

phenomenon I have observed in living specimens of *C. citrinella* and another species. The spores are further evolved than those of the type section, having lost the vermiform stage. The rarely developed pigmented stage in the spores may be due to the scanty material examined and the limited number of species known. The tendency of a reduction of the apical apparatus is also a more advanced feature.

Some nomenclatural aspects are discussed on p. 84. The reader ought also to consult a paper by Mirza & Ahmed (1970) on the atypical *Podospora clavispora* Mirza & Ahmed, which seems to have a close affinity to the *Camptosphaeriae*.

The little known type species needs some comments. It was collected [by Fuckel?] on stems of *Peucedanum officinale* in Hattenheim Forest, Nassau, Hessen, Germany. The type collection at Geneva (hb. Barbey-Boissier s.num.) consists of a few specimens on three pieces of the matrix, plus a drawing, measurements, and annotations ("Kryptosphaeria sulphurea Sph. curvirostra Sow. Peucedanum officin. Steinberg") in accordance with the published data. Petrak and Sydow have examined the material and thought it to be poorly developed ("Camptosphaeria Fuck. scheint eine gute Gattung zu sein, lässt sich aber nach dem spärlichen sehr schlecht entwickelten Material nicht sicher beurteilen und aufklären"), but in my opinion the hyaline spores are perfectly mature. The perithecia measure $530-670 \times 385-430 \mu$, the asci $160-180 \times 18 \mu$, lacking a ring. The subapical globulus is $5-6 \mu$ wide, verruculose. The biseriatae spores are clavate, $27-30 \times 9.5-12 \mu$, finely verruculose, tipped with moderately long, 3μ thick gelatinous caudae. The distinguishing characters versus *C. citrinella* are the smaller spores, different apical apparatus and habitat (pl. 12).

I do not know whether "Steinberg" is a place or collector.

14. *Cercophora citrinella* Lundq. n. sp. (Fig. 14, pl. 13)

Perithecia, obpyriformia, $530-865 \times 380-530 \mu$, tomento crasso, laxo, citrino-viridi obtecta. *Peridium* membranaceum, flavidum vel ochraceum, semipellucidum, tristratum, in collo fusco-brunneum opacum, cellulis externis angulatis, $6-10 \mu$ diam. Contentum perithecii dilute luteum. *Paraphyses* filiformes. *Asci* 8-sporei, $200-250 \times 12-21 \mu$, cylindracei vel subelavati, apice truncato, annulo apicali incrassato, c. 2.8μ diam. instructi; globulus subapicalis indistinctus vel carens. *Sporae* oblique uniseriatae vel biseriatae, unicellulares, hyalinae, initio cylindraceae, maturitate clavatae, apice conico, verruculosae, $26-36 \times 6-10 \mu$, aequilaterales, 3-7 guttis oleiferis magnis uniseriatis repletae. *Cauda gelatinosa* attenuata, solida, $20-28 \times 3-3.5 \mu$, extremis sporae affixa. Status pigmentatus non visus. — Fimicola.

Perithecia scattered, superficial to semi-immersed, non-stromatic, obpyriform, ostiolate, $530-865 \times 380-530 \mu$, short-necked, covered with a thick, loose, yellow-green tomentum of flexuous, ramified, smooth c. 3μ thick hyphae, which on the neck become short, simple, and straight, with obtuse, often inflated tips. *Peridium* pseudo-parenchymatous, membranaceous, semi-transparent, yellowish to ochraceous, except in the brown, opaque neck, sometimes with scattered, small, brown patches in the upper

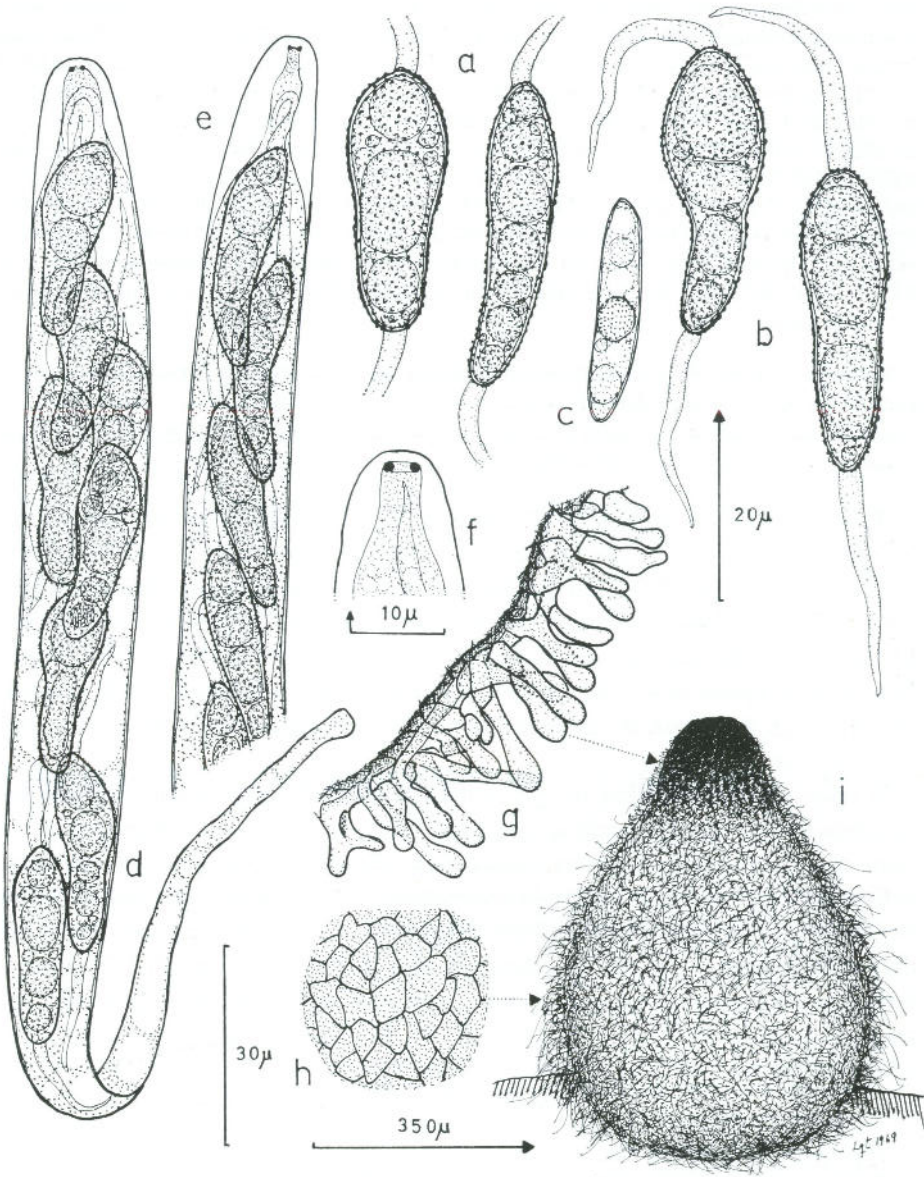


Fig. 14. *Cercophora citrinella*. *a, c, e, f, i*: Holotype (UPS). *b, d, g, h*: Lqt 3008-d (UPS). Drawn from specimens in lactic blue, *a, b*: Mature, hyaline spores. *c*: Immature, hyaline spore. *d, e*: Mature asci and spores. *f*: Ascus tip. *g*: Tomentum in lateral view. *h*: Peridium in horizontal view. *i*: Perithecium.

part, 3-layered, with angular, thin-walled, 6–10 μ large outer cells; middle layer composed of tangentially flattened cells. Perithecial contents faintly yellow. *Paraphyses* longer than the asci and mixed with them, simple, filiform. *Asci* 8-spored, 200–250 \times 12–21 μ , cylindrical to subclavate, with a moderately long stipe, truncate at the apex, non-amyloid, unitunicate, costate after dehiscence; apical ring slightly thickened, c. 2 μ in diam., simple, rounded in cross-section; subapical globulus indistinct or lacking. *Spores* obliquely uniseriate to biseriate, one-celled, hyaline, at first cylindrical to narrowly fusiform, at maturity clavate with a conical apex, verruculose, 26–36 \times 6–10 μ , symmetrical or somewhat inequilateral, filled with one series of 3–7 large oil drops; no septa or pigmentation observed. A lash-like, solid, persistent *gelatinous cauda*, 20–28 \times 3–3.5 μ , attached to each end of the spore. Phialides with microconidia present. — Fimicolous.

Holotype on horse dung from Hallavadet, Magra par., Västergötland, Sweden, 6.viii.1961, Lqt 3131-e (UPS); isotype slide in TRTC.

PARATYPES: Sweden: Öl, Resmo (ha) 1968, S 19619-q (UPS slide) — *Gtl*, Klinte, Mt. Klinteberget (r) 1961, Lqt 3008-d (IMI slide, UPS).

The spore ornamentation in *C. citrinella* and the related *C. sulphurea* is no isolated phenomenon in the *Sordariaceae* s.lat. In other cases it has been motivated to assign smooth-spored species and such with sculptured spores to different genera, but these characters are not that important in *Cercophora*; the warts in the spores characterize the species only. Verruculose spores are also known from some atypical *Lasiosphaeriae*, for instance *L. gibberosa* Munk and *L. punctata* Munk, which, however, do not seem to be closely related to *C. citrinella* because of other features.

It must be admitted that the taxonomic position of and relationships between *C. citrinella* and other tomentose species of *Cercophora* and *Lasiosphaeria* with the same kind of peridium are very complex (p. 73). A yellow or greenish tomentum is found in, for example, *Lasiosphaeria mutabilis* [Pers.] Fuck., *L. chlorina* Rehm ex Theiss., *Cercophora nigropapillata* (Kirschst.), *C. sulphurella* (Sacc.), and the earlier mentioned *C. citrina*, *C. gossypina*, and *C. lanuginosa*, which all, however, have smooth spores. *C. sulphurea* and *C. citrinella* differ mainly in spore size and ecology.

2. *Podosporoideae* Lundq. n. subfam.

Type genus: *Podospora* Ces.

Tripterosporeaceae Cain; for nomenclature, see p. 69.

Perithecia plerumque nonstromatica, ostiolata vel cleistocarpia. *Peridium* 2–5-stratum, pseudoparenchymaticum, interdum partim prosenchymaticum vel fibrosum vel gelatinosum. *Paraphyses* filiformi-ventricosae vel carens. *Asci* unitunicati, non-amyloidei, clavati, saccati vel cylindracei, maturitate tumescentes, raro dissolventes, post dehiscenciam costati; annulus apicalis praesens vel absens; globulus subapicalis carens. *Sporae* 1–4-cellulares, maturitate partim vel omnino pigmentatae, leves, interdum ornamentatae, diversiformes sed numquam