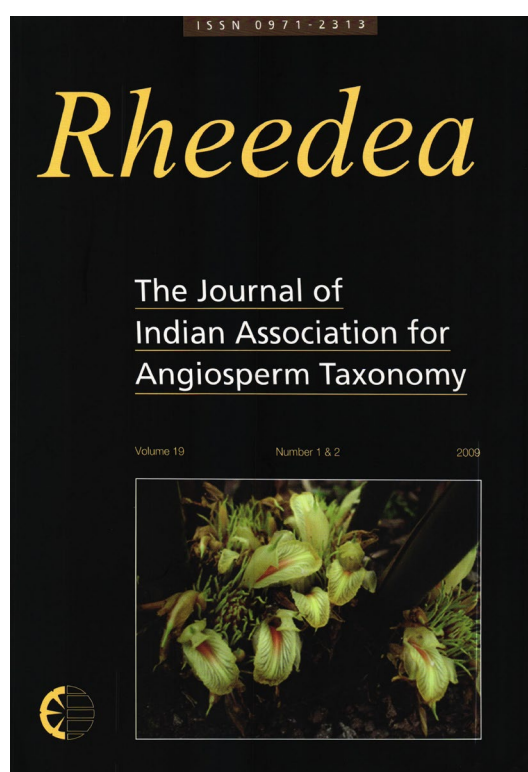




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Five New Synonyms of *Pycnus malabaricus* (Cyperaceae)

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Abstract

Five species, viz. *Cyperus atroglossa* Govind., *C. decumbens* Govind., *C. lurida* Govind., *C. plurinodosa* Govind. and *C. stricticulis* Govind. are reduced to synonyms of *Pycnus malabaricus* C. B. Clarke. Details of a comparative study of the type specimens of all the five names with the type of *P. malabaricus* are provided.

Keywords: *Pycnus malabaricus*, Synonyms, Type Specimens

Introduction

While revising the genus *Pycnus* P. Beauv. for the Flora of India, the author had an opportunity to study the type specimens of a few species described by late Prof. Govindarajulu at CAL, DD, MH, PCM and specimens kept at Field Station of Centre for Advanced Studies (CAS) in Botany, University of Madras, Madhavoyal, Chennai. The study revealed that five species, namely *Cyperus atroglossa* Govind., *C. decumbens* Govind., *C. lurida* Govind., *C. plurinodosa* Govind. and *C. stricticulis* Govind. cannot be maintained as distinct entities. Morphological characters of the type specimens of all these names were corresponding with that of *Pycnus malabaricus* C. B. Clarke.

Results of a comparative study of the type specimens of all the five names with the Holotype of *Pycnus malabaricus* are given in Table 1.

In *P. malabaricus* inflorescence is always simple, but variable in number of spikelets and their arrangement. Usually the spikelets are arranged on a single ray. However, at times up to 3 rays are found in certain specimens. Hence, number of rays in the inflorescence cannot be taken as a good character in this species. Length of the spikelets varies depending on the age. In the early stage of flowering, spikelets may be short, but gradually elongate as they get older. In the types of *C. plurinodosa* spikelets are comparatively short because the specimens are in early stage of growth. Nuts are also not dark in these specimens due to same reason. Glumes with reddish brown sides and green keel are good char-

acters to identify *P. malabaricus* in the field. Reddish brown colour of the glumes is also long lasting in the herbarium specimens. In the light of the above findings it is confirmed that the above mentioned five species described by Govindarajulu are conspecific to *P. malabaricus* and hence reduced here as taxonomic synonyms of *P. malabaricus*. Besides the types, protologues were also checked before reaching a conclusion regarding maintenance of these species. A revised nomenclature citation of *P. malabaricus* is given below along with relevant synonyms and their types. Though the description of *P. malabaricus* is available in the protologue, Cooke (1908) and Prasad & Singh (2002), a brief description with diagnostic characters is given below after the nomenclature citation.

Pycnus malabaricus C. B. Clarke in J. Linn. Soc., Bot. 34: 12. 1898. *Type*: INDIA, **Maharashtra**, Pune District, Lonavala, 16.9.1894, Woodrow 28 (Holotype – K!).

Cyperus malabaricus (C. B. Clarke) T. Cooke, Fl. Bombay 2: 856. 1908 (3: 369. 1958, Repr. ed.).

C. decumbens Govind. in J. Indian Bot. Soc. 52: 72, f. 1. 1973, **syn. nov.** *Type*: INDIA, **Maharashtra**, Satara District, Mahabaleshwar, Sedgwick 4792 (Holotype – PCM!*; Isotype 4792 A – CAL!).

Pycnus decumbens (Govind.) P. & V. Singh in J. Econ. Taxon. Bot. 5: 467. 1984.

Cyperus atroglossa Govind. in Proc. Indian Acad. Sci. 81B(5): 187, f. 1. 1975, **syn. nov.** *Type*: INDIA, **Karnataka**, Shimoga District, E. Govindarajulu

Notes: *As per the protologue the Holotypes Sedgwick 4792, E. Govindarajulu 4826 and E. Govindarajulu 4825 should have been at PCM, but located at Field Station of CAS, Dept. of Botany, University of Madras, Madhavoyal, Chennai.

Table 1. Comparative study of the types of *Cyperus atroglossus* Govind., *C. decumbens* Govind., *C. lurida* Govind., *C. plurinodosa* Govind. and *C. stricticulmis* Govind. with the Holotype of *Pycnus malabaricus* C. B. Clarke

	<i>P. malabaricus</i>	<i>C. decumbens</i>	<i>C. atroglossus</i>	<i>C. lurida</i>	<i>C. plurinodosa</i>	<i>C. stricticulmis</i>
Habit	Annuals	Annuals	Annuals	Annuals	Annuals. Govindarajalu (1975) says stolons present. But only fibrous roots were found in the type specimens	Annuals. According to Govindarajalu (1975) stolons are present. But only fibrous roots were found in the type specimens
Culms	Tufted, compressed, trigonous.	Tufted, compressed, trigonous	Tufted, compressed, trigonous	Tufted, compressed, trigonous	Tufted, compressed	Tufted, compressed
Leaves	Shorter than to as long as the culm	Shorter than to as long as the culm	Shorter than to as long as the culm	Shorter than to as long as the culm	Shorter or longer than the culm	Shorter than to as long as the culm
Inflorescence	Simple, 1 – 3-rayed (usually 1-rayed), with 3 – 12 spikelets	Simple, 1-rayed, with 3 – 5 spikelets	Simple, 1 – 3-rayed, with 3 – 10 spikelets	Simple, 1 or 2-rayed (not well developed in the types), with 3 – 8 spikelets	Simple, 1 – 3-rayed, with 5 – 8 spikelets	Simple, 1 – 3-rayed, with 3 – 6 spikelets
Involucral bracts	3, lowest much longer than the inflorescence	2 or 3, lowest longer than the inflorescence	2 or 3, longer than the inflorescence	2 or 3, lowest longer than the inflorescence	3 or 4, longer than the inflorescence	2 or 3, longer than the inflorescence
Spikelets	Strongly compressed, linear-oblong, subacute at apex, 5 – 10 × c. 2.5 mm; rachilla wingless	Strongly compressed, linear-oblong to lanceolate, subacute at apex, 6 – 8 × 2.2 – 2.5 mm; rachilla wingless	Strongly compressed, oblong-lanceolate, subacute at apex, 7 – 10 × c. 2.2 mm; rachilla wingless.	Strongly compressed, oblong-lanceolate, subacute at apex, – 10 × 2.2 – 2.5 mm; rachilla wingless	Strongly compressed, oblong-lanceolate, subacute at apex, 5 – 6 × 2.2 – 2.5 mm; rachilla wingless	Strongly compressed, lanceolate, subacute at apex, 7 – 10 × c. 2.5 mm; rachilla wingless

Glumes	Membranaceous, densely imbricate, broadly ovate, acute and minutely apiculate at apex, $c. 2 \times 1.5$ mm, with dark reddish brown nerveless sides, shining, with hyaline margins; keel prominent, green, 3-nerved	Membranaceous, densely imbricate, broadly ovate, acute and minutely apiculate at apex, $1.7-2 \times 1.5$ mm, with dark reddish brown nerveless sides and hyaline margins; keel prominent, 3-nerved	Membranaceous, densely imbricate, broadly ovate, acute and minutely apiculate at apex, $1.8-2 \times 1.5$ mm, with dark reddish brown nerveless sides, shining, with hyaline margins; keel prominent, 3-nerved	Membranaceous, densely imbricate, broadly ovate, acute and minutely apiculate at apex, $c. 2 \times 1.5$ mm, with dark reddish brown nerveless sides and hyaline margins; keel prominent, 3-nerved	Membranaceous, densely imbricate, broadly ovate, acute and minutely apiculate at apex, $2-2.2 \times 1.5-1.8$ mm, with dark reddish brown nerveless sides, shining, with hyaline margins; keel prominent, 3-nerved
Stamens	2; anthers linear-oblong, $c. 0.5$ mm long	2; anthers oblong, $0.4-0.5$ mm long	2; anthers linear-oblong, $c. 0.5$ mm long	2; anthers linear-oblong, $0.5-0.6$ mm long.	2; anthers linear-oblong, $0.5-0.6$ mm long
Style	$1.0-1.2$ mm long; stigmas shorter than style	$c. 1$ mm long; stigmas shorter than style	$c. 1$ mm long; stigmas shorter than style	$c. 1$ mm long; stigmas shorter than style	$1.0-1.2$ mm long; stigmas shorter than style
Nut	Biconvex, $c. 1 \times 0.8$ mm, broadly obovate, obtuse at apex, minutely apiculate, ultimately dark brown, finely transversely undulate	Biconvex, $c. 0.9 \times 0.7$ mm, broadly obovate, minutely apiculate at apex, dark brown to blackish, transversely undulate	Biconvex, $c. 1 \times 0.7$ mm, broadly elliptic-obovate, apiculate at apex, dark brown to blackish, transversely undulate	Biconvex, $c. 1 \times 0.7$ mm, broadly obovate, minutely apiculate at obtuse apex, yellowish turning dark brown, faintly transversely undulate	Biconvex, $1-1.1 \times 0.8-0.9$ mm, broadly elliptic-obovate, minutely apiculate at apex, dark brown to blackish, shining, faintly transversely undulate

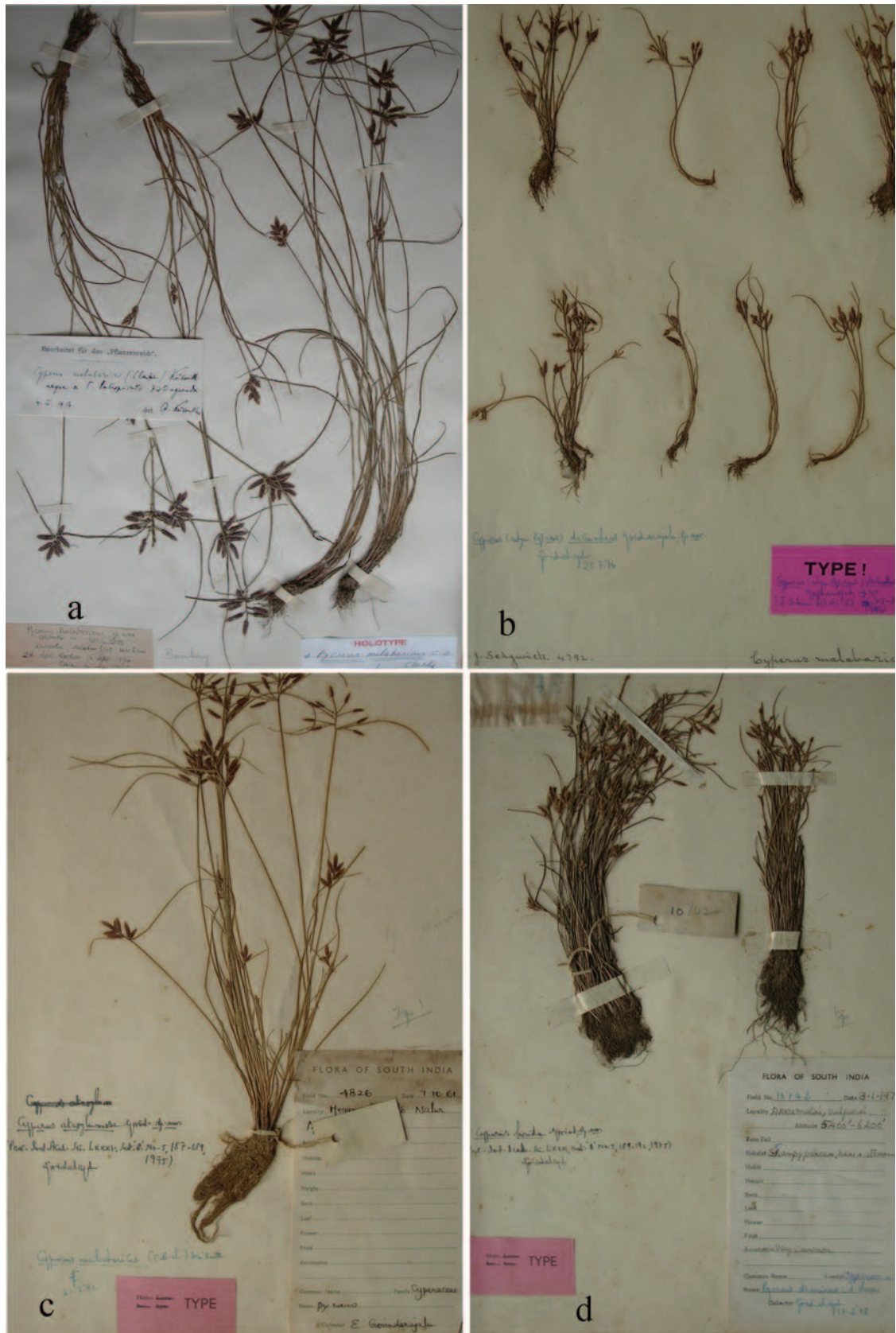


Figure 1. a. *Pycnus malabaricus* C. B. Clarke; b – d. Holotypes of *Cyperus decumbens* Govind., *C. atroglossus* Govind. and *C. lurida* Govind.

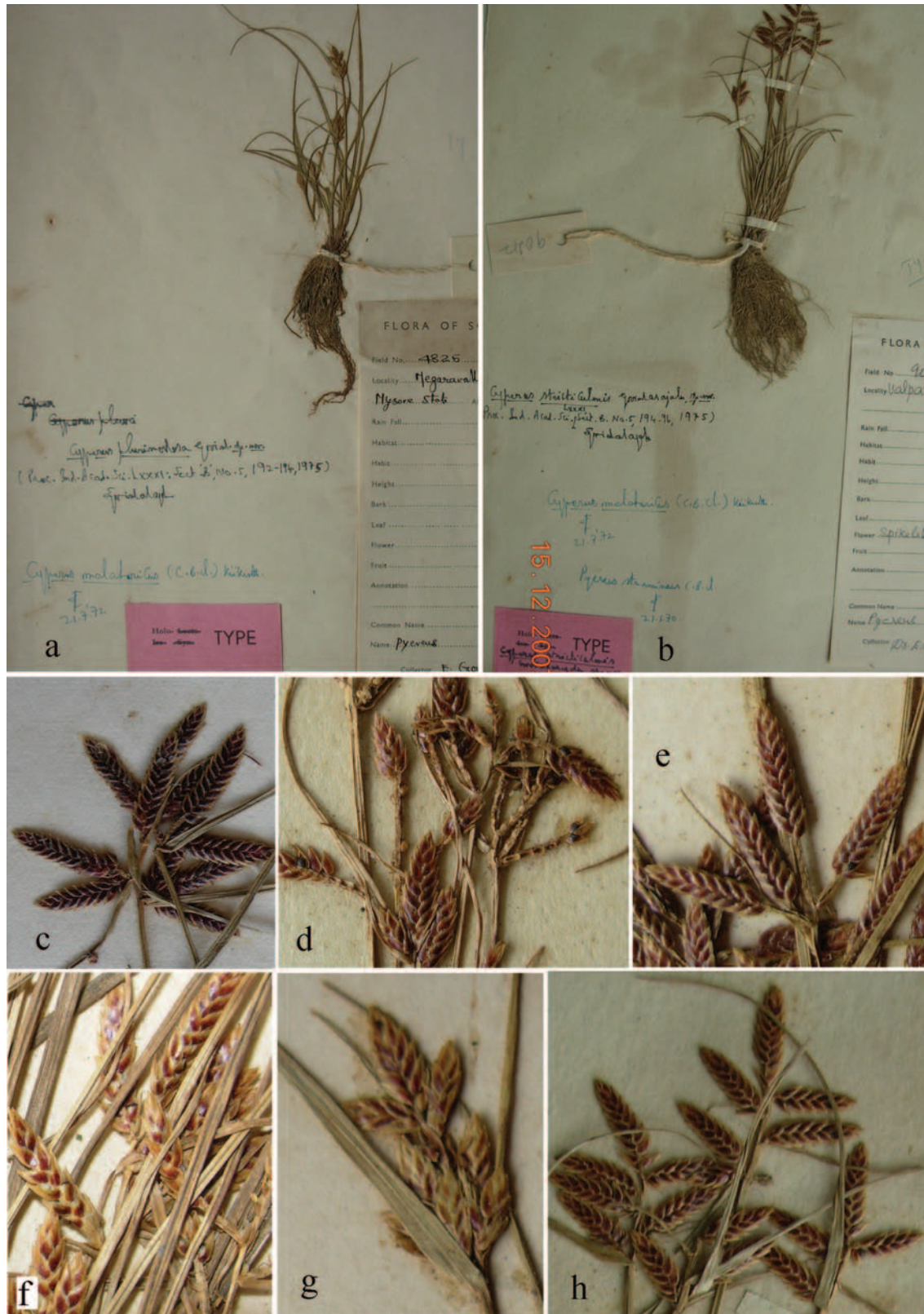


Figure 2. a, b. Holotypes of *Cyperus plurinodosa* Govind. and *C. stricticulmis* Govind.; c. Spikelets of *Pycreus malabaricus* C. B. Clarke; d – h. Spikelets of the Holotypes of *Cyperus decumbens* Govind., *C. atroglossa* Govind., *C. lurida* Govind., *C. plurinodosa* Govind. and *C. stricticulmis* Govind.

4826 (Holotype – PCM!*); Megaravalli to Nalur, 7.10.1961, *E. Govindarajalu* 4823 (Paratype – CAL!); 4823A (Paratype – BSI!†); Agumbi (Agumbe), 19.10.1961, *P. Jayaraman* 2819 (Paratype – PCM!); Emmekalkere, 10.10.1961, *E. Govindarajalu* 5001 (Paratype – MH!♦); 5001A (Paratype – BLAT!°); between Guddakeri and Nalur, 13.10.1961, *E. Govindarajalu* 5187 (Paratype – DD!).

Pycrus atroglossus (Govind.) P. & V. Singh in *J. Econ. Taxon. Bot.* 5: 467. 1984.

Cyperus lurida Govind. in *Proc. Indian Acad. Sci.* 81 B(5): 189, f. 2. 1975, *syn. nov.* Type: INDIA, **Tamil Nadu**, Coimbatore District, Valparai, Akkamalai, 3.1.1971, *E. Govindarajalu* 10742 (Holotype – PCM!‡; Isotypes 10742 F – CAL, 10742 D – DD, 10742 H – PCM).

Pycrus lurida (Govind.) P. & V. Singh in *J. Econ. Taxon. Bot.* 5: 467. 1984.

Cyperus plurinodosa Govind. in *Proc. Indian Acad. Sci.* 81B(5): 192, f. 3. 1975, *syn. nov.* Type: INDIA, **Karnataka**, Shimoga District, Megaravalli to Nalur, 7.10.1961, *E. Govindarajalu* 4825 (Holotype – PCM!*).

Pycrus plurinodosus (Govind.) P. & V. Singh in *J. Econ. Taxon. Bot.* 5: 467. 1984.

Cyperus stricticulmis Govind. in *Proc. Indian Acad. Sci.* 81B(5): 194, f. 4. 1975, *syn. nov.* Type: INDIA, **Tamil Nadu**, Coimbatore District, Valparai, 7.10.1968, *E. Govindarajalu* 9042 (Holotype – PCM!; Isotypes – CAL!, MH!).

Pycrus stricticulmis (Govind.) P. & V. Singh in *J. Econ. Taxon. Bot.* 5: 467. 1984.

Annuals with tufted slender stems, 13 – 35 cm high. Leaves shorter than or as long as the stem. Inflorescence simple, with 5 – 12 spikelets. Involucral bracts 3; lowest much overtopping the inflorescence. Spikelets strongly compressed, 5 – 10 × 2.2 – 2.5 mm, linear-oblong, subacute at apex, 14 – 20-flowered; rachilla straight, wingless. Glumes densely imbricate, c. 2 × 1.5 mm, broadly ovate, acute at apex, dark and shining

reddish brown, with white-hyaline margin; keel green. Stamens 2; anthers c. 0.5 mm long, linear-oblong. Stigmas 2, slightly shorter than style. Nut laterally compressed, biconvex, c. 1 × 0.7 – 0.9 mm, globose-obovoid, minutely apiculate at the obtuse apex, often slightly asymmetric near base, ultimately dark brown, faintly transversely undulate.

Flowering & Fruiting: August – January.

Distribution: Found in moist rocky areas and wet gravelly soil, especially towards the coastal areas. Endemic to Peninsular India.

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Notes: *As per the protologue the Holotypes *Sedgwick* 4792, *E. Govindarajalu* 4826 and *E. Govindarajalu* 4825 should have been at PCM, but located at Field Station of CAS, Dept. of Botany, University of Madras, Maduravoyal, Chennai.

†As per the protologue the Paratype *E. Govindarajalu* 4823 A should have been at BSI, but located at PCM, Chennai.

♦As per the protologue the Paratype *E. Govindarajalu* 5001 should have been at MH, but located at PCM, Chennai.

°As per the protologue the Paratype *E. Govindarajalu* 5001A should have been at BLAT, Mumbai, but located at PCM, Chennai.

‡As per the protologue the Holotype *E. Govindarajalu* 10742 should have been at PCM, but located at Field Station of CAS, Dept. of Botany, University of Madras, Maduravoyal, Chennai.