Fungi of Delhi

XXXIII. Chaetomium putrefactus sp.n.

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Chaetomium putrefactus has been described as a new species. It has smaller and sparser hairs and ellipto-fusoid ascospores.

We have isolated and described several species of Chaetomium from living and dead leaves of various plants. One species isolated from decaying leaves of Corchorus olitorius appeared to be interesting and new. It is characterized by smaller and fewer hairs and ellipso-fusoid ascospores.

Chaetomium putrefactus Gupta et Mukerji sp.n.

Peritheciis superficialibus, pellucidis ubei juvenis, nigricans ad maturitas, ovalis, 200 - 260 × 160 - 200 μm. Pilis terminalibus paucis et parvis, circa ostiolatis, rectus et divergentus, septatis, levis vel asperitas, olivaceo-brunneis, 75 - 90 × 2 - 4 μm, hyalinis ad apicibus, apice attenuatis vel hebetibus. Pilis lateralisibus paucis vel numerosis, similariter vel terminalibus, 80 - 110 × 2 - 4 μm. Ascis clavatis, octosporis, 30 - 40 × 8 - 10 μm, stipite angustus et distinctus. Ascosporis biseriatis vel irregularis, atro-olivaceo-brunneis, fusiformis vel ellipticofusoides, raro concavo-convex, apicatis ad duo apicem. Typus: In folio putrescenti Chorcori, Delhi. Cultura posita in Herbario ITCC (Indian Type Culture Collection, IARI, Delhi) sub numero HCIO, cultura exsiccata holotypa – DU(KRG)401 positus in herbario Mycologico, Universitatis, Delhi.

Colonies fast growing on Czapek’s-Dox yeast extract agar, growing to a diameter of 8 - 9 cm in 7 days at 27 ± 1°C. Perithecia aggregated on yellowish white compressed mycelial mat. On cellulose agar it develops aerial white cottony mycelium with perithecia at the base. It grows comparatively more slowly reaching 4 - 5 cm in seven days at 27 ± 1°C with fewer perithecia which were both superficial as well as embedded (Gupta et al. 1982).
<table>
<thead>
<tr>
<th>Species</th>
<th>C. fusiforme</th>
<th>C. fusisporum</th>
<th>C. subspirilliferum</th>
<th>C. fusisporale</th>
<th>C. lawranacmensii</th>
<th>C. raji</th>
<th>C. putrefactus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chivers</td>
<td>Smith</td>
<td>Borghi</td>
<td>Khanna</td>
<td>Meckel</td>
<td>Malhotra</td>
<td>Supak</td>
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<tr>
<td>Perithecia</td>
<td>Dark, brown,</td>
<td>Black,</td>
<td>Olive to cinnamon,</td>
<td>Black</td>
<td>Grayish-black</td>
<td>Greyish-black</td>
<td>Greyish-black</td>
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<td></td>
<td>120-150 µm diam, subglobose to ovoid</td>
<td>130-200 µm diam, subglobose</td>
<td>85-150 µm diam, subglobose</td>
<td>125-200 µm diam, subglobose</td>
<td>oval to subglobose</td>
<td>200-300 x 200-400 µm, globose to subglobose</td>
<td>Greyish-black to black, transparent when young, 200-250 x 150-200 µm, oval</td>
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<tr>
<td>Terminal hair</td>
<td>Arcuate with once or twice recurved tips</td>
<td>Uniform in fairly close spirals</td>
<td>Lower, third straight, upper part in loose spirals</td>
<td>Straight, few</td>
<td>Hyaline, undulate to nearly straight uniformly rough, septate</td>
<td>Two types, one very long, few undulate olivaceous-brown, rarely irregularly branched; other long undulate with straight base irregularly coiled terminally 3-5 times, olivaceous-brown</td>
<td>Few and small, straight and divergent around the ostiole</td>
</tr>
<tr>
<td>Ascoconidium</td>
<td>Dark brown, fusiform and flattened on one side</td>
<td>Dark brown, bi-convex fusiform</td>
<td>Brown, concavo-concave, face view fusiform</td>
<td>Light brown</td>
<td>Fusiform, apiculate at both ends compressed in side view</td>
<td>Light olive-gray, fusoid to slightly ellipsoid, collapsing, with a narrow furrow, apiculate at both ends</td>
<td>Dark olivaceous-brown, fusoid to elliptical fusoid, apiculate at both ends, rarely concavo-convex</td>
</tr>
<tr>
<td></td>
<td>12-17 x 5-6 µm</td>
<td>14-15.5 x 6-7 µm</td>
<td>11-13 x 6-7 µm x</td>
<td>8.5-12 x 4-5.1 µm</td>
<td>12.5-17.5 x 6.5-7.5 µm</td>
<td>10-13 x 5-7 µm</td>
<td>12.15 x 6-7 µm</td>
</tr>
</tbody>
</table>

*Rudnicka-Jozierska W., 1979, Chaetomiales /In: Flora Polska- Grayby, 12. /Red./
On Czapek’s-Dox yeast extract agar perithecia are superficial, transparent when young, becoming greyish-black to black at maturity, oval, 200 - 260 × 160-200 μm, attached to the substratum by thin rhizoids, ostiolate, producing at maturity distinct and regular cirrhus of spore-mass (Fig. 1). Terminal hair few and small around the ostiole, straight and divergent, smooth to finely rough, septate 75 - 90 × 2 - 4 μm, light olivaceous-brown, hyaline at tips, tips tapering to blunt. Lateral hair few to many similar to terminal hair, 80 - 110 × 2 - 4 μm. Ascii clavate, eight-spored, evanescent 30 - 40 × 8 - 10 μm, stipe narrow and distinct. Ascospores biseriate to irregular dark olivaceous-brown, 12 - 13 × 6 - 7 μm. Fusiform to elliptical-fusoid, apiculate at both ends, Germ-pore at one end only, sometimes a false impression of its presence on both sides, sometimes the spores are also concavo-convex.

This was isolated form surface-sterilized decayed leaves of Corchorus olitorius kept on Czapek’s-Dox yeast extract agar. Its culture has been deposited in the Indian Type Culture Collection (ITCC), IARI, Delhi and has also been kept in the mycological herbarium of the Department of Botany, University of Delhi, under reference No. DU(KRG)401. The specific epithet of this species has been based on the substrate it was isolated from.

The present form differs from the other five species of Chaetomium having ascospores (Table 1) in possessing smaller asci, ascospores and hair (Malhotra, Mukerji 1976; Mukerji, Khanna 1980; Rai, Mukerji 1962).


From our laboratory we described this species, which was isolated from bark. Chowdhery and Rai (1980) have reported another species of Chaetomium from usar soils under the same specific epithet. It appears that they were not aware of another valid species which has already been described with the same name in a reputed mycological journal. Since our form was described and named earlier we retain the name of our species as Chaetomium longipilum and consider that Chowdhery and Rai’s species should be given a new name if it is a valid species (?). The International Code of Botanical Nomenclature, Articles 45 and 65, also supports our claim of retaining the name.

From the diagrams and description of the form named as C. longipilum Chowdhery et Rai by Chowdhery and Rai (1980), it is very evident that their species is not different but Chaetomium funicolum, which shows a lot of variation in morphology under different conditions of growth. Therefore, we consider that their species is not a valid one.

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REFERENCES


Fig. 1. Chaetomium putrefactus

a – peritheciun with cirrus (× 150); b – group of asci and ascospores (× 265); c – peritheciun with cirrus (× 122); d – ascus (× 600) and ascospores (× 700)