

A NEW VARIETY OF *CYPERUS PACHYRHIZUS* FROM LAKSHADWEEP, INDIA

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ABSTRACT

Cyperus pachyrrhizus var. *humei* is described as a new variety from India. The difference between this and the typical *C. pachyrrhizus* is explained and a detailed description of the new variety is provided along with information on the habitat and distribution. The difference between the closely related *C. conglomeratus* and *C. pachyrrhizus* is also explained.

Keywords. *Cyperus*, new variety, Lakshadweep

While revising the genus *Cyperus* L. for the flora of India, few interesting specimens from Lakshadweep were found in CAL, Howrah. The oldest collection of these sedge specimens are of great historical value as these were collected in 1875 by Allan Octavian Hume, a versatile personality, a civil service officer, political reformer, naturalist and horticulturist of British India. A detailed study of the specimens revealed that these can be treated as a distinct variety of *Cyperus pachyrrhizus* Nees ex Boeckeler because of the difference between this and the typical *C. pachyrrhizus*. Hume's collection was originally identified as *C. pallidus* Heyne but later on C.B. Clarke corrected the identity as *C. pachyrrhizus* Nees. Wadood Khan tentatively identified it as *C. conglomeratus* Rottb. subsp. *conglomeratus*. However, the plant is allied to *C. pachyrrhizus* and cannot be treated as an infraspecific taxon of *C. conglomeratus* merely because of the presence of rays in the inflorescence. Most vegetative and floral characters match with that of *C. pachyrrhizus*, and it grows in similar habitats, on sandy seashores. Also the specimens in question were collected from within the distribution range of *C. pachyrrhizus*. In CAL there are specimens from Gujarat coast that are wrongly identified as *C. pachyrrhizus*. These Gujarat specimens can be treated as a variant of *C. conglomeratus* or as a different taxon allied to it. The report of *C. pachyrrhizus* from Pakistan (Kukkonen, 2001) also need to be verified, because *C. pachyrrhizus* has limited distribution range along the coastline of Sri Lanka and southern India (including the Lakshadweep), extending to Male and Seychelles. It has been observed that *C. conglomeratus* is not distributed along the coastal areas of southern India or Lakshadweep, but restricted to the North-Western region (Rajasthan and Gujarat). The Punjab specimens identified as *C. conglomeratus* in CAL are actually *C. atkinsonii* C.B. Clarke.

Further, it is clarified that considering the differences between typical *C. conglomeratus* and *C. pachyrrhizus* it is preferred here to treat the latter as a distinct species as done by Clarke (1893), Fischer (1931) and Karthikeyan & al., (1989), not as a subspecies as treated by Koyama (1980, 1980a) and Govaerts & al., (2007). The Lakshadweep specimens show the characters of *C. pachyrrhizus*, but vary mainly in the nature of inflorescence. The differences found are shown in the table below.

Based on the above differences the plant collected by A.O. Hume from Lakshadweep and a few other later collections is described here as a new variety. Images of the Isotype of *Cyperus pachyrrhizus* Nees ex Boeckeler (Barcode: K000592544) and Holotype (Acc. No. 562673) of the new variety (CAL) are provided for a comparison (Plate 1).

In the protologue of *Cyperus pachyrrhizus*, Boeckler (1868) has clearly mentioned that '*capitulosolitario*' and this is correct in all the specimens from the southern coast of the mainland India, Sri Lanka and Maldives. The umbellate inflorescence was found only in the Lakshadweep specimens, nowhere else. It is worth mentioning that umbellate inflorescence is found in the allied species, *C. conglomeratus* which is restricted to the sandy arid regions of Rajasthan and Gujarat, Pakistan and tropical Africa. But *C. pachyrrhizus* (including the proposed new variety) can easily be differentiated from *C. conglomeratus* mainly by the nut characters (Plate 2). In

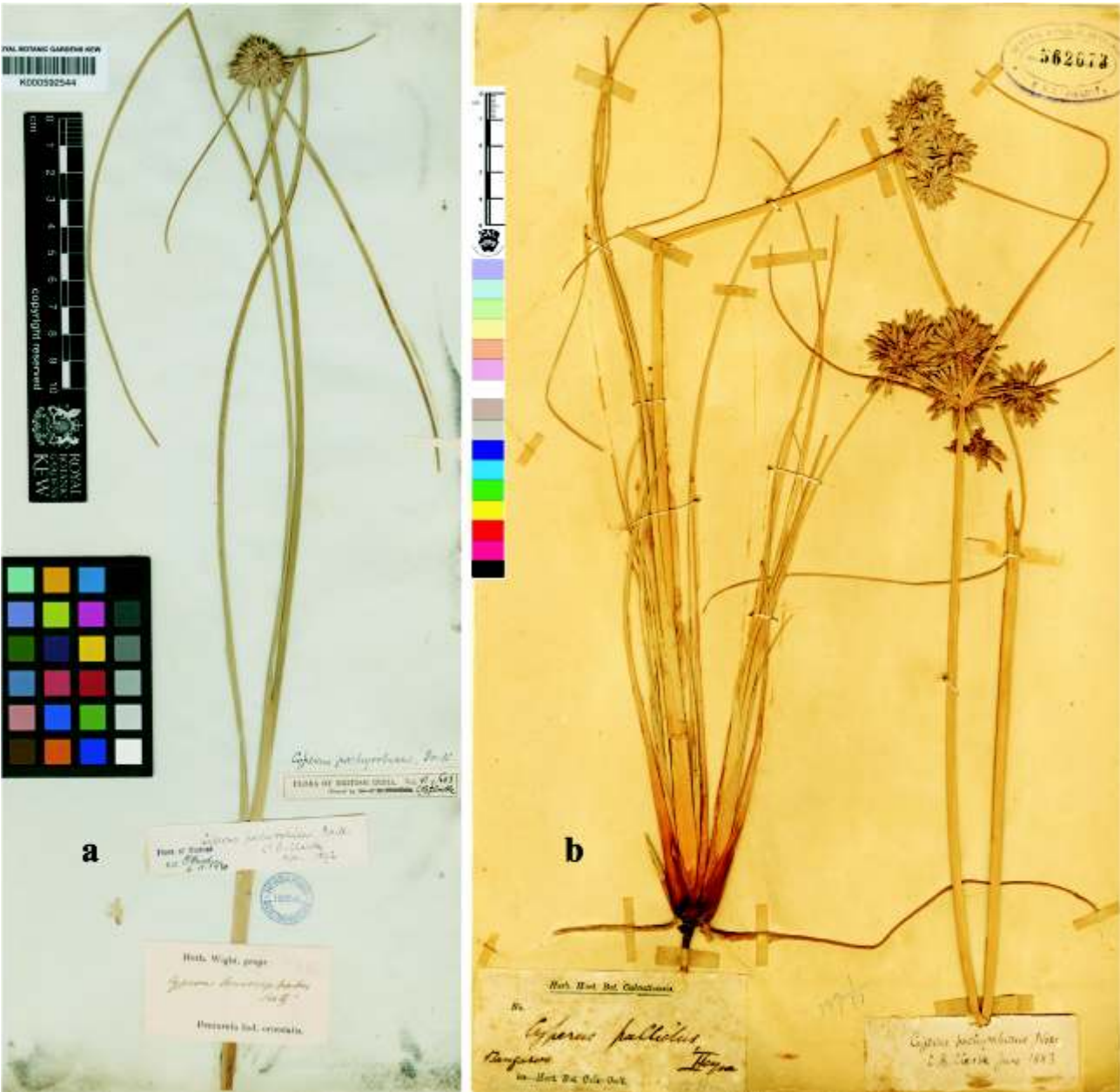


Plate 1. : a. Isotype of *Cyperus pachyrrhizus* var. *pachyrrhizus*, b. Holotype of *C. pachyrrhizus* var. *humei* V.P. Prasad var. nov.

Table 1 : Differences between *Cyperus pachyrrhizus* and the specimens from Lakshadweep

	<i>Cyperus pachyrrhizus</i> Nees ex Boeckeler	Lakshadweep specimens by A.O. Hume (Acc. No. 562673 and 562676,
Stems	2 - 3mm thick	3.5 - 5mm thick
Inflorescence	A single globose head of spikelets, 2 - 4.5cm across.	Umbellate with 4 - 5 globose heads, 5 - 8cm across.
Rays	Absent	4 - 5

C. pachyrrhizus the nut is flat on the ventral surface and smaller in size (1.7 - 2mm long), but in the latter the nut is rather thin, prominently concave on the ventral surface with both sides curved inward and bigger in size (2 - 2.2mm long). Also in *C. conglomeratus* plants are smaller, up to 50cm high and the spikes with less spikelets (4 -



Plate 2. : Ventral surface of the nuts of : **A.** *Cyperus conglomeratus* Rottb., **B.** *C. pachyrrhizus* Nees ex Boeckeler var. *pachyrrhizus* and **C.** *C. pachyrrhizus* var. *humei* var. nov.

13). In *C. pachyrrhizus* plants are stout, up to around 70cm high and the spikes with many to numerous spikelets (up to 38 in the proposed new variety).

***Cyperus pachyrrhizus* var. *humei* V.P. Prasad var. nov.**

Type : India : Lakshadweep Union Territory, Bangaroo (Bangaram Island), *A.O. Hume*, s.n. (Acc. No. 562673), 20 - 2 - 1875, Holo : CAL; Acc. No. 562676 of the same gathering is selected as the Isotype (CAL).

Tufted perennial with thick ascending rhizome, 35 - 70cm high. Roots woolly (with entangled sand particles on it). Stems obtusely trigonous, 3.5 - 5mm thick. Leaves mostly shorter, but a few exceeding the stem, canaliculate, often scabrous on the margins towards the base; sheaths papery on the margin, purplish brown towards the base. Inflorescence umbellate, with spikelets crowded on globose heads at the tip of 4 - 5 rays, 5 - 8cm across. Rays 1.5 - 3cm long. Involucral bracts 3 - 4; the lowest up to 30cm long. Spikes globose, 2.5 - 3cm across, closely packed with 28 - 38 spikelets. Spikelets oblong-lanceolate, acute at apex, 10-12 × 3 - 3.5mm, compressed but often slightly bulged along the midline, 18 - 20-flowered. Rachilla wingless, with c. 1mm long internodes. Glumes ovate, mucronate at apex, c. 4.5 × 2.2mm, with brownish streaks on both sides, hyaline at the margins; nerves 3 - 4 on both sides; mid-nerve passing into a keel; keel prominent in the upper half, gradually tapering into a prominent mucro. Stamens 3; filaments up to 4.5mm long; anthers linear oblong, c. 2.5mm long, with a prominent connective appendage at apex. Style c. 1mm long; stigmas 3, up to 2.5mm long. Nut Planoconvex, with an inconspicuous angle on the dorsal surface and flat ventral surface, ellipsoid. c. 1.7 × 0.8mm, minutely apiculate at the obtuse apex, shining black when mature.

Fls. & Frts.: December-April.

Habitat : Seashore of Islands with sandy soil.

Distrib.: Endemic to Lakshadweep

Specimens examined (other than the type) : Lakshadweep: Betra par (Bitra Island), *A.O. Hume* s.n. 1875 (CAL); Kalpatti Island, *B.M. Wadhwa* 48976, 23-2-1959 (CAL); Kalpatti, *K.S. Srinivasan* s.n., 23-2-1959 (CAL); Agathi Island, *B.M. Wadhwa* 68904, 15-12-1960 (CAL); Kadmat, *M. Sanjappa* 44204, Jan. 2008 (CAL); Kadmat, *P. Lakshminarasimhan* 44215, 23-4-2008 (CAL).

Conservation status : Not assessed. However, considering the number of specimens available in CAL it is assumed that there is no immediate threat to the species.

Etymology : The plant is named in honour of Allan Octavian Hume for his contributions in Indian natural history. As a naturalist, besides the birds, he also collected plant specimens from the beautiful Islands of Lakshadweep. Moreover, type specimens of the new variety in this article were collected by him.

Note : The epithet *pachyrrhizus* is often spelled as *pachyrrhizus* at species level or as infraspecific taxon. However, in the protologue (Boeckeler, l.c.), the spelling is *pachyrrhizus* and hence, that has to be followed.

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लक्षद्वीप, भारत से साइपेरस पैकिराइजस का एक नवीन प्रभेद

वी पी प्रसाद

सारांश

भारत से नये प्रभेद के रूप में साइपेरस पैकिराइजस प्रभेद हुमेड़ का वर्णन किया गया है। प्ररूपी साइपेरस पैकिराइजस से इसका अन्तर स्पष्ट करते हुए प्राकृतवास एवं व्याप्ति पर जानकारी के साथ विस्तृत विवरण दिया गया है। समवर्गी साइपेरस कोंग्लोमरेटस तथा साइपेरस पैकिराइजस में अंतर भी स्पष्ट किये गये हैं।