

Genus *Massarina* from India

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The fungus genus *Massarina* was erected by Saccardo (1883) with *M. eburnea* (Tul) Sacc. as type species. This genus remained unreported from the Indian flora for a long time. Mundkur and Ahmad (1946) described *M. graminicola* as a new species from Punjab. Bose and Muller (1967) commented that this species is not belonging to the genus *Massarina* as the ascospores of this species are having vertical septa. Chona, Munjul and Kapoor (1957) described *M. psidii* on *Psidium guava* L. as a new species from Delhi. Thus this report forms the first report of the genus from India. Tilak (1960) described *M. jasminicola* on dried stems of *Jasminum malabaricum* Wall. from Poona. Bose and Müller (1965) described *M. parasitica* as a parasite on living leaves of *Michelus duthiei* King., from Central Himalaya. Tilak and Srinivasulu (1968) recorded *M. polymorpha* (Rehm) Sacc. on *Lasiosiphon eriocephalus* Dcne.

The authors during their critical study and revision of the forest fungi of Maharashtra State came across the dried stems of *Colebrookea oppositifolia* Sm. and *Eugenia jambuline* Lam. infected with some black fungi. On critical study they turned out to belong to the genus *Massarina*, but differed in morphological features from the hitherto described species; therefore they are described as new to science on the basis of comparative morphology and host specificity.

The genus *Massarina* is characterised by having perithecia innate or erumpent, black, ostiolate, with many asci. Asci cylindrical, bitunicate, paraphysate, hyaline, 8-spored. Ascospores hyaline, transversely multiseptate with a mucous sheath.

At present this genus is represented by nine species from the Indian flora. A comparative study of all the species and a tentative key for the identification of the Indian species of *Massarina* is provided in the present paper.

All the species are arranged in alphabetical order.

1. *Massarina colebrookeae* sp. nov.,

Perithecia erumpent, single, black, ostiolate, $300-355 \times 275-300 \mu$, Asci many, clavate to cylindric, bitunicate, paraphysate, hyaline stipitate and 8-spored, $65-80 \times 11-15 \mu$. Paraphyses filiform, hyaline and non-septate. Ascospores hyaline, two celled, oblong to fusoid, with an oil globule in each cell, biseriata with a mucous sheath of $.75 \mu$, thick ness and measuring $26-33 \times 7-9 \mu$.

Perithecia erumpentia, singularia, nigra, ostiolata, $300-355 \times 275-300 \mu$; asci numerosi, clavato-cylindranei, antice late rotundati, postice paulatim in stipitem brevem attenuati, tenuiter tunicati $65-80 \times 11-15 \mu$, 8-spore; sporae distichae oblongo-fusoideae, utrinque attenuatae, rectae, hyalinae, medio septatae, vix vel lenissime constrictae, in quoque loculo guttula oleosa majuscula praeditae, mucu angustissimo obvolutae, $26-33 \times 7-9 \mu$; paraphyses simplices, filiformes.

Collected on the dried stems of *Colebrookea oppositifolia* Sm., at Mahabaleshwar, in the month of October, 1967. Leg. Srinivasulu and deposited in the herbarium of Maulana Azad College under MAH. 1200 (Srinivasulu type).

2. *Massarina eugeniae* sp. nov.

Perithecia superficial, black, globoid, single, ostiolate, saprophytic, $360-440 \times 350-400 \mu$. Asci many, clavate, hyaline, bitunicate, paraphysate, 8-spored, $60-55 \times 15-25 \mu$. Paraphyses filiform, hyaline, nonseptate. Ascospores hyaline, irregularly arranged, transversely multiseptate, septa thick and spores with a mucous sheath of $.75$ to 1μ . thick ness., $34-48 \times 6.5-8.5 \mu$.

Perithecia superficialia, globosa, nigra, singularia, ostiolata, $360-440 \times 350-400 \mu$; asci numerosi, clavati, antice late rotundati, postice paulatim attenuati, subsessiles, 8-spore, $60-55 \times 15-25 \mu$; sporae pluri-seriatae, cylindraneae, utrinque obtusae, vix vel leniter attenuatae, rectae vel leniter arcuatae, hyalinae, transverse multiseptatae, non constrictae, $34-48 \times 6.5-8.6 \mu$, mucu angustissimo obvolutae; paraphyses filiformes, subnumerosae.

Collected on the dried stems of *Eugenia jambulina* Lam., at Mahabaleshwar, in the month of October, 1967. Leg. Srinivasulu and deposited in the herbarium of Maulana Azad College under MAH 1201 (Srinivasulu type).

3. *Massarina jasminicola* Viswanthan & Tilak.

Mycopath. et. Mycol. appl. 13 : 237-241. 1960.

Collected on the dried stems of *Jasminum malabaricum* Wall.

4. *Massarina himalayensis* Muller & Bose.

Sydowia, 12; 160-184. 1958.

Collected on the dried stems of *Rosa webbiana* Wall.

5. *Massarina lonicerae* Bose and Müller.
Ind. Phytopath. 20 : 124—137. 1967.
Collected on *Lonicera quinquelocularis* Hardw.
6. *Massarina parasitica* Bose and Müller.
Ind. Phytopath. 18 : 341—353. 1965.
Collected on living leaves of *Michelus duthiei* King.
7. *Massarina psidii* Chona, Munjul, and Kapoor.
Ind. Phytopath. 10 : 148—156. 1957.
Collected on stems of *Psidium guyava* L.,
8. *Massarina viswanathi* Roy, Dwevedi and Sulka.
Proc. Nat. Acad. Sci. India. Ann. Number — p 67., 1958.
Collected on dried stems.
9. *Massarina polymorpha* (Rehm) Sacc.
M. V. M. Patrika, 3 : 26—30, 1967.
Collected on stems of *Lasiosiphon eriocephalous* Dcne.

Key to the Indian species of *Massarina*.

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|---|--------------------------|
| A. Perithecia in stromatic groups | <i>M. polymorpha</i> . |
| B. Perithecia single. | |
| i) Parasite on leaves | <i>M. parasitica</i> , |
| ii) Saprophyte on woody parts. | |
| x. Ascospores 2-celled. | |
| a. Perithecia less than 200 μ in size | <i>M. jasminicola</i> . |
| b. Perithecia measuring more than 250 μ | <i>M. colebrookeae</i> . |
| y. Ascospores 4-celled | <i>M. psidii</i> . |
| z. Ascospores more than 4-celled. | |
| a. Perithecia measuring less than 350 μ . | |
| i. Ascospores less than 20 μ long. | <i>M. himalayensis</i> . |
| ii. Ascospores 30—50 μ long. | <i>M. lonicerae</i> . |
| b. Perithecia measuring more than 360 μ | <i>M. eugeniae</i> . |

Munk (1956) raised this genus to the rank of a family and placed it under *Massarinaceae*. Bose (1961) however does not agree with Munk. After the present study the authors also feel that there is no necessity to separate the genus as a separate family and agree with the view of Bose (1961).

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