



## *Carex longicolla* (Cyperaceae), a new sedge from China

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### Abstract

*Carex longicolla* is described as a new species in section *Lageniformes* from South China. It is similar to *C. truncatigluma*, but differs from the latter in its culms more short, 5–10 cm long, spikelets 3–5, close each other, neck equal to or longer than nutlet, 1.5–2 mm long.

**Key words:** *Carex* sect. *Lageniformes*, conservation status, taxonomy

### Introduction

*Carex* Linnaeus (1753: 972) is one of the largest genera in seed plants (Frodin 2004) and comprises about two thousand species worldwide (Reznicek 1990, Goetghebeur 1998, Egorova 1999, Govaerts *et al.* 2007, Mabberley 2008, Dai *et al.* 2010). The recent revision of the genus from China was done by Dai *et al.* (2010) and 527 species in three subgenera and fifty-seven sections were recognized. Afterward, ten species, two subspecies and one variety were reported from China: *Carex datongensis* Su (2009a: 560), *C. incisa* subsp. *longissima* Su (2009a: 562), *Carex kobresiiiformis* Su (2009b: 84), *C. kuniuensis* Su (2009a: 557), *C. langyaensis* S.W. Su & X.M. Fang in Su (2009a: 558), *C. longipetiolata* Wang *et al.* (2012: 66), *C. paracheniana* Jin *et al.* (2012b: 931), *C. rhynchophora* var. *margineorostris* Su (2009a: 559), *C. tenuirostrata* Jin *et al.* (2012a: 326), *C. trongii* Nguyen (1979: 856) (Yu *et al.* 2012), *C. truncatigluma* subsp. *huayangensis* Su (2009a: 561), *C. yandangshanica* C.Z. Zheng & X.F. Jin in Jin & Zheng (2010: 709) and *C. zhejiangensis* Jin *et al.* (2011: 68).

*Carex* Section *Lageniformes* (Ohwi) Nelmes (1951: 366) was originally described as *Carex* subsect. *Lageniformes* Ohwi (1936: 340) within sect. *Praecoces* Christ (1886: 14) ex Ohwi (1936: 338). It is characterized by plants with stems central or arising from the axils of basal leaves, spikes few, terminal male, remainder female or androgynaeous, utricles more or less lageniform or rhomboid-lageniform, sometimes with an apical cylindrical neck, truncate or (usually) discoid-annulate at the apex (Nelmes 1951, Tang 1999, Dai *et al.* 2010). The section comprises of twelve species and is distributed in South and East Asia (Nelmes 1951, 1955, Kern 1974, Tang 1999, Dai *et al.* 2010). In China, eight species were recognized by Dai *et al.* (2010): *Carex truncatigluma* C. B. Clarke in Forbes & Hemsley (1904: 315), *C. ligata* Boott ex Benth (1861: 402), *C. taihuensis* Su *et* Xu (1989: 51), *C. ascotreta* C.B. Clarke ex Franchet (1897: 182), *C. breviscapa* Clarke (1894:736), *C. tenuispicula* Tang ex Liang (1996: 92), *C. rhynchachaenium* C. B. Clarke in Merrill (1905: 5) and *C. densipilosa* C.Z. Zheng & X.F. Jin in Jin *et al.* (2004: 544).

In the course of studying the genus *Carex* in South China, I found some unusual collections that shared the common characters of *Carex* sect. *Lageniformes* and identified as *C. truncatigluma*, but differs in its very short inflorescence, congested spikelets on the top of the culm, the lowest involucre bracts longer than the inflorescence and the neck equaling to or slightly longer than the nutlet. After a closer comparison, I concluded that it is a hitherto distinct species. Searching the specimens in herbaria, it was found that this species was annotated as *Carex longicolla* by Tsin Tang and Fatsuan Wang. Therefore, I adopted that name for this species and ascribed the authorship to them.

121°33'11"E, 24°52'26"N, 850 m, bamboo plantation, on mountain slope, 11 April 1999, *Leong Wai-Chao 1166* (PE). Yunnan: Foo-ning (now Funing) Xian, Ban-loun, 550 m, under woods, 11 April 1940, *Wang Chiwu 88386* (IBK, KUN, PE); Foo-ning (now Funing) Xian, Ban-loun, 700 m, dense woods under dense shade, 10 April 1940, *Wang Chiwu 88293* (PE). Zhejiang: Longquan Shi, Longquanshan, Anshang, Shiliting, 14 May 1933, *Chen Shi 1377* (PE); Ningbo Shi, Tiantongshan, Linglongyan, 25 April 1932, *Ho Yanyu 1016* (PE); Zhuji Shi, Wuye, 16 April 1932, *Chen Shi 74* (PE).

**Relationship:**—*Carex longicolla* can be easily distinguished from other species of *C. sect. Lageniformes* by its neck equaling to nutlet in length. The new species resembles *C. truncatigluma*, which is distributed in South China, Vietnam, Malaysia (Tang 1999, Deng 2007, Dai *et al.* 2010), in nutlet slightly constricted at the apex and re-expanded into a cylindrical, truncate neck. However, this species is easily distinguished from the latter by culms short, 5–10 cm long (not 10–30 cm long), at least lower bract longer than the inflorescence (not all shorter than the inflorescence), spikelets 3–5 (not 4–8), oppromiximate or lowest somewhat distinct (not distinct), periginia elliptic-lageniform (not lanceolate-lageniform), pistillate glume acute at apex (not emarginated with a short awn formed by extending midrib), neck between nutlet and style cylindrical (not subobconical), equalling to or longer than the nutlet (not shorter than nutlet), 1.5–2 mm long (not 0.5–1 mm).

The identification key to the species in *Carex* sect. *Lageniformes* is provided below.

#### Key to the species of *Carex* sect. *Lageniformes*

- 1a. Nutlets constricted at middle on angles.
  - 2a. Culms, leaves, and bracts glabrous; leaves 2–4 mm wide ..... *C. ascotreta*
  - 2b. Culms, leaves, and bracts pilose; leaves 4–12 mm wide ..... *C. densipilosa*
- 1a. Nutlets not constricted on angles.
  - 3a. Culms central, developed from a leafy shoot; lateral spikes androgynaeous.
    - 4a. Terminal spike androgynaeous ..... *C. palawanensis*
    - 4b. Terminal spike staminate.
      - 5a. Periginia 3.5–5 mm; leaves 4–7 mm wide; culms 10–20 cm tall ..... *C. breviscapa*
      - 5b. Periginia 5–6.5 mm; leaves 2–3 mm wide; culms 5–10 cm tall ..... *C. rhynchaenium*
  - 3b. Culms axillary or lateral at the base of a leafy base; lateral spikes pistillate.
    - 6a. Inflorescence tall, equaling to longer than leaves.
      - 7a. Staminate spikes linear, ca. 1 mm wide ..... *C. ligata*
      - 7b. Staminate spikes linear-cylindric, ca. 3 mm wide ..... *C. taihuensis*
    - 6b. Inflorescence short, much surpassed by leaves.
      - 8a. Periginia 2–3 mm ..... *C. tenuispicula*
      - 8a. Periginia 3–6 mm.
        - 9a. Neck as long as the nutlet ..... *C. longicolla*
        - 9b. Neck shorter than the nutlet.
          - 10a. Culms 5–7 cm tall; inflorescence 1–1.3 cm long; lateral spikes 0.5–1 cm long; glume acute at apex. *C. lageniformis*
          - 10b. Culms 5–30 cm tall; inflorescence 5–20 cm; lateral spikes 1.2–5 cm; glume emarginate at apex usually with a short awn formed by extending midrib.
            - 11a. All involucre bracts shorter than the extending spikelets ..... *C. truncatigluma*
            - 11b. At least lower involucre bracts longer than the extending spikelets ..... *C. pleurocaula*

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