocarp subreniform, thin, rounded in outline; no ridges; surface covered with fibres diverging from the small ventral face; no condyle. Length 9 mm; width, 9.7 mm; thickness, 7.1 mm.

Locality: Lai Chau (Muong Lay), Tuyen Quang (Na Hang), Ninh Binh (Nho Quan), Ninh Thuan (Phan Rang), Dong Nai (Cat Tien National Park) provinces .

Distribution: also India (Andaman and Nicobar Islands), China, (S and SE Hainan); Thailand, Cambodia, Malaixia, Indonesia (W Java, W Sumatra).

Habitat: In forests ridges from 300 to 700 m altitude along streamsides and on limestone mountain slopes in tropical monsoon rian forest.

Phenology: Flowering: May to July. **Fruiting:** August to November.

Specimens examined: VIETNAM. **Lai Chau** prov.: Muong Lay distr. Nam Hoang Municipality, 11 Oct., 2000, 22°08'14" N, 102°58'18" E, 478-600 m, 11 Oct. 2000, D.K., Harder, Nguyen Tien Hiep, Nguyen Quang Hieu, D. Stone 5881 (HN, MO)(♀). **Ninh Binh** prov.: Nho Quan distr. Cuc Phung National Park 20°18'42" N, 105°41'28" E, 24 Jan. 2002, MVX 166, CP 1077 (HN, CPNP) (♀). **Phan Rang** prov.: Trai Ca, 1000 m, 10 Mar. 1920, Poilane 10034 (P). **Dong Nai** prov.: Cat Tien National Park, May 2012, VTC 50 (HN, SCBG). **INDIA.** Nicobar: February 1975, Kurz 26142 (K). **CAMBODIA.** Near Kampiet: Mt. Cam Chay, Sept. Pierre 3799 (K) (♂). **THAILAND.** Chaiyaburi: Nawng Kai, A. F. G. Kerr 8516 (P); North, Patchabun: Nayom, Mar. Kerr 20185 (K) (♂). **MALAYA.** Griffiths *s.n.* (K). **LAOS.** Vientiane prov.: Ban Na Hai, 22 Oct. 1965, J.E. Vidal 4104 (P). **CHINA.** Hainan prov.: C. Wang 36431 (P).

2. *Pycnarrhena poilanei* (Gagnep.) Forman, Kew Bull. 26: 407. 1972; et., 43(3): 393. 1988; Forman, Fl. Thailand 5(3): 340. 1991; Pham., Illustr. Fl. Vietn. 1: 333. 1999; Lo, S. H., Fl. Reip. Pop. Sin. 30(1): 7. 1996; Nguyen, T. B., Checkl. Pl. Sp. Vietn. 2: 146. 2003; Luo, X. R., et al, Fl. China 7: 13. 2008. - *Pridania poilanei* Gagnep. Bull. Soc. Bot. France 85: 170. 1938. - Type: Vietnam. Quang Tri prov. 800 m, 8 May 1924, *Poilane 10374* (Holotype: P!).

Pridania petelotii Gagnep. Bull. Soc. Bot. France 85: 170. 1938. - Type: Vietnam. (Tonkin), Hoa Binh prov.: Muong tho distr. Mar. 1933, *Pételot 6071* (Holotype: P!, Isotypes: P!, NY photo!).

Vernacular name: Phi đặng.

Small hane or scandent shrubs, 2.5-4 m tall or taller. Branches terete, striate, puberulent or subglabrous. Leaves usually inconspicuously peltate; petiole slender 1-3.5 cm, straight, slightly swollen at apex; leaf blade ovate or elliptic, 11-16 by 3-6 cm, papery, adaxially glabrous, base broadly cuneate, rounded, or sometimes truncate, apex long acuminate, lateral veins 3-5 sub-basal nerve, conspicuously joined near margin, conspicuously raised abaxially, impressed adaxially. Inflorescences axillary, solitary or fasciculate, cymose, laxly branched cymes 2-3 cm, few flowered. Male flowers: pedicel to 3 mm; sepals 6-9, outer whorl minute, ca. 0.5 mm,

inner elliptic or broadly elliptic, 2-2.8 mm; petals 4 or 5, ovate, ca. 1.5 mm, shortly clawed; synandrium 1.5-1.8 mm, with 8-11 anthers. Female flowers: perianth not seen, carpels black, ca. 1 mm. Drupes red when dry, ellipsoid, 1.1-1.3 cm.

Locality: Son La (Moc Chau), Hoa Binh (Muong Tho), Ha Noi, Lao Cai (Hoang Lien National Park), Cao Bang, Nghe An (Tuong Duong), Quang Tri (Nui Rang Cop) provinces.

Distribution: China (S. Hainan and SE. Yunnan) and Thailand (Doi Tiu).

Phenology: Flowering: April to June. **Fruiting:** July to August.

Habitat: At 500-900 m altitude along streamside on limestone slope in tropical monsoon rain forest in Vietnam.

Local uses: Leaves edible, used to prepare a soup.



Figure 1: *Pycnarrhena lucida* (Teijsm. & Binn.) Mip.
a branch bearing leaf; b. fruiting twig; c. sepal;
d. petal; e. staminodes; f. seed.
(drawn by Nguyen Quang Hung from Vu Tien Chinh 2009, specimen MVX 166 2009).



Figure 2: *Pycnarrhena poilanei* (Gagnep.) Forman
a branch bearing inflorescence; b. male flower; c. petal; d. sepal; e. Staminodes
(drawn by Nguyen Quang Hung from Vu Tien Chinh 2009, specimen V.X. Phuong 37)

Specimens examined: VIETNAM. Son La prov.: Moc Chau distr. Xuan Nha, 14 Apr. 1977, Vu Xuan Phuong 37 (HN) (♂). **Hoa Binh** prov.: Muong Than, May 1933, N 6071 (VHN, P); Muong Tho, Mar. 1933, Pételot P.A., 6071 (P) (♂); Mai Chau distr. Tam Son, 6 Oct. 2000, Vu Xuan Phuong 3637 (HN). **Nghe An** prov.: Tuong Duong distr. Tam Quang, Tung Huong, along Khe Mat Stream, 16 Mar. 2007, 19°03'07" N 104°36'57" E 125 m alt. Averyanov L., P. K. Loc, N. V. Trai, N. T. Vinh, N. D. Phuong, HLF 6580 (HN). **Quang Tri** prov.: 8 May 1924. E. Poilane 10374 (P, K, VHN) (♂). **THAILAND.** Doi Tiu: Mar. Kerr 5050 (K) (♂).

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CHI PYCNARRHENA MIERS EX HOOK. F. & THOMSON, (HỌ TIẾT DỄ - MENISPERMACEAE JUSS.) Ở VIỆT NAM

**Vũ Tiến Chính, Trần Thị Phương Anh, Đậu Bá Thìn,
Lê Đình Chác, Nguyễn Thị Đẹp, Trịnh Bá Hưng, Hoàng Lê Tuấn Anh**

TÓM TẮT

Chi *Pycnarrhena* Miers ex Hook. F. & Thomson, trên thế giới hiện biết khoảng 17 loài, phân bố chủ yếu ở các vùng nhiệt đới và châu Phi. Ở Việt Nam. Nguyễn Tiên Bản (2003) đã lập danh lục của 2 loài hiện biết ở Việt Nam.

Bài báo này giới thiệu đầy đủ nhất về các loài trong chi. Mô tả đặc điểm của chi *Pycnarrhena* Miers ex Hook. F. & Thomson, khóa định loại các loài trong chi, mô tả đặc điểm của các loài trong chi, sinh học sinh thái, giá trị sử dụng, mẫu nghiên cứu ngoài tự nhiên và các mẫu nghiên cứu tại các phòng tiêu bản như (HN, HNU, NIMM, VNMM (Việt Nam); HNL (Lào); IBSC, SYS, SWFC, KUN and PE (China); KRIBB (Korea); Bali (Indonesia); P (France); K (England)) và giới thiệu các loài thuộc chi ở Việt Nam.