

研究報告

蘭嶼產無芒鴨嘴草 (*Ischaemum muticum* L. , 禾本科) 確認

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【摘要】本文描述作者近期於蘭嶼尋獲族群的禾草：無芒鴨嘴草 (*Ischaemum muticum* L. , 禾本科)，檢視本種以往於臺灣植物誌的相關處理後，確認本種禾草分布於蘭嶼濱海溼地，可依據「葉片基部常心形且具假葉柄、小穗常無芒、外穎卵形且光滑」等特徵與其他同屬植物鑑別，並提供蘭嶼產個體繪製之線描圖與相關照片。

【關鍵詞】無芒鴨嘴草、確認種、禾本科。

Research paper

Confirmation of *Ischaemum muticum* L. (Poaceae) in Lanyu

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【Abstract】 Author described population of *Ischaemum muticum* L. (Poaceae), which was found recently in Lanyu Island by the author's series botanical surveys. After examinations of relative treatments of this grass species to the flora of Taiwan in past, the author confirmed its distribution on a coastal wetland in Lanyu. This grass species could be distinguished from other congeneric species based on: cordate leaf bases with pseudopetioles, awnless spikelets, and glabrous, ovate lower glumes. In addition, line-drawing and photos based on Lanyu's materials were offered, too.

【Key words】 *Ischaemum muticum*; Confirmed species; Poaceae.

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Introduction

Ischaemum L. (Poaceae) is a genus of ca. 70 species, native to tropical regions of Eastern Hemisphere (Bor 1973; Walker 1976; Koyama 1987; Barkworth et al. 2003; Hsieh 2006; Sun and Phillips 2006; Scholz et al. 2009; Hu & Wu 2011; Chen et al. 2015). Although distribution of several species in this genus to the flora of Taiwan by Hsu (2000) was doubted in Hsieh's revisions (Hsieh 2006), parts of these doubts were cleared in following researches (Scholz et al. 2009; Chen et al. 2015). In latest revision to the grass flora of Taiwan by Chen et al. (2015), 7 species and 1 variety in the genus *Ischaemum* were recorded in Taiwan, and three *Ischaemum* spp. in Lanyu. In past, *I. muticum* was recorded at coastal area, southern Taiwan (Hsu 1978), and was adopted by Koyama (1987) Hsu (2000), Sun and Phillips (2006). The only voucher determined and cited as *I. muticum* L. by Hsu (1978) in past was considered as *I. setaceum* Honda (Hsieh 2006, Chen et al. 2015), then this species, *I. muticum* L., was excluded from the latest grass flora of Taiwan (Chen et al. 2015).

Ischaemum muticum L. (1753) is the type species of its genus, and broadly distributes at sandy coastal regions in South Asia, Southeast Asia, the Ryukyus and Micronesia (Bor 1973; Walker 1976; Koyama 1987; Hsieh 2006; Sun and Phillips 2006; Hu & Wu 2011). Based on its type specimen (Herb. Linn. No. 1214.1 (Linn.), Figure 1), it represents following characters including: awnless spikelets and florets, inflorescences shorter than uppermost leaf sheaths, and inflorescence bases included by the uppermost leaf sheaths. Koyama (1987) described the species based on materials from Japan and neighboring regions, and the description and its line drawing positively fit the type species. In

addition, Koyama (1987) described its leaf base as "rounded to shallowly subcordate often short (ca. 1 mm) - petiolate at base", that is differed to other *Ischaemum* species in eastern Asia.

During the author's serial botanical surveys in Lanyu, a strange *Ischaemum* sp. was found at coastal paddy in Lanyu (Figures 2 & 4), eastern Taiwan, which positively fit *I. mutica* L. after careful examination. Herein, description, illustration (Figure 3), photos (Figure 4) and local distribution map (Figure 2) of this grass were offered in this article, and the distribution in Lanyu, Taiwan was confirmed, too.

KEY TO THE SPECIES

1. Paired spekelets without conspicuous awn, or only sessile spikelet with a geniculate awn.
2. Lower glumes of sessile and pedicel spikelets similar, symmetrical ovate or near so..... *I. muticum*
2. Lower glumes of sessile and pedicel spikelets dis-similar.
3. Lower glume of sessile spikelet neither transversely rugose nor knobably.....
..... *I. aristatum*
3. Lower glume of sessile spikelet transversely rugose or knobably on flanks.
4. Lower glume of sessile spikelet transversely rugose, forming 4-7 sharp and continuous ridges across back; sessile spikelet 3-5 mm; uppermost leaves of those culm with inflorescence well-developed *I. rugosum*
4. Lower glume of sessile spikelet with marginal nodules, sometimes link into 2-4 weak ridges across back; sessile spikelet 6-8 mm; uppermost leaves of those culm with inflorescence rudimentary *I. barbatum*



Figure 1. Type specimen of *Ischaemum muticum* L. (Herb. Linn. No. 1214.1 (Linn.)).

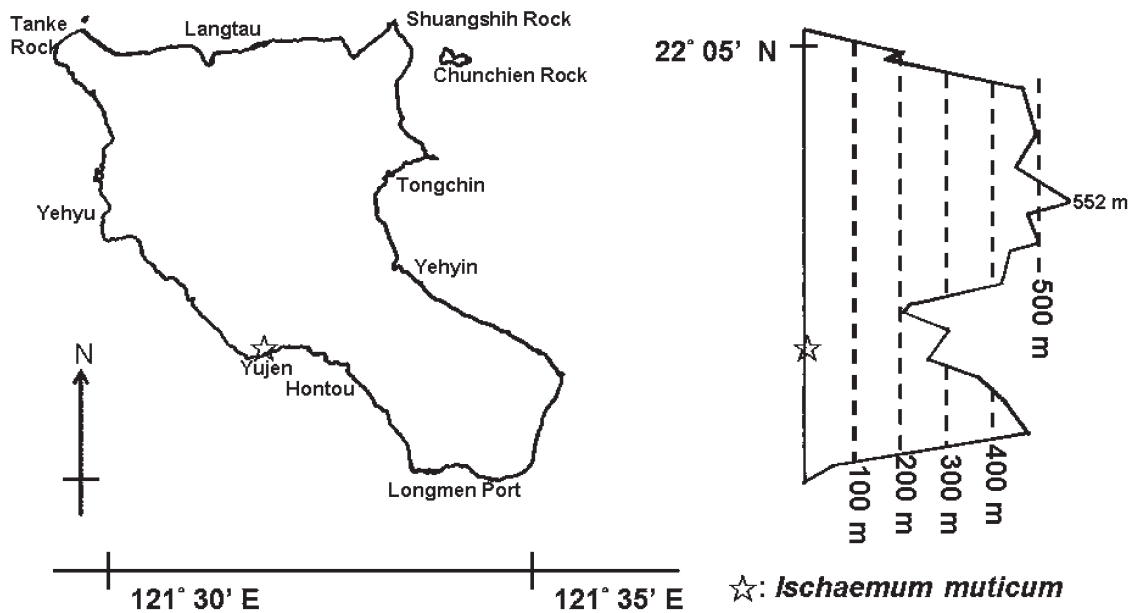


Figure 2. Distribution of *Ischaemum muticum* L. (☆) in Lanyu, Taiwan.

- 1. Paired spikelets both clearly awned.
- 5. Lower glume of sessile spikelets flattened and only nerved at upper part, coriaceous below middle; sessile spikelets ovate, 4-6 mm long; culms erect from long, creeping base; leaves spaced on the lower part of culms.
- 6. Lower glume of sessile spikelet winged on keels, apex rounded, emarginated
.....*I. ciliare*
- 6. Lower glume of sessile spikelet not winged on keels, apex sharply bicuspidate*I. timorense*
- 5. Lower glume of sessile spikelets, flat, slightly coriaceous at base; sessile spikelets lanceolate, 6-8 mm long; culms erect from short, oblique base; leaves densely aggregated on the lower part of culms.
- 7. Lower glume of sessile spikelets keeled but wingless, keels pilose.....*I. aureum*
- 7. Lower glume of sessile spikelets keeled

and winged, glabrous*I. setaceum*

Taxonomic treatment

Ischaemum muticum L. Sp. Pl. 2: 1049. 1753; Bor, The Grasses of Burma, Ceylon, India and Pakistan: 183, 1973; Koyama, Grasses of Japan and Its Neighboring Regions: 458, 1987; Walker, Flora of Okinawa and the Southern Ryukyu Islands: 235, 1976; Hu & Wu, Fl. Hong Kong, vol 4: 201, 2011. 無芒鴨嘴草 Figures 1, 3 & 4

A leafy, branched, stoloniferous spreading perennial, rooting at basal nodes where they touch the soil; stolons long, up to 1 m or more, with numerous joints and up to 4 mm indiameter, exposed, sparsely ciliate. Leaf sheaths shorter than internodes, sparsely ciliate at surfaces; ligules truncate, hyaline, elongated to the sheath margins. Leaf-blades ovate-lanceolate, 2-9 cm long, 0.5-1 cm wide, apex acute, bases cordate to sub-cordate

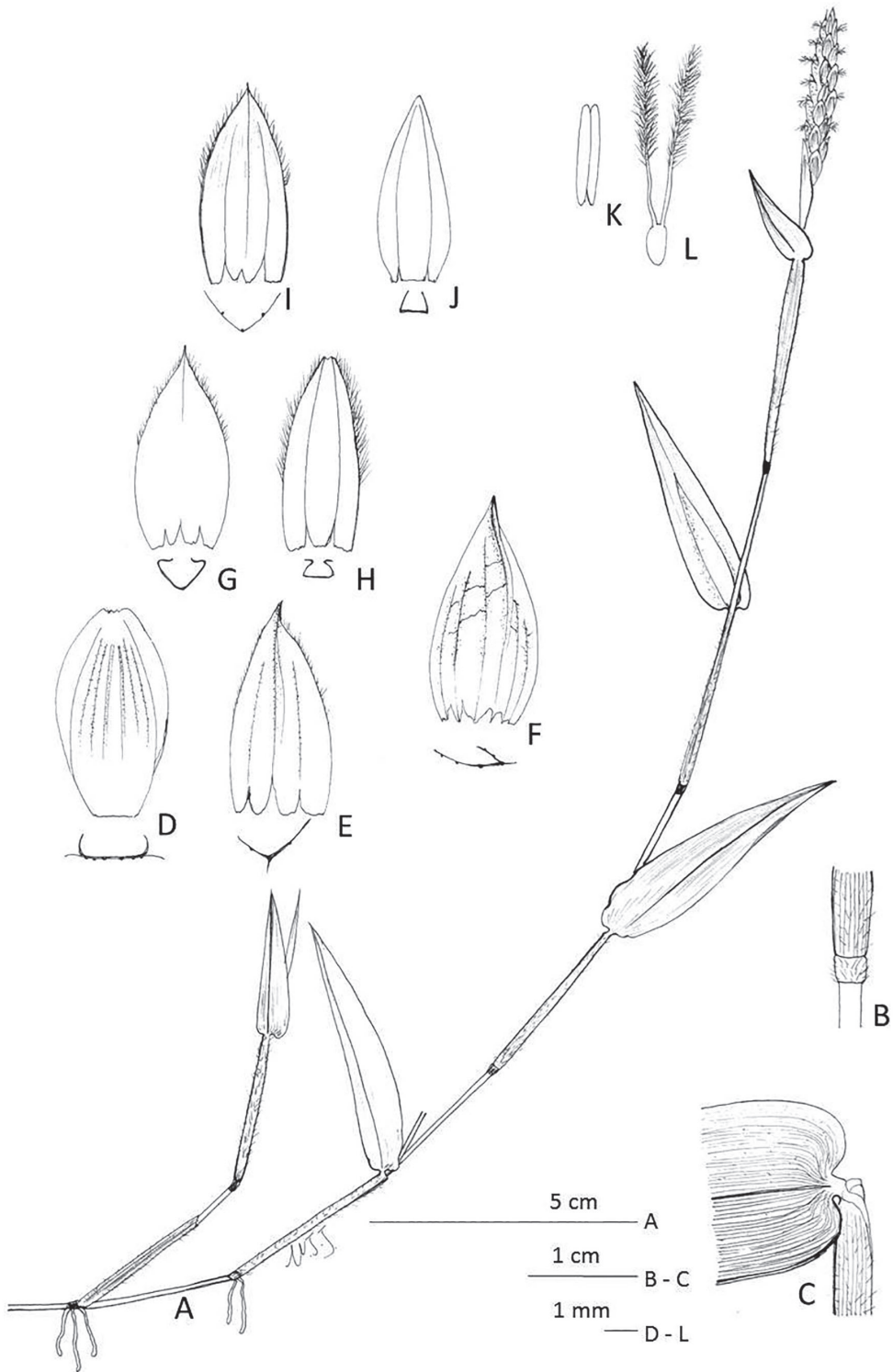


Figure 3. Line drawing of *Ischaemum muticum* L. A: Habit. B: Node. C: Leaf base and upper sheath. D: Lower glume. E: Upper glume of sessile spikelet. F: Upper glume of pedicelled spikelet. G: Lower lemma. H: Lower palea. I: Upper lemma. J: Upper palea. K: Anther. L: Pistil.

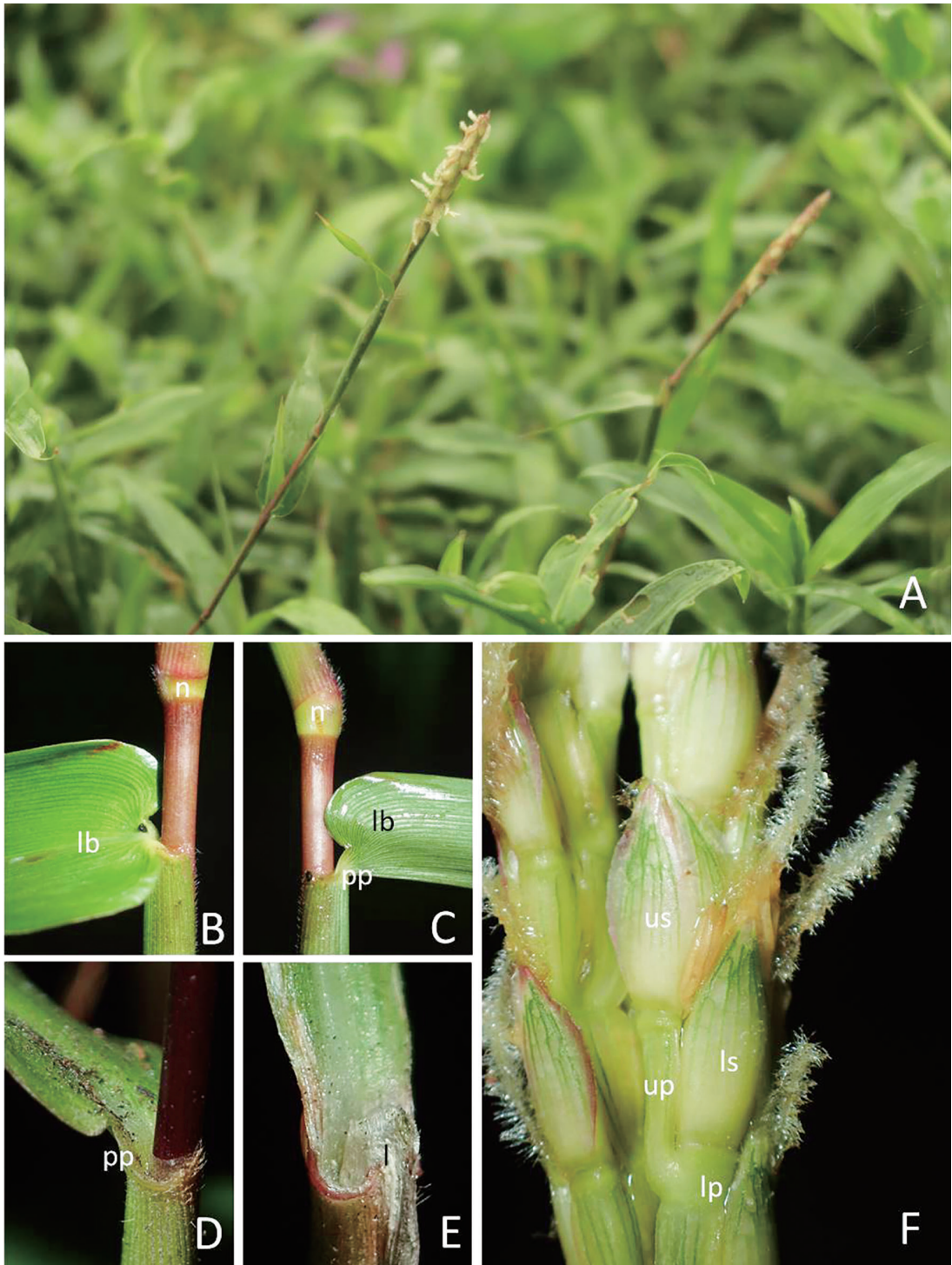


Figure 4. *Ischaemum muticum* L. A: Habit. B & C: Leaves base and nodes, C: lateral view. D & E: Leaf base, E: showing the ligule. F: Part of inflorescence, showing the paired spikelets. (lb: leaf base; lp: lower pedicel; ls: lower spikelet; n: node; pp: pseudopedicel; up: upper pedicel; us: upper spikelet).

then narrowing into a very short pseudopetioles, occasionally rounded to obtuse. Culms up to 30 cm high when flowering. Inflorescence apical, composed of 2 racemes closely pressed together, each 1.5-5.5 cm long, halfly enclosed by uppermost sheaths or fully exerted. Spikelets paired, lower ones sessile or shortly pedicelled, upper ones pedicelled, on one side of a triangular rachis, straw-coloured. Sessile spikelets glabrous, dorsal-ventrally compressed, lower glumes ovate, basal part enfolding the spikelet base, 7-9 mm long, 8-nerved, nerves ribbed, marginal ones narrowly winged, apex truncate; upper glumes ovate, 7-9 mm long, 3-nerved, base oblique, upper part of midrib strongly keeled and narrowly winged, upper margin ciliate, apex acute; lower florets male or hermaphrodite, lower lemmas ovate, chartaceous, upper margin ciliate, apex acuminate, lower paleas elliptic, chartaceous, 2-keeled, upper margin ciliate, apex truncate; upper florets hermaphrodite, upper lemmas ovate, membranous, 3-nerved, upper margin ciliate, apex acuminate, upper paleas narrow-ovate, membranous, 2-keeled, apex acute; anther 3, to 3 mm long. Pedicelled spikelets similar to sessile ones, but upper glumes laterally compressed, bases oblique, 6-nerved, one of the central vein keeled and narrowly winged at upper part.

Specimens examined: Herb. Linn. No. 1214.1 (Linn.). TAIWAN. Taitung Hsien, Lanyu Hsiang, Yujen, 27 May 2019, *Ming-Jer Jung 6150* (TAIF), same loc., 28 Aug 2019, *Ming-Jer Jung 6192* (TAIF).

Notes: Vernacular name of *Ischaemum muticum* includes: seashore centipede grass and drought grass. This grass occurs at a coastal paddy in a wetland area, where there is full sun of Lanyu (Figures 2 & 4A). It occurs with *Commelina auriculata* Blume (Commelinaceae) which is

dominant in local. Only one population was found, and its distribution is less than 1 km². According to the IUCN Red List criteria (IUCN 2010), regional population of *I. muticum* in Taiwan could be categorized as Critical Endangered (CR). Based on materials from Lanyu island, cordate to obtuse or short-petiolate leaf base (Figures 3C & 4B - E), awnless spikelets, glabrous and ovate lower glumes, and broad-wings on lower glumes (Figures 3 & 4F) could be diagnose characters of this rare grass in local.

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