

DIVERSITY OF *SAUROMATUM* (ARACEAE) IN INDIA INCLUDING A NEW SPECIES

*K. SASIKALA¹, M. REEMA KUMARI² & K.A.A. KABEER³

¹Mahatma Gandhi Govt. Arts College, Mahe - 673 311, U.T. of Puducherry, India

²Maharani Lakshmi Ammanni College for Women, Bengaluru - 560 012, India

³Botanical Survey of India, Central National Herbarium, Howrah - 641 004, India

ABSTRACT

The genus *Sauromatum* Schott (Araceae) is represented by 12 species in the world. In India the genus is represented by 6 species namely *S. brevipes*, *S. diversifolium*, *S. horsfieldii*, *S. meghalayense*, *S. nangkarensis* and *S. venosum*. *Sauromatum paramjitii* Sasikala, Reema Kumari & Kabeer a new species collected from Sikkim has been reported. A detailed description, an illustration, photograph and a revised key to the Indian species of *Sauromatum* is provided for easy identification.

Key words: *Sauromatum paramjitii*, Araceae, New species, Sikkim, India.

I. INTRODUCTION

The genus *Sauromatum* Schott (Araceae) comprises of 12 species in the world. According to Govaerts et al., 2014 and www.theplantlist.org there are 9 species in the world. The genus *Sauromatum* is widely distributed in Tropical Asia, Africa, Indo-malesia, Northeast Australia, Bhutan, Cambodia, China, India and Nepal (Mayo et al., 1997 and Li Heng & Hetterscheid, 2010). In India the genus was earlier represented by 1 species (Hooker, 1894) and 2 species by (Karthikeyan *et al.*, 1989 and Sasikala, 2000). The two genera *Sauromatum* and *Typhonium* are overlapping and hence some of the *Typhonium* species have been transferred to *Sauromatum* (Hetterscheid & Boyce, 2000, Li Heng & Hetterscheid, 2010, and Cusimano et al., 2010). Two new species *S. meghalayense* and *S. nangkarensis* have been added to the list and were described by D.K. Roy et al., 2014 and Nangkar & Tag, 2018 respectively. At present there are 7 species under the genus in India namely *S. brevipes*, *S. diversifolium*, *S. horsfieldii*, *S. meghalayense*, *S. nangkarensis* and *S. venosum* including a new species *Sauromatum paramjitii* described from Sikkim. In India *S. brevipes* is distributed in Sikkim, Uttar Pradesh, Uttarakhand and West Bengal. The species *S. diversifolium* is found in Arunachal Pradesh, Assam, Maharashtra, Himachal Pradesh, Sikkim and Uttar Pradesh. *S. horsfieldii* is found in Kashmir, Maharashtra, Meghalaya, Mizoram, Nagaland, Uttarakhand and Uttar Pradesh. *S. venosum* is widely distributed in most parts of the country from Bihar, Goa, Gujarat, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Meghalaya, Odisha, Punjab, Rajasthan and Uttar Pradesh. The two species which are endemics are *S. meghalayense* found in

Meghalaya and *S. nangkarensis* recorded from Arunachal Pradesh. During a visit to BSHC, for the study of Araceae members, the Acc. Nos. 27933 and 27934 were found to be interesting. On further critical examination and comparison with literature, it turned out to be a new species of *Sauromatum* which is supported here by a description, an illustration and a photograph.

II. TAXONOMY

Sauromatum paramjitii Sasikala, Reema Kumari & Kabeer, *sp. nov.* is closely allied to *Sauromatum brevipes* but differs distinctly from it in having warty and more or less glandular pubescent hairs on the dorsal surface of leaves, on peduncle, spathe tube and pistillate flowers; neuters spatulate and a sigmoid appendix. (**Fig.1; Plate 1**)

Type: India: Sikkim, Hilly R.F., 21.05.1995, *P. Singh* 17396 (Holo CAL, Iso BSHC).

Cormous herb; corms globose, *c.* 1 cm across. Cataphylls 1 or 2, lanceolate, (1.5-) 3 - 4.5 cm long, acute or obtuse. Leaves pedatisect; leaflets 3 - 5, lanceolate, sessile, long-acuminate, glandular pubescent and warty on dorsal surface; middle leaflet 4.5 - 5 x 0.8 - 1 cm; lateral leaflets (1.7-) 2.5 - 4 x 0.3 - 0.5 cm, gradually smaller; petioles (5.5-) 10 - 11.5 cm long. Inflorescence solitary, appearing along with leaves. Peduncle 6.7 - 7.5 cm long, glandular pubescent. Spathe ovate-lanceolate, 5.7 - 8.5 cm long, purplish below, white or cream coloured above, slightly twisted at apex; tube ovoid-oblong, inflated, 1.5 - 2 cm long, connate, glandular pubescent with reddish purple spots; limb linear-lanceolate, 4.2 - 6.5 x *c.* 0.8 cm long, with filiform tapering, acute. Spadix 5.6 - 6.3 cm long, stipitate; stipe *c.* 1 mm long. Pistillate flower-portion at base followed by neuter flower-portion, interstice and staminate flower-portion terminating in a sigmoid appendix. Pistillate flower-portion 2 - 3 x 2.5 - 3 mm; pistillate flowers *c.* 50, covered with glandular hairs; ovary globose, *c.* 1 mm, unilocular; ovules 2, 3.3 - 4 x 1.2 - 1.8 mm, oblong, erect on basal placentation; stigma sessile, capitate. Neuter flower-portion 3 -

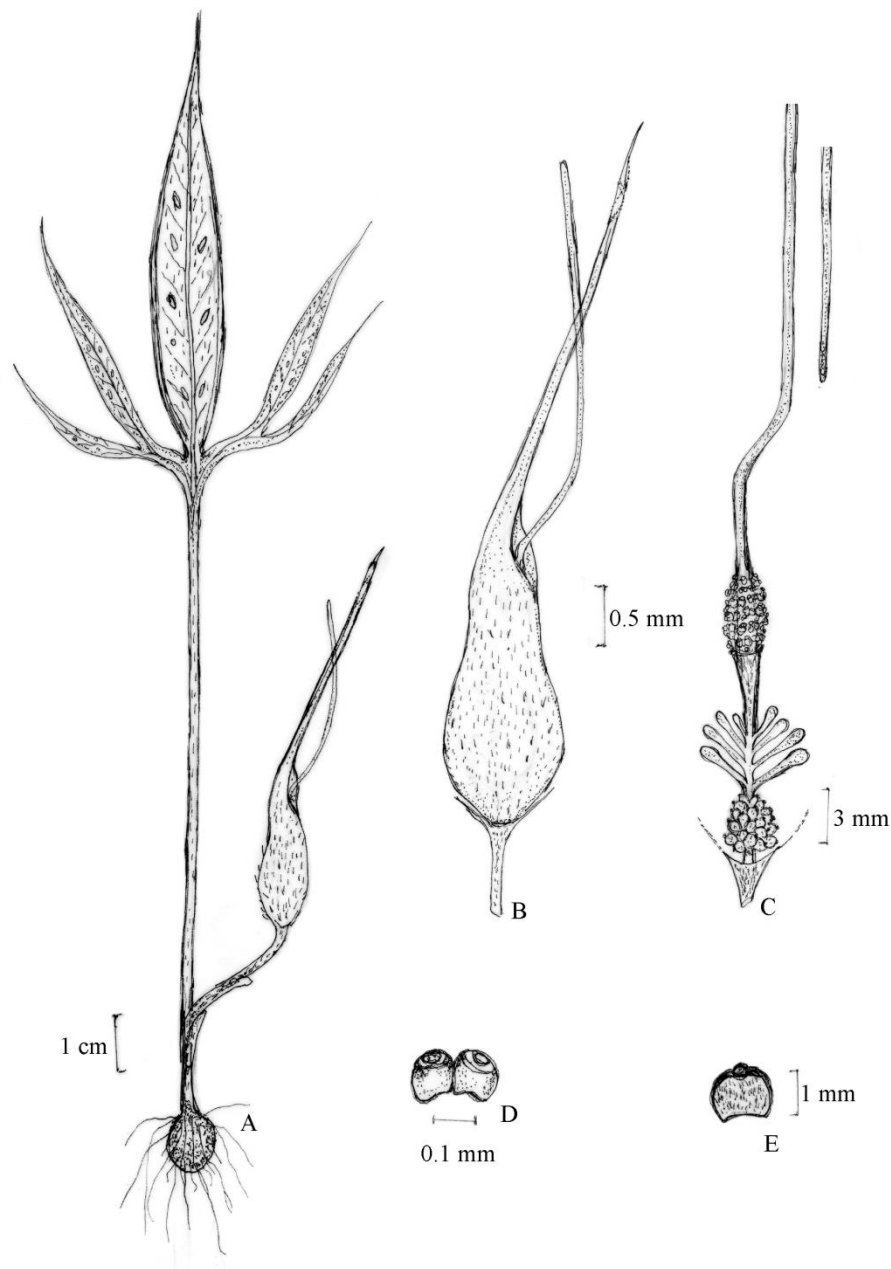


Fig. 1. *Sauromatum paramjitii* Sasikala, Reema Kumari & Kabeer, *sp. nov.* A. Habit; B. Inflorescence; C. Spadix; D. Staminate flower; E. Pistillate flower

3.2 mm long; neuters 1.5 -3 mm long, spatulate. Interstice 3 - 4 mm long, naked. Staminate flower-portion c. 4 x 2 mm, subcylindric; staminate flowers arranged spirally, lax; anthers c. 0.2 mm across, sessile, dehiscent by apical pores. Appendix sigmoid, slender, 4.2 - 4.6 cm long, longer than rest of spadix, erect at first for 6 -7 mm, then bend for 3 - 4mm, and then erect upwards for 3.3 - 3.5 cm. Fruit not seen.

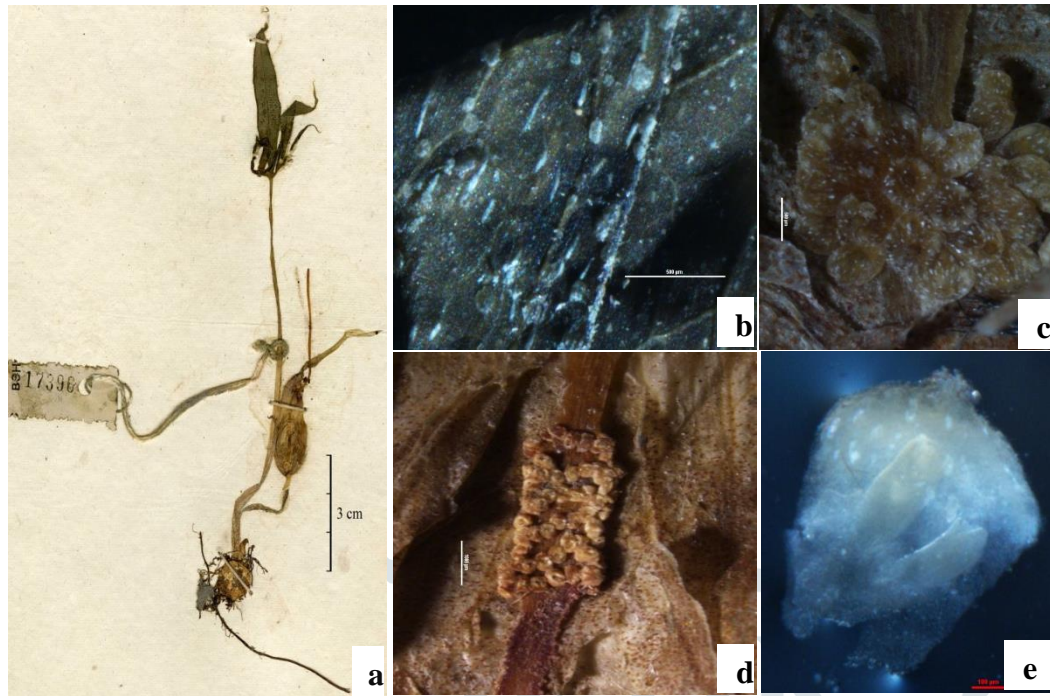


Plate 1. *Sauromatum paramjitii* Sasikala, Reema Kumari & Kabeer, *sp. nov.* **a.** Habit with spathe split open to show sigmoid appendix; **b.** Leaf - dorsal view showing wart and glandular hairs; **c.** - Pistillate flower-portion; **d.** Staminate flower-portion; **e.** Ovary with 2 ovules.

Fl.: May.

Habitat: On rocks and moist slopes.

Etymology: The specific epithet is to honour Dr. Paramjit Singh, Director, Botanical Survey of India, Kolkata, who collected the specimen and for his invaluable contributions towards Plant Taxonomy.

Notes: This species was thought to be a new species of *Typhonium* but now treated under *Sauromatum*. From Bogner's *pers. comm.* we understand that the genera *Sauromatum* and *Typhonium* are quite distinct and the differences are depicted in Table - 1.

Table - 1. Distinguishing characters of the two genera

S. No.	Character	<i>Sauromatum</i>	<i>Typhonium</i>
1	Spathe	Connate	Convolute
2	Leaf, Peduncle and Spathe	Hairy	Not hairy
3	Ovules	Two	One

Based on the above differences the new species is placed under the genus *Sauromatum* and is allied to *S. brevipes*. It is allied to *S. brevipes* and differs from it on the following characters (Table - 2).

Table - 2. The morphological differences between *Sauromatum brevipes* and *Sauromatum paramjitii*, sp. nov.

S. No.	Character	<i>Sauromatum brevipes</i>	<i>Sauromatum paramjitii</i> sp. nov.
1	Leaflets	Neither pubescent nor warty on dorsal surface	Glandular pubescent and warty on dorsal surface
2	Peduncle	Hypogaeus, 1.2 - 4 cm long, not hairy	Not hypogaeus, 6.5 - 7.5 cm long, glandular hairy
3	Spathe tube and ovary	Not hairy	Glandular hairy
4	Spathe	10 - 24 cm long	5.7 - 8.5 cm long
5	Spadix	10 - 15 cm long, sessile	5.6 - 6.3 cm long, stipitate
6	Neuter zone	4 - 6 mm long	3 - 3.2 mm long
7	Male zone	Staminate flowers arranged compactly	Staminate flowers arranged spirally, lax
8	Appendix	Erect, 5 - 14 cm long	Sigmoid, 4.2 - 4.6 cm long

Key to the Indian Species

- 1a. Inflorescence appearing without leaves **7. S. venosum**
- 1b. Inflorescence appearing along with leaves 2
- 2a. Stamines of two types **3. S. horsfieldii**
- 2b. Stamines of one type 3
- 3a. Spathe triangular ovate 4
- 3b. Spathe lanceolate, ovate lanceolate or oblong lanceolate 5
- 4a. Peduncle green; spathe tube ovoid or ellipsoid; appendix stipitate **5. S. nangkarensis**
- 4b. Peduncle purplish brown; spathe tube not ovoid or ellipsoid;
appendix not stipitate **4. S. meghalayense**
- 5a. Leaf 3 - 7 (- 9) partite; spathe tube connate at margin 6
- 5b. Leaf simple to pedatisect; spathe tube free **2. S. diversifolium**
- 6a. Leaflets neither pubescent nor warty on dorsal surface; appendix erect **1. S. brevipes**
- 6b. Leaflets pubescent and warty on dorsal surface; appendix sigmoid **6. S. paramjitii**

III. ACKNOWLEDGEMENTS

The senior author is grateful to the Principal and the Head, Post Graduate Dept. of Plant Science, Mahatma Gandhi Govt. Arts College, Mahe, for encouragement. Authors wish to express their sincere gratitude to the Addl. Director, Botanical Survey of India, (BSI), Southern Regional Centre (SRC), Coimbatore (MH), for permitting to consult the herbarium and library; Dr. V.J. Nair, Emeritus Scientist,

BSI, SRC, Coimbatore, for critically going through the manuscript and suggestions; Dr. J. Bogner, Augsburger Str. 43 a, D-86368, Gersthofen, Germany, for confirming it as a novelty and valuable comments. The timely help rendered by Mr. C.P. Vivek, Ph.D. Scholar, and Mr. Ramesh, Photographer, BSI, SRC, Coimbatore, are gratefully acknowledged.

IV. REFERENCES

- Cusimano, N., Matthew, D.B., Hettterscheid, W.L.A. and Renner, S.S. 2010. A phylogeny of *Areae* (Araceae) implies that *Typhonium*, *Sauromatum*, and the Australian species of *Typhonium* are distinct clades. *Taxon* 59(2): 439 - 447.
- Engler, A.G.H. 1920. *Sauromatum*. In: Engler, A.G.H. (ed.) *Das Pflanzenreich* (IV 23F) 73: 122 - 127. Leipzig.
- Govaerts, R., Bogner, J., Boos, J., Boyce, P.C., Cosgriff, B. and Croat, T. 2014. World Check list of Araceae. Royal Botanic Garden, Kew.
- Hettterscheid, W.L.A. and Boyce, P.C. 2000. A reclassification of *Sauromatum* Schott and new species of *Typhonium* Schott (Araceae). *Aroideana* 23: 48 - 55.
- Hooker, J.D. 1894. *The Flora of British India* 6: 490 - 556. London.
- Karthikeyan, S., Jain, S.K., Nayar, M.P. and Sanjappa, M. 1989. *Florae Indicae Enumeratio: Monocotyledonae* 2: 4 - 15. Botanical Survey of India, Calcutta.
- Li, Heng and Hettterscheid, W.L.A. 2010. *Sauromatum*. In: Wu, Z. & Raven, P.H. (eds.). *Flora of China* 23: 34 - 39. Missouri Botanical Garden Press. St. Louis.
- Mayo, S.K., Bogner, J. and Boyce, P.C. 1997. *The Genera of Araceae*. Royal Botanic Gardens. Kew.
- Nangkar, A., and Tag, H. 2018. *Sauromatum nangkarensense* (Araceae : Areae) - a new species from Arunachal Himalaya, India. *Pleione* 12(1): 87 - 93.
- Sasikala, K. 2000. A Taxonomic Revision of the Indian Araceae. Ph.D. Thesis. Bharathiar University, Coimbatore, India (unpublished).
- Talukdar, A.D., Roy D.K., Sinha, B.K. and Dutta Choudhury, M. 2014. *Sauromatum meghalayense* (Araceae; Tribe: Areae), a new species from Meghalaya, India. *NeBIO* 5(3): 1 - 3.

www.theplantlist.org.