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

Atchara Teerawatananon
Natural History Museum, National Science Museum, Technopolis, Pathum Thani 12120, Thailand.
teerawaa@gmail.com

Sarawood Sungkaew
Department of Forest Biology, Faculty of Forestry, Kasetsart University, Bangkhen, Bangkok 10900, Thailand; Center for Advanced Studies in Tropical Natural Resources, Kasetsart University, Bangkhen, Bangkok 10900, Thailand. Author for correspondence: fforsws@ku.ac.th

Trevor R. Hodkinson
School of Natural Sciences, Botany Building, Trinity College Dublin, University of Dublin, Dublin 2, Ireland. hodkinst@tcd.ie

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 warrant validation. The names Arundinella kerrii and Dimeria kerrii were previously used by Hambananda (1990, unpublished thesis) and Nanakorn and Norsangkri (2001), respectively.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.

Hae species Arundinellae hisiae (Thunb.) Tanaka et A. flaviatilis Hand.-Mazz. similis, sed ab eis foliis basaliis vaginis fibrosis, glumae et lemmatibus superioribus minoribus atque callis floeculis superioribus trichomatibus breviores ca. 1/5 lemmatis longitudinem aequantibus differt.

Perennial, loosely tufted. Culms 30–120 cm tall, erect, hollow; nodes hisrate, 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, rachis 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- to 7-nerved; lower paleas ovate-oblong, 2.5–2.7 mm; upper florets hermaphrodite, 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 (Thunb.) Tanaka and A. flaviatilis Hand.-Mazz.,


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.
Teerawatananon et al.
New Poaceae from Thailand

Table 1. Comparison of morphological characters of *Araudinella flaviatilis*, *A. hirta*, and *A. kerrii*.

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

**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.


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.

Hae species ab omnibus congeneris thailandici glumae superioris carina ala rugosa lata ornata ciliata.

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, ciliate, 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, rachis flattened, 0.6–0.7 mm wide, slightly zigzag, slightly ridged, ridge glabrous, narrowly winged, margins scabrousul; 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
This species is distinguished from all other species (1877-1942), the Irish doctor and h

**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 Chantaranothai, John Parnell, and Anders S. Barfod for their useful comments on the manuscript; to Pimwadee Pornponggruangrueng for her support of the work; and to Benjamin Öllgaard 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_1448026).

Literature Cited


https://doi.org/10.3417/2009033.

View This Item Online: https://www.biodiversitylibrary.org/item/180102
DOI: https://doi.org/10.3417/2009033
Permalink: https://www.biodiversitylibrary.org/partpdf/218466

Holding Institution
Missouri Botanical Garden, Peter H. Raven Library

Sponsored by
Missouri Botanical Garden

Copyright & Reuse
Copyright Status: Permission to digitize granted by rights holder
Rights: https://www.biodiversitylibrary.org/permissions

This document was created from content at the Biodiversity Heritage Library, the world’s largest open access digital library for biodiversity literature and archives. Visit BHL at https://www.biodiversitylibrary.org.