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A Revision of *Wallichia* (Palmae)

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ABSTRACT: A revision of the Asian palm genus *Wallichia* is given, based on examination of morphology of herbarium specimens. Eight species are recognized, one of which, *W. lidiae*, is described as new. Lectotypes are chosen for *W. disticha*, *W. gracilis*, and *W. oblongifolia*. A key, complete synonymy, descriptions, pinnae shape illustrations, and distribution maps are given for all species.

KEY WORDS: ***Wallichia*, Palmae, Arecaceae, revision.**

INTRODUCTION

Wallichia is a genus of 10 currently recognized species (Govaerts and Dransfield, 2005), occurring in Nepal, Bhutan, northeastern India, Myanmar, Thailand, Lao, Vietnam, and China. The genus is placed in the tribe Caryoteae, along with *Caryota* and *Arenga* (Uhl and Dransfield, 1987). There is no revision of the genus. In preparation for a *Field Guide to the Palms of Southern Asia* I have collected and studied *Wallichia* in China, northeastern India, Myanmar, and Vietnam, and examined specimens from A, BKF, BH, BK, HITBC, HN, IBSC, IBK, K, KUN, MO, NY, P, SYS, and US. I conclude that eight species are present in the genus.

Wallichia Roxb., Pl. Coromandel 3: 91. 1820. Lectotype (here designated). *W. caryotoides* Roxb. (see discussion under *W. caryotoides*). 華里棕屬

Harina Buch.-Ham., Mem. Wern. Nat. Hist. Soc. 5: 317. 1826.
Wrightea Roxb., Fl. Ind. ed. 1832, 3: 621. 1832.
Asraoa J. Joseph, Bull. Bot. Surv. India 14: 144. 1975.

Stems clustered or rarely solitary, covered with persistent, fibrous leaf sheaths. Leaves spirally or distichously arranged; sheaths with prominent, fibrous ocreas; petioles rounded in cross-section, brown tomentose; rachis tomentose as the petiole; pinnae induplicate, narrowed at the base, lanceolate, broadly lanceolate, or oblong, deeply to shallowly lobed, the proximal lobe of a pinna oriented toward the leaf base, with smooth, undulate margins except for the serrate lobes and apex, blunt at the apex, the apical pinna compound, consisting of several non-split pinnae forming a broad terminal pinna, silvery-gray with small, brown dots abaxially, with broad lines of brown tomentum parallel with the veins, with one prominent main vein and minor veins diverging from the base. Inflorescences branched to one order, rarely spicate; peduncular bracts numerous, persistent, sheathing or not sheathing the peduncle, densely brown or black tomentose adaxially; staminate inflorescences lateral, pendulous or erect; staminate flowers borne in spirally arranged pairs, the pairs either side of an aborted pistillate flower (or sometimes an intermediate flower with gynoecium and stamens), subtended by a very small bracteole; sepals cupular, lobed or not lobed, sometimes the lobes briefly imbricate; petals free, valvate; stamens 3-19, linear, basifixed; pistillode absent; pistillate inflorescences terminal, pendulous or erect; pistillate flowers borne singly and spirally, surrounded by one small outer bracteole and two inner, broad, imbricate bracteoles; sepals united into a low, cupular calyx; petals united into a three lobed corolla, the lobes valvate distally initially, free and spreading after anthesis; staminodes absent; fruits ovoid to ellipsoid or oblong, with apical stigmatic residue, variously colored; eophyll simple; germination remote.

In the key and species descriptions, stem diameter includes the persistent leaf bases.

Key to the species of *Wallichia*

1. Stems solitary; leaves arranged in one or a few planes; pinnae from middle of leaf irregularly arranged in clusters of 3-8 …… …..... 2. *W. disticha*
1. Stems clustered; leaves arranged spirally; pinnae from middle of leaf regularly arranged.
2. Stems short and subterranean or to 1 m tall, to 40 cm diameter; pinnae 16-17 per side of rachis, approximately oblong ..... ……..... 7. *W. oblongifolia*
2. Stems aerial, to 4 m tall, 1.5-10 cm diameter; pinnae 3-19 per side of rachis, lanceolate or broadly lanceolate.
3. Stems to 0.6 m tall, to 2 cm diameter; rachis 0.15-0.5 m long; pinnae 3 per side of rachis ..... 6. *W. nana*

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3. Stems to 4 m tall, 1.5-10 cm diameter; rachis 0.45-2 m long; pinnae 5-19 per side of rachis.
   4. Stems bearing staminate inflorescences to 4 m tall, pistillate stems much shorter, to 0.5 m tall; Myanmar (Bago) .... 4. *W. lidiae*
4. Stems bearing staminate and pistillate inflorescences about equal in length; all other areas.
5. Stamens 3; China (Tibet) and India (Arunachal Pradesh) ..... ……. 8. *W. triandra*
5. Stamens 6-19; all other areas.
6. Stamens 16-19; pinnae lanceolate, scarcely lobed; Thailand (Peninsula) ..... 5. *W. marianneae*
6. Stamens 6-16; pinnae broadly lanceolate or lanceolate with pronounced lobes; Bangladesh, China, India, Myanmar, Thailand (North), and Vietnam.
7. Pinnae 5-7 per side of rachis; staminate rachillae 0.5-1.5 cm long; pistillate rachillae to 6 cm long; stamens 6-7; China (Guangxi, Yunnan) and Vietnam (Central, Northern) ..... ……..… 3. *W. gracilis*.
7. Pinnae 8-12 per side of rachis; staminate rachillae 12.5-20.5 cm long; pistillate rachillae 10-20 cm long; stamens 11-16; Bangladesh, China (Tibet, Yunnan), India, Myanmar, and Thailand ..... 1. *W. caryotoides*

TAXONOMIC TREATMENTS

1. *Wallichia caryotoides* Roxb., Pl. Coromandel 3: 91. 1820. *Harina caryotoides* (Roxb.) Buch.- Ham., Mem. Wern. Nat. Hist. Soc. 5: 317. 1826. *Wrightea caryotoides* (Roxb.) Roxb., Fl. Ind. ed. 1832, 3: 621. 1832. Lectotype (here designated) Roxb., Pl. Coromandel 3: pl. 295 (excluding flowers and fruits). 1820. 琴葉華里棕

Wallichia siamensis Becc., Atti Soc. Tosc. Sci. Nat. Pisa Processi Verbali 44: 175. 1934. Type. THAILAND. Chiang Mai: Doi Sutep, 23 October 1910, A. Kerr 1813 (HOLOTYPE: FI-B *n. v.*; holotype image BH; ISOTYPE: K!).
Wallichia mooreana S. K. Basu, Taiwania 28: 146. 1983. Type. CHINA. Yunnan: Poneshee, 17 Mar 1868, D. Anderson *s. n.* (HOLOTYPE: CAL *n. v.*; ISOTYPE: K!).

Stems clustered, to 3 m tall, 2-10 cm diameter, Stems bearing staminate and pistillate inflorescences about equal in length. Leaves 4-7, spirally arranged; sheaths disintegrating into black fibers, with a prominent, fibrous ligule at the apex; petioles 0.8-1.5 m long; rachis 0.9-1.5 m long; pinnae 8-12 per side of rachis, regularly and alternately arranged except for clustered proximal 2-3 pinnae, spreading in the same plane, pinnae from middle of leaf 25-49 cm long, 5-11 cm wide at widest point, widest near the middle, lanceolate, with two pronounced lobes. Inflorescences subtended by smaller leaves, unisexual, staminate and pistillate borne on the same or separate stems, the pistillate terminal the staminate lateral; staminate inflorescences 40-50 cm long, erect; prophyll 4-7 cm long; peduncle 15-30 cm long; peduncular bracts 6-8, sheathing the peduncle; rachillae 21-30, 12.5-20.5 cm long, 1.5-3 mm diameter, glabrous; staminate flowers 5-6 mm long; sepals 1-2 mm long, connate into a cupular calyx; petals 5-6 mm long, yellow; stamens 11-16; pistillate inflorescences 40-50 cm long, erect; prophyll to 6.5 cm long; peduncle 23-24 cm long; peduncular bracts several, sheathing the peduncle; rachillae 7-17, 10-20 cm long, 2.5-4 mm diameter; pistillate flowers to 2.5 mm long at anthesis; sepals 1 mm long; petals 2 mm long; gynoecium 2 mm long; fruits ovoid to ellipsoid, to 1.7 cm long, to 0.8 cm diameter, red.

Local names and uses: *chilputta* (Bangladesh), *walizong* (China), *saingpa*, *zanong* (Myanmar), *kuang denj*, *taou-rung-nu* (Thailand). No uses recorded.

Distribution and habitat: Bangladesh, China (Yunnan), India (Arunachal Pradesh, Tripura), Myanmar (Kachin, Mon, Rakhine, Sagaing), and Thailand (North) (Fig. 1A); lowland to montane rain forest, at 100-1800 m elevation. One sight record (reliable sightings of the species without collection of specimens) is included in Figure 1A.

Notes: Roxburgh's (1820) description and illustration of *Wallichia caryotoides* is a mixture of two species – referred to in this paper as *W. caryotoides* and *W. oblongifolia*. The text describes an acaulescent palm (as in *W. oblongifolia*). The illustration, plate 295, shows pinnae with lobed margins and pendulous, condensed staminate inflorescences (as in *W. caryotoides*), but the detailed drawings of the staminate flowers, with six stamens, and fruits are of *W. oblongifolia*. The part of plate 295 showing pinnae and inflorescences is therefore chosen as lectotype.

The confusion between these two species probably occurred because they appear similar, and both were cultivated in the Calcutta Botanical Garden (Griffith, 1845), where Roxburgh was superintendent from 1793 to 1813. Griffith (1845, p. 488), wrote that the two species had been "so strangely mistaken" for each other. The confusion was perpetuated by Martius (1845).

The isotype of *W. mooreana* and a paratype (*Henry 12331* - cited by Basu (1983)) are identical to other specimens of *W. caryotoides*. Both Basu (1983) and Beccari (1910 - describing *W. gracilis*) cited *Henry 12331* as a paratype. One probable reason for this confusion is that the apical leaves, subtending inflorescences, are smaller and have narrower pinnae than those leaves from further down the stem. These apical leaves are often collected, and indeed appear different from other leaves.

In *Wallichia caryotoides*, stems most often have terminal pistillate inflorescences and lateral staminate ones, although sometimes stems appear to have only either pistillate or staminate inflorescences. Pistillate inflorescences appear to bear solitary pistillate flowers only, and staminate ones paired staminate flowers only.

Additional specimens examined: BANGLADESH. Chittagong, no date, *Hooker & Thomson s. n.* (A, K, P); Seetakoond, 12 Jan 1857, *Hooker & Thomson s. n.* (K). MYANMAR. Kachin: Jambu Ridge Wildlife Corridor, 25°59'N, 96°40'E, 228 m, 11 Jan

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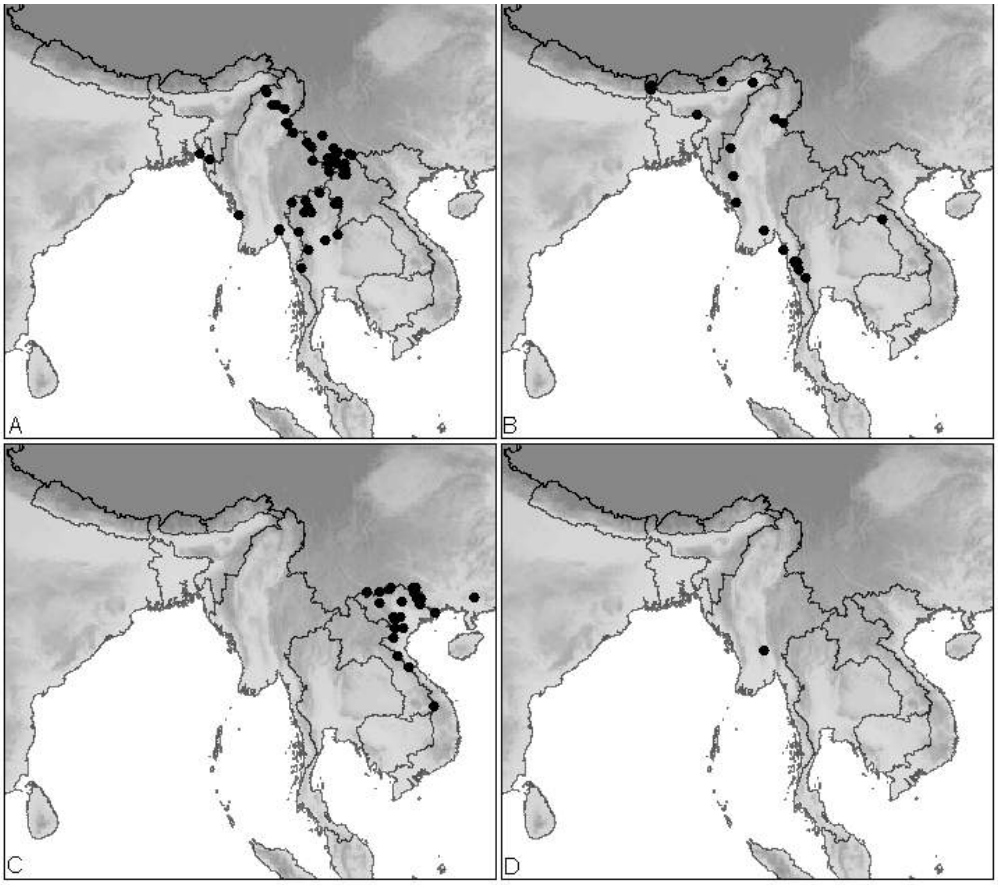


Fig. 1. Distribution maps. A: *Wallichia caryotoides*. B: *W. disticha*. C: *W. gracilis*. D: *W. lidiae*.

2005, *Henderson et al. 3119* (MAND, NY, RAF, RANG); Ledo road, between Mile 22 Camp and Mile 8 Camp, between Namyung and Shinbwiyang, 26°48'N, 96°12'E, 600 m, 26 Jan 2005, *Henderson et al. 3154* (K, MAND, NY, RAF, RANG); Sumpra Bum, 3000 ft., 15 Feb 1953, *Kingdom-Ward 10533* (A). Mon: Kyaikto, Golden Rock, road from pagoda to base camp, 17°24'N, 97°04'E, 1 Nov 2005, *Henderson et al. 3198* (NY, RAF); Kyaikto, E of village, 900 m, 22 Nov 2003, *Hodel 1965* (NY). Rakhine: Ngapali Township, 3 km E of Mya Bin village, 100 m, 15 Mar 2003, *Hodel & Aye Pe 1937* (NY). Sagaing: Ledo road, N of Namyung, 26°59'N, 96°11'E, 338 m, 19 Jan 2005, *Henderson et al. 3139* (K, MAND, NY, RAF, RANG); Ledo road, N of Namyung, 26°59'N, 96°11'E, 428 m, 19 Jan 2005, *Henderson et al. 3142* (MAND, NY, RAF, RANG). CHINA. Yunnan: Xishuanbanna, Kun Ge Luo, 17 Mar 1957, *Anon 7226* (KUN); Luo road, Do Liu Dao Ban, 27 Apr 1957, *Anon 8169* (KUN); Xishuanbanna, Menglunmanlun, 16 Sep 1959, *Anon 59-13042* (KUN); Xishuanbanna, Menglun, Mengla, 16 Sep 1952, *Anon 59-13042* (KUN); Xishuanbanna, Mengla, Man Na Electricity Station, 20 Mar 1984, *Chen 18992* (HITBC); Xishuanbanna, Mengla, Yi Wu, Zhu Shi river, 30 Apr 1984, *Chen 14289* (HITBC); YinJiang, Xi Ma, Na Bang Ba, 26 Nov 1981, *Chen 18941* (HITBC); Ning Jiang, Meng Wang, 7 Dec 1951, *Feng 14200* (KUN); SiMao, 15 km S along road to Gali, ca. 1200 m, 13 Apr 1955, *Feyerodov 480* (NY); SiMao, no date, *Henry 12331* (A, K, NY, US); SiMao, Cai Yan River, 14 Jul 2000, *Yuan 5261* (HITBC); Xishuanbanna, Jinuo mountain, Long Pa, 21°59'N, 101°05'E, 1278 m, 6 Jul 2003, *Henderson et al. 3100* (KUN, NY); Xishuanbanna, Mengla county, 3-4 km from Manzhuang, 21°24'N, 101°37'E, 9 Jul 2003, *Henderson et al. 3106* (KUN, NY); road from Labang to Liuding Tongbiguan, 24°06'N, 97°05'E, 17 Jul 2003, *Henderson et al. 3112* (KUN, NY); Mengtze, no date, *Henry 10411* (K, NY, US); Menglun, Botanical Garden Electrical Station, 1 Sep 1982, *Koyama 402* (KUN); Cang Yuan, Nanla commune, Da He Di, 28 Jun 1974, *Li 12550* (HITBC); Mengla, Meng Xing River, 24 Dec 1977, *Li 20858* (HITBC); Jing-Dong, Man Chwan, 15 Jun 1940, *Li 2971* (KUN); Xishuanbanna, Man Sha, 17 Apr 1959, *L01617* (KUN); Ping Bing Yao Shan Qu, Ke Zi, Ge Niao, 21 Apr 1954, *Mao 3954* (KUN); Jiang Cheng, Jia He, Ming Zi Sha, 8 Nov 1989, *Pei 772* (KUN); Menglian, Mang Ma, 24 Feb 1978, *Pei 14234* (HITBC); YinJiang, Tong Bi Guan, 1 Sep 1976, *Pei 14215* (HITBC); Xishuanbanna, Mengla, 2 May 1980, *Pei 18938* (HITBC); Yi-Wu, Mengla, 20 Dec 1958, *Research Team 10408* (KUN); YinJiang, on the way to NaBang Ba, 3 Nov 1974, *Tao 13106* (HITBC); Xishuanbanna, Jiang Hong, 29 Jul 1977, *Tao 15695* (HITBC); Mengla River, 28 Apr 1992, *Tao 45498* (HITBC); Mengla, Meng Kang, 13 Apr 1986, *Tong 24972* (HITBC); He Kau, Si Tiao Ban, 14 Apr 1953, *Wang 31* (KUN); Tsang-Yuan, Apr 1936, *Wang 73269* (A); Fo-Hai, 1500 m, 1 May 1936, *Wang 74281* (A, KUN); Sheau-Meng-Yeang, Che-Li Hsien, 1 Sep 1936, *Wang 75829* (A, KUN); Ban-Chiou-Chian, Che-li, 840 m, Oct 1936, *Wang 79729* (A); Xichou Fa Dou, 15 Dec 1939, *Wang 85726* (KUN); Mianning, Mayetiu, 1350 m, 24 Sep 1938, *Yü 17710* (A); Xishuanbanna, Mengla, Shang Yong, 15 Oct 1974, *Yang 10952* (HITBC); Xishuanbanna, Menglun, Man Lun, 9 Jun 1967, *Yunnan Group 3* (KUN); Lin Cang, First District, Ma Yi Dui, 24 Aug 1957, *Xin 334* (KUN). THAILAND. Chiang Mai: Doi Pae Poe, about 90 m NW of Tak, 17°17'N, 98°25'E, 1380 m, 14 Mar 1968, *Hansen & Smitinand12912* (BKF, K); Doi Setup, 1000 m, 15 Nov 1997, *Hodel & Vatcharakorn 1785* (BH); same locality, 31 Oct 1930, *Kerr 3278*

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(BK, K); same locality, 26 Aug 1991, *Pooma 515* (BKF); same locality, 26 Apr 1958, *Sorensen et al. 3043* (AAU, BKF); same locality, 19 Sep 1958, *Sorensen et al. 5130* (BKF); N of Chiang Mai at Chiang Dao, 600-1000 m, 17 Nov 1997, *Hodel & Vatcharakorn 1793* (BH); Khun Awn, 900-1000 m, 30 Jan 1924, *Kerr 4724* (AAU, BK, K); Bam Mae Kam, 1050 m, 2 Dec 1990, *Maxwell 90-1297* (A); Doi Chiang Dao, Doi Chiang Dao National Park, 14 Nov 1986, *Smith 22* (K); Inthanon National Park, 950 m, 23 Jul 1988, *Phengklai et al. 6861* (BKF). Chaing Rai: Doi Tung, 1000 m, 13 Nov 1997, *Hodel & Vatcharakorn 1783* (BH). Khamphaeng Phet: Mae Wong National Park, 16°05'N, 99°04'E, 1300 m, *Parnell et al. 95-377* (K). Mae Hong Kong: Khao Chi Chong, 1500-1800 m, 9 Jun 1995, *Niyomdham et al. 4286* (BKF). Nan: Doi Phu Kha, 30 km E of Pua, 1400-1600 m, 10 Nov 1997, *Hodel & Vatcharakorn 1775* (BH); Doi Phu Kha, 55 km E of Pua, 1000 m, 11 Nov 1997, *Hodel & Vatcharakorn 1780* (BH); Doi Phu Kha National Park, 26 km from Pua, 1150 m, 19°25'N, 101°06'E, 1150 m, 17 Aug 1995, *Parnell et al. 95-165* (K); Doi Phu Kha National Park, 19°12'N, 101°04'E, 1400 m, 23 Sep 1996, *Boyce 1129* (BKF, K). Phitsanulok: Phu Hin Rong Kla, 40 km E of Nakhon Thai, Rom Glao waterfall, 17°05'N, 101°07'E, 1100 m, 11 Dec 1990, *Larsen et al. 41876* (AAU).

2. *Wallichia disticha* T. Anderson, J. Linn. Soc., Bot. 11: 6. 1871. *Didymosperma distichum* (T. Anderson) Hook. f., Rep. Prog. Condition Roy. Bot. Gard. Kew 1882: 61. 1884. TYPE. INDIA. Sikkim: between the rivers Mahanuddee and Teesta, no date, *T. Anderson s. n.* (LECTOTYPE, here designated: P!). 二裂華里棕

Wallichia yomae Kurz, Forest Fl. Burma 2: 533. 1877. TYPE. MYANMAR: Bago: Pegu Yomah, 23 Jan 1868, *S. Kurz 1469* (LECTOTYPE, here designated: US!).

Stems solitary, to 9 m tall, 15-25 cm diameter. Leaves arranged in one or a few planes; sheaths 40-60 cm long, fibrous, with coarse, overlapping, black fibers, those of the outer layer thicker than the inner ones; petioles 0.5-1.5 m long; rachis 1.8-3.5 m long; pinnae 45-73 per side of rachis, irregularly arranged in clusters of 3-8 pinnae, spreading in different planes, pinnae from middle of leaf 56-80 cm long, 5-8 cm wide at widest point, linear or linear-lanceolate, shallowly lobed. Inflorescences unisexual, staminate and pistillate borne on the same stem, the pistillate terminal and the staminate lateral; staminate inflorescences to 1.2 m long, pendulous; prophyll not seen; peduncle to 50 cm long; peduncular bracts several, open and not sheathing the peduncle; rachillae to over 1000, to 30 cm long, 2 mm diameter, arranged in irregular whorls; staminate flowers to 10 mm long; sepals 1.5-2 mm long, connate into a cupular, lobed calyx, the lobes very briefly imbricate; petals to 10 mm long, purple and yellow; stamens 8-15; pistillate inflorescences to 1 m long, pendulous; prophyll not seen; peduncle to 50 cm long; peduncular bracts open and not sheathing the peduncle; rachillae 40-50, 30-60 cm long, 5-9 mm diameter; pistillate flowers 2 mm long; sepals 1 mm long; petals 2 mm long; gynoecium 2 mm long; fruits ellipsoid, to 2.2 cm long, to 1.5 cm diameter, reddish-brown.

Local names and uses: *thakal* (Bhutan), *katong* (India), *tao pha* (Lao), *minbaw*, *trung*, *zanong* (Myanmar), *mak na re suan* (Thailand). The pith from the stems is eaten in times of famine.

Distribution and habitat: Bangladesh, Bhutan, China (Yunnan), India (Arunachal Pradesh, Assam, Meghalaya, Sikkim, West Bengal), Lao (Bolikhamsay), Myanmar (Bago, Chin, Kachin, Kayin, Rakhine), Thailand (Northern, West), and probably Nepal (Fig. 1B); scattered localities in lowland to montane rain forest, especially in rocky places on steep slopes, often in disturbed areas, to 1200 m elevation. Six sight records (reliable sightings of the species without collection of specimens) are included in Figure 1B.

Notes: There is considerable variation in size and shape of pinnae, from narrowly linear to more broadly linear-lanceolate (Figs. 2A & B).

Staminate and pistillate inflorescences are borne on the same stem, with the pistillate terminal and the staminate lateral. Direction of anthesis amongst inflorescences is basipetal. There is no evidence that inflorescences are subtended by smaller leaves. An individual stem can produce inflorescences for over two years. On staminate rachillae, the direction of anthesis is acropetal.

The locality of *Brandis s. n.* has not been found. Sopilura (Sopilara?) is not found on modern maps or gazeteers, and the only Gonda Hills found in India is in the state of Jharkhand, an unlikely locality for *Wallichia disticha*.

Additional specimens examined: INDIA. Assan: Makim, Apr 1879, *Brandis s. n.* (K). Meghalaya: Cherrapunjee, Khasi Hills, 4000 ft., 14 Aug 1952, *Thakur Rup Chand 6391* (BH). West Bengal: above Sivoka, Feb 1874, *Gamble 2970* (K). State unknown: Choklong, lower Danguling (Daguling?) Hills, Jan 1875, *Gamble 2971* (K); Gonda Hills, inland from Sopilura (Sopilara?), no date, *Brandis s. n.* (K). MYANMAR. Chin: Nachawan-Webula, 1000-4000 ft., 28 Apr 1938, *Dickason 7217* (NY). CHINA. Yunnan: Ying Jiang, Xi Ma, 28 Nov 1981, *Chen 18946* (HITBC); Ying Jiang, Xi Ma, Na Bang Ba, 10 Oct 1988, *Chen 659* (KUN). THAILAND. Kanchanaburi: Sangkhlaburi District, Three Pagodas Pass, 300 m, 8 Jan 1994, *Dransfield et al. 7343* (K); Sangkhlaburi, 450 m, 1 Nov 1997, *Hodel & Vatcharakorn 1766* (BH); Wangka, Kanburi, 200 m, 26 Jan 1926, *Kerr 10313* (AAU, K, NY); SE of Sai Yok, 26 Dec 1961, *Larsen 8965* (BKF); Toong Yai, Sangkhlaburi, 400-500 m, 22 Mar 1997, *Niyomdham & Phuma 4967* (BKF); same locality, same date, *Niyomdham & Phuma 4968* (BKF). LAO. Bolikhamsay: Pakkading District, Ban Naphong, Houay Mouang, 18°12'N, 104°21'E, 260 m, 9 Feb 1999, *Evans 32* (K).

3. *Wallichia gracilis* Becc., Webbia 3: 211. 1910. TYPE. VIETNAM. Tonkin: Vallee de Banton [Lang Son: Ban Ton], 800 m, 27 Dec 1887, *B. Balansa 4362* (LECTOTYPE, here designated: P! lectotype image BH). 纖細華里棕（新擬）

Wallichia chinensis Burret, Notizbl. Bot. Gart. Berlin-Dahlem 13: 602. 1937. Type. CHINA. Guangxi: Lungchow, 20 Jun 1935, S. P. Ko 55394 (HOLOTYPE: B, destroyed; ISOTYPES: IBSC! SYS!).

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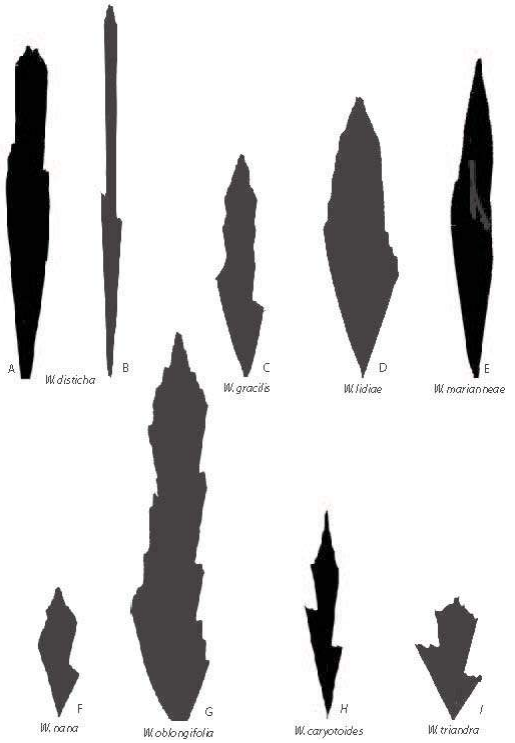


Fig. 2. Silhouettes of *Wallichia* pinnae viewed from the adaxial side, reduced 20% from life size. A: *W. disticha* (*Henderson s. n.*). B: *W. disticha* (*Evans 32*). C: *W. gracilis* (*Averyanov 4805*). D: *W. lidiae* (*Henderson et al. 3212*). E: *W. marianneae* (*Hodel 1703*). F: *W. nana* (*Moore 6085*). G: *W. oblongifolia* (*Henderson et al. 3156*). H: *W. caryotoides* (*Hodel 1793*). I: *W. triandra* (from *Joseph, 1972*).

Stems clustered, to 1.5 m tall, 2-2.5 cm diameter, stems bearing staminate and pistillate inflorescences about equal in length. Leaves arranged spirally; sheaths to 40 cm long, fibrous, with black fibers; petioles 1-1.7 m long; rachis 0.45-1.2 m long; pinnae 5-7 per side of rachis, regularly arranged, spreading in the same plane, pinnae from middle of leaf 30-40 cm long, 6-9 cm wide, lanceolate, with two lobes. Inflorescences unisexual, subtended by smaller leaves, staminate or pistillate terminal; staminate inflorescences 12-25 cm long, pendulous; prophyll to 4 cm long; peduncle to 12 cm long; peduncular bracts to 8, open and not sheathing the peduncle; rachillae numerous, 0.5-1.5 cm long, 0.8 mm diameter, short and crowded on the rachis; staminate flowers to 5 mm long; sepals 1 mm long, connate into a cupular, lobed calyx, the lobes free for about half their length, at least one pair of lobes briefly imbricate; petals to 5 mm long, white; stamens 6-7; pistillate inflorescences to 35 cm long, pendulous; prophyll to 4 cm long; peduncle to 20 cm long; peduncular bracts to 8, open and not sheathing the peduncle; rachillae numerous, to 6 cm long, 2 mm diameter; pistillate flowers 2 mm long; sepals 1.5 mm long; petals 2 mm long; gynoecium 2 mm long; fruits ovoid to ellipsoid, to 1.5 cm long, to 1.0 cm diameter, yellow.

Local names and uses: *hsian-tung-lan* (China), *hoa ly* (Vietnam).

Distribution and habitat: China (Guangxi, Yunnan) and Vietnam (Central, Northern), and probably Lao (Fig. 1C); lowland forest, at 200-1000 m elevation.

Notes: Beccari (1910) listed three specimens of *W. gracilis*, one of which, with staminate flowers, is chosen as lectotype. Beccari (1910) did not describe the number of stamens, nor the form of the staminate sepals because the flowers on *Balansa 4362* are old and without stamens. Burret (1937), in describing *W. chinensis*, recorded 6-9 stamens. Beccari (1910) cited two paratypes - *Henry 12331* and *Henry 10411* – which are both here identified as *W. caryotoides*.

Pinnae shape of *Wallichia gracilis* is similar to that of *W. caryotoides* (Figs. 2C & H). However, both staminate and pistillate rachillae of *W. gracilis* are considerably shorter than those of *W. caryotoides*. There is, however, variation in inflorescence length within *W. gracilis*, and both staminate and pistillate inflorescences range from short and compact to elongate.

Additional specimens examined: CHINA. Guangxi: *Long Jing, 12 Dec 1958*, Qing 14604 *(IBK, IBSC); Daqingshan, Long Jing, 2 Jul 1957*, Qing 12955 *(IBK, IBSC); Jingxi, 23 Aug 1935*, Ko 55593 *(IBSC); same locality, 23 Aug 1935*, Peng 297155593 *(IBSC); Long Jin, Da Qing Shan, Ke Kang, 15 Jun 1957*, Tung 12621 *(IBK, IBSC, KUN); Long Jin, Da Qing Shan, Gan Men, 2 Jun 1957*, Tung 12155 *(KUN); Longzhou, 25 Jun 1935*, Xipeng 55394 *(IBK, IBSC)*. Yunnan: *MaLiPo, Nan Wen He, at the foot of Tao Jun Shan, 1 Jun 1983*, Chen 18977 (*HITBC*); *MaLiPo, Tung-ting, 1200-1800 m, 23 Nov 1947*, Feng 13616 *(A, KUN); Jin Ping, 15 Apr 1958*, Huang 557 *(KUN); He Kou, Nan E, 6 Jul 1953*, Liu 189 (*KUN*); *MaLiPo, Kwan-Kao, 15 Feb 1940*, Wang 86913 (*IBK, KUN*); *Si-chou, Fa-doe, 15 Feb 1939*, Wang 85736 *(KUN)*. VIETNAM. Cao Bang: Tra Linh District, Quoc Toan, Lung Tao, 22°45'N, 106°19'E, 14 Dec 1998, *Hiep cbl1237/1* (HN). Bac Kan: Cho Don District, Bang Lung, 13 May 2000, *Hach cd10* (HN). Ha Tay: Ba Vi, ca. 800 m, 19 Jan 1886, *Balansa 4369* (P). Ha Tinh: Huong Son District, Nga Doi, 18°29'N, 105°13'E, 20 May 1998, *Hiep et al. 773* (HN, K). Hoa Binh: Da Bac District, Phu Canh mountain, 20°55'N, 105°02'E, 30 Mar 2001, *Hiep et al. hal452* (HN). Kon Tum: Distr. Dak Glay, ca. 15-18 km NW of Dak Glay, near Mang Khen (Dak Che) village, 1000 m, 24 Nov 1995, *Averyanov et al. vh1953* (A, AAU, P). Lang Son: Dong Dang, Feb 1885, *Balansa 519* (P). Lao Cai: Van Ban District, Nam Xe Municipality, Mu stream, 22°01'N, 104°00'E, 815-953 m, *Harder et al. 7032* (HN). Nghe An: Que Phong, Hanh Dich, 20 Dec 2002, *Anon s. n.* (HN). Ninh Bihn: Cuc Phuong National Park, 20°21'N, 105°35'E, 330 m, *Soejarto et al. 10394* (A, HN); same locality, 30 Jul 1999, *Nguyen Manh Cuong et al. 308* (HN); same locality, 9 Jul 1971, *Giang Dam 326* (HN); same locality, 23 Feb 1971, *Hop 70cp* (HN). Phu Tho: Xuan Son, 1 Jul 2003, *Phuong 6214* (HN). Quang Bihn: Distr. Minh Hoa, 72 km WNW of Dong Hoi, Municipality Thong Hoa, vicinity of Yen Son village, 17°40'N, 105°57'E, 200 m, 18 Apr 1997, *Averyanov et al. 4805* (AAU, HN, MO). Quang Ninh: Taai Wong Mo Shan and vicinity, Chan Uk Village near Chuk-phai, Hai-coi, 11-20 May 1939, *Tsang 29051* (A, K, IBSC, P).

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4. *Wallichia lidiae* A. Henderson, *sp. nov.* (Figs. 2D, 3). TYPE. MYANMAR. Bago Division: W of Oktwin, N of Toungoo, road across Pegu Yoma, 18°51'N, 96°12'E, 4 Nov 2005, *A. Henderson, U San Hlaing & Kyi Myat Min 3212* (HOLOTYPE: NY! ISOTYPE: RAF!). 理荻雅華里棕（新擬）

A similaribus speciebus differt: foliolis vix lobatis, late lanceolatis et inflorescentiis staminatis amplioribus.

Stems clustered, with one main stem and several shorter ones, to 4 m tall, 4 cm diameter, stems bearing staminate inflorescences to 4 m tall, pistillate stems much shorter, to 0.5 m tall. Leaves 6, spirally arranged; sheaths not fibrous; petioles 2 m long; rachis 1 m long; pinnae 7 per side of rachis, regularly and alternately arranged except for clustered proximal pair, spreading in the same plane, pinnae from middle of leaf 50 cm long, 12-14 cm wide at widest point, widest near the middle, broadly lanceolate, scarcely lobed. Inflorescences subtended by smaller leaves, unisexual, staminate and pistillate borne on separate stems, the pistillate terminal the staminate lateral; staminate inflorescences 70 cm long, to 7 per stem, pendulous; prophyll not seen; peduncle 40 cm long; peduncular bracts 11, open and not sheathing the peduncle; rachillae 4 cm long, 1 mm diameter, glabrous; staminate flowers not seen; pistillate inflorescences 45 cm long, pendulous; prophyll not seen; peduncle 20 cm long; peduncular bracts several, open and not sheathing the peduncle; rachillae about 17, 14-15 cm long, 2.5 mm diameter; pistillate flowers to 3 mm long at anthesis; sepals 0.5 mm long; petals 2.5 mm long; gynoecium 2.5 mm long; fruits not seen.

Local names and uses: None recorded.

Distribution and habitat: Known only from the central part of the Pegu Yomah, Myanmar (Fig. 1D); on steep slopes in highly disturbed forest, at low elevations.

Notes: *Wallichia lidiae* differs from all other species in its short pistillate stems and elongate staminate stems, both of which are borne in the same clump. In pistillate stems the single inflorescence is terminal, and is subtended by smaller leaves. Staminate stems are elongate and have a terminal abortive pistillate inflorescence and up to seven lateral staminate inflorescences.

5. *Wallichia marianneae* Hodel, Palm J. 137: 8. 1997. TYPE. THAILAND. Trang: SE of Trang near Ton Tok Park, 3 May 1997, *D. Hodel, P. Vatcharakorn & R. Vatcharakorn 1703* (HOLOTYPE: BK *n. v.*; ISOTYPE: BH!). 瑪麗安華里棕（新擬）

Stems clustered, to 1.6 m tall, 4-10 cm diameter, stems bearing staminate and pistillate inflorescences about equal in length. Leaves spirally arranged; sheaths 30-75 cm long, disintegrating into black fibers, with a prominent, fibrous ligule at the apex; petioles 1-1.5 m long; rachis 0.8-1.3 m long; pinnae 5-10 per side of rachis, regularly and alternately arranged, spreading in the same plane, proximal 2-3 pinnae in a cluster, pinnae from middle of leaf 57-77 cm long, 6-8 cm wide at widest point, lanceolate, scarcely lobed. Inflorescences unixexual, subtended by smaller leaves, staminate and pistillate borne on the same stems, the pistillate terminal, the staminate lateral; staminate inflorescences not seen in their entirety; rachillae to 10, to 20 cm long, 2-2.5 mm diameter; staminate flowers to 6 mm long; sepals 1.5 mm long, connate into a cupular calyx, very briefly lobed; petals 6 mm long, purple; stamens 16-19; pistillate inflorescences not seen; rachillae to 11 cm long, 3.5 mm diameter; pistillate flowers to 3 mm long; sepals to 0.5 mm long; petals 3 mm long; gynoecium 1.5 mm long; fruits ovoid to ellipsoid, to 1.1 cm long, to 0.8 cm diameter, red or purple.

Local names and uses: *kuong* (Thailand). No uses recorded.

Distribution and habitat: Thailand (Peninsula) and probably adjacent Myanmar (Fig. 4A); lowland moist forest, 600-1100 m elevation.

Notes: Distinguished from other species by its lanceolate pinnae (Fig. 2E) and purple staminate flowers with 16-19 stamens.

One specimen from Thailand (Kanchanaburi: ca. 30 km NW of Thong Pha Phum on highway 323 to Myanmar border, ca. 20 km E of Koeng Ka Vin and Pawanaputso Temple, 500 m, 1 Nov 1997, *Hodel & Vatcharakorn 1765* (BH, MO)) has lanceolate pinnae as in *W. marianneae* and 12 stamens as in *W. caryotoides*. It is illustrated in Hodel (1998), plate 83c. It may be a hybrid between *W. marianneae* and *W. caryotoides*.

Additional specimens examined: THAILAND. Trang: Khao Chong, forest adjacent to Peninsular Botanic Garden, 7°37'N, 99°37'E, 150-200 m, 24 Oct 1992, *Barfod et al. 43985* (AAU); Khao Chang, Botanical Gardens, Tub Kian, 2 km from headquarters, 3 Dec 1986, *Smith 94* (K). Phangnga: Sri Phangnga National Park, 9°00'N, 98°28'E, 100-200 m, *Barfod et al. 45264* (AAU). Phuket Khao: Khao Phra Kaeo non-hunting area, 8°02'N, 98°21'E, 50-100 m, 27 Feb 1994, *Barfod et al. 45273* (AAU). Ranong: La-un, 1100 m, 3 Jan 1929, *Kerr 16522* (AAU, BH, BK, K, NY); Kapur District, Klong Na Kha Wildlife Sanctuary, Bang Mon, 25 Nov 1986, *Smith & Sumawong 47* (K).

6. *Wallichia nana* Griff., Calcutta J. Nat. Hist. 5: 488. 1845. *Harina nana* (Griff.) Griff., Palms Brit. E. India 176. 1850. *Didymosperma nanum* (Griff.) H. Wendl. & Drude in O. C. E. de Kerchove de Denterghem, Palmiers 243. 1879. *Blancoa nana* (Griff.) Kuntze, Revis. Gen. Pl. 2: 727. 1891.

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Fig. 3. Staminate (left) and pistillate (right) stems of *W. lidiae*, showing unequal length (both from *Henderson et al. 3212*).

Arenga nana (Griff.) H. E. Moore, Principes 4: 114. 1960. Type. INDIA. Assam: "lower Assam, in woods about Gowahatty", no date, *Jenkins s. n.* (HOLOTYPE: CAL *n. v.*; ISOTYPES: A! K! NY! P!). 矮生華里棕

Stems clustered, to 0.6 m tall, to 2 cm diameter, stems bearing staminate and pistillate inflorescences about equal in length. Leaves arranged spirally; sheaths to 20 cm long, fibrous, with a fibrous ligule to 8 cm long; petioles 0.1-0.28 m long; rachis 0.15-0.5 m long; pinnae 3 per side of rachis, regularly arranged, spreading in the same plane, pinnae from middle of leaf 9-20 cm long, 6.5-10 cm wide, lanceolate, with two lobes. Inflorescences unisexual, subtended by smaller leaves, the pistillate terminal and the staminate lateral; staminate inflorescences to 30 cm long, erect; prophyll not seen; peduncle to 20 cm long; peduncular bracts several, sheathing the peduncle; rachillae 1-4, to 13 cm long, 2 mm diameter, densely brown tomentose;

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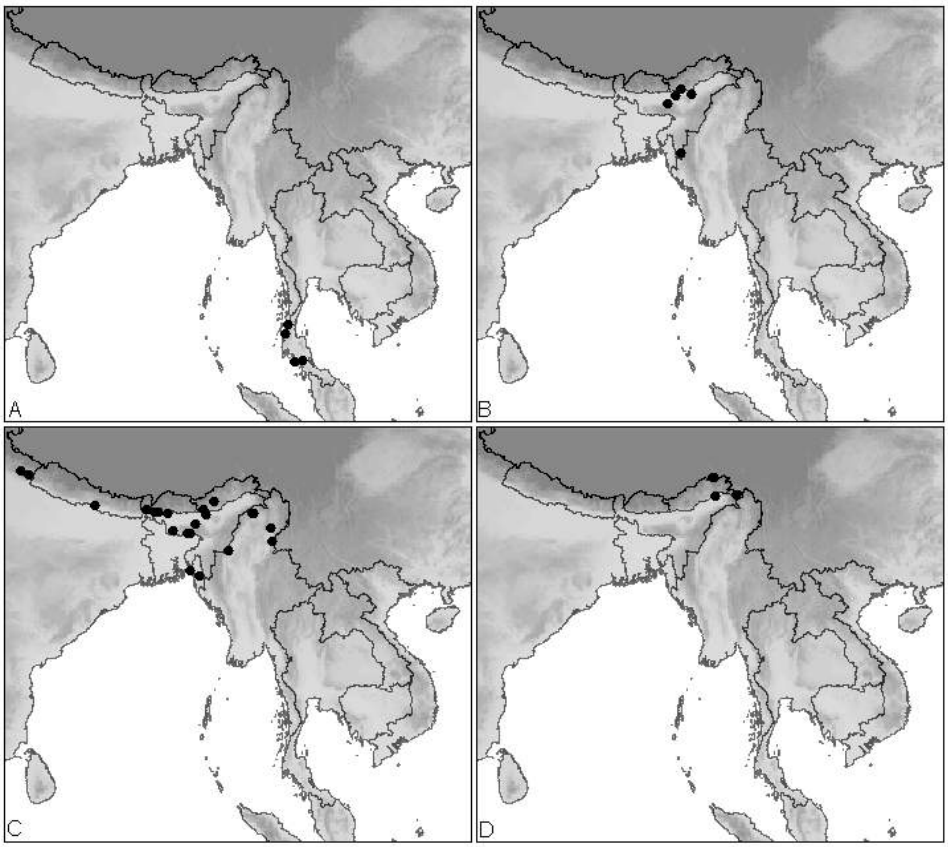


Fig. 4. Distribution maps. A: *Wallichia marianneae*. B: *W. nana*. C: *W. oblongifolia*. D: *W. triandra*.

staminate flowers to 5 mm long; sepals 2 mm long, connate into a cupular calyx, deeply lobed, the lobes not imbricate; petals 5 mm long, purple; stamens 9; pistillate inflorescences 20-30 cm long, erect; prophyll not seen; peduncle 11-15 cm long; peduncular bracts several, sheathing the peduncle; rachillae 1-3, often only one well-developed, 8-12 cm long, 3-4 mm diameter, densely brown tomentose; pistillate flowers 2-3.5 mm long; sepals 0.5 mm long; petals 2-3 mm long; gynoecium 2-3 mm long; fruits ellipsoid, to 1.2 cm long, to 1.0 cm diameter, white.

Local names and uses: *ipathi* (India). No uses recorded.

Distribution and habitat: India (Arunachal Pradesh, Assam, Meghalaya)(Fig. 4B); lowland rainforest at low elevations.

Notes: This species was transferred by Moore (1960) from *Wallichia* to *Arenga*, presumably based on its staminate sepals. *Wallichia* and *Arenga* are morphologically similar, and the only difference between the two is the form of the staminateflowers. *Wallichia* is said to have the sepals of the staminate flowers connate into a tube, and *Arenga* to have free and imbricate staminate sepals (Uhl and Dransfield, 1987). As found in this study, species of *Wallichia* have cupular staminate sepals, either lobed or not lobed at the apex. In those species with lobed apices, the lobes are sometimes briefly imbricate. In all species of *Arenga*, the staminate sepals are free and imbricate. In this scenario, *Arenga nana* clearly belongs in *Wallichia*.

Griffith (1850) reported ‘about 14’ stamens, although only nine have been counted in this study.

Staminate and pistillate inflorescences are borne on the same stem, with a terminal pistillate inflorescence followed by staminate inflorescences. Direction of anthesis amongst inflorescences is basipetal. Distal inflorescences are subtended by smaller leaves.

Additional specimens examined: INDIA. Assam: Duphla Hills, 12 Dec 1874, *Lister 59* (P); banks of the Duking and Dhumsiri rivers, Mar 1890, *Anon s. n.* (K) Meghalaya: Khasia, Nowgong, 22 Jul 1850, *J. Hooker & J. Thomson s. n.* (K, P).

7. *Wallichia oblongifolia* Griff., Calcutta J. Nat. Hist. 5: 486. 1845. *Harina oblongifolia* (Griff.) Griff., Palms Brit. E. India 175. 1850. TYPE. INDIA. Assam: unknown locality, no date, *Masters s. n.* (LECTOTYPE, here designated: NY!).

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Wallichia densiflora Mart., Hist. nat. palm. 3: 190. 1845. Harina densiflora (Mart.) Walp., Ann. Bot. Syst. 3: 1032. 1853. Type not designated.

Stems clustered, short and subterranean or to 1 m tall, to 40 cm diameter, stems bearing staminate and pistillate inflorescences about equal in length. Leaves 7-10, spirally arranged; sheaths and ligules disintegrating into black fibers; petioles to 2 m long; rachis 1.5-2.5 m long; pinnae 16-17 per side of rachis, regularly and alternately arranged, spreading in the same plane, proximal 2-3 pinnae in a cluster, the smallest erect, pinnae from middle of leaf 45-56 cm long, 7-12 cm wide, widest near the apex, approximately oblong, with several lobes. Inflorescences unisexual, staminate and pistillate borne on separate stems; staminate inflorescences pendulous, not seen in their entirety; prophyll not seen; peduncle not seen; peduncular bracts several, covering and compressing the rachillae at anthesis; rachillae numerous, at least to 12 cm long, 2 mm diameter, glabrous; staminate flowers 7-10 mm long; sepals 5-7 mm long, connate into a cupular calyx; petals to 7 mm long, free except for the basal 2 mm, there forming a solid tube with the stamens inserted; stamens 6; pistillate inflorescences to 100 cm long, horizontally spreading; prophyll not seen; peduncle to 70 cm long; peduncular bracts several (at least 3); rachillae 16-32, to 35 cm long, 4.5-6.5 mm diameter; pistillate flowers to 6 mm long; sepals 1 mm long; petals 5 mm long; gynoecium to 5 mm long; fruits ovoid to ellipsoid, to 1.5 cm long, to 0.8 cm diameter, greenish-brown to reddish.

Local names and uses: *mihua walizong* (China); *takoru* (Bhutan, Nepal); *araru*, *chilputtal*, *ipathi*, *lemi* (India); *zanong* (Myanmar); *khareto* (Nepal). The leaves are used for thatching and making brooms.

Distribution and habitat: Bangladesh, Bhutan, China (Yunnan), India (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Uttaranchal), Myanmar (Kachin, Sagaing), and Nepal (Fig. 4C); lowland or montane rain forest, especially in rocky places on steep slopes, 200-1200 m elevation. Four sight records (reliable sightings of the species without collection of specimens) are included in Figure 4C.

Notes: This species has usually been known as *Wallichia densiflora* Mart. This name was published in September 1845 in the second printing of the third volume of *Historia Naturalis Palmarum* (Martius, 1845; see also Dransfield and Moore, 1982). Here Martius refers to page 189 of the first printing of the third volume, published in 1838, but no reference to *Wallichia densiflora* appears on that page, at least not in the copy at NY (contra Dransfield and Moore, 1982). Page 189, in fact, contains the treatment of *Iriartea*, and that of *Wallichia* is on page 188. However, even on that page there is no reference to *W. densiflora*. *Wallichia oblongifolia* was published in January 1845 (Griffith, 1845), and thus precedes *W. densiflora*.

Wallichia oblongifolia is distinctive in its large, approximately oblong pinnae (Fig. 2G). Inflorescences of *W.oblongifolia* appear to be either staminate or pistillate and no specimen has been seen with both staminate and pistillate flowers on the same inflorescence. There is no evidence of inflorescences being subtended by reduced leaves. In the field plants have been seen with either staminate or pistillate inflorescences, never both, and thus there is a possibility that this species is dioecious.

Additional specimens examined: INDIA. Assam: Garo Hills, Chokphot, 1300 ft., no date, *Parry 876* (K). Manipur: Mount Sirhoi, 13 Oct 1948, *Kingdon-Ward 18231* (NY). Meghalaya: Khasi Hills, Barapani, 3000 ft., 5-14 Jun 1949, *Thakur Rup Chand 1658* (BH); Khasi Hills, Burnihat, 15 Mar 1955, *Thakur Rup Chand 8330* (BH); Khasi Hills, no date, *Hooker & Thomson s. n.* (A, P). Sikkim: Tista, Mar 1874, *Gamble 2969* (K); Chumbai, 7 May 1876, *Gamble s. n.* (K); no locality, 1000-3000 ft., no date, *Hooker & Thomson s. n.* (A, P). Uttaranchal: Kumaon, 1000-2500 ft., no date, *Strachey & Winterbottom s. n.* (A, K, P). BANGLADESH. Chittagong, Pharoha, 28 Feb 1879, *Gamble 6765b* (K); Chittagong, Sitakund, 1000 ft., no date, *Hooker & Thomson s. n.* (K). CHINA. Yunnan: Labang, near YinJiang on border with Myanmar, 24°45'N, 97°34'E, 16 Jul 2003, *Henderson et al. 3111* (NY): Jiang Cheng, Tu Ka river, 18 Dec 1991, *Tao 49085* (HITBC); YinJiang, Xi Ma, Na Bang Na near La Zha river, 10 Dec 1978, *Tao 17894* (HITBC); YinJiang, Xi Ma, Na Bang Ba, 30 Oct 1988, *Chen 660* (KUN). BHUTAN. Sankosh: 2 km W of Pinkhua, 26°44'N, 90°02'E, 360 m, 16 Mar 1982, *Grierson & Long 3786* (A, K). Samchi: Khagra Valley near Gokti, 26°49'N, 89°12'E, 600 m, 2 Mar 1983, *Grierson & Long 3409* (K). NEPAL. Chitwan National Park, Siwalik Hill (Churiya Hill), ca 8 km SE of Bhimpur Siwalik, 350 m, Oct 1993, *Rijal 800* (K). MYANMAR. Kachin: Ledo road, 3 km N of Shinbwiyang, 26°43'N, 96°11'E, 260 m, 16 Jan 2005, *Henderson et al. 3132* (K, MAND, NY, RAF, RANG); Ledo road, Mile 8 Camp, between Namyung and Shinbwiyang, 26°46'N, 96°12'E, 847 m, 27 Jan 2005, *Henderson et al. 3156* (K, MAND, NY, RAF, RANG); Ledo road, between Mile 8 Camp and Shinbwiyang, 26°43'N, 96°12'E, 350 m, 29 Jan 2005, *Henderson et al. 3164* (MAND, NY, RAF, RANG).

8. *Wallichia triandra* (J. Joseph) S. K. Basu, Principes 20: 120. 1976. *Asraoa triandra* J. Joseph, Bull. Bot. Surv. India 14: 144. 1975. TYPE. INDIA. Arunachal Pradesh: Hayuliang, 25 Sep 1969, *A. Rao 48105* (HOLOTYPE: CAL *n. v.*).

三藥華里棕

Stems clustered, to 3 m tall, 3-5 cm diameter, Stems bearing staminate and pistillate inflorescences about equal in length. Leaves arranged spirally; sheaths fibrous; rachis to 2 m long; pinnae 11-19 per side of rachis, regularly arranged, spreading in the same plane, pinnae from middle of leaf to 40 cm long, to 10 cm wide at widest point, lanceolate, with two pronounced lobes. Inflorescences unisexual, the pistillate terminal and staminate lateral; staminate inflorescences to 0.35

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m long, erect; prophyll not seen; peduncle not seen; peduncular bracts about 8, sheathing the peduncule; rachillae to 16 cm long; staminate flowers to 8 mm long; sepals 1-1.5 mm long, connate into a cupular calyx; petals 6-8 mm long, dark violet; stamens 3; pistillate inflorescences to 0.35 m long, erect; prophyll not seen; peduncle not seen; peduncular bracts several, sheathing the peduncle; rachillae 20-30 cm long; pistillate flowers 4 mm long; sepals 1 mm long; petals 3 mm long; fruits oblong, to 1.3 cm long, to 0.7 cm diameter, red.

Local names and uses: None recorded.

Distribution and habitat: Known only from China (Tibet) and India (Arunachal Pradesh) (Fig. 4D); montane rainforest, at 900-2000 m elevation.

Notes: The description above is taken from Joseph (1972). *Kingdom-Ward 18477*, which lacks staminate flowers, probably belongs here, based on pinnae shape only. It comes from the same locality as one of the paratypes cited in the original description.

Additional specimens examined: INDIA. Arunachal. Pradesh: Mishmi Hills, Glo, Kamlang valley, 4000 ft., 1 Apr 1949, *Kingdom-Ward 18477* (NY). CHINA. Tibet: Didong, Medog, SE Tibet, 13 Dec 1992, *Sun ETM2217* (KUN); Mo-Tuo, Mo Tuo, Bei Ben, 7 Oct 1974, *Qing Hai Tibet Team 74-5067* (KUN); Mo Tuo, Lao Mo Tuo, 26 Aug 1974, *Qing Hai Tibet Team 74-4548* (KUN).

Excluded and doubtful names

Harina wallichia Steud. ex Saloman, Palmen: 127. 1877. Nomen nudum.

Didymosperma gracilis Hook. f., Fl. Brit. India 6: 420. 1894. Type. INDIA. Arunachal Pradesh: Dafla Hills, no date, *Booth s. n.* (HOLOTYPE: K!).

The type specimen is so poor that it is not possible to identify this specimen.

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華里棕屬 (棕櫚科) 植物訂正

Andrew Henderson[1]

(收搞日期：2006 年 5 月 2 日; 接受日期：2006 年 8 月 28 日)

摘　　要

本文檢視植物標本館標本外部形態特徵，進行亞洲棕櫚科植物華里棕屬之訂正。共有 8 個物種被確認，包括 1 新種—理荻雅華里棕 (*Wallichia lidiae*) 及二裂華里棕 (*W. disticha*)、纖細華里棕 (*W. gracilis*)、長橢圓葉華里棕 (*W. oblongifolia*) 選模式標本之選定。文中包括該 8 種之檢索表、完整之同物異名、分類描述、羽葉形態之繪圖及每一種的分佈圖。

關鍵詞：華里棕屬、棕櫚科、訂正。

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