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A New Species of *Arenga* (Palmae)

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ABSTRACT: Confusion over two, morphologically similar species of *Arenga* (Palmae) is resolved. The well-known *A. engleri* is shown to be endemic to Taiwan, and a new species, *A. ryukyuense* is described from the Ryukyu Islands.

KEY WORDS: *Arenga*, new species, Taiwan, Ryukyu, Palmae.

INTRODUCTION

Arenga contains about 20 species (Govaerts and Dransfield, 2005), widely distributed from India to Southeast Asia, and reaching New Guinea and Australia. The most recent treatment of the genus is that of Mogea (1991; see also Mogea, 1999, 2004).

This paper concerns two morphologically similar species occurring in Japan (Ryukyu Islands) and Taiwan. These have been confused in the revision of Mogea (1991) and also in the floras of Taiwan (Li, 1978; Liao, 2000) and the Ryukyus (Walker, 1976).

Mogea (1991) determined the specimens cited here as belonging to two species - *Arenga engleri* from the Ryukyu Islands and Taiwan, with shorter stems and net-like ocreas; and *A. tremula* from the Ryukyu Islands, Taiwan, Hainan, and the Philippines, with taller stems and tubular ocreas.

In *Arenga tremula* Mogea (1991) recognized two subspecies (not validly published) – subsp. *tremula* from the Philippines, with irregularly arranged pinnae and multiple staminate inflorescences; and subsp. *longistamina* from the Ryukyu Islands, Hainan, and Taiwan, with regularly arranged pinnae and solitary staminate inflorescences.

Examination of specimens of *Arenga tremula* from the Philippines shows that they differ in several respects from those cited here. Presumably the reason that Mogea considered that a subspecies of *A. tremula* was present in the Ryukyus, Hainan, and Taiwan was based on stamen number. Mogea reported that *A. tremula* had 80-100 stamens, and examined two specimens (*Moran 5117*, *Hatusima 17253*) of subsp. *longistamina* with staminate flowers. However, neither have such a high number of stamens. *Moran 5117* has 35 (in distal flowers on a rachilla) to 59 (in proximal flowers on a rachilla) stamens (CAL duplicate examined by Mogea, US duplicate examined here); and *Hatusima 17253* has approximately 45 stamens (L duplicate examined by Mogea, US duplicate examined here). Furthermore, the Hainan specimens determined by Mogea (1991) as *A. tremula* are better accommodated in *A. westerhoutii*.

In preparation for the *Field Guide to the Palms of Southern Asia* (Henderson, in prep.) I have examined specimens from A, BH, K, KUN, NY, and US of *Arenga* from Japan (Ryukyu Islands) and Taiwan. I conclude that two species are present, one of which is undescribed. Here I give complete descriptions of both species. They can be distinguished by the following key.

Key to the species of *Arenga* in Japan (Ryukyu Islands) and Taiwan

1. Pinnae strongly ribbed adaxially, lobed along the distal margins only; filaments 0.5-1 mm long; stamens 35-59; Japan (Ryukyu Islands) ..... *A. ryukyuense*
1. Pinnae flat adaxially, lobed all along the margins; filaments 2-4 mm long; stamens 25-37; Taiwan. ..... *A. engleri*

1. *Arenga ryukyuense* Henderson, sp. nov. Fig. 1

Type. JAPAN. “Loo-Choo Islands”, no locality, 1853-1856, *C. Wright s. n.* (HOLOTYPE: NY! ISOTYPE: US!).

Ab *Arenga engleri* differt: pinnis subter valde costatis, marginibus distalis lobatis; filamentis 0.5-1 mm longis; et staminibus 35-59.

Stems short and subterranean except for flowering stems, these reaching 2 m tall, 20 cm diameter. Leaves pinnate; sheaths fibrous; ocrea net-like, sheathing, to 30 cm long; petioles to 1 m

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Fig. 1. Holotype specimen of *Arenga ryukyuense*.

long, covered with felt-like, light brown tomentum and dark brown, peltate scales; rachis to 2 m long, tomentose as the petiole; pinnae 32-48 per side of rachis, linear, strongly ribbed adaxially, notched along the distal margins, without ears at the base, or rarely ears present, regularly arranged and spreading in the same plane except for the basal few pinnae, these paired; middle pinnae 43-59 cm long, 1.7-3.5 cm wide. Inflorescences interfoliar, unisexual, not seen in their entirety; staminate rachillae 26-37 cm

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long, 2.9-4.6 mm diameter, numerous, glabrous; staminate flowers 8-9.5 mm long, spirally and distantly arranged; sepals 2.5-3.5 mm long; petals 7.5-9 mm long; filaments 0.5-1 mm long; anthers 5.5-6 mm long; stamens 35-59; pistillate inflorescences pendulous; rachillae 16-31 cm long, 3.4-6.8 mm diameter, glabrous; pistillate flowers spirally and distantly arranged, 16-27 cm long, 5 mm diameter, glabrous; pistillate flowers 2.5 mm long; sepals 2 mm long, broadly imbricate; petals 2.5 mm long, valvate for ca. two thirds their length; fruits globose, 1.2-1.8 cm diameter, orange or red.

Local names and uses*: kuru-tsugu*, *mani*. No uses recorded.

Distribution and habitat*:* Japan, Ryukyu Islands (Sakishima Group, Okinawa Group); lowland forest or secondary forest along river margins, or scrub forest especially near the sea shore, at low elevations.

Notes: This species has been illustrated by Walker (1976). Several specimens of *Arenga ryukyuense* are known from the Bonin Islands. On the label of two of these is written "grow wild from cult?", indicating a cultivated origin for these specimens. The genus is not included in the palm flora of the Bonin Islands (Moore and Fosberg, 1956).

Additional specimens examined: JAPAN. Sakishima groupe: Iriomote Island, Nakama River, 0-30 m, 29 Apr 1982, *Fukuoaka 11346* (KUN); Iriomote, Yaeyama Islands, 21 Jan 1973, *Furuse 2132* (K); Iriomote Island, Nakara River, 16 Jul 1955, *Hatusima 18717* (US); Iriomote Island, near Funaura, 8 Sep 1974, *Murata & Tabata 646* (K); Iriomote, Komi Pasture to Komi, Taketomi-cho, Yaeyama-gun, 0-30 m, 16 Mar 1982, *Okada et al. 312* (A, US); Yaeyama Gunto, along Urauchi River, 21 Aug 1951, *Walker 6677* (US); Ishigaki Island, Ntana Yama, ridge above Ozato, 100-150 m, 21 Jun 1956, *Fosberg 37658* (BH, US); Ishigaki Island, near Tomina, 18 Jul 1955, *Hatusima 18890* (US), same locality, 23 Jul 1956, *Fosberg 38070* (BH). Okinawa group: Ogami Jima, 25 m, 25 Aug 1956, *Fosberg 38405* (BH, US); Okinawa Island, Hyakuna, Shimajiri, 17 Apr 1955, *Hatusima 17253* (US); Okinawa, Kawasaki, Kin Village, 5 Jun 1962, *Jones s. n.* (BH, US); Okinawa Island, Kinwan, 26°21'N, 127°52'E, 9 Apr 1955, *Moran 5117* (US); Okinawa, Kunigami, Kunigami-son, Yona, 7 Nov 1976, *Ohashi & Tateishi 1028* (US); Okinawa Island, Motobu Peninsula, foot of Mt. Awa, 10 Dec 1953, *Walker 7599* (US); Okinawa Nakagami, Tomari Village, near Kuba-saki, 4 Jul 1951, *Walker et al. 6017* (US); Okinawa, Naha, 1 Mar 1917, *Wilson 8014* (K).

2. *Arenga engleri* Becc., Malesia 3: 184. 1889. *Didymosperma engleri* (Becc.) Warb., Monsunia 1: t. 2, f. 1. 1900. *Arenga tremula* var. *engleri* (Becc.) Hatus, Fl. Ryukyus: 754. 1971. Type. TAIWAN. Taipei: Tamsuy, 14 Apr 1864, *R. Oldham 626* (LECTOTYPE, here designated, FI-B n. v.; ISOLECTOTYPE: K!).

Stems clustered, to 4 m tall, 10-15 cm diameter. Leaves pinnate; sheaths fibrous; ocrea not seen; petioles to 1.8 m long, covered with dark brown, peltate scales; rachis to 3 m long, tomentose as the petiole; pinnae 38-41 per side of rachis, linear, flat adaxially, very briefly lobed along the margins, without ears at the base, regularly arranged and spreading in the same plane except for the basal few pinnae, these paired; middle pinnae 43-49 cm long, 2-2.2 cm wide. Inflorescences interfoliar, unisexual, to 60 cm long, not seen in their entirety; staminate rachillae 9.7-27.6 cm long, 3.6-4 mm diameter, numerous, glabrous; staminate flowers 8-14 mm long, spirally and distantly arranged; sepals 2-2.5 mm long; petals 9-14 mm long; filaments 2-4 mm long; anthers 3-6 mm long; stamens 25-37; pistillate rachillae 27-32 cm long, 5-7.4 mm diameter, glabrous; pistillate flowers spirally and distantly arranged, 3 mm long; sepals 2.5 mm long, broadly imbricate, gibbous; petals 3 mm long, valvate for about two thirds their length; fruits globose, 1.5 cm diameter, orange or red.

Local names and uses: *soan-tsang* (Taiwanese), *shan-tsong* (Mandarin).

Distribution and habitat: Taiwan; lowland forest, at low elevations.

Notes: This species is widely cultivated. One specimen, *Chung 6374*, from Fukien Province, China, is said by Merrill (1937) to be possibly cultivated.

Additional specimens examined: TAIWAN. Kaohsiung co.: Rokki, 300 m, 13 May 1934, *Gressitt 41* (NY).Nanto co.: Musha, 12 Mar 1918, *Wilson 10022* (K, US). Unknown province: no locality, no date, *Henry 798* (K, NY, US); Tong An, Chikutoki, E of Kagi, 9 Mar 1912, *Price 148* (K).

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山棕屬 (棕櫚科) 新種

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摘　　要

本文報導山棕屬（棕櫚科）內兩個形態相似容易混淆的種。山棕（*A. engleri*) 是廣為熟知的臺灣特有種，而琉球山棕（*A. ryukyuense*) 為琉球群島的特有種。

關鍵詞：山棕屬、新種、臺灣、琉球、棕櫚科。

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