

NOTES ON THE GENUS *Panicum* LINN. (GRAMINEAE) IN FORMER
MADRAS PRESIDENCY

J. D. Hooker (1896) has described 41 species under the genus *Panicum* Linn. as occurring in former Madras Presidency, comprising the present states of Andhra Pradesh, Kerala, parts of Mysore and Tamil Nadu. Since then the delimitation of this genus has undergone many changes; many taxa have been segregated from *Panicum* Linn. (s.l.) either as new genera or have been transferred to other genera. As a result, out of the 41 species reported by Hooker (l.c.) for this area, only 11 remain under *Panicum* Linn. (s.s.).

Of these the occurrence of *Panicum auritum* Presl. ex Nees in Travancore is doubtful. Fischer (1934 & 1936) and Bor (1960) have not reported it from the area under discussion. In addition, there are no gatherings of this species in MH (Madras Herbarium). This brings down the number of species of *Panicum* Linn. (s.s.) to 10 as reported by Hooker from this region, and subsequently corroborated by the works of Ranga Achariyar and Tadulinga Mudaliyar (1921) and Fischer (l.c.).

Panicum fischeri Bor is a valuable addition to this region. According to Bor (1956) this species has been collected twice and that too at Kullar (Kallar) in the Nilgiris by Gamble, and apparently nowhere else. The distinguishing feature of this species is the rhachilla which is produced beyond the insertion of the upper floret. Fischer (l.c. p. 1782) also noticed this feature earlier but misidentified the species as *P. psilopodium* (S. India: Kalkad to Sengaliteri, Tinnevely Dt., 23 Sept. 1915, MH 12353). Later, the same species has been collected in E. Ghats (Andhra Pradesh: near Papanasam Falls, Chittoor Dt., 14 Oct. 1958, K. Subramanyam 6962) and recently in Southern Ghats (Tamil Nadu: Way to Thulukkamparai, Thirukurungudi, Tirunelveli Dt., 29 Nov. 1969, B. V. Shetty 33042). From this it becomes evident that this grass is not restricted to Nilgiris alone. However, as the few collections indicate, it is a rare species.

In view of the considerable changes this genus has undergone since the publication of *Flora of the Presidency of Madras*, it is thought fit to give a simplified key to help easy identification of this genus.

KEY TO THE SPECIES OF *Panicum* LINN.

1. Rhachilla not produced beyond the upper lemma
2. Upper lemma smooth
3. Spikelets symmetrical

4. Lower glume distinctly less than half as long as the spikelet
5. Lower glume suborbicular, truncate
6. Culms spongy, floating; leaves not distichous, flat ... *P. paludosum*
- 6'. Culms tough, rhizomatous; leaves markedly distichous, usually involute ... *P. repens*
- 5'. Lower glume broadly ovate, acute
7. Spikelets persistent; panicle compact; upper glume 11-13 nerved; upper lemma oblong, acute ... *P. sumatrense*
- 7'. Spikelets deciduous, often diseased and much deformed; panicle lax; upper glume 11-nerved; upper lemma oblong-obtuse, apiculate ... *P. psilopodium*
- 4'. Lower glume more than half or sometimes as long as the spikelet
8. Leaves linear, base not cordate
9. Spikelets not gaping at maturity
10. Spikelets not more than 3 mm long
11. Spikelets 2.5-3 mm long; margins of lower and upper glumes broadly membranous ... *P. antidotale*
- 11'. Spikelets 1.5-2 mm long; margins of glumes not membranous ... *P. walens*
- 10'. Spikelets 5-6 mm long; glumes and lower lemma acuminate; spikelets not gaping ... *P. miliaceum*
- 9'. Spikelets 3-4 mm long, gaping at maturity; glumes and lower lemma acuminate ... *P. trypheron*
- 8'. Leaves lanceolate, base cordate
12. Spikelets few, 4-5 mm long, glumes acuminate ... *P. gardneri*
- 12'. Spikelets many, 2-3 mm long; glumes sub-acute ... *P. notatum*
- 3'. Spikelets gibbous
13. Leaves ovate, amplexicaul at base; spikelets many, crowded; lower glume as long as the spikelet ... *P. brevifolium*
- 13'. Leaves narrowly lanceolate, base rounded or subcordate; spikelets few, distant; lower glume $\frac{1}{2}$ - $\frac{1}{3}$ the length of the spikelet ... *P. sparsicomum*
- 2'. Upper lemma transversely rugose; lowermost branches of inflorescence whorled ... *P. maximum*
- 1'. Rhachilla produced beyond the upper lemma; spikelets few, $\pm$ 5 mm long; leaves linear ... *P. fischeri*

DISTRIBUTION DATA*

Panicum antidotale Retz. Obs. Bot. 4: 17. 1786; Hook. f. Fl. Brit. Ind. 7: 52. 1896; Fischer in Gamble's Fl. Pres. Madras 1783. 1934; Bor, Grasses of India, Burma and Ceylon 322. 1960.

KERALA PLAINS: Cochin, Palghat. S. DECCAN: Bangalore. S. GHATS: Tirunelveli. TAMIL NADU UP- LANDS: Coimbatore. W. GHATS: Nilgiris, Sheva- roys.

*The physiographical delimitations, as proposed by Chatterjee (1965), have been followed, while giving the distribution.

- Panicum brevifolium** Linn. Sp. Pl. 1: 59. 1753; Fischer in Gamble's Fl. Pres. Madras 1783. 1934; Bor, Grasses of India, Burma and Ceylon 324. 1960. *P. ovalifolium* Poir., Hook. f. Fl. Brit. Ind. 7: 44. 1896.
E. GHATS: Godavari, Visakhapatnam. TAMIL NADU PLAINS: Chingleput. W. GHATS: Cannanore.
- P. fischeri** Bor in Kew Bull. 1956: 257. 1956; Bor, Grasses of India, Burma and Ceylon 325. 1960.
E. GHATS: Chittoor. S. GHATS: Tirunelveli. W. GHATS: Nilgiris.
- P. gardneri** Thw. Enum. Pl. Zeyl. 359. 1864; Fischer in Gamble's Fl. Pres. Madras 1783. 1934; Bor, Grasses of India, Burma and Ceylon 326. 1960. *Isachne gardneri* Benth., Hook. f. Fl. Brit. Ind. 7: 26. 1896.
S. GHATS: Kottayam, Pulneys. W. GHATS: Nilgiris.
- P. maximum** Jacq. Collect. Bot. 1: 76. 1786; Hook. f. Fl. Brit. Ind. 7: 49. 1896; Fischer in Gamble's Fl. Pres. Madras 1783. 1934; Bor, Grasses of India, Burma and Ceylon 327. 1960.
E. GHATS: Visakhapatnam. S. GHATS: Pulneys, Tirunelveli. TAMIL NADU PLAINS: Chingleput, Ramanathapuram. TAMIL NADU UPLANDS: Coimbatore, Salem. W. GHATS: Nilgiris.
- P. miliaceum** Linn. Sp. Pl. 1: 58. 1753; Hook. f. Fl. Brit. Ind. 7: 45. 1896; Fischer in Gamble's Fl. Pres. Madras 1782. 1934; Bor, Grasses of India, Burma and Ceylon 327. 1960.
ANDHRA PLAINS: Krishna (Cult.).
- P. notatum** Retz. Obs. Bot. 4: 18. 1786; Bor, Grasses of India, Burma and Ceylon 701. 1960. *P. montanum* Roxb., Hook. f. Fl. Brit. Ind. 7: 53. 1896; Fischer in Gamble's Fl. Pres. Madras 1783. 1934; Bor, l.c. p. 329.
E. GHATS: Visakhapatnam. S. GHATS: Kottayam, Pulneys, Trichur. TAMIL NADU UPLANDS: N. Arcot, Coimbatore, Madurai. W. GHATS: Calicut, Cannanore, Nilgiris, Palghat, Shevaroy.
- P. paludosum** Roxb. Fl. Ind. 1: 310. 1820; Fischer in Gamble's Fl. Pres. Madras 1783. 1934; Bor, Grasses of India, Burma and Ceylon 329. 1960. *P. proliferum sensu* Hook. f. Fl. Brit. Ind. 7: 50. 1896, non Lamk.
E. GHATS: Cuddapah, Ganjam, Visakhapatnam. KARNATAKA COAST: Mangalore. S. DECCAN: Bangalore. S. GHATS: Pulneys, Tirunelveli. TAMIL NADU UPLANDS: Coimbatore, Madurai.
- P. psilopodium** Trin. Gram. Panic. 217. 1826; Hook. f. Fl. Brit. Ind. 7: 46. 1896; Fischer in Gamble's Fl. Pres. Madras 1782. 1934; Bor, Grasses of India, Burma and Ceylon 329. 1960.
E. GHATS: Cuddapah, Godavari, Krishna, Kurnool, Visakhapatnam. S. DECCAN: Mysore. S. GHATS: Tirunelveli. TAMIL NADU PLAINS: S. Arcot, Chingleput. TAMIL NADU UPLANDS: N. Arcot, Chingleput, Salem, Tiruchirapalli. W. GHATS: Coorg, Palghat.
- P. repens** Linn. Sp. Pl. 2: 87. 1762; Hook. f. Fl. Brit. Ind. 7: 49. 1896; Ranga Achariyar & Tadulinga Mudaliyar, South Indian Grasses, 99. 1921; Fischer in Gamble's Fl. Pres. Madras 1783. 1934; Bor, Grasses of India, Burma and Ceylon, 330. 1960.
E. GHATS: Cuddapah, Godavari, Visakhapatnam. S. DECCAN: Hyderabad. S. GHATS: Kanyakumari, Pulneys, Tirunelveli. TAMIL NADU PLAINS: S. Arcot, Chingleput, Ramanathapuram. TAMIL NADU UPLANDS: N. Arcot, Coimbatore, Madurai, Salem, Tiruchirapalli. W. GHATS: Cannanore, Coorg, Nilgiris.
- P. sparsicomum** Nees ex Steud. Syn. Pl. Glum. 1: 83. 1854; Hook. f. Fl. Brit. Ind. 7: 58. 1896; Bor, Grasses of India, Burma and Ceylon 330. 1960. *Cyrtococcum sparsicomum* (Nees ex Steud.) A. Camus, Fischer in Gamble's Fl. Pres. Madras 1786. 1934.
S. GHATS: Pulneys.
- P. sumatrense** Roth ex Roem. & Schult. Syst. Veg. 2: 434. 1817; Bor, Grasses of India, Burma and Ceylon 701. 1960. *P. miliare sensu* Hook. f. Fl. Brit. Ind. 7: 46. 1896; Fischer in Gamble's Fl. Pres. Madras 1782. 1934; Bor l.c. 329.
E. GHATS: Visakhapatnam. KERALA PLAINS: Palghat. TAMIL NADU PLAINS: N. Arcot, Chingleput. W. GHATS: Nilgiris.
- P. trypheron** Schult. Syst. Veg. 2: Mant. 244, 1824; Hook. f. Fl. Brit. Ind. 7: 47. 1896; Ranga Achariyar & Tadulinga Mudaliyar, South Indian Grasses 96. 1921; Fischer in Gamble's Fl. Pres. Madras 1783. 1934; Bor, Grasses of India, Burma and Ceylon 331. 1960.
ANDHRA PLAINS: Nellore. E. GHATS: Cuddapah, Guntur, Kurnool, Visakhapatnam. S. DECCAN: Bangalore. S. GHATS: Kanyakumari, Kottayam, Tirunelveli. TAMIL NADU PLAINS: S. Arcot, Chingleput, Ramanathapuram. TAMIL NADU UPLANDS: N. Arcot, Coimbatore, Madurai, Salem. W. GHATS: Cannanore, Nilgiris, Palghat.

Panicum walens Mez in Engl. Bot. Jahrb. 34: 146. 1904; Clayton in Kew Bull. 20: 264. 1966. *P. austroasiaticum* Ohwi, Bor, Grasses of India, Burma and Ceylon 324. 1960. *P. humile* Nees ex Steud., Hook. f. Fl. Brit. Ind. 7: 48. 1896; Fischer in Gamble's Fl. Pres. Madras 1782. 1934. E. GHATS: Visakhapatnam. S. GHATS: Kottayam.

ACKNOWLEDGEMENT

My grateful thanks are due to Dr. B. D. Sharma, Regional Botanist, Botanical Survey of India, Central Circle, Allahabad for the interest he has shown and for facilities provided during the course of this work.

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SESHAGIRIA ANSARI ET HEMADRI (ASCLEPIADACEAE) FROM MAHARASHTRA STATE, INDIA—ADDITIONAL DATA

Recently the authors have described in a brief note, a new genus *Seshagiria* Ans. et Hem. in Indian Forester 97(3): 126-127, 1971 along with a plate wherein it was not possible to provide relevant data in details. Such details on characters and other interesting aspects together with a plate are now being presented in this paper to enable other botanists to locate this species in other parts of India too.

Seshagiria sahyadrica Ansari et Hemadri in Ind.

For. 97: 126-127, t. 1, f. 1-9, 1971 (Plate 1).

A perennial twiner, 2-4 m long. Stem twining, slightly woody, terete, branching and glabrous. Leaves variable, opposite, petiolate, ovate-acuminate or ovate-oblong, 7-12 × 3.5-6.5 cm, rarely upto 19 × 9 cm, entire, base broadly cordate with a few glands at the base of midrib on the upper side, 6-8 nerved; petiole 2-4.5 cm long, grooved, slightly ciliate along the margins. Inflorescence few to many-flowered sub-axillary or lateral sub-umbellate cymes; peduncles 1-3.5 cm long, puberulous, terete; pedicels capillary, puberulous, 1.5-2.7 cm long; calyx 5-partite, lobes 0.3 cm long, ovate, acute, ciliate along the margins; corolla vinaceous purple, ± fleshy, 1.5-2.0 cm long, divided near to the base, rotate; lobes over-lapping to the right at the base, twisted to the left linear-elongated, ± 0.2 cm wide

in the middle, tapering towards the slightly bent tip, broadening at the base upto 0.5 cm wide, with reflexed margins. Corona double; the outer cupular, fleshy, 5-lobed, forming cavities at the base with the staminal column; the inner corona of 5 dilated fleshy, subglobose masses, more or less 1/2 the length of staminal column and adnate to its base on one side and the outer corona lobes on the other side (or in between the staminal column and outer corona lobes). Anthers 5 with white, inflexed, membranous tips. Gynostegium 0.5 cm long. Pollen masses in all 10, pendulous, oblong, pale yellow, waxy, attached to the corpusculum by distinct caudicles. Carpels 2, glabrous, fleshy many-ovuled, free, usually one abortive. Follicles usually ± 8 × 2.5 cm, ovate-lanceolate, glabrous with warty protuberances all over. Seeds many, ovoid compressed ± 0.8 × 0.5 cm, prominently marginate; coma white, ± 2.5 cm long.

Flowering: May (end)-August.

Fruiting: August-October.

Vernacular name: Khobar-doda.

The twining stem and branches provide a strong fibre. As in the case of *Glossonema variens* (Stocks) Benth. the green immature fruits are relished by the local people.