

HYPHOMYCETES OF CONIFER LEAF LITTER
HORMODENDRUM STAUROPHORUM SP. NOV.¹

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Abstract

Hormodendrum staurophorum sp. nov., a pleomorphic dematiaceous hyphomycete isolated from fallen needles of *Pinus sylvestris*, is described and illustrated.

The fungus described here was isolated twice during a study of the micro-fungal succession associated with decaying leaf litter of *Pinus sylvestris*. Both cultures were obtained from recently fallen needles sampled from the surface litter, or L layer, of the organic horizon at Delamere Forest, Cheshire, England (Kendrick 1959). The needles had been rigorously washed in many changes of detergent and sterile water to remove surface-borne fungal spores prior to plating on acidified malt agar.

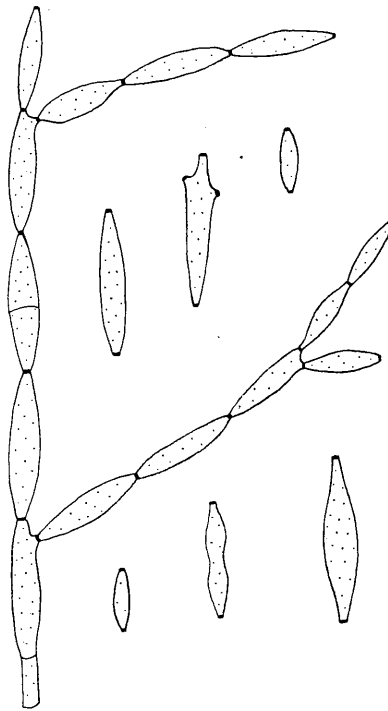


FIG. 1. *Hormodendrum staurophorum*: conidia from culture, $\times 1500$.

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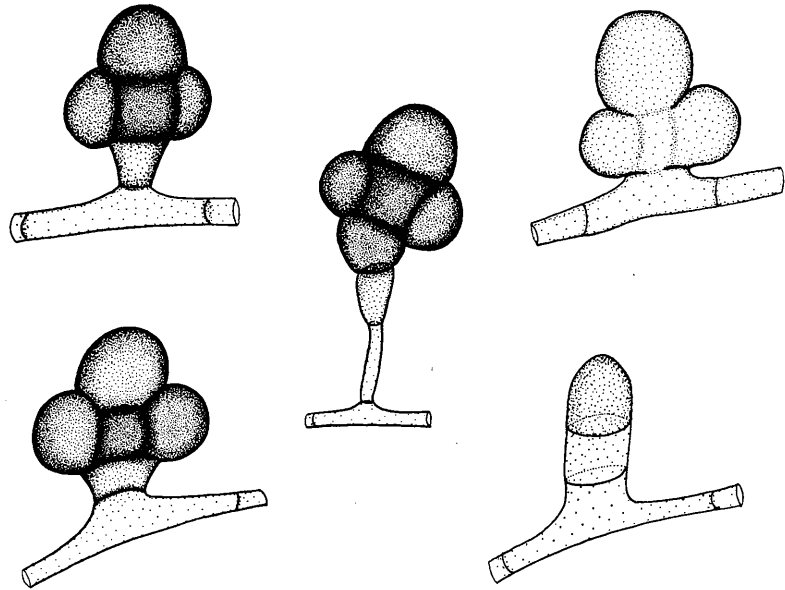


FIG. 2. *Hormodendrum staurophorum*: chlamydospores from culture, $\times 1500$.

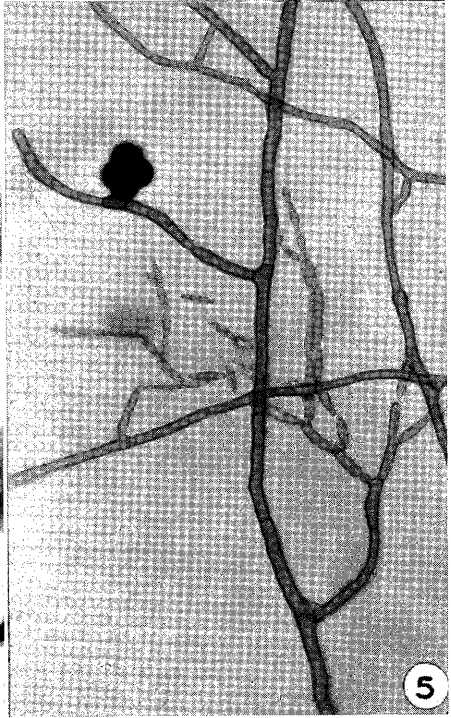
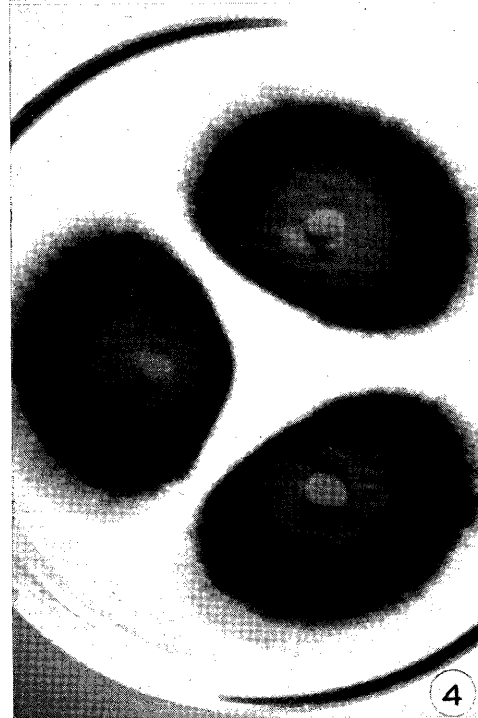
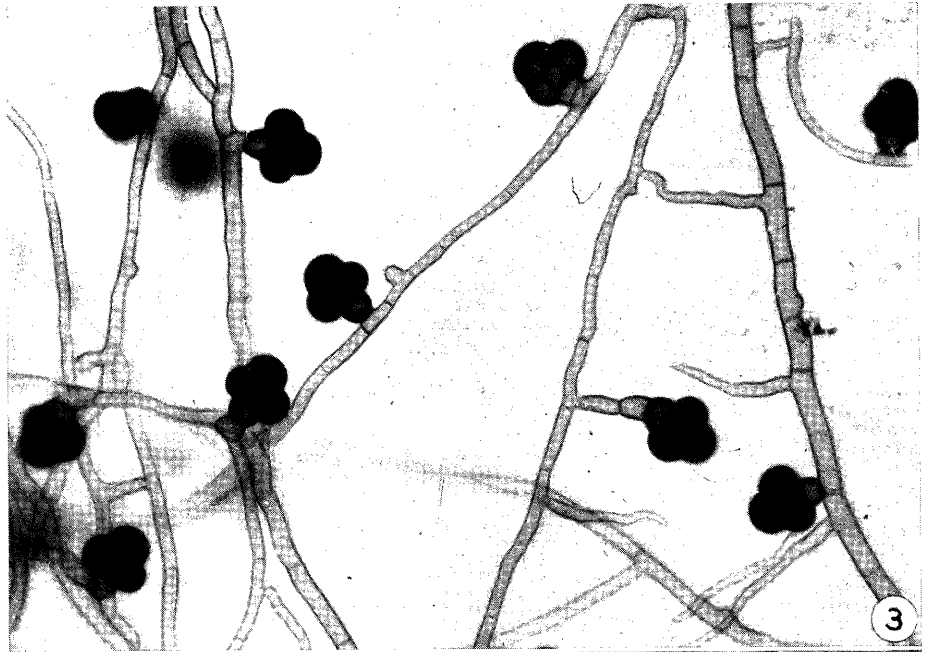
On malt agar, colonies are spreading and effuse. Aerial mycelium is velvety in texture, and light brown in color, while immersed mycelium is a rich brown. The mycelium is composed of branched, septate, brown hyphae which are $1.4\text{--}4.0\ \mu$ in width. The conidia (Figs. 1, 5) are inconspicuous, developing acropetally in dry, branched chains from aerial hyphae. They are non-septate, pale brown, and more or less fusiform, measuring $5.2\text{--}18.0 \times 1.4\text{--}2.6\ \mu$; each end is truncate and a lateral truncate outgrowth is sometimes found near the apex of the conidium where a new branch of the spore chain has been initiated.

The very characteristic, darkly pigmented chlamydospores (Figs. 2, 3, 5) are produced abundantly on the immersed mycelium. They are cruciform, being made up usually of five cells; a truncate obconical basal cell somewhat less heavily pigmented than the others, a more or less cubical central cell which protrudes on both sides from the axial plane of the spore, two hemispherical lateral cells situated on opposite sides of the central cell, and a larger hemispherical apical cell. The entire chlamydospore is quite constant in its dimensions, being $12.5\text{--}16.8\ \mu$ long, $12.5\text{--}15.0\ \mu$ wide, and $6.8\text{--}8.2\ \mu$ thick. In older colonies, the chlamydospores are occasionally slightly roughened. They may be sessile, or are borne on an auxiliary cell or at the apex of a hypha. This unique chlamydospore, resembling the dictyospore of some species of *Monodictys* (Hughes 1958), is the feature which justifies the erection of a new species for these isolates.

FIG. 3. *Hormodendrum staurophorum*: mycelium bearing chlamydospores, $\times 550$.

FIG. 4. *Hormodendrum staurophorum*: colonies on malt agar at 14 days, natural size.

FIG. 5. *Hormodendrum staurophorum*: conidia and a chlamydospore developed from the same hypha, $\times 550$.



***Hormodendrum staurophorum* sp. nov.**

Fungi imperfecti, hyphomycetes saprophytici.

Ex culturis in agaro "malt" dicto descripta.

Coloniae radiantes, effusae. Mycelium aerium velutinum, pallide fuscum. Mycelium immersum brunneum. Hyphae ramosae, septatae, fuscae, 1.5–4.0 μ crassae. Conidia non-septata, dilute fusca, plusminusve fusiformia, 5.2–18.0 \times 1.4–2.6 μ , in utraque terminatione truncata, interdum versus apicem cum enatione truncata laterali; acropetalim in catenas siccas ramosas, ex hyphis aeriis oriunda. Chlamydosporae numerosae, saepe immersae, solitariae, atrobrunneae, parietibus crassis, cruciformiae in 2 dimensionibus, e cellulis 5 compositae—cellula basali obconicotruncata, cellula centrale plusminusve cubiforme, 2 cellulis hemisphaericis parvis lateralibus, atque cellula majore hemisphaerica apicali—in mycelio sessiles, vel cum cellula auxiliare, vel in hyphae apice; 12.5–16.8 μ longae, 12.5–15.0 μ latae, 6.8–8.2 μ crassae; in coloniis maturis interdum subasperae.

Habitat: ex foliis emortuis *Pini sylvestris*, Delamere, Cheshire, Anglia isolatum.

Typus: in Herbarium DAOM 60786, siccus ex vitro.

The specific epithet has been derived from the Greek ' $\Sigma\tau\alpha\upsilon\rho\acute{\sigma}\ \phi\acute{\epsilon}\rho\omicron\nu$ ' meaning 'Cross bearer', in preference to the Latin 'cruciferum' of the same meaning, which was thought to be potentially misleading.

I am much obliged to Dr. V. H. Heywood for correcting the Latin diagnosis.

References

- HUGHES, S. J. 1958. Revisiones hyphomycetum aliquot cum appendice de nominibus rejiciendis. *Can. J. Botany*, **36**, 727–836.
- KENDRICK, W. B. 1959. The time factor in the decomposition of coniferous leaf litter. *Can. J. Botany*, **37**, 907–912.