Two new Asteridiella species from Tamil Nadu, India

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During a survey of endemic and endangered plants in the Shenbaganur reserve forests near Kodaikanal in Tamil Nadu, Symlocos anamallayana Bedd. (Symlocaceae) was found severely infected with a black mildew fungus. The fungus was peeled-off by nail polish technique to study in natural conditions (Hosagoudar & Kapoor 1984; Hosagoudar 1996). The fungal colonies revealed presence of two new fungal taxa of the genus Asteridiella McAlpine, easily distinguished by oblong and globose head cells of appressoria and presence of three and four septe acospores.

Asteridiella kodaikanalensis sp. nov.
(Fig. 1)

Coloniae amphigenae, plerumque epiphyllae, densae, ad 2mm diam., coloniae epiphyllum confluentes et coalescentes. Hyphae rectae vel subrectae, oppositae acuteque ramosae, laxe vel dense reticulatae, cellulae 11-32 x 6-10 μm. Appressoria alternata, unilateralis, recta, antrorsa, 14-27 μm longa; cellulae basilares cylindraceae vel cuneatae, 3-11 μm longae; cellulae apicales plerumque rectae, globosae, integrae, ovatae, 11-16 x 9-13 μm. Pliaides appressoriis mixtus, oppositae vel unilateralis, amphiiformes, 16-24 x 6-10 μm. Peritheca globosa, aggregata, ad 168μm diam.; cellulae peritheciales conoideae vel mammiformes, ad 32μm longae; acospore c cylindraceae, 4-septatae, constrictae ad septatae, 35-42 x 16-18 μm.

Colonies amphigenous, mostly epithylous, dense, up to 2mm in diameter, confluent and cover an entire upper surface of the leaves. Hyphae straight to substraight, branching opposite at acute angles, loosely to closely reticulate, cells 11-32 x 6-10 μm. Appressoria alternate, unilateral, straight, antrorse, 14-27 μm long; stalk cells cylindrical to cuneate, 3-11 μm long; head cells mostly straight, globose, ovate, entire, 11-16 x 9-13 μm. Phialides mixed with appressoria, opposite, unilateral, amphiiform, 16-24 x 6-10 μm. Peritheca globose, grouped, up to 168μm in diam.; perithecial wall cells conoid to mammiform, up to 32μm long; acospores cylindrical, 4-septate, constricted at the septa, 35-42 x 16-18 μm.

Etyymology: Species named after collection locality

Material examined
Type: 20.ii.2006, On leaves of Symlocos anamallayana Bedd. (Symlocaceae), Shenbaganur Shola, Kodaikanal, Tamil Nadu, India, coll. K. Ravi Kumar HCIO 46807 (type), TBGT 2148 (isotype) (Myco Bank # MB5140116).

This species is similar to Asteridiella fidelis (Toro) Hansf., known on Symlocos theiformis from Philippines in which acospores are four septate (Hansford 1961). However, A. kodaikanalensis differs from it in having predominantly globose but entire head cells of appressoria and also phialides produced on the mycelial branch where appressoria are also borne.

Asteridiella shenbaganurense sp. nov.
(Fig. 2)

Coloniae amphigenae, plerumque epiphyllae, densae, ad 2mm diam., confluences et coalescentes epiphyllorum. Hyphae rectae vel subrectae, oppositae vel alternate acuteque vel laxe ramosae, laxe vel dense reticulatae, cellulae 16-42 x 8-10 μm. Appressoria alternata, unilateralis, recta vel saepe curvula, antrorsa vel subantrorsa, 17-42 μm longa; cellulae basilares plerumque unicellularis, rarum uniseptatis, cylindraceae vel cuneatae, 4-18 μm longae; cellulae apicales plerumque rectae, saepe curvulae, oblongae, ovatae, clavate, plerumque integrae, saepe angularis vel raro sublobatae, 9-24 x 8-16 μm. Phialides appressoriis mixtus, oppositae, alaternae vel unilateralis, amphiiformes, 20-37 x 8-10 μm. Peritheca globosa, aggregata, ad 208μm diam.; cellulae peritheciales conoideae vel mammiformes, ad 32μm longae; acosporae ellipsoidae vel fusiformes, rectae vel curvulae, 3-septatae, constrictae ad septatae, 43-49 x 14-19 μm.

Colonies amphigenous, mostly epithylous, dense, up to 2mm in diameter, confluent and cover an entire upper surface of the leaves. Hyphae straight to substraight, branching opposite to alternate at acute to wide angles, loosely to closely reticulate, cells 16-42 x 8-10 μm. Appressoria alternate, unilateral, straight to often slightly curved, antrorse to subantrorse, 17-42 μm long; stalk cells mostly unicellular, rarely 1-septate, cylindrical to cuneate, 4-18 μm long; head cells mostly straight, often curved, oblong, ovate, clavate, mostly entire, often angular, rarely suboblate, 9-24 x 8-16 μm. Phialides mixed with appressoria, opposite, alternate, unilateral, amphiiform, 20-37 x 8-10 μm. Peritheca globose, grouped, up to 208μm in diam.; perithecial wall cells conoid to mammiform, up to 32μm long; acospores ellipsoid or fusiform, straight to curved, 3-septate, constricted at the septa, 43-49 x 14-19 μm.
Figure 1. Asteridiella kodaikanalensis sp. nov.
a - Appressorium; b - Phialide; c - Ascospores; d - Perithecial wall cells

Figure 2. Asteridiella shenbaganurensis sp. nov.
a - Appressorium; b - Phialide; c - Ascospores; d - Perithecial wall cells
Etymology: Species named after collection locality

Material examined
Type: 20.ii.2006, On leaves of *Symplocos anamallayana* Bedd. (Symplocaceae), Shenbaganur Shola, Kodaikanal, Tamil Nadu, India, coll. K. Ravi Kumar HCIO 46808 (type), TBGT 2149 (isotype) (Mycobank # MB8140117).

This species is similar to *Asteridiella singalensis* Hansf., reported on *Symplocos* sp. from Sri Lanka, in having 3-septate ascospores (Hansford 1961). However, differs from it in having distinctly oblong and entire to angular head cells of appressoria.

Further, phialides are mixed with appressoria and having smaller ascospores.

References