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A NEW SPECIES OF *CHRYSOSPORIUM*

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THE genus *Chrysosporium* Corda has been reviewed earlier¹⁻³. Presently 22 species of this genus have been enumerated³. *C. tropicum*, *C. lucknowense*, *C. indicum*, *C. evolceanui*, *C. crassitunicatum*, *C. carmichaeli*, *C. queenslandicum* and *C. sulfureum*⁴⁻⁸ were isolated from Indian soil. The present communication deals with a new species of *Chrysosporium* not described earlier.

Chrysosporium geophilum Kushwaha and Shrivastava
sp. nov. (figure 1).

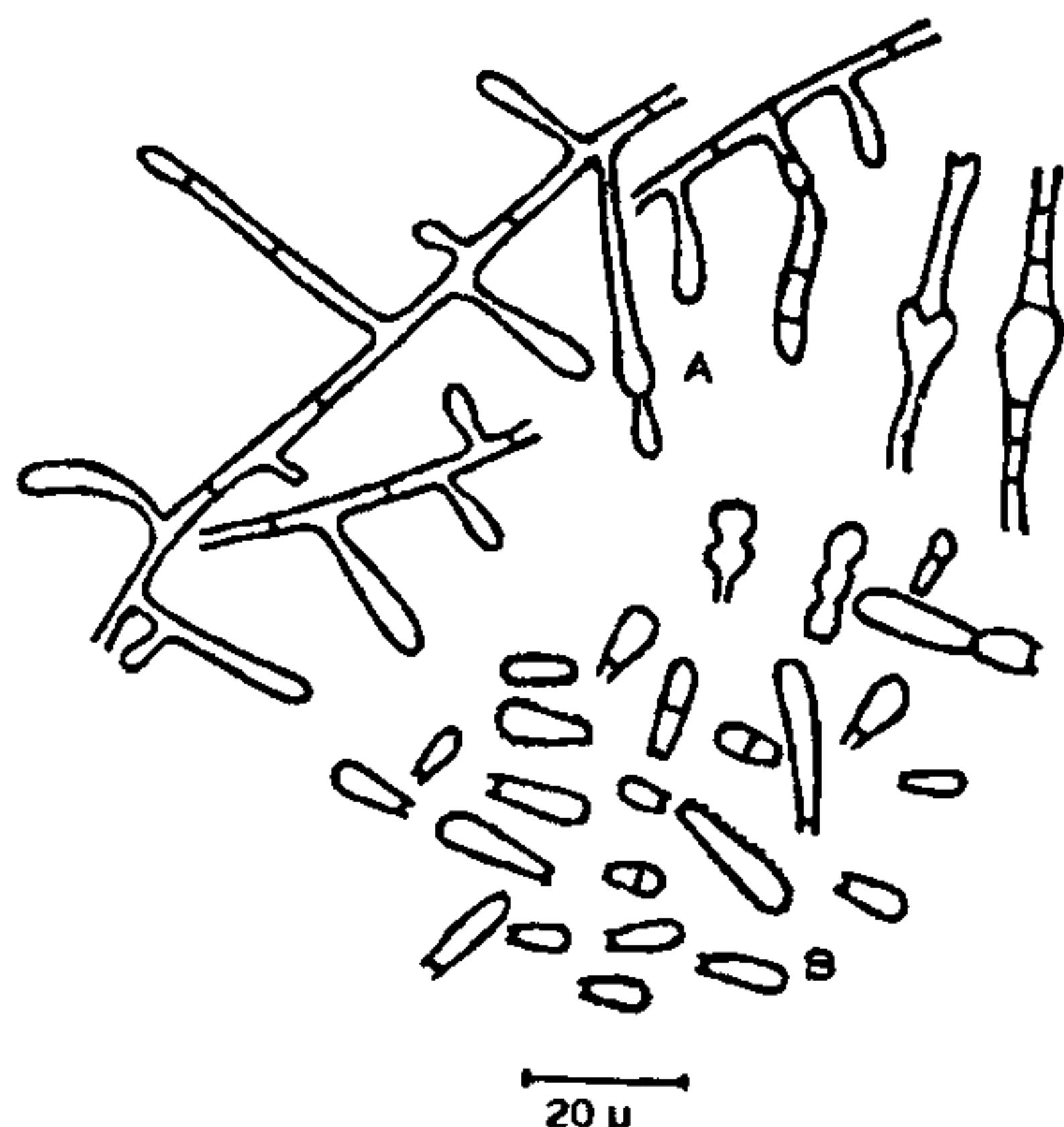


Figure 1. *Chrysosporium geophilum*. A, Hyphae, with conidiogenous cells; B, conidia.

Colonies in agar Sabouraudii cum dextroso composite per viginti dies crescentes diametrum 60-70 mm attingentes, albee, subtus pallide cremeo-brunneae, densae definito, aequali. Hyphae septatae, hyalinae, tenuiter tunicatae, 1-4 μ m crassae, frequenter cellulas conidiogenas inflates, hyellnas, leviter et cresse tunicatas, subglobosas vel aliquantum anormes, 8 μ m crassas producentes. Hyphae spatuliformes productae. Conidia terminalia lateralique sessilia vel in prominentiis brevibus gestis, subhyaline, levia vel aspara, tenuiter tunicatae, abovoidea vel clavata, continus vel raro bicellularia, 2-4 \times 4-20 μ m, cicatrice basali lato notata 4-10 \times 2-4 μ m intercalaria rariora, subhyalina, levia vel aspera, doliformia vel allipsoidea, 2-4 μ m.

Colonies on Sabouraud's dextrose agar white, 60-70 mm in diameter, reverse pale creamy brown, dense and fluffy at centre, thinner outwards, raised centrally, margin defined. Hyphae septate, hyaline, thin-walled, 1-4 μ m wide, frequently producing swollen conidiogenous cells, hyaline, smooth and thick-walled, subglobose or irregular in shape, up to 8 μ m wide. Racquet hyphae present. Lateral conidia sessile on short protrusions, subhyaline, initially echinulate and some becoming smooth-walled on maturity, thick-walled, obovoid to clavate, 1-celled, 4-20 \times 2-4 μ m. Two-celled conidia rare, 4-10 \times 2-4 μ m. Intercalary conidia less abundant, subhyaline, smooth or rough, thick-walled, barrel-shaped to ellipsoid 2-4 μ m.

This fungus was isolated from human hair buried in soil collected from the L.L.R. Hospital Campus, Kanpur, India, in May 1982 and its specific epithet refers to its habitat.

Subcultures were deposited in the culture collection of the Department of Botany, Christ Church College, Kanpur (CC/534); CMI, Kew, England (IMI 276183); and ITCC, New Delhi, India (ITCC 3345).

This fungus bears some similarities to *C. indicum*, *C. tropicum* and *C. pannicola* in its morphology. However, the present fungus can be differentiated from *C. indicum* and *C. tropicum* on the basis of presence of 2-celled and larger conidia borne on swollen conidiogenous cells. The large conidia of *C. geophilum* which are initially echinulate and become smooth-walled on maturity further differ from those of *C. pannicola*.

Two-celled conidia of *C. carmichaeli* and *Chrysosporium* anamorph of *Arthoderma curreyi* also resemble those of the new species, but on the basis of colony colour, larger conidia and swollen conidio-

genous cells *C. geophilum* can be separated from these two fungi. The swollen conidiogenous cells of this species may be regarded as rudimentary ampulliform swellings as in *Chrysosporium pannicola* and *Myceliophthora fergusii*. The present fungus is classified in *Chrysosporium* because of its conidia with broad bases. This fungus grew well on moistened human hair and Sabouraud's dextrose agar at 35°C. The keratinophilic nature of this fungus was further determined by the method of Agrawal and Kushwaha⁹.

This study was supported by a research grant from ICMR, New Delhi. We thank Dr P. M. Stockdale, CMI, England, for comments on the isolate, Dr J. W. Carmichael, Canada, for critical comment on the manuscript, and Dr D. P. Rogers, USA, for Latin translation.

5 May 1988; Revised 28 January 1989

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LARGE CARDAMOM—A NEW HOST FOR *PESTALOTIOPSIS VERSICOLOR* (SPEG.) STEYAERT

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LARGE cardamom (*Amomum subulatum* Roxb.) is an important cash crop of Sikkim occupying the largest area and highest production in India. During a

survey of large cardamom diseases several foliar diseases were noticed. Recently symptoms of leaf blight, which could severely damage the foliage and the crop, were also noticed in plantations of large cardamom around Gangtok.

Minute grey spots with chlorotic haloes developed on the leaves mostly from the tip or margin. The spots were amphigenous and irregular in shape, with a prominent reddish-brown margin surrounded by chlorotic haloes. The spots were 130–200 mm × 26–45 mm in size, but under favourable conditions the entire leaf blade was blighted very fast. After some time, the central necrotic portion turned straw-coloured and appeared studded with numerous black dots on both the surfaces. Several such spots often coalesced to give a blighted appearance to the foliage. In the rainy season the necrotic tissues of the infected leaf withered away.

Repeated isolations from the infected leaves yielded a fungal pathogen, which was identified as *Pestalotiopsis versicolor* (Speg.) Steyaert. Colonies on potato dextrose agar are white, with aerial mycelium diffuse towards irregular advancing edge but denser towards the older part of the colony. Acervuli develop from yellowish clumps of hyphae and produce greenish-black spore masses. Diurnal zonation of mycelial growth and acervulus formation are apparent. No pigmentation or discoloration of the mycelium was visible on the reverse side. Conidia (21.5–27.5 × 4.35–8.75 μm) 4-septate, with 3 middle cells dark or brown and end cells hyaline. Apical cell bears 2 or 3 appendages while basal cell ends in a simple pedicel or a single basal appendage (figure 1).

Pathogenicity of the fungus was established by spraying spore and mycelial suspensions on healthy leaves. Humidity above 85% RH and temperature between 23 and 28 °C favoured development of the disease. Typical disease symptoms appeared on both younger and older leaves 6–10 days after inoculation, but infection on younger leaves appeared early. The fungus has not been reported earlier on *Amomum subulatum*^{1,2}. Therefore this report constitutes a new host record for *P. versicolor* and also a new disease record for large cardamom. Earlier the fungus has been recorded on many hosts, including *Mangifera indica*, *Eugenia jambolana*, *Terminalia tomentosa*, *Typha angustata*, *Musa paradisiaca* var. *robusta*, *Jatropha curcas* and *Aloe vera*. The diseased specimen and culture have been deposited at the herbarium of CMI, Kew, England, under reference No. IMI 276700.