

研究報告

馬祖紫菀屬 (菊科) 新紀錄植物—陀螺紫菀

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【摘要】本文報導馬祖地區一種新紀錄植物—陀螺紫菀 (*Aster turbinatus* S. Moore var. *turbinatus*)。本種特產於中國大陸，分布安徽、江蘇、福建、江西及浙江。馬祖臨近福建，但之前未曾紀錄，本研究為首次報導。本種具假花序梗為總托延長形成，頂端的葉片苞片狀等特徵，可明顯與其他已知的紫菀屬植物區別。本文提供彩色照片、描述及線繪圖等供參考用。

【關鍵詞】新紀錄、菊科、馬祖、紫菀屬、陀螺紫菀。

Research paper

Aster turbinatus S. Moore var. *turbinatus* (Compositae): A newly recorded species of Matsu

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【Abstract】A newly recorded species *Aster turbinatus* S. Moore var. *turbinatus* found in Matsu is reported. This species is endemic to mainland China, and distributed in Anhui, Jiangsu, Fujian, Jiangxi and Zhejiang. Matsu islands were near to Fujian, but never has been recorded before, this is the first time reported this species in Matsu. *Aster turbinatus* S. Moore var. *turbinatus* is easily distinguished from other known congeners by having pseudo peduncles which are developed by the extension of compound receptacles and the bract-like apex synflorescence leaves. Photos, description and line drawings were provided for identification.

【Key words】newly record, Compositae, Matsu, *Aster turbinatus* var. *turbinatus*.

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Introduction

Aster (Compositae: Astereae, Asteroideae) is a large, complex genus of more than 600 species, cosmopolitan distribution (Funk et al. 2009). Nearly 100 species in China (Chen et al. 2011), 16 species in Taiwan (Soejima & Peng 2003) and 5 species in Matsu (Kuo et al. 2004). This genus is characterized by campanulate involucre, imbricate, 2-6 seriate; flattened receptacles; pistillate ray florets, most fertile, colorful; bisexual disk florets, fertile; synantherous base obtuse; style branch tip lanceolate; compressed and slender pappus (Chen et al. 2011; Soejima & Peng 2003; Kuo et al. 2004)

Recently, we found an unknown taxon in western Nangan island of Matsu. Its compound

receptacle is extended into pseudo peduncle, and both surfaces of leaves moderately scabrous which are different from all known *Aster* species in Flora of Matsu (Kuo et al. 2004). The habitat of this taxon in western Nangan island is facing China and beside coastal road with less interference, thus we consider this taxon is native to Matsu. Herbarium specimens were also consulted and compared at PPI, TCF and TNM; besides HAST, TAI and TAIF were available online. After carefully literature reviewed, the unknown taxon was recognized as *A. turbinatus* var. *turbinatus*, and this was a newly recorded species of Matsu. Morphological description, photos and a key to the taxa of Matsu are also provided.

Key to the *Aster* species in Matsu

1. Capitula smaller, 5-7 mm.*Aster subulatus* (帶馬蘭)
1. Capitula bigger, more than 1 cm.
 2. Compound receptacle extended into pseudo peduncle.*A. turbinatus* var. *turbinatus* (陀螺紫菀)
 2. Compound receptacle not extended into pseudo peduncle.
 3. Annual or biennial; inner and outer phyllaries nearly equal.
 4. Capitula 1.6-2.2 cm in diam., pappus single type.*A. ciliolus* (華南狗娃花)
 4. Capitula 2.2-4.0 cm in diam., pappus two types.*A. hispidus* (狗娃花)
 3. Perennial; inner phyllaries longer than outer ones.
 5. Middle cauline leaves amplexicaul; ray florets purple to blue.*A. panduratus* (琴葉紫菀)
 5. Middle cauline leaves base cuneate, not amplexicaul; ray florets white. ...*A. ageratoides* (山白蘭)

Taxonomic treatment

Aster turbinatus S. Moore var. *turbinatus*, Journal of Botany 16 (185): 132-133. 1878.

陀螺紫菀 (Figures 1, 2)

Herbs, perennial, ca. 60-100 cm tall, rhizomatous. Stems erect, simple, scabrous, sometimes long branched in upper part. Leaves alternate, cauline, gradually reduced upward, abaxially pale green, adaxially green, both surfaces moderately scabrous, more densely on

adaxial surfaces. Margin serrate to serrulate, midvein prominently abaxial, apex acute to acuminate, mucronate; lowest leaves partial withered at anthesis, lower cauline leaves ovate to ovate-lanceolate, base pandurate or truncate, 8.1-11.5 × 1.3-2.8 cm; synflorescence leaves sessile, lanceolate to ovate, 0.6-3.0 (-8.0) × 0.4-1.3 (-1.8) cm, base rounded. Capitula 1-10 in terminal raceme-form synflorescences; pseudo peduncles strigillose; bracts numerous,

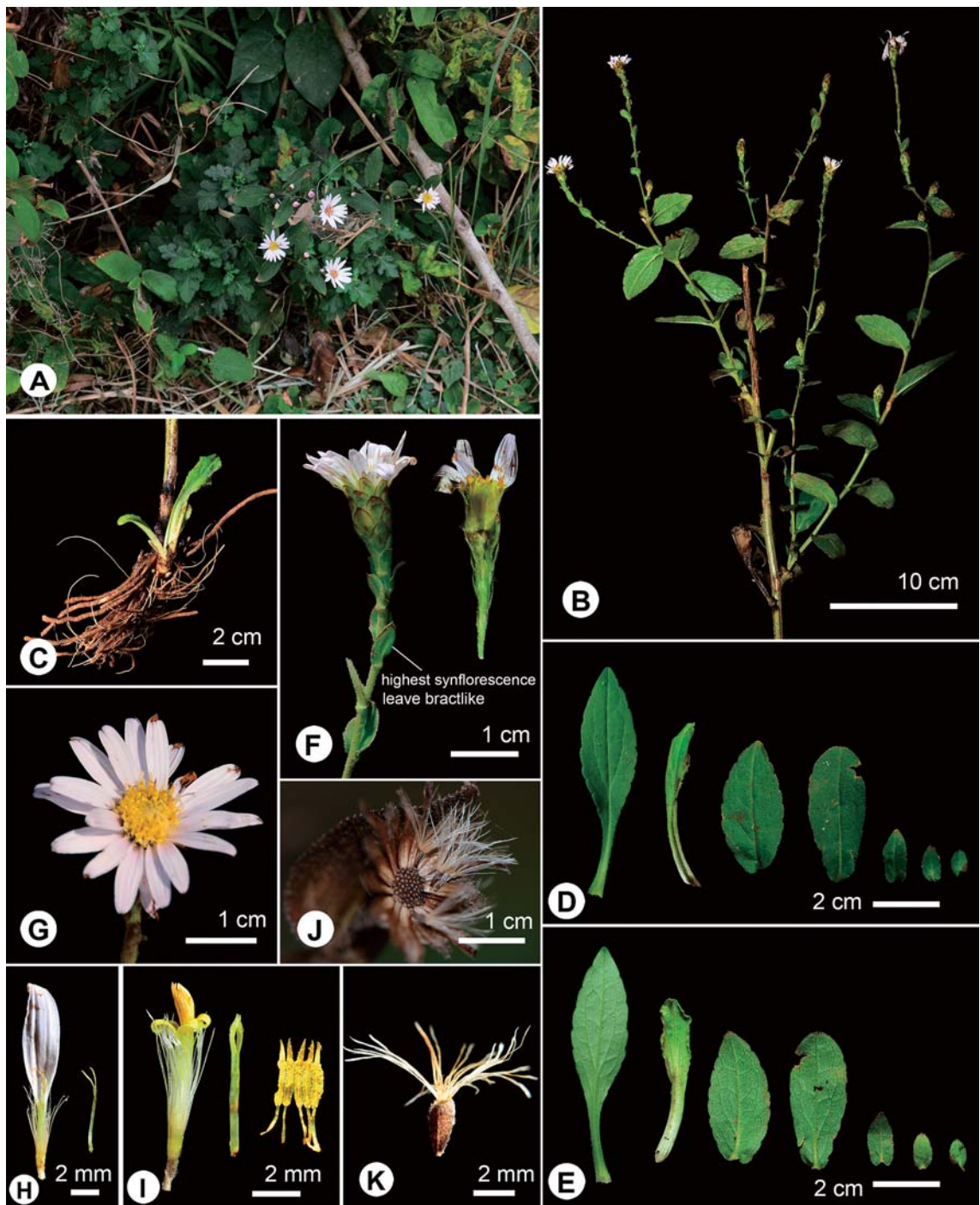


Figure 1. *Aster turbinatus* S. Moore var. *turbinatus*. A. habitat; B. habit; C. root; D. leaf adaxial surface (left two are basal leaf, others are cauline leaves); E. leaf abaxial surface (left two are basal leaf, others are cauline leaves); F. capitula; G. capitula front view; H. ray floret with style; I. disk floret with style and synantherous; J. mature receptacle and achenes; K. achene.

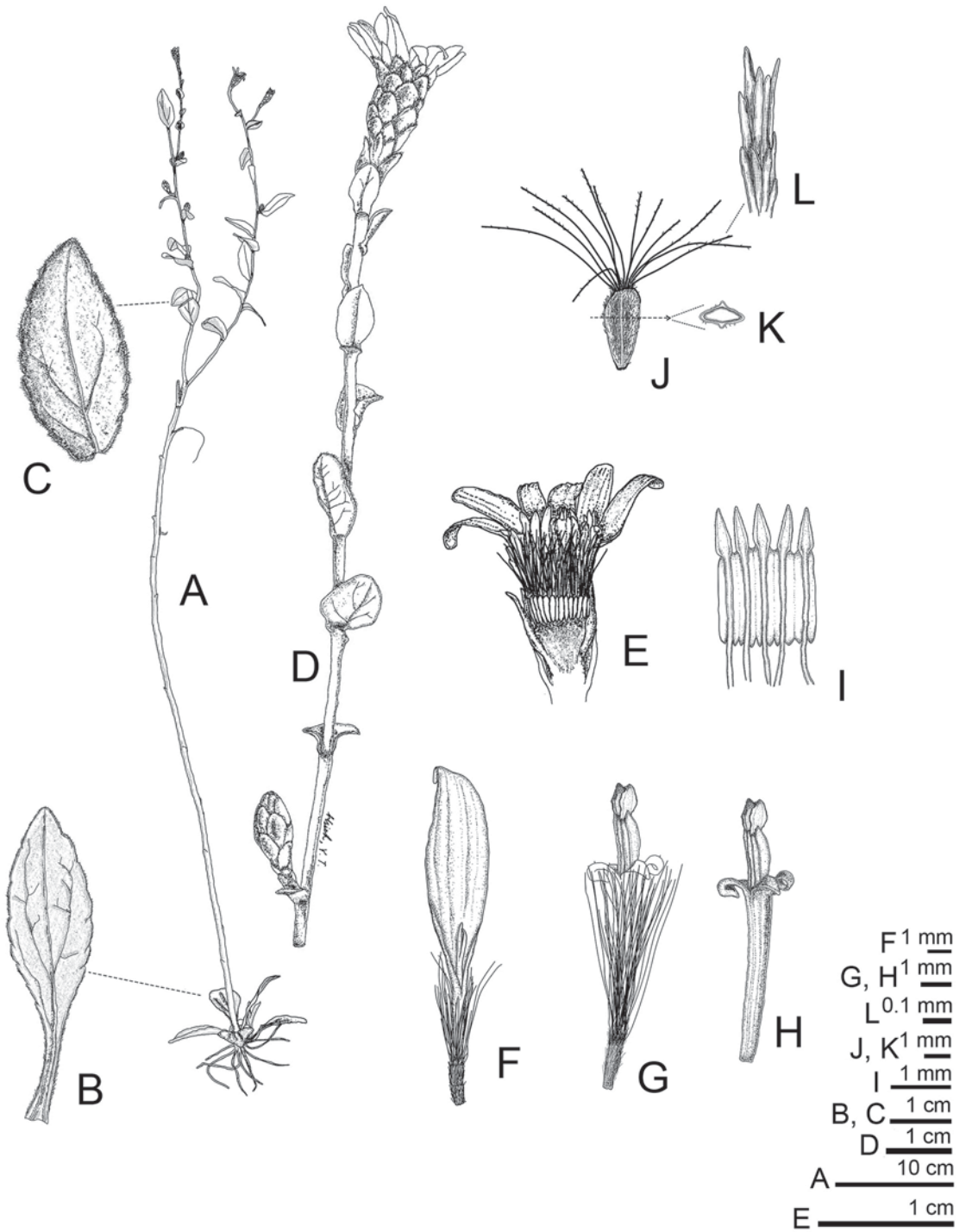


Figure 2. *Aster turbinatus* S. Moore var. *turbinatus*. A. habit; B. rosette leaf; C. cauline leaves; D. capitula and branch; E. radial section of capitula; F. ray floret; G. disk floret; H. disk floret removed ovary and pappus; I. synantherous; J. achene; K. cross section of achene; L. terminal pappus.

inbricate, apex synflorescence leaves bract-like, ciliate. Involucre campanulate, 1.3-2.5×7.1-9.8 mm; phyllaries 5-7 seriate, margin purplish, pubescent, ciliate, apex obtuse, erose, purplish; outer phyllaries broadly ovate, 6.8-7.5×1.6-2.5 mm; middle phyllaries ovate to oblanceolate, 4.8-6.3×1.9-2.5 mm; inner phyllaries oblong to narrowly oblong, 0.6-0.8×1.1-1.9 mm. Ray florets 15-23, pistillate, purple or light purple, lamina 7.4-14.3×2.0-2.9 mm; disk florets ca. (20) 45-52, bisexual, yellow, 4.8-9.2 mm long, tube base flared, limb campanulate, lobes tip backrush, narrowly triangular. Achenes brown, narrowly oblong, slightly compressed, 1.9-2.2 mm long, strigillose. Pappus white, slender, 6.6-8.1 mm long.

Distribution: Endemic to southern mainland China, distributed in Anhu, Jiangsu, Jiangxi,

Zhejiang, Fujian. In Matsu, this species was discovered in Nangan Island at present (Figure 3).

Habitat and phenology: This species grows in margin of forest, grassland, mountain slope, and shaded place. Flower and fruit period lasts from September to December.

Specimen examined: Lienchiang County, Matsu, Nangan Township, Chungshanmen, at road side, 26°08'59"N 119°55'15"E, elev. 168 m, 11 Sep. 2007, *C.M. Wang 10730* (TNM); Shengtian road, at road side, 26°09'05.5"N 119°54'49.3"E, elev. ca. 20 m, 17 Oct. 2017, *C. Y. Chang 1483* (TCF); same loc., 17 Oct. 2017 *Y. T. Hsieh 178* (TCF).

Discussion

Two varieties of *A. turbinatus* were recorded in the Flora of China (Chen et al. 2011). *A.*

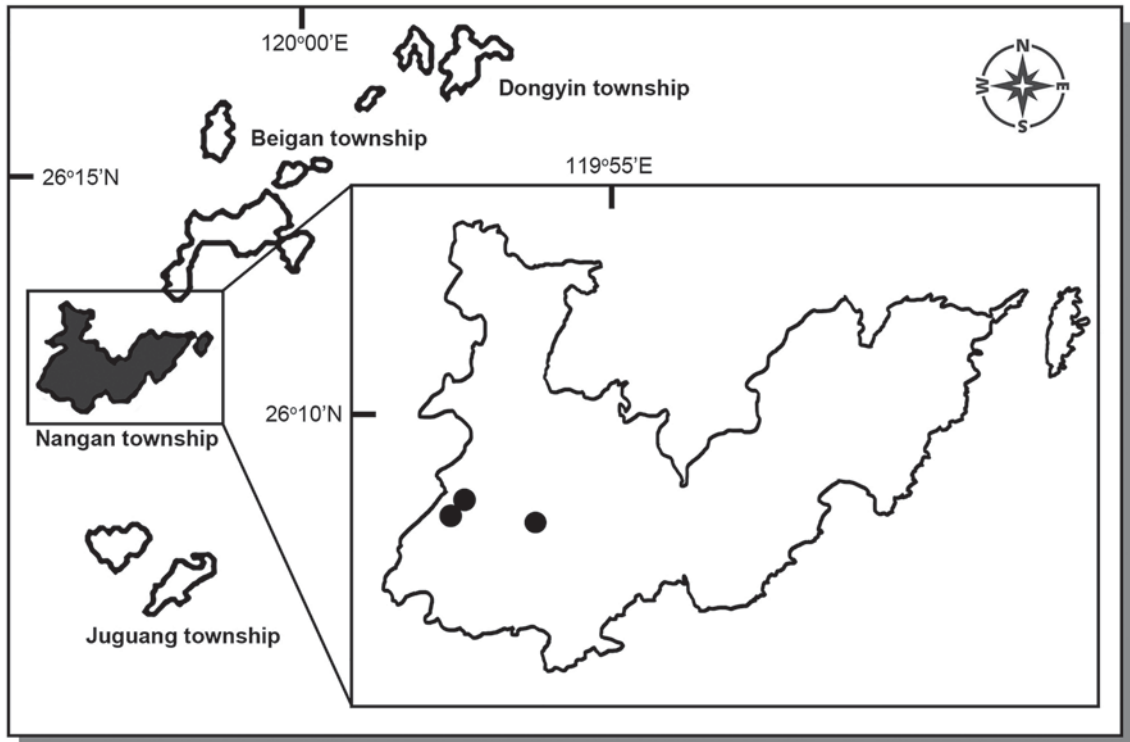


Figure 3. Distribution map of *Aster turbinatus* S. Moore var. *turbinatus* in Matsu.

turbinatus S. Moore var. *turbinatus* is easily distinguished from the other variety *A. turbinatus* S. Moore var. *chekiangensis* C. Ling ex Y. Ling (仙白草) by its leaves not decurrent and larger ray floret with purple lamina (Chen et al. 2011). Accordingly, the populations in Matsu belonged to the var. *turbinatus*.

We assumed this taxon was dispersed to Matsu by nature power rather than human beings, from some reasons as following: first, we found this species from western Nangan island is near Fujian, one of the natural distribution area. Second, such taxon was discovered beside coastal road with less disturbance, all around were wild vegetation. The common companion species are *Ficus erecta* Thunb. var. *beeheyana* (Hook. & Arn.) King (Moraceae), *F. pumila* L. (Moraceae), *Schefflera octophylla* (Lour.) Harms (Araliaceae), *Melastoma septemnerium* Lour. (Melastomataceae), *Dendranthema indicum* (L.) Des Moul. (Compositae), *Piper kadsura* (Choisy) Ohwi (Piperaceae) and *Lygodium japonicum* (Thunb.) Sw. (Schizaeaceae). Third, previous survey might focus on the growing season. However, *A. turbinatus* S. Moore var. *turbinatus* was flowering from autumn to winter, so it was probably overlooked by previous studies. Accordingly, we consider this species is newly

recorded rather than naturalized one.

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