

## Genus *Didymosphaeria* from India

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(With 2 figs.)

The genus *Didymosphaeria* was erected by Fuckel (1869) with *D. epidermidis* as type species. However this genus remained unrepresented from Indian flora for a long time. Ramchandra Reddy (1960) reported *D. sadasivani* from rhizospaere of *Oryza sativa* L., for the first time from India. Wehmeyer (1963) reported *D. punjabensis* Petrak., on *Stipa himalica* from Punjab. Later

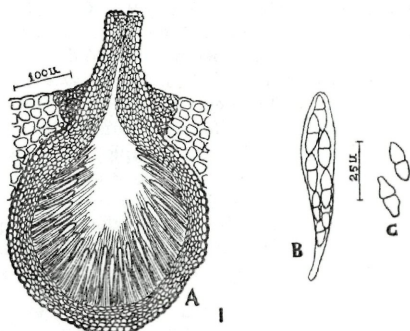


Fig. 1. *Didymosphaeria ailantii* sp. nov. — A. V. S. of Perithecium. B. Ascus. C. Ascospores.

Ramchandra Rao (1966) described two new species of this genus from Marathwada.

The genus is characterised by having the perithecia globose to ovoid, black, forming clypeus with the epidermis of the host, ostiolate, single, embedded in the host, with a projecting neck; Asci many, cylindrical, stipitate, hyaline and paraphysate. Ascospores two celled, brown and constricted at the septum.

During the investigation and revision of different genera of Ascomycetes from India, author came across with dried stems of *Ailanthus excelsa* Roxb., and *Duranta repens* L., infected with some black fungus. On critical study it revealed to be the species of *Didy-*

*mosphaeria*. Since no species have been reported on the above hosts previously, detailed comparative studies were carried out, which showed that the present collections differ in several morphological features besides being reported on hitherto unreported hosts. It is therefore proposed to be presented as new to science on host specificity and comparative morphology.

At present the genus *Didymosphaeria* is represented by 7 species in India. All these species are arranged in alphabetical order. At the end a comparative table along with a key for the Identification of the Indian species of this genus is provided.

### 1. *Didymosphaeria ailanthi* Sp. nov.

Perithecia black, embedded in the host tissue, single, forming clypeus with the epidermis of the host, ostiolate, globoid to ovoid, measuring from  $400-675 \times 520-650 \mu$ . Clypeus often ill developed and remain below epidermis at maturity. Neck up  $150 \mu$ . long, protruding out at maturity. Asci many, paraphysate, unitunicate, hyaline, stipitate, and 8 spored,  $57-65 \times 11.5-13.5 \mu$ . Paraphyses filiform, hyaline, and nonseptate. Ascospores brown to dark brown, two celled, constricted at the septum and fusoid,  $15-19 \times 6.5-7.5 \mu$ .

Collected on dried stems of *Ailanthus excelsa* Roxb., at Aurangabad, in November, 1966. Leg. Srinivasulu and deposited in the herbarium of Marathwada University, under No. MUH. 252.

Perithecia solitaria, innata, clypeo epidermali tecta, globosa vel ovoidea,  $400-675 \times 530-650 \mu$ , ostiolo conoideo usque ad  $150 \mu$  longo erumpentia; asci numerosi, tenuiter tunicati, stipitati, 8-sporei,  $57-65 \times 11.5-13.5 \mu$ ; sporeae brunneae vel obscure brunneae, fusoidae, rectae, utrinque obtusae, medio septatae, leniter constrictae,  $15-19 \times 6.5-7.5 \mu$ ; paraphyses filiformes, ascos superantes.

### 2. *Didymosphaeria caesalpiniae* R. Rao

Taxonomic studies in some genera of Follicolous and Woody Ascomycetes and Deuteromycetes of Marathwada. A Thesis submitted to Marathwada Univ. for. Ph. D., Degree.

Collected on dried stems of *Caesalpinia crista* L., Leg. R. Rao. Aurangabad. 10-10-1965.

### 3. *Didymosphaeria durantae* sp. nov.

Perithecia black, embedded in the host tissue, with projecting long neck, ostiolate, neck forming clypeus with the epidermis of the host,  $275-310 \times 250-300 \mu$ . Clypeus well developed, black, crust like, ball shaped and exerted at maturity. Neck up to  $200 \mu$ . long. Asci many, cylindrical to club shaped, hyaline, unitunicate, paraphysate, 8 spored,  $55-61 \times 13-15 \mu$ . Paraphyses filiform, hyaline, and nonseptate. Ascospores fusoid, two celled, dark brown, with a constriction at the septum,  $17-20 \times 5.5-7 \mu$ .

Collected on dried stems of *Duranta repens* L. at Aurangabad, in October 1967. Leg. Srinivasulu and deposited in the herbarium of Marathwada University, under No. MUH. 253.

Perithecia innata, nigra, globosa vel ovoidea, ostiolo cylindraceo-conico usque ad 200  $\mu$  longo, clypeo cincto erumpentia, 275—

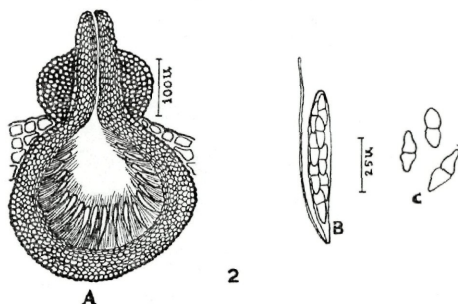


Fig. 2. *Didymosphaeria durantae* sp. nov. — A. V. S. of Perithecium. B. Ascus. C. Ascospores.

310  $\times$  250—300  $\mu$ ; asci numerosi, cylindraceo-clavati, tenuiter tuni-  
cati, 8-spori, 55—61  $\times$  13—15  $\mu$ ; sporae plus minusve distichae,  
fusoideae, rectae, obscure brunneae, medio septatae, lemiter constrictae,  
17—20  $\times$  5.5—7  $\mu$ ; paraphyses filiformes, ascos vix superantes.

4. *Didymosphaeria elbursensis* Petrak. Mycol. 55, 3: 313—335.  
1963. — Collected on *Stipa himalica*. Leg. Wehmeyer, L. E.,  
Punjab. 1962.

5. *Didymosphaeria futilis* (Berk & Broom) Hebm.

“Taxonomic studies in some genera of Follicolous and Woody  
Ascomycetes and Deuteromycetes of Marathwada”. A thesis submitted  
to Marathwada Univ. for Ph. D., Degree, 1966. — Collected on dried  
stems of *Lantana camara* L., Leg. R. Rao. Aurangabad. 2—12—1965.

6. *Didymosphaeria punjabensis* Wehmeyer. Mycol. 55, 3:  
313—335. 1963. — Collected on *Poa sterilis* Bieb. Leg. Weh-  
meyer, L. E., Punjab. 1962.

7. *Didymosphaeria sadasivani* Reddy. Mycol. 53: 471—473.  
1960.

Collected from rhizosphere of *Oryza sativa* L., Leg. R. Reddy.  
Hyderabad. 1960.

Comparison between 7 species of *Didymosphaeria* from India

Species.	Perithecia.	Asci.	Ascospores.	Necks.
1. <i>D. ailanthi</i> .	400-675 × 520-650 μ.	57-65 × 11.5-13.5 μ.	15-19 × 6.5-7.5 μ.	up to 150 μ. long.
2. <i>D. caesalpiniae</i> .	345-570 × 255-480 μ.	60-74 × 9-11.2 μ.	9.6-12.8 × 5-6.4 μ.	up to 25 μ. long.
3. <i>D. durantae</i> .	275-310 × 250-300 μ.	53-61 × 13-15 μ.	17-20 × 5.5-7 μ.	up to 200 μ. long.
4. <i>D. elbursensis</i> .	200-300 μ.	90-152 × 27 μ.	25-27 × 10-11 μ.	up to 25 μ. long.
5. <i>D. futilis</i> .	300-360 × 195-300 μ.	83-107 × 8-10 μ.	12-16 × 6-8 μ.	up to 25 μ. long.
6. <i>D. punjabensis</i> .	200-400 μ.	60-70 × 9-11 μ.	9-12.5 × 4-5 μ.	up to 25 μ. long.
7. <i>D. sadasivanii</i> .	203-295 × 185-225 μ.	41-64 × 9-15 μ.	15-18.5 × 9.3-11.2 μ.	up to 25 μ. long.

Key to the Indian species of *Didymosphaeria*

- a. Projecting neck above 25 μ. long.
  - 1. Perithecia above 400 μ. .... *D. ailanthi*.
  - 2. Perithecia below 350 μ. .... *D. durantae*.
    - b. Projecting neck below 25 μ. long.
      - 1. Asci above 80 μ. long.
        - x. Ascospores 12-16 μ. long. .... *D. futilis*.
        - y. Ascospores 25-27 μ. long. .... *D. elbursensis*.
      - 2. Asci below 80 μ. long.
        - x. Perithecia 200-400 μ.
          - i. Ascospores below 15 μ. long. .... *D. Punjabensis*.
          - ii. Ascospores above 15 μ. long. .... *D. sadasivanii*.
        - y. Perithecia 345-570 μ. .... *D. caesalpiniae*.

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