

Pycnospatha (Araceae: Lasioideae), a new generic record for the flora of Cambodia and Vietnam

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ABSTRACT. *Pycnospatha arietina* Gagnep. (Araceae–Lasioideae) is recorded as a new species and genus record for Cambodia and Vietnam. An updated species description and a key to both species of *Pycnospatha* are provided. The Cambodian plant is figured.

Keywords. Araceae, Cambodia, Laos, Lasioideae, *Pycnospatha*, *Pycnospatha arietina*, Vietnam

Introduction

The first author has for over 15 years been undertaking Araceae-related fieldwork in Vietnam and following easing of access, more recently in Cambodia and Lao. In 2007, during fieldwork in the Peah Ream National Park, Sihanouk Ville, Cambodia, material was collected of *Pycnospatha arietina* Gagnep. (Araceae - Lasioideae), representing a new genus and species record for Cambodia. This new Cambodian collection locality is only approximately 30 km N of Phu Quoc island (Vietnam) from where Hô (1993, 2000) illustrated, as *Amorphophallus* sp., what is undoubtedly also *P. arietina*. Thus the genus *Pycnospatha*, represented by *P. arietina*, is also present in Vietnam.

Pycnospatha comprises two species. The type, *P. palmata* Thorel ex Gagnep. (Gagnepain 1941) was described from Lao P.D.R. based on a collection made by Clovis Thorel during his 1886-1868 Mekong Delta expedition. Although as yet not recollected from Lao, *P. palmata* has more recently been found in NE Thailand (Bogner 2009).

Pycnospatha arietina (Gagnepain 1941, 1942) was described from a collection of Put Phraisurind, the Thai assistant of A.F.G. Kerr, originating from central Thailand, but is now known to be widespread but scattered, and never common, in Central & SE Thailand (see Boyce 1993). Hu (1968) described a third species, *P. soerensenii* S.Y.Hu, differing from *P. arietina* by a less divided leaf blade, an aculeate petiole epidermis, and by having some flowers with a rudimentary 'perianth'. In his revision Bogner (1973) regarded *P. soerensenii* as a synonym of *P. arietina*, a stand maintained here.

Key to species

- 1a. Tuber to over 10 cm diam. Leaf to 2.5 m tall: mature leaf blade 'dracontoid' (see below), up to 60 × 100 cm. Spathe 9–20 × 3–5 cm; spadix 4–6 × 1–1.5 cm; style to 6 mm. Fruits c. 2 cm diam *Pycnospatha arietina*
- 1b. Tuber c. 2.5 cm diam. Leaf to 50 cm tall: mature leaf blade palmately trilobed, up to 35 × 16 cm. Spathe 3–7 × 1.5–3 cm; spadix 2–3 × c. 0.5 cm; style to 2 mm. Fruits 7–8 mm diam *Pycnospatha palmata*

Pycnospatha arietina Gagnep., Bull. Soc. Bot. France 88: 512 (1941) & in H. Lecomte, Fl. Gén. Indo-Chine 6(9): 1110 (1942); Bogner, Oesterr. Bot. Z. 122: 207 (1973); Boyce in Curtis's Bot. Mag. 10(3): 121–124, Pl. 226 (1993); Hô, Illustr. Fl. Vietnam. 3(2): 448, fig. 8337 (as '*Amorphophallus sp.*') (1993); Mayo, Bogner & Boyce, Gen. Araceae. 135, Pl. 24, 111C (1997); Hô, Illustr. Fl. Vietnam. 3: 363, fig. 9165 (as '*Amorphophallus sp.*') (2000). TYPE: Thailand ['Siam'], SE77, Sa Kaeo: Watthana Nakhon ['Watana'], 15 Oct 1928. *Put Phraisurind 1949* (holo K 000291745! iso BK! BKF! K 000291746! K 000291744!). (Fig. 1)

Pycnospatha soerensenii S.Y. Hu, Dansk Bot. Ark. 23: 418, t. 3, f. 1-3 (1968). TYPE: Thailand. SE61, Chantaburi: Makarn, 8 Apr 1959. *T. Sorensen, K. Larsen & B. Hansen 7217* (holo C!).

Geophytic, seasonally dormant, tuberous, moderately robust herb with leaves 80 cm–2.5 m tall. Tuber semi-globose, 13–17 cm in diam., upper surface somewhat irregularly flattened with many roots and numerous cylindrical or globose secondary tubers. **Roots** stout, 3–4 mm in diam. **Adult leaf** usually solitary, rarely two together: petiole 80–200 cm long, c. 2.5 cm diam. at base, subtended by a triangular cataphyll: cataphyll 4–13 × 1–4.5 cm, pale green to whitish, spotted reddish brown; greyish green to white-grey with blackish green to reddish or dark brown mottling and with scattered to rather dense prickles; **petiolar sheath** short, c. 5–7 cm long, closed: adult **leaf blade** dracontoid (elaborated forms of sagittate, hastate or trisect leaves with the anterior and posterior divisions highly dissected and subdivided, with the terminal lobes each with two or more tips; leaf maturation acropetal with the leaf blade exposed from the bud at a very early stage in its expansion), up to 1 m wide, anterior lobe trilobed with the central lobe again bilobed, posterior lobes bilobed with secondary and tertiary lobes irregularly pinnatifid, each terminal lobe with two or sometimes three tips, blade dark green, upper surface glossy often with a slight bluish green sheen. **Peduncle** 1.5–3 cm long, quite stout, c. 13 mm in diam., and oblong in cross-section at base, ivory at base, red-brown above, enveloped by up to 7 cataphylls; **cataphyll** triangular to lanceolate, shortest one 2.5 cm long, 4 cm wide at base, longest one up to 9 cm, and 3.5 cm wide, white at base, upper part dull red-brown outside, pink-red inside, darker at margin. **Spathe** c. 15 cm long in Cambodian material (overall range 9–20 cm long), lower part convoluted into a tube, c. 10 cm long, c. 4.5 cm diam., margins not overlapping, opened, reddish to dark brown, light brown and green yellow at base, with dull stripes, c. 1 cm distant: spathe limb fornicate, 4.5 cm long, 9 cm wide at apex, 5.5 cm wide at base, apex truncated, acute at tip, dark red-brown with white spots outside, dark brown

inside. *Spadix* sessile, conical, c. 4.5 cm long, 2.3 cm diam. at base, covered densely by flowers and fertile to tip. *Flowers* bisexual, naked, very densely arranged. Stamens 6, 2–3.5 mm long; filaments flat, c. 1 mm long, whitish; anther truncate apically, 2–2.5 mm long, yellow, dehiscing by a longitudinal slit. Gynoecium ovate, 5–7 × c. 0.7 mm,



Fig. 1. *Pycnospatha arietina* Gagnep. **A.** Whole plant (the first author holding the plant with Mr Rattana, Cambodian guide); **B.** Leaf blade, top view; **C.** Tuber with secondary tubers; **D.** Inflorescence; **E.** Spadix; **F.** Infructescences; **G.** Fruits, cut to reveal seeds. Photo credits: V.D. Nguyen.

pale grey; style extending far beyond stamens, conical, c. 6 mm long, 1.8 mm wide; stigma discoid, flat. Ovules 2, anatropous. **Infructescence** globose, sometimes short cylindrical, composed of c. 40 berries; **fruits** ovate, c. 1 cm diam., with persistent style at the acuminate apex, spiny, violet-brown outside, white inside, 1 seeded. **Seeds** kidney-shaped, c. 4 mm diam., testa hard, thick, verrucose, brown.

Distribution: C, E & SE Thailand, SW Vietnam, S Cambodia.

Habitat: Sandy soil in open places in dry semi-evergreen tropical forest, elsewhere (Thailand) in seasonally dry bamboo forest. 90–450 m asl.

Materials studied: CAMBODIA: Krong Preah Sihanouk, Peah Ream National Park 10°33'45.6"N 103°39'14.5"E, 20 Nov 2007, *Nguyen Van Du et al.*, CB-VN 103 (HN! K!).

THAILAND. **Saraburi:** Muak Lek, 3 Sep 1928, *Put Phraisurind 1857* (BK! K!); ex Muak Lek, cult. in Bangkok, 3 Nov 1929, *A.F.G. Kerr 17580* (BK! K!). **Rayong:** Khao Chamao N.P., 9 Sep 1994, *P.C. Boyce 909* (BKF! K barcode no. 60524!). **Chantaburi:** Makam, Subvillage No. XIII, 20 Mar 1971, *J. Bogner 395* (B! K barcode nos. 29047.184! 34425! 34429! M! US!); Makam, 8. Apr 1959, *T. Sørensen, K. Larsen & B. Hansen 7217* (C!). **Sa Kaeo:** ex Watthana Nakhon cult. in Bangkok, 15 Jan 1930, *A.F.G. Kerr 18098* (BK! K!); ex Watthana Nakhon cult. in Bangkok, 27 Oct 1930, *A.F.G. Kerr 19875* (BK! K!); Watthana Nakhon, 14 Oct 1928, *Put Phraisurind 1908* (BK! K!); Watthana Nakhon, 15 Oct 1928, *Put Phraisurind 1949* (BK! BKF! K barcode nos. 000291745! K 000291746! K 000291744!).

Conservation: The plant is not common in Cambodia and its continued survival much depends on local government plans if the place, where the plant occurs is left to unregulated tourist-related or construction programs. Based on IUCN criteria, *P. arietina* is Vulnerable (VU) in Cambodia.

Cultivation: In Hanoi *P. arietina* of Cambodian origin grows well in sandy soil in an open position. The tubers need to should be taken up and stored during (Vietnam) winter to prevent them rotting in the cool, wet weather.

Notes: Neither Bogner (1973) nor Boyce (1993) mentioned the presence of secondary tubers on the surface of the mother tubers, nor the often globose infructescence.

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