



On the occurrence of *Memecylon capitellatum* (Memecylaceae) in India

The paleotropical genus *Memecylon* L. (Memecylaceae DC. or Melastomataceae Juss. subfam. Oligoneuraceae Burnett) has about 150–300 species (Bremer, 1970; Mabberley, 1987; Stone 2006). It is mainly distributed from tropical Africa, Madagascar, southeastern Asia and northern Australia to the Fiji Islands (Bremer, 1987). In India, it is represented by about 32 species (Santapau & Henry, 1973), of which 13 are endemic to Western and Eastern Ghats of southern India (Ahmedullah & Nayar, 1986; Nayar, 1996; Ravikumar et al., 2003). Various workers have added 23 additional species for India either as new species or as new records (Arul Prakasan & Parthasarathy, 2009; Henry, 1980; Henry & Subramanyam, 1971; Kumar et al., 2002, 2004; Mohanan et al., 2001; Manickam et al., 2007; Murugan, 2011; Murugan & Manickam, 2001, 2002; Murugan & Gopalan, 2006; Murugan et al., 2000, 2001; Rajendraprasad et al., 2006; Reddy et al., 2004; Sivu et al., 2012a,b, 2014a,b; Viswanathan, 1995,2001; Viswanathan & Rajendran, 1997; Viswanathan & Manikandan, 2001).

Taxonomically it is one of the most difficult group and the delimitation of species is mainly by such traditional characters such as shape and size of leaves, position and nature of inflorescence, length of pedicels, shape and nature of cohesion of the calyx, and the presence or absence of disc rays. Further, foliar sclerides and the nature of the embryo are also used as aids in the identification of the taxa (Rao & Bhupal, 1974; Rao & Dakshni, 1963; Rao et al., 1980). During floristic explorations in various hill ranges of Dindigul District, the first author collected some interesting specimens of *Memecylon* from the dry evergreen forests of Alagar Hills. On critical examination with relevant literature, it was identified as *Memecylon capitellatum* L., an endemic species

of Sri Lanka (Bremer, 1970, 1987; Senaratna, 2001). Later the identity was cross-matched online with the authentic specimens housed the Royal Botanic Garden, Kew, and at The Natural History Museum, London. A thorough review of literature revealed that this remarkable species was hitherto unrecorded from India. Therefore, the present collection is a new distributional record for India. A brief description along with photo-plate is provided to facilitate easy identification of this species in field.

Taxonomy

Memecylon capitellatum L., Sp. Pl. 349. 1753.

Memecylon edule Roxb. var. *capitellata* (L.) Clarke in Hook.f., Fl. Brit. India 2: 564. 1879, nom. illeg.

Memecylon edule Roxb. var. *laeta* Clarke in Hook., Fl. Brit. India 2: 564. 1879.

Type: Sri Lanka; Without locality data, 1854, G.H.K. *Thwaites 1564* (lectotype (his designatus): K-barcode K300357738!; isolectotype: BM-BM000944531).

Trees small, 3-4 m high; branchlets subterete. **Leaves** opposite-decussate, 2.2–9.7 × 1.1–4.7 cm, shiny, green but drying yellowish-green; petioles 4–7 mm long; leaf blades elliptic, rounded, acute, subacute, or most often subcaudate at apex, cuneate at base; midrib prominent, sulcate above; lateral veins 5-10 on either side; intramarginal veins prominent. **Inflorescence** in condensed heads on long stout peduncles, 3–15-flowered, axillary or if at leafless nodes then solitary or in pairs; peduncles subterete, 5–15 mm long; pedicels indistinct; bracts fleshy, deltoid, subulate. **Flowers** blue or white-purple, fragrant, bisexual, disc 4 mm across. **Receptacle** campanulate-cyathiform, prolonged above ovary, continuous with calyx. **Calyx** prominently 4-toothed; calyx-teeth widely triangular, 5–6 × 3–4 mm, acute or apiculate, fleshy. **Petals** 4, blue or white without, purple within, twisted in bud, orbicular

in outline, apiculate at apex, 2 × 2.5 mm. **Disc rays** 8, deep. **Stamens** 8, equal; filaments purple, incurved in bud, becoming straight when elongated, 3–4 mm long; glands yellow, disc shaped; anthers brown, 1.5 mm long. **Ovary** 1-celled; ovules numerous, attached to central placenta; style purple, simple, 3–4 mm long. **Berries** globose, 10 mm across, blue to black when ripe.

Flowering: August & April. **Fruiting:** October–June.

Geographical Distribution: India (Tamil Nadu) and Sri Lanka.

Specimens examined: India; Tamil Nadu; Dindigul District; Alagar Hills, on way to Periaruvi Valley, 10°6'28"N, 78°12'15", 460 m, 19 Aug 2013, R. Kottaimuthu 502153 (SNCH); same location, 29 Sep 2014, R. Kottaimuthu 502415 (SNCH).

Ecology: This rare species is found in the dry evergreen forests as a small understorey tree and grows at an altitude of 400–500 m. Associated arborescent species include *Manilkara roxburghiana* (Wight) Dubard, *Alphonsea sclerocarpa* Thwaites, *Memecylon grande* Retz., *Milium eriocarpa* Dunn, *Walsura trifoliolata* (A. Juss.) Harms, *Suregada angustifolia* (Muell.-Arg.) Airy Shaw, *Ochna lanceolata* Spreng., *Memecylon molestum* (Clarke) Cogn., *Pterospermum suberifolium* Lam., *Chionanthus zeylanica* L., and *Casearia graveolens* Dalzell. Associated shrubs species include *Polyalthia korinti* (Dunal) Thwaites, *Tarrenna asiatica* (L.) Kuntze ex K. Schum., and *Carissa spinarum* L. while among the climbers are *Ventilago madraspatana* Gaertn., *Salacia chinensis* L., *Morinda umbellata* L., and *Derris parviflora* Benth. Among the associated herbs are such species as *Cyanotis arachnoidea* C.B. Clarke, *Fimbristylis ovata* (Burm.f.) J. Kern., *Cheilanthes swartzii* Webb & Berthel, and *Adiantum incisum* Forssk.

Remarks: *Memecylon capitellatum* is closely related to *M. umbellatum* Burm.f. but can be distinguished from the latter by its acute-caudate leaves with prominent intramarginal veins and 3–15 flowers in condensed heads on 5–15 mm long peduncles.

Ethnic use: Leaf juice is taken internally for 30 days for diabetes.

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Literature cited

Ahmedullah, A. and M. P. Nayar, 1986. *Endemic Plants of Indian Region. Vol. 1-Peninsular India*. Botanical Survey of India, Kolkatta.

Arul Prakasan, L. and N. Parthasarathy, 2009. *Memecylon parvifolium* Thwaites (Melastomataceae) from southern Eastern Ghats—a new record to tree flora of India. *Journal of Economic & Taxonomic Botany*, 33: 426–427.

Bremer, K., 1970. Taxonomy of *Memecylon* (Melastomataceae) in Ceylon. *Opera Botanica*, 50: 1–32.

Bremer, K., 1987. *Memecylon*. In: Dassanayakae, M. D. and F. R. Fosberg (eds.), *A Revised Handbook to the Flora of Ceylon*. Vol. VI, Amerind Publishing, New Delhi: 206–238.

Henry, A. N., 1980. A new *Memecylon* L. (Melastomataceae) from Tamil Nadu, India. *Journal of Bombay Natural History Society*, 77: 492–493.

Henry, A. N. and K. Subramanyam, 1971. *Memecylon hookeri* Thw. (Melastomataceae), a new record for India. *Bulletin of the Botanical Survey of India*, 13: 165.

Kumar, E. S. S., R. Antony, and A. E. S. Khan, 2002. *Memecylon agasthyamalaianum* (Melastomataceae), a new species from India. *Botanical Bulletin Academia Sinica*, 44: 175–177.

Kumar, E. S. S., G. Thulasidass, S. S. Yeragi, and G. M. Nair, 2004. *Memecylon sylvaticum* Thw. (Melastomataceae)—A new record for India. *Journal of Economic & Taxonomic Botany*, 28: 513–515.

Mabberley, D. J., 1987. *The Plant-Book*. Cambridge: Cambridge University Press: 706.

Manickam, V.S., C. Murugan, G. J. Jothi, and V. Sundaresan, 2007 *Memecylon courtallense* – a new species (Melastomataceae) from Courtallum Hills of Tamil Nadu, India. *Indian Journal of Forestry*, 30: 77–80.

- Mohanani, N., N. Ravi, M. S. Kiranraj, and T. Shaju, 2001. A new species of *Memecylon* (Melastomataceae) from India. *Nordic Journal of Botany*, 21: 493–494.
- Murugan, C. and R. Gopalan, 2006. Four additions to Indian *Memecylon* L. (Melastomataceae) from south India. *Indian Journal of Forestry*, 29: 105–108.
- Murugan, C. and G. V. S. Murthy, 2010. *Memecylon macrocarpum* Thwaites—An addition to Memecylaceae of India from Courtallum Hills, Tamil Nadu. *Journal of Economic & Taxonomic Botany*, 34: 522–523.
- Murugan, C. and V. S. Manickam, 2001. Two distributional records for India. *Journal of Economic & Taxonomic Botany*, 25: 346–349.
- Murugan, C. and V. S. Manickam, 2002. New species of *Memecylon* and *Sonerila* (Melastomataceae) from southern Western Ghats of India. *Journal of Economic & Taxonomic Botany*, 25: 509–513.
- Murugan, C., V. S. Manickam, and V. Sundaresan, 2001. *Memecylon tirunelvelicum*, a new species of Melastomataceae from Peninsula India. *Novon*, 11: 197–199.
- Murugan, C., V. Sundaresan, and G. J. Jothi, 2000. *Memecylon manickamii*, a new species of Melastomataceae from the Western Ghats of Tamil Nadu. *Kew Bulletin*, 55: 1001–1003.
- Murugan, C., 2011. *Memecylon minutiflorum* Miq. (Memecylaceae) —A new record for India from the Mount Harriet National Park, Bay Islands, India. *Indian Journal of Forestry*, 34: 469–470.
- Rajendraprasad, M., S. L. Prathapan, A. G. Pandurangan, and T. Shaju, 2006. *Memecylon royenii* Blume (Melastomataceae): A new record for India. *Indian Forester*, 132: 229–232.
- Rao, T. A. and P. Bhupal, 1974. The utility of sclereid typology in solving problems of synonymy in a few taxa of the genus *Memecylon* L. *Proceeding of the National Academy of Sciences Biological Sciences*, 80: 291–300.
- Rao, T. A. and K. M. M. Dakshni, 1963. Systematics of *Memecylon*—A preliminary survey based on the sclereid morphology. *Proceeding of the National Academy of Sciences Biological Sciences*, 58: 28–35.
- Rao, T. A., K. Bremer, and S. Chakraborti, 1980. Foliar sclereids in Sri Lanka (Ceylonese) species of *Memecylon* (Melastomataceae). *Botaniska Notiser*, 133: 397–401.
- Ravikumar, K., R. V. Sankar, and T. Ravi Shankar, 2003. Rediscovery of *Memecylon sisparens* Gamble (Melastomataceae) 110 years after type collection. In: Janarthnam, M. K. and D. Narasimhan (eds), *Plant Diversity: Human Welfare and Conservation*, Goa University: 151–156.
- Reddy, K. N., C. S. Reddy, and V. S. Raju, 2004. *Memecylon jadhavii* (Melastomataceae): A new species from Andhra Pradesh, India. *Journal of Economic & Taxonomic Botany*, 28: 165–166.
- Santapaua, H. and A. N. Henry, 1973. *A dictionary of flowering plants in India*. CSIR, New Delhi, India.
- Sivu, A. R., M. K. R. Narayanan, E. S. S. Kumar, N. S. Pradeep, N. Anilkumar and A. G. Pandurangan, 2012a. *Memecylon wayanadense* (Melastomataceae), a new species from Western Ghats, India. *Edinburg Journal of Botany*, 69: 371–378.
- Sivu, A. R., M. K. R. Narayanan, E. S. S. Kumar, K. A. Sujana, N. S. Pradeep, N. Anilkumar and A. G. Pandurangan, 2012b. *Memecylon clarkeanum* Cogn. (Melastomataceae)- a threatened species, new record for India. *Taiwania*, 57: 327–330.
- Sivu, A. R., M. K. R. Narayanan, E. S. S. Kumar, N. S. Pradeep, E. S. S. Kumar and A. G. Pandurangan, 2014a. A new species of *Memecylon* (Melastomataceae) from the Western Ghats, India. *Phytotaxa*, 162: 44–50.
- Sivu, A. R., M. K. R. Narayanan, E. S. S. Kumar, N. S. Pradeep and T. Shaju, 2014b. *Memecylon sahyadrica* (Melastomataceae) a new species from the Western Ghats, India. *International Journal of Advanced Research*, 2: 759–763.
- Senaratna, L. K., 2001. *A Checklist of the Flowering Plants of Sri Lanka*. National Science Foundation of Sri Lanka, Colombo: 451.
- Stone, R. D., 2006. Phylogeny of major lineages in Melastomataceae, subfamily Oligospermoideae: Utility of nuclear glyceraldehyde 3-phosphate dehydrogenase (*GapC*) gene sequences. *Systematic Botany*, 31: 107–121.

Viswanathan, M. B., 1995. A note on the distribution and conservation status of *Memecylon capitellatum* Linn. in South India. *Bulletin of the Botanical Survey of India*, 37: 127–128.

Viswanathan, M. B., 2001. Two new species in *Memecylon* (Melastomataceae) from India. *Nordic Journal of Botany*, 21: 253–258.

Viswanathan, M. B. and U. Manikandan, 2001. A new species, *Memecylon mundanthuraianum*, of Melastomataceae from India. *Nordic Journal of Botany*, 21: 259–262.

Viswanathan, M. B. and A. Rajendran, 1997. *Memecylon rivulare* Bremer (Melastomataceae): An addition to the Indian flora. *Bulletin of the Botanical Survey of India*, 35: 124–126.

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