New Species of Palms from Thailand, Part II

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Field work and research leading to a book on Thai palms and cycads to be published in 1998 in time for the International Palm Society Biennial Meeting in Thailand has resulted in several unusual collections. A careful search of herbaria in Thailand and the palm literature for Southeast Asia and Malaysia indicates these novelties have not been collected and are new to science, thus names are provided for them here. This article is the second and final one in a series. Although not so named, part I appeared in *The Palm Journal* 134: 28-37, 1997.

Areca bifaria Hodel **sp. nov.** Fig. 1-2.

Species insignis inflorescentiis erectis, rachillis paucis roseis dispositis distiche et plane in uno plano, a ceteris speciebus bene distincta. Typus: Thailand, SW of Narathiwat, 600 m elev., *D.R. Hodel, P. & R. Vatcharakorn 1753* (Holotypus BK)

Solitary understory palm to 5 m tall; stem 5 cm diam., brown proximally, green distally with brown leaf scars 1.25-2 cm wide, internodes 4 cm, conspicuous prop roots at base of stem to 30 cm high. Leaves 10, pinnate, spreading; sheaths 45 cm long,, tubular, deeply split opposite petiole but still forming a crownshaft, light green; petiole 15-20 cm long, light green with yellow band abaxially; rachis 2.5-2.75 m long; pinnae 10-16 on each side of rachis, 60-70 x (2-)8-15 cm, falcate, acuminate, 1-6-nerved, distal 3 pairs of pinnae truncately praemorse. Inflorescences 1-2, infrafoliar, 25 cm long, stiffly erect, pinkish; peduncle 2.5 cm long; rachis 15 cm long; rachillae 13, these 15 cm long , thick, stiff, ascending, distichously arranged and fanned flat in one plane against the crownshaft. Staminate flowers nearly throughout rachillae in 2 distichous rows, 2 flowers side-by-side within a row basally, solitary in a row apically, slightly sunken and subtended proximally by a short, triangular bracteole; flowers 5 x 2 mm and greenish and narrowly ovoid in bud, at anthesis 4-5 x 4-5 mm, yellowish green; calyx 0.75 mm high, prominently lobed, lobes traingular, acute; petals 4-5 x 2 mm, long-ovate, valvate, acute; stamens 3, 4 mm high; pistillode 4-5 mm high, columnar, truncate apically. Pistillate flowers 1-2 at the base of each rachillae in each of the 2 distichous rows, 15 x 10 mm, ovoid, jade-green in bud, yellowish at anthesis; calyx 9 mm high, narrowly crown-like, sepals imbricate in basal 2/3, acute apically, yellowish with broad brownish margins; corolla 12 mm high, narrowly crown-like, petals imbricate in basally 3/4, acute apically, greenish yellow; pistil 15 mm high, ovoid, stigma with 3, prominent, large, thick, recurved, white lobes conspicuously exserted above corolla. Fruits immature, 2.5 x 1.5 cm, ovoid, green; stigmatic remains apical, prominent.

Areca bifaria occurs in wet hill forest in south peninsular Thailand near the Malaysian border. Its inflorescence is one of the most colorful, showy, lovely, and distinctive of Thai palms. The few, dark pink rachillae, stiffly ascending and distichously arranged and fanned flat in one plane against the crownshaft, attractively complement the green to yellow staminate and pistillate flowers, the latter with large, prominent, white, exserted stigma lobes. The epithet is from the Latin *biarius*, meaning arranged in two rows, and refers here to the rachillae.

Iguanura divergens Hodel **sp. nov.** Fig. 3-5.

Iguanura wallichianae (Wall. Ex Mart.) Hook. F. affinis sed pinnis lateribus et nervis divergens differt. Typus: Thailand, Betong, 800 m elev., *D.R. Hodel, P. & R. Vatcharakorn 1743* (Holotypus BK).

Clustered understory palm to 3 m tall. Stems 2.5-3.5 cm diameter, ringed, internodes 3-4 cm long, covered with deciduous reddish brown

indument. Leaves 7, pinnate, ascending-spreading; sheaths 25 cm long, tubular, persistent, marescent, not forming a crownshaft, covered with brownish indument; petiole 20-30 cm long, with similar indument as sheath; rachis 1-1.25 m long; pinnae 4-5 on each side of rachis, +/- trapezoid, sides not parallel, 42 cm long, 11 cm wide at apex, narrowing to 5.5 cm wide at base, 6-7-nerved, end pinnae 27-30 cm long, 10-10.5 cm wide at apex, narrowing to 7-9 cm wide at base, 10-nerved, all pinnae with apical margins praemorse and nerves conspicuously diverging distally. Inflorescences 1-2, interfoliar, to 60 cm long; peduncle 25 cm long, flattened, 8-10 mm wide, ascending; prophyll 17 cm long, tubular, apically opening along one side, other side winged, peduncular bract inserted 2 cm above prophyll, 23 cm long; rachis 9-13 cm long; rachillae 9-13, these 28-34 cm long, 1.5-1.75 mm diam., each subtended by a small bract at base, spreading and intertwined; peduncle, prophyll and peduncular bract, rachis, and rachillae with reddish brown, +/- deciduous hairs. Flowers in triads of a center, later-opening pistillate flanked on each of 2 sides by earlier-opening staminate, triads subtended proximally by conspicuous, shelf-like bracteoles 1 x 3.5 mm, these prominently indented near the middle, smaller bracteoles subtending triad distally, 2 small membranous bracteoles subtend pistillate flower, similar bracteole subtends 1 of staminate flowers. Staminate flowers 2.75 x 1.75 mm, ovoid; calyx 1.75 x 1.75 mm, cupular, shallowly lobed, sepals imbricate nearly to apex; petals 2.75 x 1 mm, long-ovate, valvate, acute, prominently nerved when dry; stamens 6, 1.75 mm high, filaments 1.25 mm long, anthers 1 mm long, dorsifixed above middle; pistillode 1.8 mm high, columnar, slightly exceeding stamens, truncate and expanded apically, flared basally. Pistillate flowers 3 x 2.75 mm, ovoid; calyx 1.75 x 2.75 mm, similar to that of staminate flowers; petals 3 x 2 mm, bowl-shaped, mucronate with acute tip, prominently nerved when dry; staminodes 5-6, small, slender; pistil 2.5 x 1.5 mm, ovoid, stigma with 3, short, recurved lobes. Fruits not seen.

Iguanura divergens occurs in wet mountain forest near Betong in south peninsular Thailand very near to the Malaysian border. It grows with and is similar to *I. wallichiana* and *I. multifida*; however, these two species are easily distinguished by their straight-sided, parallel-nerved pinnae. The specific epithet means diverging or going different ways, and refers to the sides and nerves of the pinnae.

Iguanura multifida Hodel **sp. nov.** Fig. 6.

Iguanura wallichianae (Wall. Ex Mart.) Hook. F. affinis sed pinnis multo numerioribus perangustis differt. Typus: Thailand, Betong, 800 m elev., *D.R. Hodel, P. & R. Vatcharakorn 1745* (Holotypus BK).

Clustered understory palm to 3 m tall. Stems 2.5-3.5 cm diameter, ringed, internodes 3-4 cm long, covered with deciduous light brown indument. Leaves 6-7, pinnate, ascending; sheaths 25 cm long, tubular, persistent, marescent, not forming a crownshaft, covered with brownish indument; petiole 15 cm long, with similar indument as sheath; rachis 1.75-2 m long; pinnae 20-30 on each side of rachis, 50 x 1.3-3 cm, falcate, acuminate, coarsely toothed, 1-2-nerved, end pair 35 x 5.5 cm, truncately serrated, teeth 1 mm high, all pinnae with sides and nerves parallel. Inflorescences 1, interfoliar, 55 cm long, ascending, prophyll and peduncular bract not seen; rachis 10 cm long; rachillae 11, these 30 cm long, 1.5 mm diam., spreading; rachis and rachillae drying deeply furrowed and long-angled; peduncle and rachis with light brown to whitish hairs. Flowers not seen. Fruits 18 x 8 mm, +/- ovoid, green to pinkish; seed 10 x 6 mm; fruiting perianth 3.5 x 4 mm, cupular, prominently lobed, lobes imbricate in basal 1/4-1/2, slightly spreading apically; staminodes small, slender.

Iguanura multifida occurs in wet mountain forest near Betong in south peninsular Thailand very near to the Malaysian border. It grows with and is similar to *I. wallichiana* and *I. divergens*. However, *I. wallichiana* differs in the leaves with much fewer and wider and more coarsely toothed pinnae and the inflorescence with densely brown tomentose peduncle and rachis. *I. divergens* differs in it much fewer pinnae with non-parallel sides and nerves diverging toward the tip. The epithet is from the Latin *multi*, meaning many, and *fidus*, meaning divided, and refers here to the leaves with numerous, pinnae.

Fig. 1 *Areca bifaria*, habit, Narathiwat, *Hodel et al. 1753* (holotype).

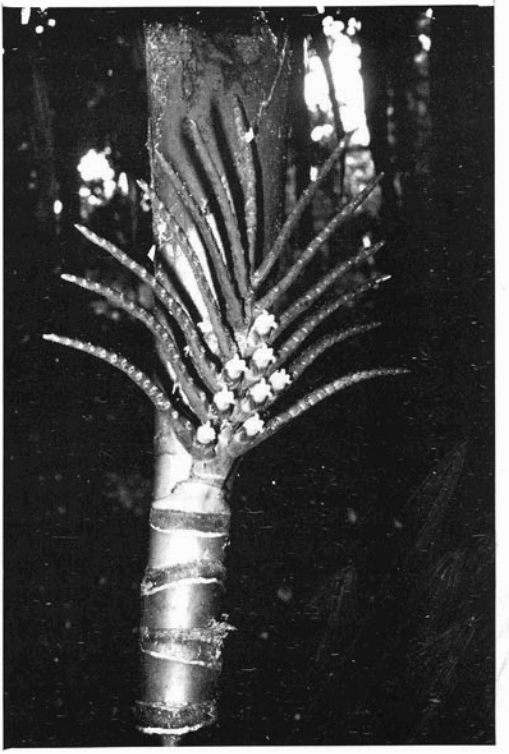

Fig. 2 *Areca bifaria*, inflorescence with pistillate flowers, *Hodel et al. 1753* (holotype).

Fig. 3 *Iguanura divergens*, habit, Betong, *Hodel et al. 1743* (holotype).

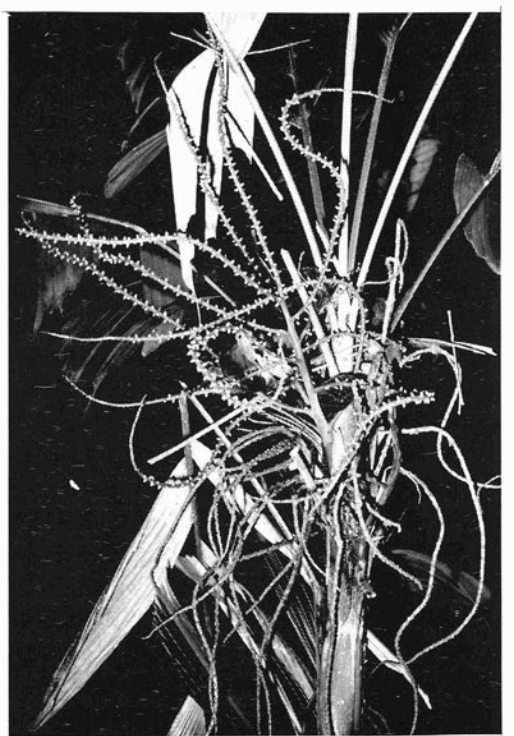

Fig. 4 *Iguanura divergens*, inflorescence, *Hodel 1745* (holotype).