

South Indian Valsaceae (Diaporthales, Ascomycotina). II.

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Diaporthe perijuncta and *D. koelreuteriae* constitute new Indian records. *D. koelreuteriae* produced a *Phomopsis* state from single ascospore cultures and the connection is established here for the first time.

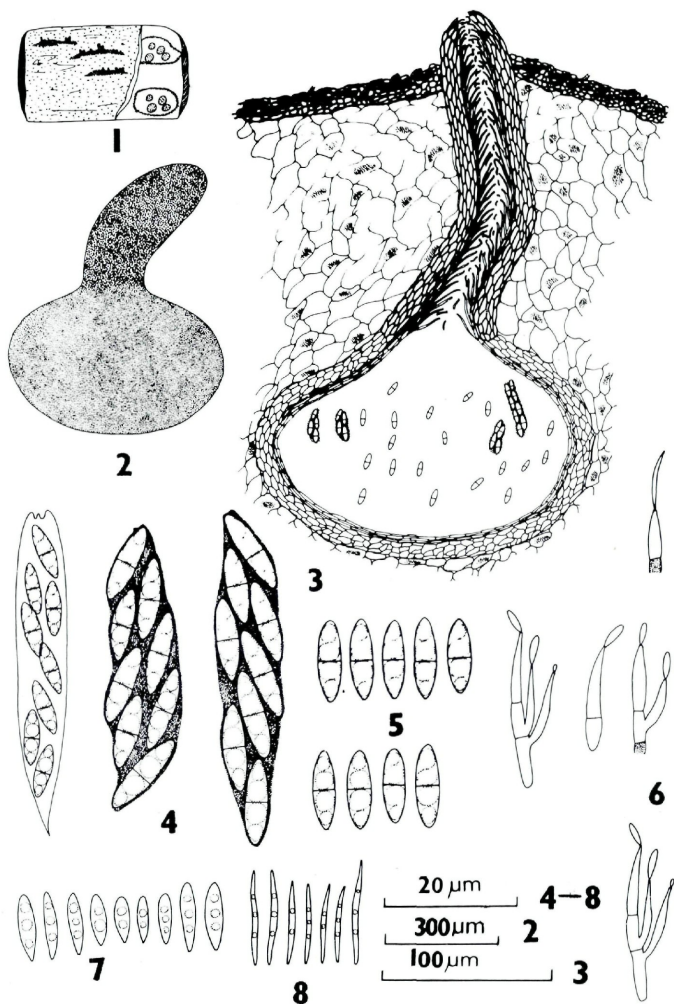
During a collection trip, two interesting fungi were collected which on critical examination have been assigned to the genus *Diaporthe* NITSCHKE. These two species are new records for India (BILGRAMI et al., 1979; BUTLER & BISBY, 1960). Single ascospore cultures of *D. perijuncta* produced alpha and beta conidia in stromatic pycnidia. The conidial state is assigned to the form-genus *Phomopsis* (SACC.) BUBÁK. Both species of *Diaporthe* are described and illustrated in this paper. The specimens are deposited in the herbarium of Madras University Botany Department.

1. *Diaporthe perijuncta* NIESSL, Hedwigia 17: 44. 1878. - Figs. 1-8.

On woody stems. Dorsal blackening not entering into the wood. Dark lines delimiting perithecial groups within the substratum, 0.5-5.0 mm across or very rarely up to 15.0 mm in diam.

Perithecia in groups of 2-5, globose to sub-globose, ostiolate, brown, 450-480 × 495-525 µm. Perithecial wall 10-12 µm thick, pseudoparenchymatous, with smooth surface, consisting of distinct outer and inner regions. Outer region 8-10 µm thick, composed of 3-4 layers of tangentially elongated, thin-walled, light-brown cells. Inner region 2-3 µm thick, composed of 1-2 layers of loosely packed, thin walled, hyaline cells. Neck central to slightly eccentric, black and brittle, straight to little bent, rarely 1.0-2.0 mm long, mostly small, 360-375 × 135-150 µm; its wall 10-12 µm thick, composed of small, compactly arranged, dark-brown cells 4-5 layer deep. Ostiole simple, periphysate; periphyses slender and upwardly projecting.

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Figs. 1-8. - *Diaporthe perijuncta*. - 1. habit. - 2. perithecium - whole mount. - 3. longitudinal section of a perithecium. - 4. asci with ascospores. - 5. ascospores. - 6. conidiogenous cells with conidia. - 7. alpha conidia. - 8. beta conidia.

Asci unitunicate, thin-walled, (the wall evanescent at maturity), cylindrical-clavate, non-amyloid, becoming free in the perithecial cavity, 8-spored, $50.6-68.5 \times 8.5-12.5 \mu\text{m}$. – Ascospores irregularly biseriate, hyaline, ellipsoid to fusiform, with round ends, 4-guttulate, medianly 1-septate, $13.4-15.0 \times 3.0-4.2 \mu\text{m}$. – Paraphyses absent.

Ascospores germinating overnight in potato dextrose agar and oatmeal agar. Colony moderately growing, attaining a diam. of 4 cm in 10 days, with surface floccose, white turning black, with light yellow slimy conidial masses from the conidiomata at the periphery, reverse black.

Mycelium immersed, branched, hyaline to brown, septate. – Pycnidia erumpent, solitary or very rarely in groups of 2-3, black, globose to flattened-globose, unilocular, $240-280 \times 420-460 \mu\text{m}$; conidiomatal wall up to $10 \mu\text{m}$ thick, composed of about 5-7 layers of plectenchymatous tissue with uniform pigmentation. – Ostiole simple, circular, often papillate, $380-420 \times 280-320 \mu\text{m}$; ostiolar wall about $40 \mu\text{m}$ thick, composed of 4-5 layers of heavily pigmented plectenchymatous tissue towards the outer and 5-7 layers of nearly pseudoparenchymatous tissue towards the inner.

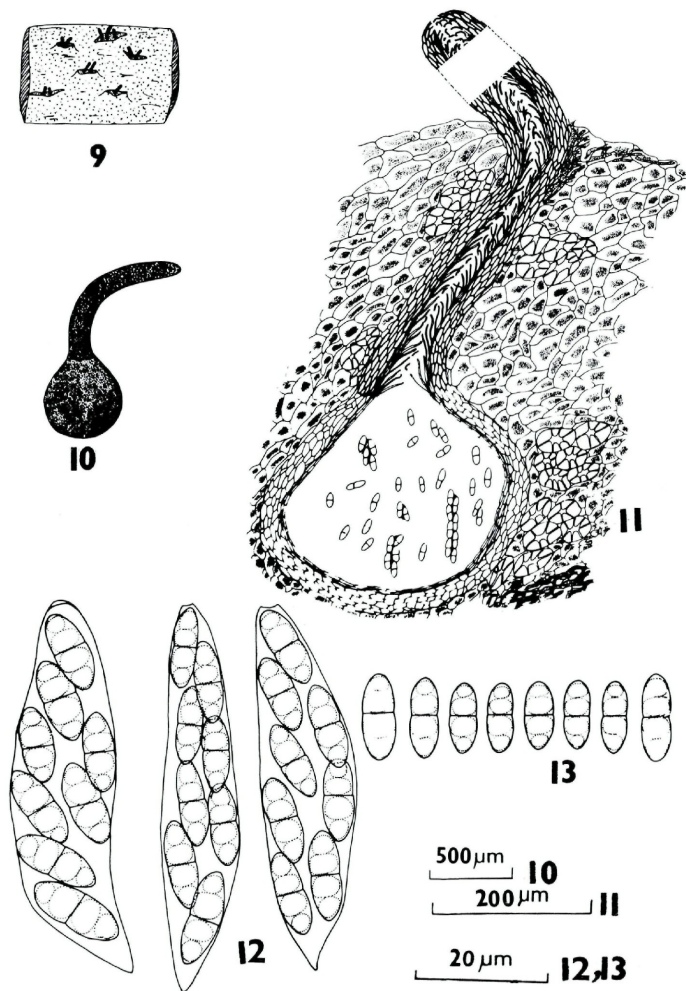
Conidiophores brown, simple, cylindrical, rarely branched, formed from the innermost cells of the locular walls. – Conidiogenous cells enteroblastic, phialidic, determinate, integrated, rarely discrete, hyaline, with collarette, $8.2-12.5 \times 2.0-2.5 \mu\text{m}$. – Conidia of two types: alpha conidia hyaline, fusiform, straight, 2-3-guttulate, 1-celled, $7.5-11.2 \times 2.0-2.8 \mu\text{m}$; beta conidia hyaline, filiform, straight to slightly bent, 2-3-guttulate, 1-celled, $11.8-17.4 \times 1.0-1.5 \mu\text{m}$.

Specimens examined. – On unidentified dead twigs: Karnataka State, Belgaum Dt., Londa, Mundawad, 23.11.1980, FSI Nos. 4805a, 4812; Karnataka State, Kolar Dt., Nandi Hills, 1.2.1976, FSI No. 449a; Tamil Nadu State, Tirunelvely Dt., Chengeltheri, 30.8.1980, FSI No. 4713; Tamil Nadu State, Nilgiris Dt., Ooty, Dodabetta, 14.1.1981, FSI No. 5027b; Ooty, Coonoor, Sim's park, 15.1.1981, FSI Nos. 5036, 5040; Tamil Nadu State, Madurai Dt., Kodaikanal, Tiger Shola, 3.2.1981, FSI Nos. 5078b, 5082b, 5089c, 5103.

2. *Diaporthe koelreuteriae* (DURIEU) SACC., *Michelia* 2: 60. 1880. – Figs. 9-13.

On woody stems. Discs angular, 0.5-1.5 mm across. Dorsal blackening feebly developed, not entering into the wood. Dark lines delimiting perithecial groups within the host and covering large areas.

Perithecia solitary or in groups of 2-4 within the discs, usually collectively erumpent, globose to sub-globose, ostiolate, brown, $420-450 \times 500-540 \mu\text{m}$. Perithecial wall 16-20 μm thick, pseu-



Figs. 9-13. - *Diaporthe koelreuteriae*. - 9. habit. - 10. perithecium - whole mount. - 11. longitudinal section of a perithecium. - 12. asci with ascospores. - 13. ascospores.

doparenchymatous, with smooth surface, consisting of distinct outer and inner regions. Outer region 12–16 μm thick, composed of 3–5 layers of tangentially elongated, thin-walled, light-brown cells. Inner region 4–5 μm thick, composed of 1–2 layers of loosely arranged, thin-walled, hyaline cells. Neck central, long, stout, straight to little bent, thick-walled, 900–1000 \times 130–150 μm ; its wall 12–14 μm thick, composed of small, compactly arranged, dark-brown cells 3–5 deep. Ostiole simple, periphysate; periphyses slender and upwardly projecting.

Asci unitunicate, thin-walled, cylindric-clavate, non-stalked, non-amyloid, becoming free in the perithecial cavity, 8-spored, 58.5–65.5 \times 10.0–15.0 μm . – Ascospores irregularly biseriate, thin-walled, hyaline, fusiform to nearly cylindrical, with round ends, 4-guttulate, medianly 1-septate and with a slight constriction at the septum, 11.5–15.0 \times 4.5–5.5 μm . – Paraphyses absent.

Specimens examined. – On unidentified dead twigs: Tamil Nadu State, Madurai Dt., Kodaikanal, Bear Shola, 26.9.1980, FSI No. 4740; Kodaikanal, Silver Cascade, 26.9.1980, FSI No. 4751; Kodaikanal, Berijam, 28.9.1980, FSI Nos. 4795, 4796; Kodaikanal, Berijam, Madhikettan Shola, 11.8.1982, FSI Nos. 5190, 5192.

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