

## *Carex obliquicarpa*, a new species of the Cyperaceae from Guangxi, South China

Xiao-Feng Jin<sup>1</sup>, Bing-Yang Ding<sup>1,2</sup> & Chao-Zong Zheng<sup>1</sup>

<sup>1)</sup> College of Life Sciences, Zhejiang University, Hangzhou, Zhejiang, 310012, P. R. China

<sup>2)</sup> School of Life and Environment Science, Wenzhou Normal College, Wenzhou, Zhejiang, 325027, P. R. China

Received 17 Aug. 2004, revised version received 15 Feb. 2005, accepted 24 Feb. 2005

Jin, X.-F., Ding, B.-Y. & Zheng, C.-Z. 2005: *Carex obliquicarpa*, a new species of the Cyperaceae from Guangxi, South China. — *Ann. Bot. Fennici* 42: 223–226.

*Carex obliquicarpa* X.F. Jin, C.Z. Zheng & B.Y. Ding, a new species of the Cyperaceae from China, is described and illustrated. The morphological characters of *C. obliquicarpa* and the similar species *C. olivacea* and *C. retrofracta* are compared.

Key words: *Carex*, Cyperaceae, new species, taxonomy

*Carex* comprises ca. 2000 species, which makes it the largest genus in Cyperaceae and it is distributed in many regions of the world. *Carex* can be easily recognized from other genera of Cyperaceae by the absence of a perianth, and presence of unisexual flowers and utricles subtending nutlets (Nelmes 1951). *Carex* is divided into three subgenera, mainly based upon the number of stigmas, arrangement of spikes and whether the spikes are unisexual or bisexual (Zhang *et al.* 1998, Dai *et al.* 2000). Approximately 500 species have been recorded in China (Dai *et al.* 2000). Recently, several new taxa of *Carex* have been described (Jin *et al.* 2003, 2004).

When collecting specimens in Guangxi, we found a population of a peculiar *Carex* at Mount Guposhan, Hezhou County. Further study on the utricles and nutlets suggested that this plant belonged to *Carex* sect. *Confertiflorae*, but there are clear differences between it and the other members of this section. Therefore, we treat this plant as a new species.

***Carex obliquicarpa*** X.F. Jin, C.Z. Zheng & B.Y. Ding, *sp. nova* (Fig. 1)

*Haec species C. olivaceae affinis, sed culmis lateribus, squamis pistillatis brevioribus, 2–2.5 mm longis, apice truncatis, breve aristis obscuris, utriculis squamis longioris, oblique extensis differt. Species etiam affinis C. retrofractae, a qua foliis subtus glabris, squamis staminatis et pistillatis nec aristatis, utriculis oblique extensis differt.*

TYPE: China. Guangxi Zhuangzu Autonomous Region, Hezhou County, Mount Guposhan, under forests, alt. 850 m, 23.IV.2004 H. Wang 1033 (holotype HZU; isotype PE).

Perennial herb. Rhizome lignose. Culms lateral, 50–65 cm tall, trigonous, with fuscous leafless sheaths at base. Leaves equal to culms in length, 9–19 mm wide, plane, acuminate at apex, smooth at margin, glabrous on both surfaces. Bracts shortly phylloid, ± equal to inflorescences in length, lowest one with sheaths, sheaths up to



**Fig. 1.** *Carex obliquicarpa* (from holotype, drawn by Fei-Jie Wu & Xiao-Feng Jin). — **A:** Habit. — **B:** Part of inflorescence. — **C:** Staminate scale. — **D:** Pistillate scale. — **E:** Utricle. — **F:** Nutlet.

5 cm long. Spikes 4 to 5, lowest one distant from others; terminal spike staminate, linear cylindrical, 3–4 cm long, peduncle ca. 5 mm long; others pistillate, long cylindrical, 3–5 cm long, 3–4 mm wide, densely flowered, lowest peduncle up to 10 cm long, exerted from sheath, upper peduncles 2–5 mm long. Staminate scales long-elliptic, membranous, 4–4.5 mm long, obtuse at apex, with 2 green nerves on dorsal surface, reddish brown at margin. Pistillate scales narrowly obovate, membranous, 2–2.5 mm long, truncate at apex, with 2 green nerves on dorsal surface, reddish-brown at margin. Utricles longer than scales,

obliquely extended, obovoid, obtusely trigonous, brown, 3.5–4 mm long, glabrous, multi-veined, with transverse wrinkles, broadly cuneate at base, beaked at apex; beak 1 mm long, mouth shortly 2-toothed. Nutlets closely included, obovoid, trigonous, infuscate, ca. 2 mm long, emarginate at apex, with attenuated short stalk at base. Styles ca. 1 mm long, slightly incrassate at base. Stigmas 3. Flowering and fruiting April to May.

This new species belongs to *Carex* sect. *Confertiflorae*, characterized by pistillate, densely-flowered spikes and by the brown utricles. It closely resembles *C. retrofracta* in having lat-

**Table 1.** Comparison of *Carex obliquicarpa*, *C. retrofracta* and *C. olivacea*.

Characters	<i>C. obliquicarpa</i>	<i>C. retrofracta</i>	<i>C. olivacea</i>
Culm	Lateral	Lateral	Central
Leaf	Glabrous on both surfaces	Pubescent on dorsal surface	Glabrous on both surfaces
Bract	Short leaf-like, lowest one long-vaginate, others very short-vaginate	Leaf-like, lowest one long-vaginate, others very short-vaginate	Leaf-like, very short-vaginate or evaginate
Spike	4–5	4–5	5–7
Staminate spike	One, linear-cylindric, 3–5 cm long	One, long-cylindric, 3–6 cm long	One or two, cylindric or narrowly cylindric
Pistillate spike	Long-cylindric, 3–5 cm long, densely-flowered	Long-cylindric, 4–10 cm long, sparsely-flowered	Cylindric, 5–10 cm long, densely-flowered, sometimes with a few staminate flowers at apex
Staminate scale	Long-elliptic, 4–4.5 mm long, obtuse at apex	Lanceolate, 7–7.5 mm long, acuminate at apex	Oblanceolate or oblong, 5–7 mm long, acute or obtuse at apex
Pistillate scale	Narrowly obovate, 2–2.5 mm long, truncate at apex	Ovate, 5–6 mm long, long-aristate	Ovate or oblong lanceolate, 4–8 mm long, long- or short-aristate
Utricle	Longer than scale, obliquely extended, obovoid, 3.5–4 mm long, beak mouth shortly 2-teethed	Shorter than scale, horizontally or adown extended, ovoid or obovoid, 4–5 mm long, beak mouth obliquely truncate	Shorter than scale, horizontally extended, ovoid or broadly ovoid, ca. 4 mm long, beak mouth shortly 2-teethed
Nutlet	Obovoid, ca. 2 mm long, emarginate at apex	Ellipsoid, ca. 2 mm long, shortly beaked at apex	Ellipsoid or obovoid, ca. 2 mm long, shortly beaked at apex, beak curved

eral culms and glabrous utricles, but differs in the leaves that are glabrous on dorsal surface, shorter spikes, staminate and pistillate scales that are not aristate, and in the utricles that are obliquely extended. *Carex obliquicarpa* is also similar to *C. olivacea* in having glabrous and brown utricles, strong staminate spikes, but the former differs by having lateral culms, pistillate scales 2–2.5 mm long, that are truncate and not shortly aristate at apex, and utricles longer than the scales, obliquely extended. Characters distinguishing the new species from the morphologically somewhat similar ones are detailed in Table 1.

ADDITIONAL SPECIMEN EXAMINED (paratype). — **China.** Guangxi Zhuangzu Autonomous Region, Hezhou County, Mount Guposhan, under forests, alt. 800 m, 23.IV.2004 *H. Wang 1034* (HZU).

## Acknowledgements

We are grateful to Prof. Song-Yun Liang and Prof. Lun-Kai Dai for their continuous help and encouragement, to Dr. Fei-Jie Wu for the illustration, to Dr. Zhong-Chao Li for providing important literature, to Mr. Hong Wang for his collection and to Mr. Yun-Wang Luo for his kind help during our fieldwork.

## References

- Dai, L. K., Liang, S. Y., Li, P. C. & Tang Y. C. 2000. *Carex*. — In: Dai, L. K. & Liang, S. Y. (eds.), *Flora Reipublicae Popularis Sinicae*. 12: 56–528. Sci. Press, Beijing. [In Chinese].
- Jin, X. F., Zheng, C. Z. & Ding, B. Y. 2003: *Carex subcapitata*, a new species of the Cyperaceae from Zhejiang, China. — *Acta Phytotax. Sin.* 41: 566–568. [In Chinese with English summary].
- Jin, X. F., Zheng, C. Z. & Ding, B. Y. 2004: New taxa of

- Carex* (Cyperaceae) from Zhejiang, China. — *Acta Phytotax. Sin.* 42: 541–550.
- Nelmes, E. 1951: The genus *Carex* in Malaysia. — *Reinwardtia* 1: 221–450.
- Zhang, S. R., Liang, S. Y. & Dai, L. K. 1998: Leaf anatomy of fourteen species in *Carex* subgenus *Indocarex* (Cyperaceae). — *Acta Phytotax. Sin.* 36: 333–340. [In Chinese with English summary].