

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 ellipso-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 ubi juvenis, nigricans ad maturiatis, ovalis, 200-260 × 160-200 μm. Pilis terminalibus paucis et parvis, circa ostiolatis, rectis et divergentibus, septatis, levis vel asperitis, olivaceo-brunneis, 75-90 × 2-4 μm, hyalinis ad apicibus, apice attenuatis vel hebetibus. Pilis lateralibus paucis vel numerosis, similiter vel terminalibus, 80-110 × 2-4 μm. Ascis clavatis, octosporis, 30-40 × 8-10 μm, stipite angustus et distinctus. Ascosporis biserialis vel irregularis, atro-olivaceo-brunneis, fusiformis vel ellipticofusoides, raro concavo-convex, apiculatis ad duo apicem. Typus: In folio putrescenti Chorcori, Delhi. Cultura posita in Herbario ITCC (Indian Type Culture Collection, IARI, Delhi) sub numero HC10, 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 $27 \pm 1^\circ\text{C}$. 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 $27 \pm 1^\circ\text{C}$ with fewer perithecia which were both superficial as well as embedded (G u p t a et al. 1982).

Table 1

Comparison of seven species of Chaetomium

Species	<i>C. fusiforme</i> Chavers	<i>C. fusisporum</i> Smith	<i>C. subpirillif- erum</i> Sengsøva	<i>C. fusisporale</i> Bal et Bakerji	<i>C. lawsonii</i> Bakerji et Khanan	<i>C. raii</i> Mukherji et Bakerji	<i>C. putrefactus</i> Cupra et Kuzerji
Perithecia	Dark, brown, 120-150 µm diam, subglobose to ovoid	Black, 130-200 µm diam, subglobose	Olive to cinnamon, 85-150 µm diam, subglobose	Black, 125-200 µm diam, subglobose to ovoid	Greyish-black 200-300x390-400 µm, oval to subglobose	Greyish-black, opaque, 200-220 x 200 µm, globose to subglo- bose	Greyish-black to black, transparent when young, 200-260x150-200 µm, oval
Terminal hair	Unicou- route with once or twice recurved tips	Uniform in fairly close spirals	Lower, third straight, upper part in loose spirals	Straight, few	Hycoloid, undulate to nearly straight uniformly rough, seriate	Two types, one very long, few undulate olivace- ous-brown, rarely irregularly bran- ched; other long undulate with straight base irregularly coiled terminally 3-5 ti- mes, olivaceous- brown	Few and small, straight and diver- gent around the ostiole
Ascopores	Dark brown, fusiform and flattened on one side 12-17 x 5-6 µm	Dark brown biconvex fusi- form 14-15, 500-7 µm	Brown, conconvex, face view fusi- form 11-13x6-7 µm ^x	Olive-green with brownish tinge, biconvex ellipsoid to fusiform, form part at one end 8.5-12 x 4-5.1 µm	Light brown, fusiform apiculate at both ends com- pressed in side views 12.5-17.5 x 6.5-7.5 µm	Light olive-grey, fusoid to slightly ellipsoid, colla- psing, with a narrow fur- row, apiculate at both ends 10-15 x 5-7 µm	Dark olivaceous- brown, fusiform to elipti- cal fusoid, apicu- late at both ends, rarely concave-con- vex 12-13 x 6-7 µm

^x Rudnikoka-Jozieraka J., 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, $200-260 \times 160-200 \mu\text{m}$, attached to the substratum by thin rhizoids, ostiolate, producing at maturity distinct and regular cirrus of spore-mass (Fig. 1). Terminal hair few and small around the ostiole, straight and divergent, smooth to finely rough, septate $75-90 \times 2-4 \mu\text{m}$, light olivaceous-brown, hyaline at tips, tips tapering to blunt. Lateral hair few to many similar to terminal hair, $80-110 \times 2-4 \mu\text{m}$. Asci clavate, eight-spored, evanescent $30-40 \times 8-10 \mu\text{m}$, stipe narrow and distinct. Ascospores biseriate to irregular dark olivaceous-brown, $12-13 \times 6-7 \mu\text{m}$. 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 from 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).

Chaetomium longipilum Malhotra et Mukerji, Rev. Mycol. 40: 179-184, 1976.

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 funiculum*, which shows a lot of variation in morphology under different conditions of growth. Therefore, we consider that their species is not a valid one.

REFERENCES

- Chowdhery H. J., Rai J. N., 1980, Some new and unrecorded fungi from Indian usar (alkaline) soils, N. Hedw. 32: 217-223.
- Gupta R., Menon R., Mukerji K. G., 1982, Dimorphism in some *Chaetomium* species, N. Hedw. (in press).
- Malhotra G., Mukerji K. G., 1976, Fungi of Delhi. XXIX. Three new species of *Chaetomium* from decaying wood, Rev. Mycol. 40: 179-184.
- Mukerji K. G., Khanna M., 1980, Fungi of Delhi. XII. *Chaetomium lawransauesii* sp.n., Acta Mycol. 16: 255-257.
- Rai J. N., Mukerji K. G., 1962, A new species of *Chaetomium* from Indian soils, Can. J. Bot. 40: 857-861.

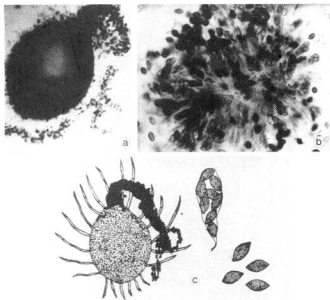


Fig. 1. *Chaetomium putrefactus*

a - perithecium with cirrus ($\times 150$); b - group of asci and ascospores ($\times 265$); c - perithecium with cirrus ($\times 122$); d - ascus ($\times 600$) and ascospores ($\times 700$)