Chalara cladii M. B. Ellis spec. nov.

Coloniae velutinae, rufo-brunneae vel atrae, usque ad 4×1 cm.

Mycelium immersum, ex hyphis hyalinis, levibus, 1–2 μ crassis compositum.

Conidiophora singula vel 2–80 aggregata, brunnea, 80–920 μ longa, superne cylindracea, continua, 7–10 μ lata, in stipite tereti, 5–8 μ lato, 3–27 septato producta.

Conidia intra conidiophorum oriunda, ut catena emergentia, cylindracea, primo hyalina, dein brunnea, 1-septata, 11–17 (13) μ longa, ad septum 5–7 μ lata, utrinque truncata verruculosaque.

Habitat in foliis emortuis *Cladii marisci*, Wheatfen Broad, Norfolk, Anglia, 14.i.1947, E. A. Ellis, Herb. I.M.I. 10171 typus.

Colonies, velvety, reddish brown when young, later dark brown to black, up to 4×1 cm.; often irregular in outline. Part of the dead leaf around each colony is usually bleached. Mycelium immersed in the substratum, composed of hyaline, smooth-walled, 1–2 μ thick hyphae; the hyphae swell and turn brown where they break through to the surface to form conidiophores. Each conidiophore consists of a simple, septate stipe and a long cylindrical spore sac. A continuous column of protoplasm can be traced up through the cells of the stipe and into the spore sac and from this column, at a point usually 10–20 μ from the apex, conidia are cut off in basipetal succession. As a rule 1–2, though occasionally 3 conidia can be seen inside the sac. In young developing conidiophores the apex is rounded and subhyaline (Fig. 14 D). When two conidia have been formed,

pressure from within causes the apical wall to rupture (Fig. 14 C); after dehiscence the elastic wall around the mouth contracts slightly and seems to clasp the issuing conidia quite firmly (Fig. 14 K). When spore formation has ceased, the

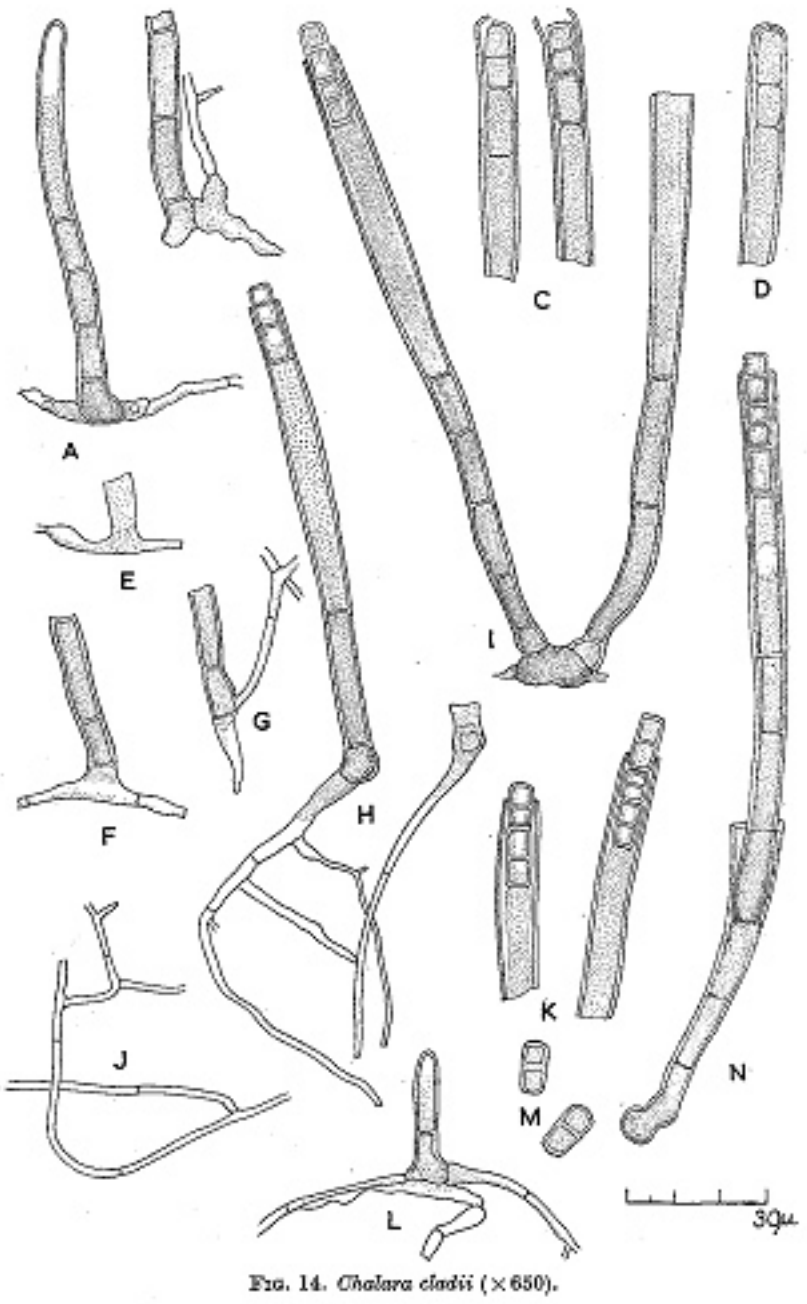

Fig. 14. *Chalara cladii* (×650).

stipe often grows on, new growth taking place within and from the base of the old spore sac, and eventually a new apical spore sac is formed (Fig. 14 N). Conidiophores arise singly or in groups of 2–80, from brown thickened hyphae. Stipe

straight or slightly flexuous, almost cylindrical, 3–27-septate, not constricted at the septa, often swollen at the base, expanded at the apex to form a spore sac, brown, darker near the base, smooth, 40–860 μ thick; spore sac almost cylindrical, brown, 40–60 μ long, 7–8 μ thick at the apex and 8–10 μ in its broadest part. Conidia (Fig. 14 M) almost cylindrical but slightly broader at the base, truncate at both ends, 1-septate, 11–17 (13) μ long, 5–7 μ wide at the septum; at first hyaline but soon turning brown, end walls verruculose, side walls smooth or slightly rough near the ends. The basal cell of a conidium is often slightly longer than the apical one; the contents of the two cells stain evenly with cotton blue in young conidia but in mature ones the basal cell stains much more deeply. *Chalara cladii* grows readily on potato-dextrose agar forming thin, burnt umber colonies up to 90 mm. diam. in 6 weeks. The mycelium (Fig. 14 J), which is partly superficial and partly immersed in the substratum, is composed of hyaline to pale brown, smooth, branched, 1–3 μ thick hyphae with cells 7–58 μ long; at the point of origin of the conidiophores (Fig. 14 A, B, E–H, L) it is brown and up to 7 μ thick. Conidiophores (Fig. 14 H) arise singly, either terminally or laterally on the hyphae and rooting hyphae are often formed at the base; stipe 2–14-septate, 30–220 μ long, 3·5–5·5 μ thick; spore sac 46–68 μ long, 6·5–7 μ thick at the apex, 7–7·5 μ in the broadest part. Conidia pale brown, 10–20 (14) μ long, 5–6 μ wide at the septum; they are extruded in long chains. In old cultures the conidia often become very dark brown.

This fungus has been found only on dead leaves of *Cladium mariscus* at Wheatfen Broad, Norfolk. It differs from all other species of *Chalara* in having spores 5–7 μ wide the end walls of which are verruculose. In some ways it appears to lie in an intermediate position between the genera *Chalara* and *Sporochisma*; both on natural substrata and in culture the conidia turn brown but the characteristic 'drum stick' capitate hyphae of *Sporoschisma* are absent. *C. cladii* is often found associated with a species of *Belonium*.

Specimens Examined

Chalara cladii *folder in Herb. I.M.I.*

On *Cladium mariscus*, Wheatfen Broad, Norfolk, E.A.E., M.B.E., & J.P.E., Jan. 1947 (10171 type); Mar. 1940 (21390a), 1948 (27789); Apr. 1947 (14875f, 16534d), 1949 (34918a); May 1947 (15393b); Aug. 1947 (17355b); Dec. 1948 (32602).