

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.

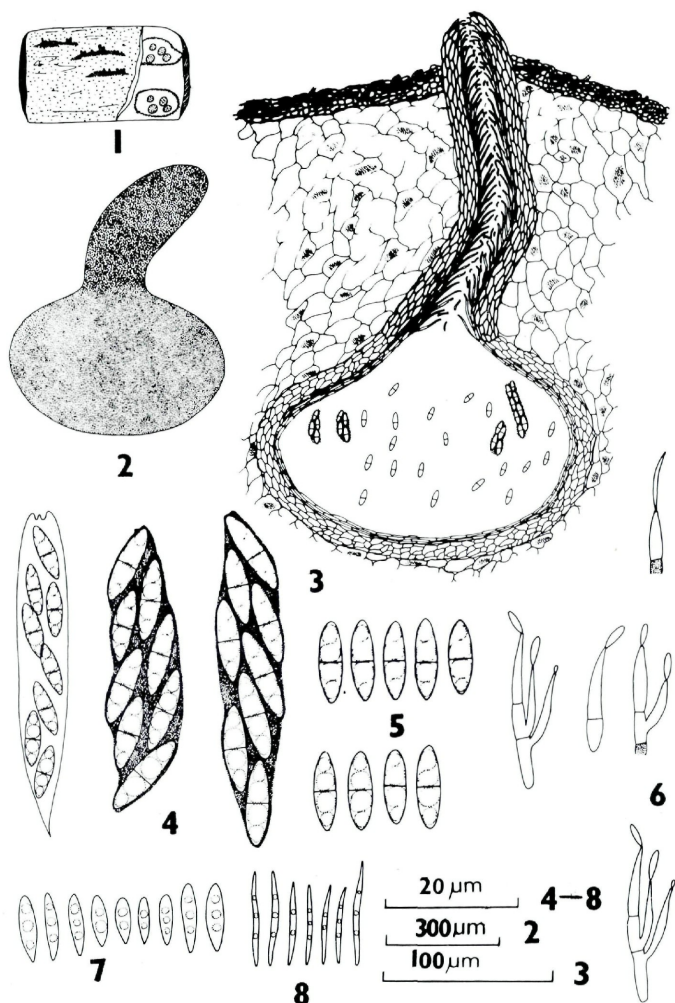
During a collection trip, two interesting fungi were collected which on critical examination have been assigned to the genus *Diaporthe* NITSCHKE. These two species are new records for India (BILGRAMI et al., 1979; BUTLER & BISBY, 1960). Single ascospore cultures of *D. perijuncta* produced alpha and 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), cylindric-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.

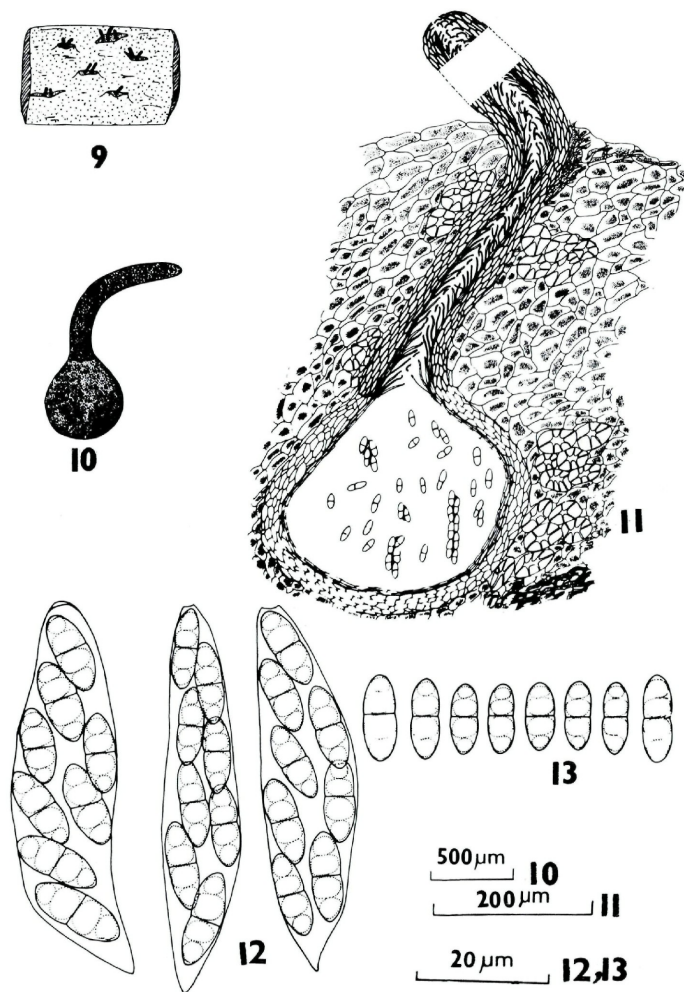
Conidiophores brown, simple, cylindrical, rarely branched, formed from the innermost cells of the locular walls. – Conidiogenous cells enteroblastic, phialidic, determinate, integrated, rarely discrete, hyaline, with collarette, $8.2-12.5 \times 2.0-2.5 \mu\text{m}$. – Conidia of two types: alpha conidia 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, Tirunelveli 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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