Short Communication

Two rare hyphomycetes fungi from Maharashtra, India

Ninad Dharkan¹ and Dilip Hande²

¹S.P.M. Science and Gilani Arts Commerce College, Ghatanji, Dist. Yavatmal- 445301, MS, India
²Shri. Shivaji Science College Amaravati, Dist. Amaravati- 44603, MS, India
dvhande@gmail.com

Available online at: www.isca.in, www.isca.me

Abstract

The communication include two hyphomycetes fungi from Maharashtra, India viz, Stachybotrys indicus sp.nov and Volutella vajapurellasp.nov. The description and illustration of species under study are rare.

Keywords: Stachybotrys, dark brown conidia, Volutella hyaline conidia, brown setae.

Introduction

The genus Stachybotrys was established by Corda in 1837. Stachybotrys are saprophytic fungi commonly in soil¹. Stachybotrys is also recorded on submerged wood in mangroves². The genus Volutella was established by Tode. Volutella is a wide spread genus of the family Nectriaceae. Volutella is a facultative plant pathogen³. The species under study were compared with other known species of Stachybotrys and Volutella and treated as new species, the detailed descriptions are given below.

Materials and methods

The specimens in question were collected by standard procedure. The semi-permanent slide were prepared with the help of cotton blue stain. The material were identified by using keys and literature⁴. The exicatii were deposited in Ajrekar Mycological Herbarium, A(ARI) Pune 411004.

Taxonomy: Stachybotrys indicus sp.nov. (Figure-1): (Etym : Host Canna indica L.): Colonies pulvinate, black, mycelium immersed in substrate conidiophores loosly intertwined, flexuous, separate, smooth measure 42.0-247µm long; 3.8µm medium, conidiogenous cells monopodialidicdiscrete in groups of 3-6 at the apex of each conidiophore, measure 11.4-15.2µm long; conidia acrogenous, simple sub spherical to ellipsoidal, smooth, dark brown to black measure 7.6-11.4x3.8-7.6µm.

Holotype: On dead leaves of Canna indica L. (Fam: Cannaceae) Legit. N.S.D. at Bothli Panjra Dist. Wardha, MS on 12/12/05 AMH No. 9085 (Holotype).

Volutella vajapurellasp.nov. (Figure-2): (Etym: locality Vaijapur): Sporodochia dispersed of gregarious, disc-shaped, sub-epidermal embedded, black, stromatic, measure 114.0-304.0x76.0-171.0µm; setae dark, brown, erect or slightly curved, tapering toward tip, broad at base, septate, measure 45.6-176.0x3.8-7.6µm; conidiophores simple densely arranged that would make a membrane as if, slightly brown with flat tips for support to the simple conidium, brne at the tip, measure 19.0-22.8µm longa; conidia hyaline, unicellular falcate, semilunar-shaped, acute, apex, measure 15.2-26.6x3.8µm.


Table-1: Shows distinctness of various known species of Stachybotrys

<table>
<thead>
<tr>
<th>Species</th>
<th>Conidiophore (µm)</th>
<th>Conidiogenous cell (µm)</th>
<th>Conidia (µm)</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.chlorohalonata</td>
<td>44-69</td>
<td>8-11x4-6 m</td>
<td>8-10.5x4-5.5</td>
<td>8</td>
</tr>
<tr>
<td>S. palmae</td>
<td>110-230x6.3-10</td>
<td>11-12.5x6-7.5</td>
<td>10-15x5-7.5</td>
<td>13</td>
</tr>
<tr>
<td>S.cardylynes</td>
<td>95-160x5.8 8</td>
<td>11-14x3.8-5.4</td>
<td>7-8x3.2-5.1</td>
<td>13</td>
</tr>
<tr>
<td>S.biformis</td>
<td>50-75x3.4</td>
<td>8-12x3.5-4.5</td>
<td>7.5-9.5x2.5-3.3</td>
<td>11</td>
</tr>
<tr>
<td>S.yushuemis</td>
<td>59-90x3-4.5</td>
<td>11.5-14.5x5-6.5</td>
<td>10.5-13.5x3-4</td>
<td>11</td>
</tr>
<tr>
<td>S.indicussp. nov.</td>
<td>42.0-247x3.8</td>
<td>3.8-5.4</td>
<td>7.6-11.4x3.8-7.6</td>
<td>Understudy</td>
</tr>
</tbody>
</table>
Table-2: Taxonomical Study of Volutella species.

<table>
<thead>
<tr>
<th>Species</th>
<th>Spordochia (µm)</th>
<th>Setae (µm)</th>
<th>Conidiophore (µm)</th>
<th>Conidia (µm)</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>V. kamati</td>
<td>0.3-0.5</td>
<td>38.5-111.8x4.3-7.5</td>
<td>10.7-30.0x3.2-5.2</td>
<td>15.5-23.5x4.3-5.3</td>
<td>5</td>
</tr>
<tr>
<td>V. lini</td>
<td>160x18.7-45.8</td>
<td>50-200x5</td>
<td>8-12x1.5</td>
<td>8-14 x 1.2-1.6</td>
<td>10</td>
</tr>
<tr>
<td>V. agavella</td>
<td>66.0-150x40-196</td>
<td>39-96.0x4</td>
<td>15.4-22.6x3.6-6.6</td>
<td>19-22.4x2.5-4.8</td>
<td>12</td>
</tr>
<tr>
<td>V. ciliata</td>
<td>300-560</td>
<td>735x5-7.5</td>
<td>--</td>
<td>5-7x2-2.4</td>
<td>3</td>
</tr>
<tr>
<td>V. vaijapurellasp.nov</td>
<td>114.0-304.0x76-171.0</td>
<td>45.6-176.0x3.8-7.6</td>
<td>19.0-22.8 long</td>
<td>15.2-26.6x3.8</td>
<td>Understudy</td>
</tr>
</tbody>
</table>

Figure-1: Stachybotrys indicus sp.nov. Figure-a,b, Conidiophore with Conidia, (c) Conidiogenous cell, (d) Conidia.

Figure-2: Volutellavaijapurellasp.nov. Figure-a,b, Habit; Figure-c, Setae & indicates attachment of Conidia (d) Setae (e) Conidia.
Results and discussion

A comparison of species reveals that the species under study have larger conidiophore than S. biformis, S. chlorohalonata, S. yushuemis and smaller than S. palmae. Conidia are larger than S. cardylines and S. biformis. The spore of Volutellavaijapurella is larger than V. agavella and V. lini. Setae the identifying character are smaller than V. ciliata. The size of conidia is smaller than V. lini and V. ciliata. Overall taxonomical data in Table-1 and Table-2 indicates that the species included in this communication are treated as new.

Conclusion

The morphotaxonomy of refereed species Stachybotrys and Volutella are different therefore these taxa termed as new species. The taxa Stachybotrys indicus sp. nov reported first time from Bothli Panjra forest Wardha District Maharashtra.

References