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Source: Novon: A Journal for Botanical Nomenclature, 21(1):149-153. 2011.

Published By: Missouri Botanical Garden

DOI:

URL: <http://www.bioone.org/doi/full/10.3417/2009033>

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Arundinella kerrii and *Dimeria kerrii*, Two New Endemic Species from Thailand (Poaceae, Panicoideae)

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ABSTRACT. *Arundinella kerrii* Teerawat. & Sungkaew and *Dimeria kerrii* Teerawat. & Sungkaew (Poaceae, Panicoideae) are validly published for the first time. Species descriptions and illustrations are provided for both taxa known only from collections from Thailand.

Key words: *Arundinella*, *Dimeria*, IUCN Red List, Panicoideae, Poaceae, Thailand.

While preparing the accounts of grass genera for the *Flora of Thailand*, two overlooked grass names were found to require validation. The names *Arundinella kerrii* and *Dimeria kerrii* were previously used by Hambananda (1990, unpublished thesis) and Nanakorn and Norsangri (2001), respectively.

ARUNDINELLA RADDI

Arundinella kerrii Teerawat. & Sungkaew, sp. nov.

Arundinella kerrii Hambananda, nom. inval.
TYPE: Thailand. Nakhon Phanom: Tha Uthen, ca. 200 m, 16 Feb. 1924, A. F. G. Kerr 8474 (holotype, BK; isotypes, BM, K). Figure 1.

Haec species *Arundinellae hirtae* (Thumb.) Tanaka et A. fluiatili Hand.-Mazz. similis, sed ab eis foliorum basalium vaginis fibrosis, glumis et lemmatibus superioribus minoribus atque calli flosculi superioris trichomatibus brevioribus ca. 1/5 lemmatis longitudinem aequantibus differt.

Perennial, loosely tufted. Culms 30–120 cm tall, erect, hollow; nodes hirsute, basal sheaths becoming fibrous. Leaf sheaths 9–16 cm, glabrate, margins hispid with tubercle-based hairs. Ligules membranous, ciliate, 0.5–0.6 mm, with a dense row of hairs behind ligule. Leaf blades narrowly linear, (8–)20–50(–70) × 0.3–0.8 cm, glabrous on both surfaces,

margins scabrous and hispid with tubercle-based hairs. Panicles contracted, 5–15 cm long; secondary axes racemose, 1.5–5 cm, alternate, rhachis scabrous. Spikelets grayish green, ovate-oblong, 3–3.6 × 1–1.5 mm; pedicels 0.2–2 mm, scabrous and hispid; lower glumes ovate, 2.5–3 × 0.8–1.2 mm, acute, 3- to 5-nerved, hispid with tubercle-based hairs on nerves; upper glumes ovate to ovate-oblong, 2.5–3.5 × 1–1.2 mm, acuminate, 5-nerved, hispid with tubercle-based hairs on nerves; lower florets male; lower lemmas ovate to ovate-oblong, 2.5–3 mm, acute, upper margins fringed, 5- or 7-nerved; lower paleas ovate-oblong, 2.5–2.7 mm; upper florets hermaphroditic, upper lemmas ovate-oblong, 1.8–2 mm, acute or mucronate or minutely bifid, shortly awned from the sinus, awns 0.5–0.6 mm, 3-nerved; upper paleas ovate-oblong, 1.8–2 mm, acute; callus pubescent, hairs 0.2–0.3 mm; anthers 0.9–1.6 mm. Caryopses not seen.

Distribution and habitat. Endemic to Thailand, this species is known only from Nakhon Phanom Province in northeastern Thailand. *Arundinella kerrii* occurs in open grasslands at an altitude of ca. 200 m.

IUCN Red List category. Using the IUCN Red List criteria (IUCN, 2001), *Arundinella kerrii* could be considered as Endangered (EN) or possibly Extinct (EX). The taxon is known only from collections made in Nakhon Phanom Province in northeastern Thailand in 1924, despite attempts by the authors to re-collect it. However, insufficient data exist regarding its conservation status, so we provisionally assign the species status as Data Deficient (DD).

Discussion. *Arundinella kerrii* is similar to *A. hirta* (Thumb.) Tanaka and *A. fluiatilis* Hand.-Mazz.,

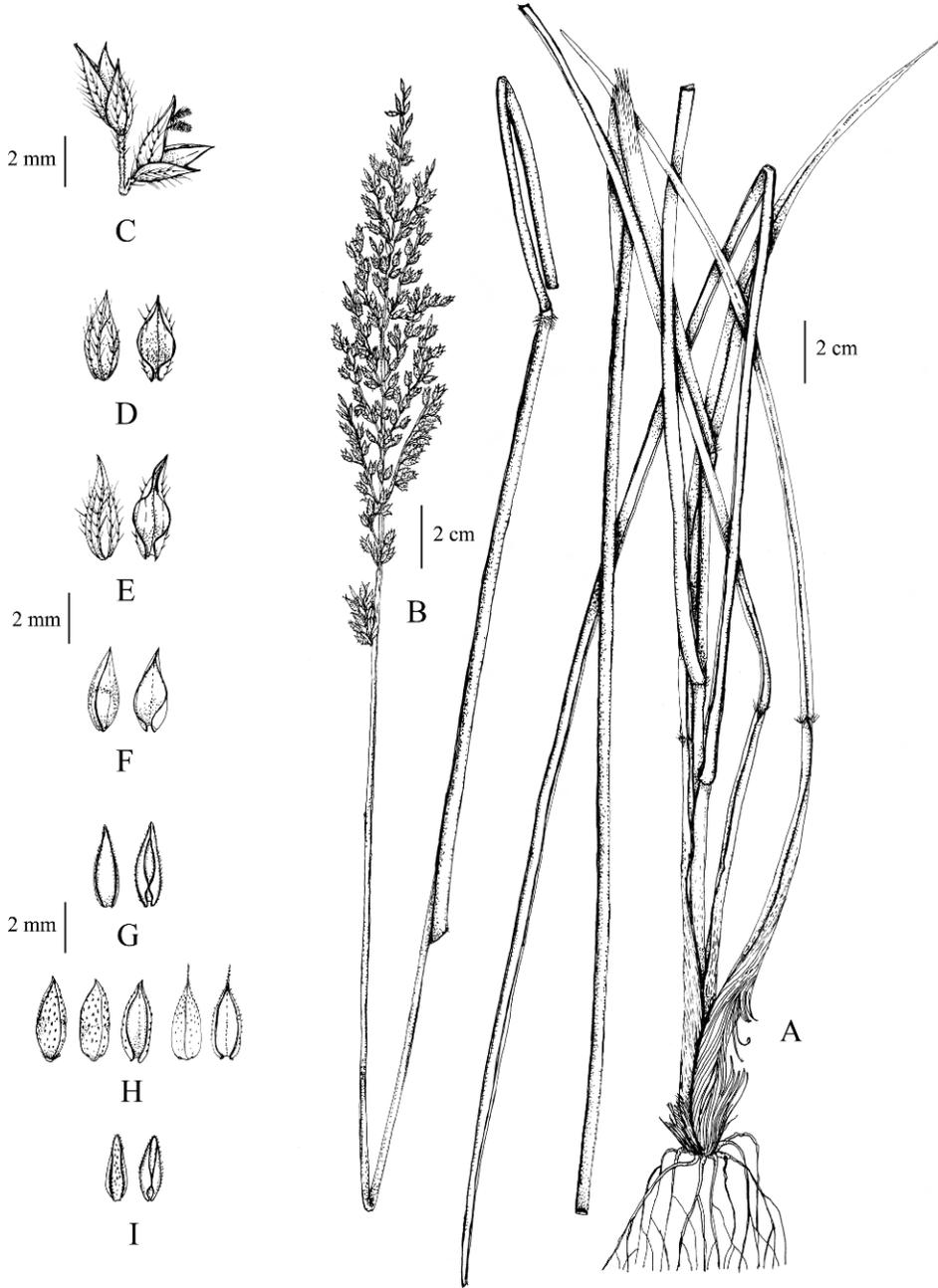


Figure 1. *Arundinella kerrii* Teerawat. & Sungkaew. —A. Habit. —B. Inflorescence. —C. Spikelets, lateral view. —D. Lower glumes. —E. Upper glumes. —F. Lower lemmas. —G. Lower paleas. —H. Upper lemmas. —I. Upper paleas. A, B drawn from *Kerr 21330* (K); C–I drawn from the holotype *Kerr 8474* (BK) by A. Teerawatananon.

but differs from them in having fibrous basal leaf sheaths, smaller glumes and upper lemma, and shorter callus hairs that are ca. 1/5 the length of the lemma. The differences among *A. fluviatilis*, *A. hirta*, and *A. kerrii* are summarized in Table 1. *Arundinella kerrii* was originally described, but not effectively published, by Hambananda (1990: 28–30)

in an unpublished thesis (McNeill et al., 2006: Art. 30.5). Hambananda's description of *A. kerrii* was in Thai, but without a Latin diagnosis. In agreement with Art. 36.1 and Rec. 36A of the *International Code of Botanical Nomenclature* (McNeill et al., 2006), Hambananda's name was neither valid nor effectively published.

Table 1. Comparison of morphological characters of *Arundinella fluviatilis*, *A. hirta*, and *A. kerrii*.

Characters	<i>A. fluviatilis</i>	<i>A. hirta</i>	<i>A. kerrii</i>
Nodes	glabrous	glabrous or bearded	hirsute
Leaf sheaths	glabrous, margins ciliate	glabrous to pilose, margins ciliate or hispid with tubercle-based hairs	glabrate, basal sheath becoming fibrous, margins hispid with tubercle-based hairs
Inflorescence	an open panicle, 10–20 cm long	an open or contracted panicle, 8–45 cm long	a contracted panicle, 5–15 cm long
Pedicels	scabrous	scabrous	scabrous and hispid
Lower glumes	2.6–3.5 mm long, 5-nerved, scabrous on nerves	2.5–4 mm long, 3- to 5-nerved, scabrous on nerves (pilose with tubercle-based hairs on nerves in variety <i>hondana</i>)	2.5–3 mm long, 3- to 5-nerved, hispid with tubercle-based hairs on nerves
Upper glumes	4.5–5 mm long, scabrous on nerves	3.5–4.8 mm long, scabrous on nerves (pilose with tubercle-based hairs on nerves in variety <i>hondana</i>)	2.5–3.5 mm long, hispid with tubercle-based hairs on nerves
Upper lemmas	2.6–3.4 mm long	2.5–3.5 mm long	1.8–2 mm long
Upper lemma apex	awned, awns 0.3–1.5 mm long	acute to short mucronate	acute or mucronate or minutely bifid, shortly awned from the sinus, awns 0.5–0.6 mm long
Callus hairs	1.3–1.7 mm (ca. 1/2 length of upper lemma)	0.8–1.5 mm (1/3–1/2 length of upper lemma)	0.2–0.3 mm (ca. 1/5 length of upper lemma)

Paratype. THAILAND. **Nakhon Phanom:** Chaiyaburi, ca. 200 m, 1 May 1932, *A. F. G. Kerr 21330* (BK, BM, K).

DIMERIA R. BR.

Dimeria kerrii Teerawat. & Sungkaew, sp. nov.

Dimeria kerrii C. E. Hubb., nom. nud. *Dimeria kerrii* Nanakorn & Norsangsri, 2001, nom. nud. TYPE: Thailand. Satun: Ban Tola Tai [Tola], ca. 50 m, 3 Jan. 1928, *A. F. G. Kerr 13868* (holotype, K 648084; isotypes, BM 928281, K 648258). Figure 2.

Haec species ab omnibus congeneris thailandicis glumae superioris carina ala rugosa lata ornata differt.

Perennial. Culms up to 1.2 m tall, erect; nodes pubescent, stems waxy below nodes, usually short-noded at base. Leaf sheaths overlapping below, 6–9 cm, sparsely pilose at lower part, upper part tomentose, margins scarious. Ligules membranous, ciliolate, ca. 0.6 mm. Leaf blades linear-lanceolate, 10–20 × 3–4.5 mm, tomentose on both surfaces, sparsely pilose with tubercle-based hairs especially toward the margins, margins scabrous near the apex. Racemes (2 or) 3, 8–16 cm, rhachis flattened, 0.6–0.7 mm wide, slightly zigzag, slightly ridged, ridge glabrous, narrowly winged, margins scaberulous; peduncles distally hirsute. Spikelets ovate-oblong, 5–6 × 1.8–2 mm; pedicels compressed but not flattened, 0.8–1.2 mm, margins glabrous, clavate; spikelet callus hairy, hairs up to 0.5 mm; lower glumes oblong, 5–5.5 mm, acuminate, keeled, ciliate

on keel; upper glumes oblong-elliptic, 5.5–6 mm, acute to acuminate, keeled, sparsely hirsute near margins, broadly winged all along the keel, wings rugose and ciliate; lower lemmas oblanceolate or clavate, 2.5–3 mm, margins ciliate on the upper half; upper lemmas oblong-elliptic, ca. 4 mm, awns 12–15 mm, columns 2–3 mm; stamens 2, anthers 1.8–2 mm. Caryopses not seen.

Distribution and habitat. *Dimeria kerrii* is endemic to Thailand and is known only from the type locality (Satun Province in peninsular Thailand) at an altitude of ca. 50 m.

IUCN Red List category. Using the IUCN Red List criteria (IUCN, 2001), *Dimeria kerrii* could be considered as either Endangered (EN) or possibly Extinct (EX). Despite attempts by the authors to re-collect it at the type locality, it remains known only from collections last made in 1928, in Satun Province in peninsular Thailand. Because data regarding its conservation are insufficient, we provisionally assign the status as Data Deficient (DD).

Discussion. This species was first named by C. E. Hubbard on the two specimens of the *A. F. G. Kerr 13868* collection at Kew, but Hubbard never published its description. The name later appeared in an enumeration of Thai grass species (Nanakorn & Norsangsri, 2001), but a Latin diagnosis was not provided; it is therefore considered invalid in accordance with Art. 36.1 and Rec. 36A of the

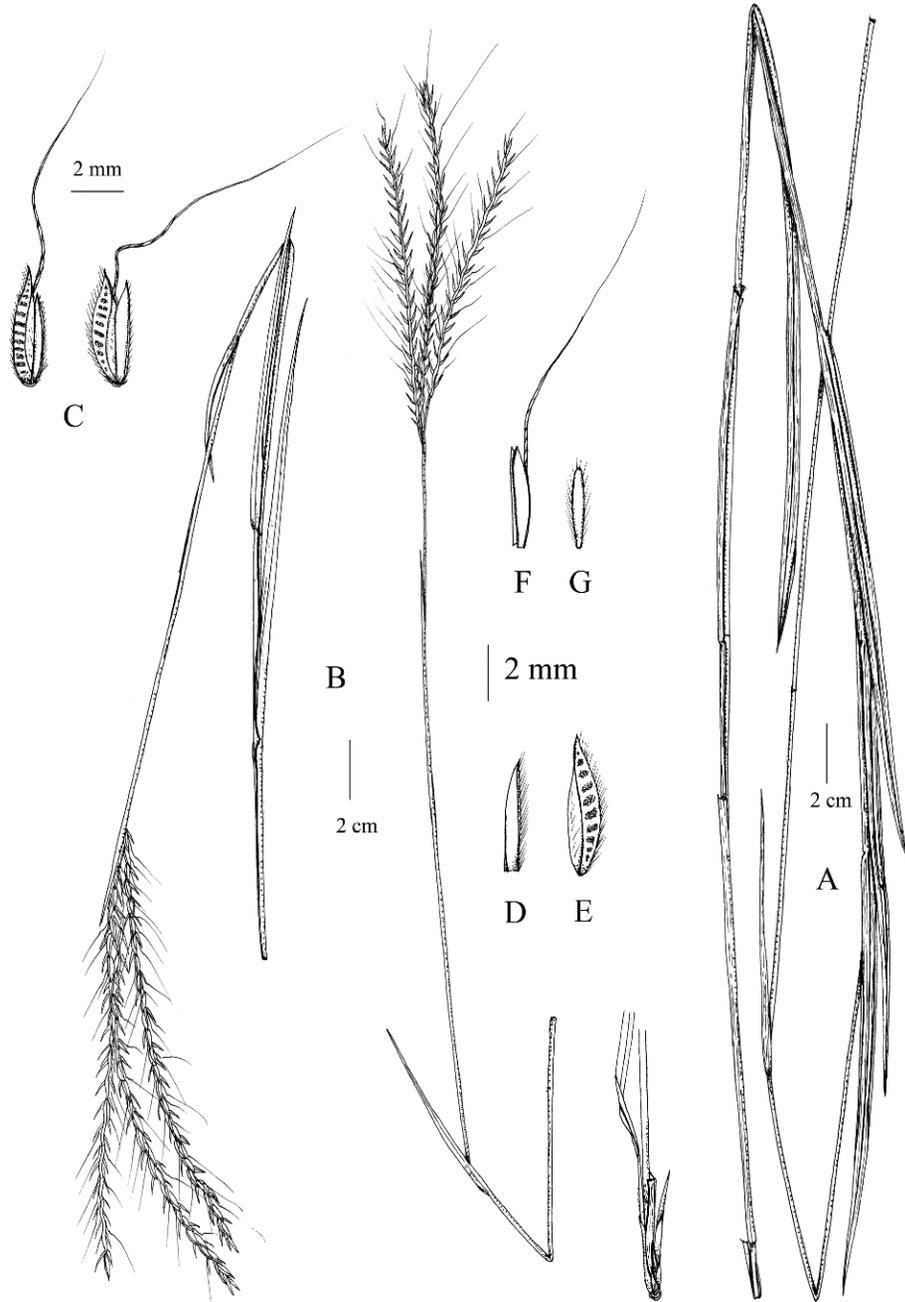


Figure 2. *Dimeria kerrii* Teerawat. & Sungkaew. —A. Habit. —B. Inflorescences. —C. Spikelets, lateral view. —D. Lower glume. —E. Upper glume. —F. Upper lemma. —G. Lower lemma. Drawn from the holotype *Kerr 13868* (K) by A. Teerawatananon.

International Code of Botanical Nomenclature (McNeill et al., 2006).

This species is distinguished from all other species of *Dimeria* by its rugose, broad wing on the keel of the upper glume.

Etymology. *Arundinella kerrii* and *Dimeria kerrii* are named in honor of Arthur Francis George Kerr (1877–1942), the Irish doctor and botanist, who undertook large botanical collections in Thailand. He collected over 25,000 herbarium specimens all over

Thailand while working for the Thai government between 1902 and 1932.

Acknowledgments. We thank the curators and the staff of the following herbaria: BKF, C, E, K, and NY for the use or loan of specimens. Thanks to Pranom Chantaranonthai, John Parnell, and Anders S. Barfod for their useful comments on the manuscript; to Pimwadee Pornpongrungrueng for her support of the work; and to Benjamin Øllgaard and Jan Frits Veldkamp for the Latin diagnoses. This work was supported by the Thai Research Fund (TRF)/BIOTEC Special Program for Biodiversity Research and Training (grant T_148026).

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