

Research note

Rediscovery of *Fimbristylis macassarensis* Steud. (Cyperaceae) in Taiwan

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【 Summary 】

Fimbristylis macassarensis Steud., a doubtful species in the flora of Taiwan, has recently been rediscovered in the eastern part of Taiwan. The present study provides a taxonomic description, illustrations, and a line drawing. In addition, the geographic distribution and notes on its ecology and habitat information are given.

Key words: *Fimbristylis*, *Fimbristylis macassarensis*, Taiwan, Taxonomy.

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研究簡報

土城飄拂草在台灣之再發現

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摘 要

土城飄拂草(*Fimbristylis macassarensis* Steud.)在台灣被列為疑問種，近年再發現於台灣東部花蓮縣。本文描述其分類特徵，分布及生長環境。

關鍵詞：飄拂草屬、土城飄拂草、台灣、分類學。

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Fimbristylis macassarensis Steud. is probably native to Indonesia, and is confined to a fairly limited range of distribution in Southeast Asia. It was not recorded in Taiwan until 1977 when Kuoh, who gathered the plants at Tucheng, Nantou County, described it as a new record to the flora of Taiwan (Kuoh 1977). However the specimen (Kuoh 3868) forming the basis of this record was not preserved and no more collections were known. This species has been overlooked in past literature pertaining to the flora of Taiwan (Koyama 1978, Huang 1979, Liu 2000, 2002, Boufford et al. 2003), and in consequence, was treated as doubtful in the most recent revision (Lin 2008).

In the course of a Botanical Survey for Biodiversity study in eastern Taiwan in 2002, the senior author rediscovered a population of this species on the National Dong Hwa University campus at Shoufong, Hualien County. It occurs in natural or semi-natural environments not far from water, and usually where habitats of this kind are found, including damp paths along thicket margins, damp grasslands, and by the sides of streams, reservoirs, ponds, and ditches. The present study gives a species description and illustrations, based on live plant materials from Taiwan;

furthermore, the geographic distribution and notes on its ecology and habitat information are provided.

Taxonomic treatment

Fimbristylis macassarensis Steud., in Syn. Pl. Glum. 2: 109. 1855; Backer & Bakh. f., F1. Java 3: 462. 1968; Kuoh, Biol. Bull. Taiwan Normal Univ. 12: 81. f. 4. 1977; Govaerts et al., World checklist of Cyperaceae 478. 2007.

Fimbristylis corniculata Merr., Philipp. J. Sci. C Bot. 7(4):231. 1912.

.....土城飄拂草 Figs. 1, 2

Annual herb, tufted, 20~30 cm tall, rhizomes absent; roots fibrous, dark-brown. Culms nearly terete, glabrous, pale-green, 0.5~1 mm across. Leaves 5~10, 8~15 cm long, 1.2~1.5 mm wide, blades erect, linear, obtuse to subacute at apex, with minute prickles on distal margins; ligules absent; sheath 2~3 cm long, green flushed with pale-brown at base. Anthela compound to decomposed, bracts 2, reduced to scales, lanceolate, brown, 5 mm long; primary rays 3~5, very unequal, 0~1.2 cm long. Spikelets 1~3, borne at apex of raylets, narrowly ellipsoid, 5~6 mm long, 1.8~2.3 mm wide, reddish-brown to dark-brown. Glumes elliptic to elliptic-obovate,

1.8~2 mm long, 1.2~1.5 mm wide, brown, with scattered short rusty-brown strips, si-

nus at apex, puberulent on abaxial surface, margins ciliate, 3-veined, midvein green,

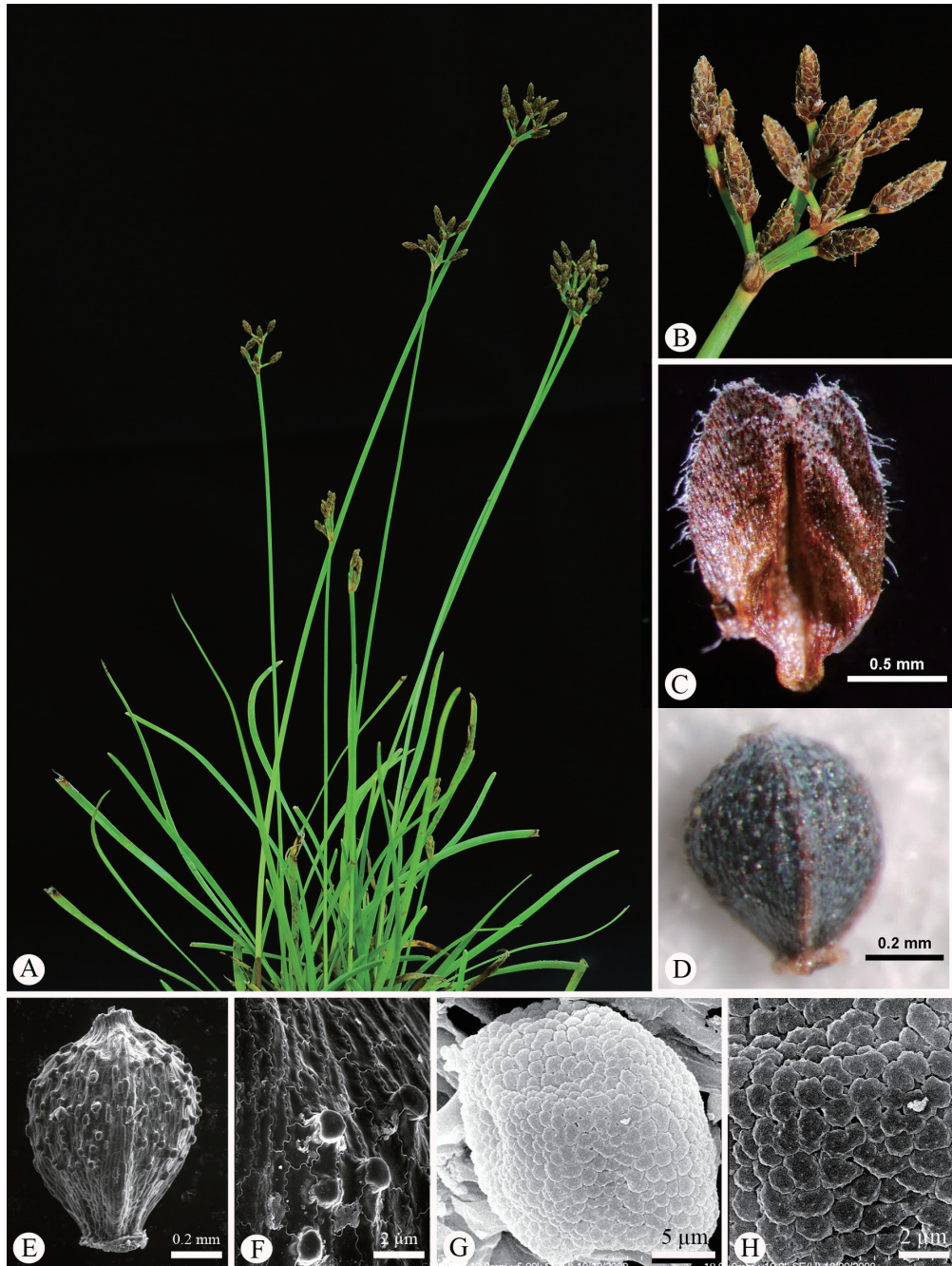


Fig. 1. *Fimbristylis macassarensis* Steud. **A:** habit; **B:** inflorescence and spikelets; **C:** glume; **D** and **E:** achene; **F:** pericarp of achene; **G:** pollen grain; **H:** surface of pollen grain (E-H, SEM photographs).

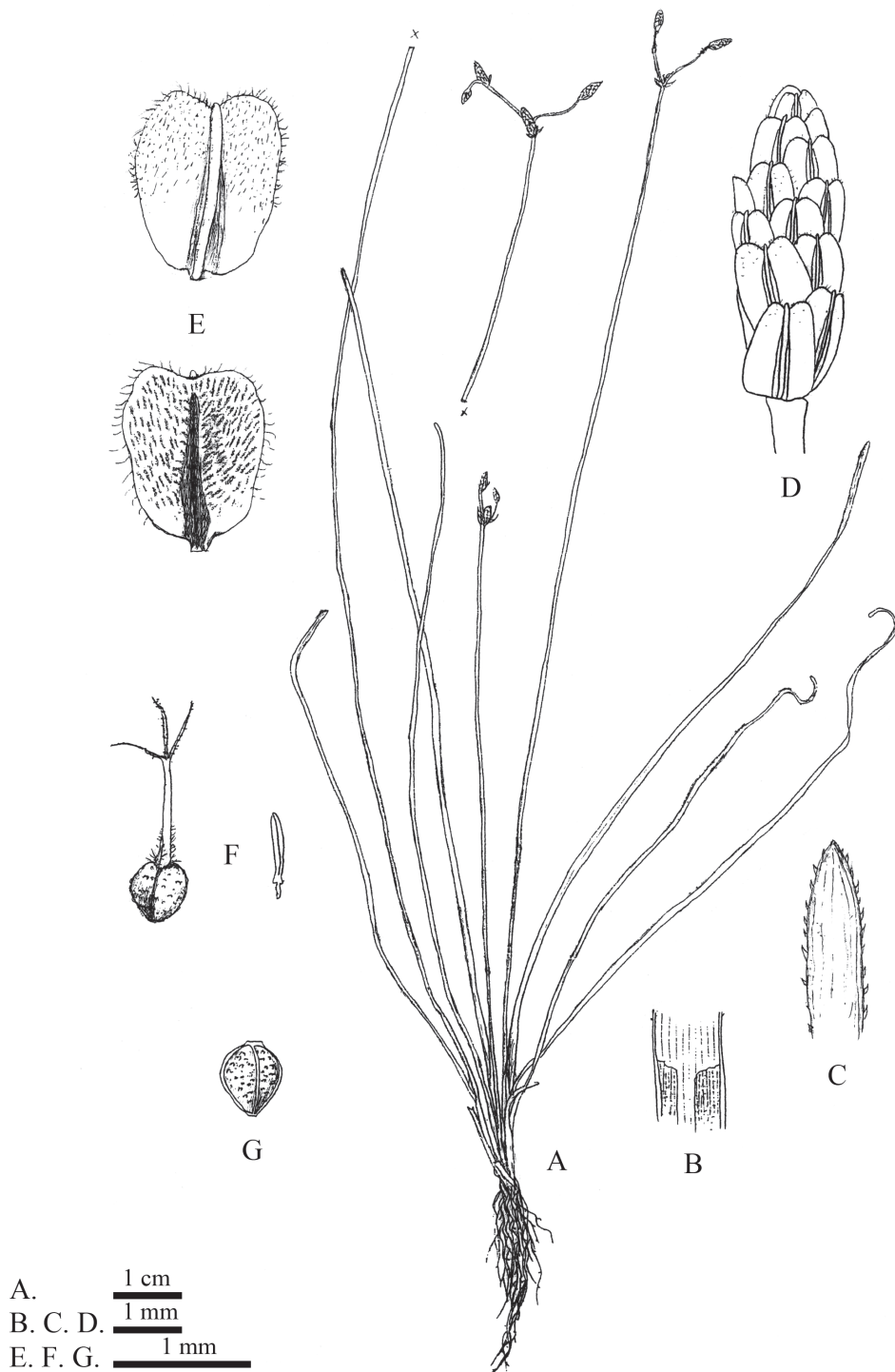


Fig. 2. *Fimbristylis macassarensis* Steud. A: habit; B: orifice of leaf-sheath; C: upper portion of blade; D: spikelet; E: glumes, abaxial (above) and adaxial (below) surfaces; F: pistil (left) and stamen (right); G: achene.

keel-like, raised on abaxial surface, apex free, slightly protruding, lateral veins inconspicuous. Stamens 3, anthers yellow, 0.8 mm long. Styles pale-brown, 1 mm long, puberulent and slightly swollen at base, stigma 3, 0.5 mm long, ovary trigonous, 0.5 mm long, brown. Achenes trigonous, obovoid, 0.8 mm long, 0.6 mm wide, black, tuberculate on surfaces.

Distribution: *Fimbristylis macassarensis* Steud. is distributed in Australasia, and from Malaysia to Java, Celebes and the Philippines, south to northern Australia (Govaerts et al. 2007).

Specimens examined: Hualian Co.: National Dong Hwa University campus at Shou-Fong, along stream sides, on sandy soils, 30 July 2002, *S.-H. Chen s. n.*, open grasslands, *S.-Y. Chen 406*, near edges of pond, *S.-Y. Chen 181* (all at NHU, Herbarium, National Dong Hwa University).

Notes: *Fimbristylis macassarensis* Steud. grows locally on a wide variety of soils from sandy to clay, and is tolerant of a fairly wide range of drought conditions. It usually associates with other weedy wetland plants such as *Cynodon dactylon* (L.) Pers., *Imperata cylindrical* (L.) P. Beauv. var. *major* (Nees) C.E. Hubb. ex Hubb. & Vaughan, *Fimbristylis dichotoma* (L.) Vahl, *Hedyotis corymbosa* (L.) Lam., *Dentella repens* (L.) J. R. Forst. & G. Forst., *Lindernia crustacean* (L.) F. Muell., and *Phyla nodiflora* (L.) Greene.

This species closely resembles several species of *Fimbristylis* in Taiwan; however, the characters of the deep-notched and marginal long-hairy glume, which are clearly visible on the specimens, should prevent confusion with other species of the genus in the area.

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