

Taxonomy of Mongolian Bulrushes (Cyperaceae Juss.)

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Abstract

The taxonomic position of Mongolian species belonging to the genus *Scirpus* L. is revised here. Five species are included in this genus. In this paper, three of them are transferred to the genus *Schoenoplectus* (H.G.L. Reichenb.) Palla. Keys for the identification of these two genera and species, species descriptions and data on their distribution in Mongolia are given.

Key words: Mongolia, *Schoenoplectus*, *Scirpus*, systematics,

Introduction

Bulrushes belong to the family Cyperaceae Juss., the sixth biggest family in the Mongolian Flora (Gubanov, 1996). The study on systematics of the sedge family of Mongolia is part of an ongoing project for creating the "Flora of Mongolia". Mongolian plants belonging to the sedge family are well studied, but detailed research defining the genera, except *Carex*, is still lacking.

In Mongolia, five species of bulrushes have been included in the genus *Scirpus*: *S. hippolyti*, *S. orientalis*, *S. radicans*, *S. supinus* and *S. triquetus*. It should be noted that there is one more genus in Mongolia which includes bulrush species - the genus *Bolboschoenus* Palla, which includes three species (Gubanov, 1996).

Bulrushes occur in marshes, lakeshores, streams and riverbanks, sometimes in the water. Oriental bulrush (*S. orientalis*) and Hippolyt's bulrush (*S. hippolyti*) are rarely eaten by livestock (Ulzijkhutag, 1985). There is no data on the edibility of other species.

Distributions of bulrush species in Mongolia are given in Gubanov (1996). The botanical-geographical regionalisation of Mongolia by A.A. Yunatov and V.I. Grubov (Grubov, 1982) is used here. There are 16 regions: (1) Khuvsgul, (2) Khentei, (3) Khangai, (4) Mongol-Daurian, (5) Great Khyangan, (6) Khovd, (7) Mongolian Altai, (8) Middle Khalkh, (9) East Mongolia, (10) Depression of Great Lakes, (11) Valley of Lakes, (12) East Gobi, (13) Gobi-Atai, (14) Dzungarian Gobi, (15) Transaltai Gobi and (16) Alashaa Gobi.

In the distribution section, after the description of each species, the numbers are given for the respective regions where the species occurs.

Materials and Methods

Bulrush specimens from the Herbarium of the Institute of Botany, Mongolian Academy of Sciences (UBA) and the Herbarium of the National University of Mongolia (UBU), as well as additional literature were used for the present study. There are 74 sheets of specimens in total, which were collected by a number of scientists between 1924 and 1990. This study was conducted using traditional methods of plant systematics.

Results

Mongolian flora includes two species of *Scirpus* and three species of *Schoenoplectus*. For the construction of keys to the two discussed genera and species, Timokhina's (1990) key was partially used.

Key to two closely related genera of Cyperaceae

1 Leaf blades reduced; inflorescence pseudolateral; perianth bristles present or missing	<i>Schoenoplectus</i>
- Leaf blades present; inflorescence terminal; perianth bristles always present	<i>Scirpus</i>

Genus *Schoenoplectus* (H.G.L. Reichenb.) Palla

1 Annual, with many slender stems; nut surface transversely rugulose *S. supinus*
 - Perennial, with thick stems; nut surface smooth 2

2 Stem triangular; bract longer than inflorescence; glumes smooth *S. triquetus*
 - Stem terete; bract shorter than inflorescence; glumes scabrous along the keel, often with reddish brown dots. *S. lacustris* subsp. *hippolyti*

S. lacustris subsp. *hippolyti* (V.I. Krecz.) Kukkonen (1996), Ann. Naturhist. Mus. Wien 98B (Suppl.): 89. - *Scirpus hippoliti* V. Krecz. Bot. mat. (Leningrad), 7,1: 28 (1937).

80 to 150 (exceptionally 200) cm tall plant, with thick rhizome; leaves reduced to wide sheaths which may have short blades; inflorescence anhelodium, consisting of ovate spikelets, arranged one to five at the tip of secondary peduncles; glumes brown to golden brown, scarious and ciliate along the margin, with prominent midrib extensions; nuts obovate, 2 to 2.5 mm long, more or less glossy, grey. *Distribution:* 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15

S. supinus (L.) Palla Bot. Jahrb. 10:299 (1888). - *Scirpus supinus* L. Sp. Pl.: 49 (1753).

Stems 5 to 25 cm tall, with fine root fibrils; leafless sheaths at the stem base, upper ones bear short (1 to 10 mm) narrow-linear blades; inflorescence capitate, consists of 1 to 10 oblong-ovate spikelets; bracts longer than inflorescence, up to 10 cm long; glumes elliptical, brownish, midrib area green; nuts obovate, almost triangular, dark brown. *Distribution:* 10 (Khovd river)

S. triquetus (L.) Palla Bot. Jahrb. 10:299 (1888). - *Scirpus triquetus* L. Mantissa: 29 (1769).

Creeping rhizome reddish; 50 to 100 cm tall plant, with triangular stem; upper sheaths bear short blades; spikelets ovate, with obtuse tip, all droop into one side of the inflorescence; glumes notched at the apex but with awn, ciliate along the margin; perianth bristles barbellate; nuts 2 to 3 mm long, yellowish or brown. *Distribution:* 9 (Sand dune Ongon els)

Genus *Scirpus* L.

1 Spikelet ovate with scabrous peduncle; perianth bristles 1.5 - 2 times longer than nut, erect *S. orientalis*
 - Spikelet lanceolate with smooth peduncle; perianth bristles 3 - 4 times longer than nut, curled *S. radicans*

S. orientalis Ohwi, Acta Phytotax. Gerobot. (Kyoto), 1: 76 (1932).

40 to 120 cm tall plant, with creeping rhizome; stem triangular, 2.5 to 8 mm in diameter; leaves linear, with acute tip, 3 to 10 mm wide, acute spikelets arranged one to three at the tip of secondary peduncles, forming an anhelodium; glumes keeled, three-veined, dark green, midrib area light; perianth bristles equal or little longer than nuts; nuts triangular, white, 1 mm long. *Distribution:* 2, 3, 4, 5, 9.

S. radicans Schkuhr, Ann. Bot. (Usteri), 2,4: 49 (1793).

40 to 100 cm tall plant; except for generative rhizomes, creeping rhizome produces lateral shoots which bend to the ground and root; leaves linear, flat, up to 2 cm wide; acute spikelets solitary; glumes 2 mm long, not keeled, dark in color; perianth bristles 6; nuts obovate, 1 mm long. *Distribution:* 3, 4, 9.

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Хураангуй

Монгол орны *Scirpus* төрлийн ургамлын ангилалзүйн судалгааны дүнд тус төрөлд багтааж байсан таван зүйлийн гурвыг *Schoenoplectus* төрөлд хамааруулж үзэв. Тус хоёр төрөл болон зүйлүүдийг ялган таних түлхүүр, зүйл тус бүрийн товч конспект, Монгол дахь тархалтын талаархи мэдээллийг тусгасан болно.

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