

Short Communication

A new *Cercophora* with a *Chrysosporium*-like anamorph

Seiichi Ueda

Nagasaki Prefectural Institute of Public Health and Environmental Sciences, Nameshi 1-chome, Nagasaki 852, Japan

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A new species of *Cercophora*, isolated from river sediment collected from Sakai River in Nagasaki Prefecture, Japan, is described and illustrated. It is distinguished from the other known species by the morphology of its ascomatal peridium and ascospores, and by its *Chrysosporium*-like anamorph.

Key Words—*Cercophora terricola*; *Chrysosporium*-like anamorph; Japan; river sediment.

During a continuing study of river pollution in Nagasaki Prefecture, Japan, an undescribed species of *Cercophora* Fuckel was isolated from river sediment by the soil plate method. This fungus is characterized by its areolate peridium, long ascospores with a short lower cell and a *Chrysosporium*-like anamorph. On the basis of these characteristics, the fungus is sufficiently different from all described species of *Cercophora* (Lundqvist, 1972; Lundqvist and Fakirova, 1973; von Arx, 1973; Hilber and Hilber, 1979; Hilber et al., 1987; Udagawa and Muroi, 1979; Udagawa and Sugiyama, 1982; Hanlin and Tolerero, 1987) to warrant its description as a new species.

***Cercophora terricola* Ueda, sp. nov.** Figs. 1–7

Coloniae in agar "potato-carrot" celeriter crescentes, planae, tenues, ex mycelio vegetativo submerso constantes, cum pagina hyphis aeriis albis sparsae; perithecia abunde producentia; reversum incoloratum.

Perithecia superficialia vel immersa, dispersa, sine stromate, obpyriformia, 360–560 × 200–320 μm, brunnea vel atrobrunnea, laxe pilosa; pili recti vel flexuosi, rigidi, crassi, aliquantum irregulariter turgidi, usque ad 100 μm longi, prope basin 2–4 μm diam, ad apicem rotundati, interdum ramiformes; collum nigrum, opacum, conicum vel late cylindratum, 95–280 × 120–220 μm, glabrum vel cum pilis brevibus rectis brunneis 20–70 μm longis instructum. Peridium perithecii tenue, circiter 20 μm crassum, areolatum; stratum exterius ex cellulis brunneis 2–4 μm diam compositum; stratum interius ex cellulis hyalinis angularibus compositum. Paraphyses hyalinae, filiformes vel ventricosae, vulgo 4–6 μm diam, septatae. Asci octospori, cylindrati vel clavati, 170–215 × 16–18 μm, apice truncati, ad apicem annulo apicali incrassato, sine globulo subapicali, longe stipitati. Ascosporae 2–3 seriales, primo unicellulares, hyalinae, vermiformes, 42–46 × 5–6 μm, sigmoideae vel geniculatae, leves, deinde transverse uniseptatae et bicellulares, apice utrinque appendice affixae; cellula superior olivaceo-brun-

nea vel fusco-brunnea, ellipsoidea, 20–24(–28) × (7–)8–10 μm, levis, basi truncata, apice conica cum poro germinationis circa 1 μm diam praedita; cellula inferior hyalina, cylindracea, 22–25 × 5–6 μm, prope medium tumens, inferne geniculata; appendices gelatinosae hyalinae, 8–24 × 1.5–2 μm. Anamorphosis adest. Conidia holoblastica, simplicia, solitaria, in hyphis submersis dispersa, hyalina, globosa vel subglobosa, 3–4 μm diam, levia.

Holotypus: NEI 4458, colonia exsiccata in cultura ex sedimento fluvii ad fluminis Sakai, Nagasaki, in Japonia, 4.xii. 1974, a S. Ueda isolata et ea in collectione fungorum, Musei et Instituti Historiae Naturalis Chiba (CBM) conservata.

Etymology: Latin, *terricola* = dwelling on the ground, referring to the habitat.

Colonies on potato-carrot agar growing rapidly, attaining a diam of 8 cm in 7 days at 25°C, plane, thin, vegetative mycelium submerged, loose-textured, with surface developing only sparse prostrate aerial hyphae, white; perithecia not producing within 14 days; reverse uncolored, then becoming Greyish Yellow to Yellowish White (M. 4B4-M. 4A2, after Kornerup and Wanscher, 1978).

Colonies on oatmeal agar spreading broadly, thin, vegetative mycelium rather submerged, floccose to funiculose in appearance, consisting of sparse surface growth of aerial hyphae, at first white, then becoming Light Orange (M. 6A5); perithecia not producing within 14 days; exudate abundant, clear; reverse uncolored, then becoming Light Orange (M. 6A5).

Mycelium consisting of hyaline, branched, septate, smooth-walled hyphae measuring 1.5–9 μm in diam, sometimes forming bundles.

Perithecial initials developing abundantly on oatmeal agar as numerous knots, which are borne laterally along the hyphae, irregularly swollen and entangled on the hypha, then two swellings becoming a coil.

Perithecia superficial to immersed, scattered, non-stromatic, obpyriform, 360–560 × 200–320 μm, brown

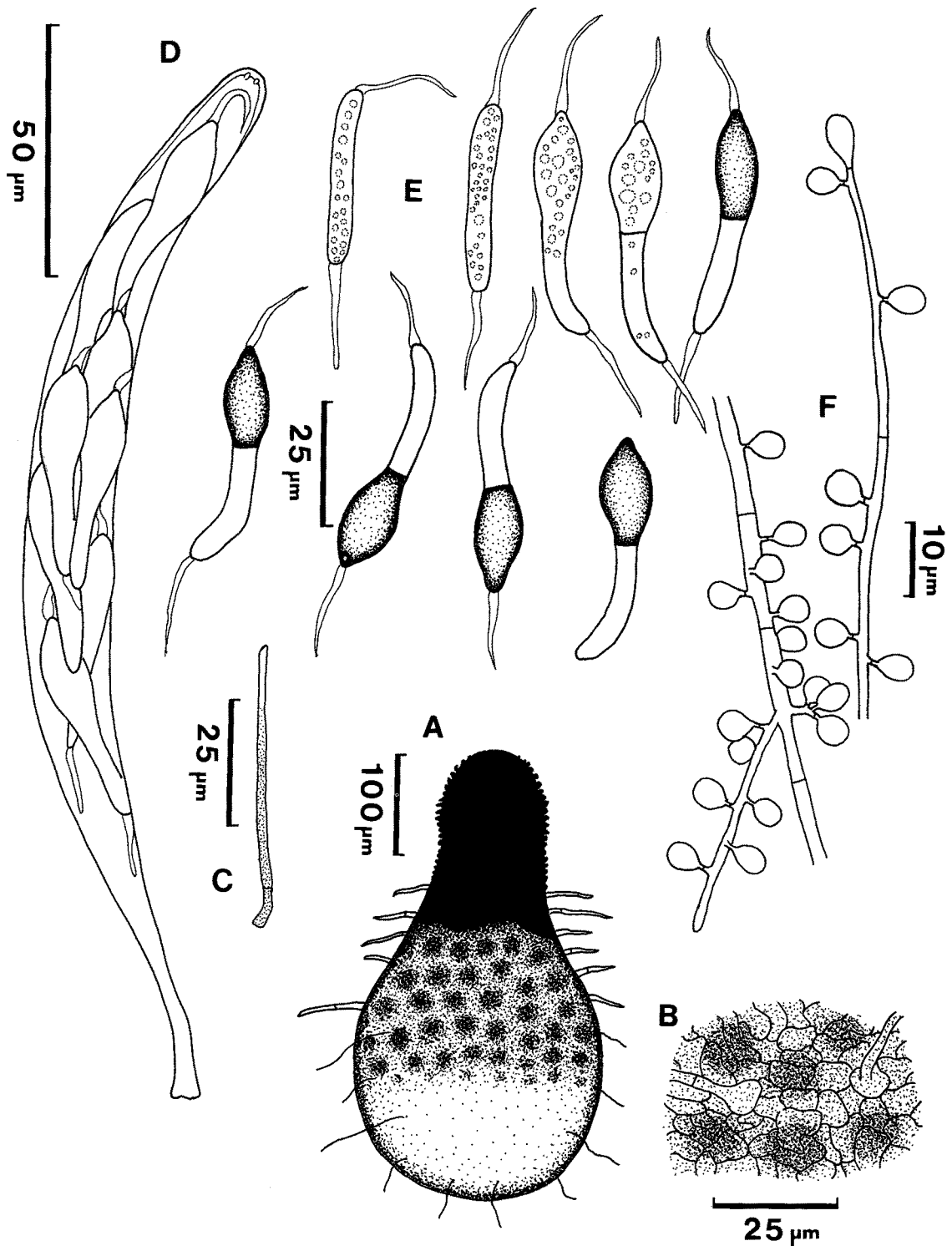
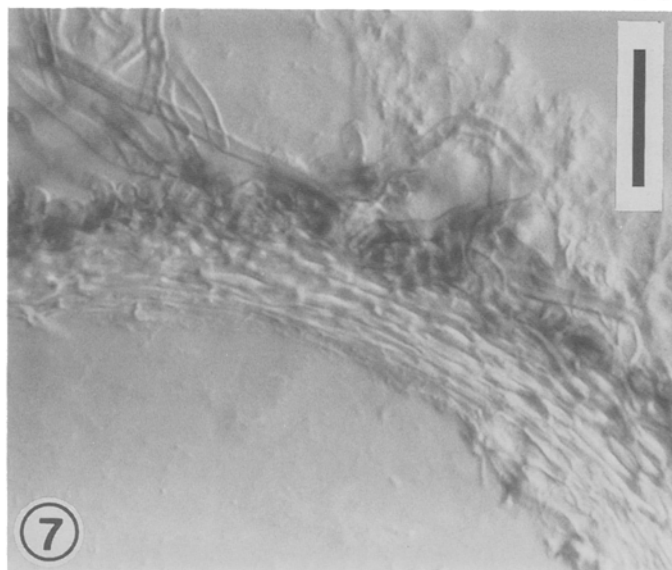
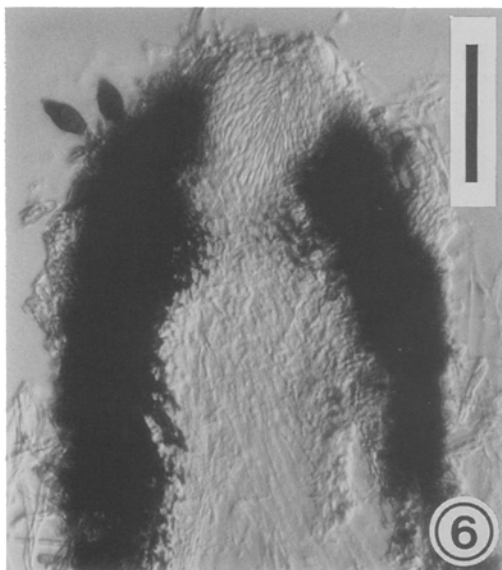
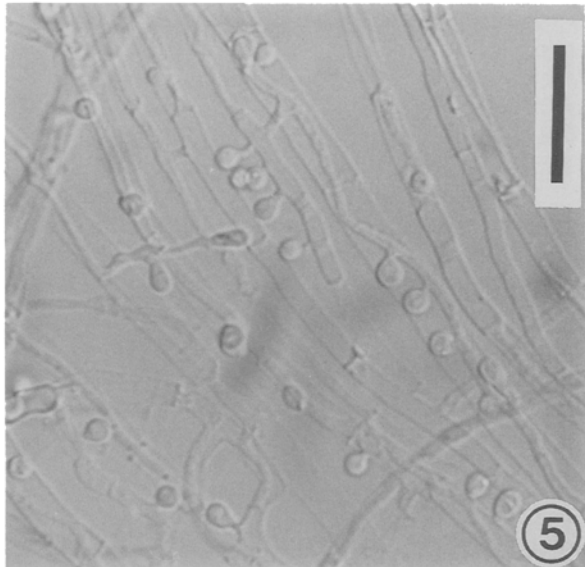
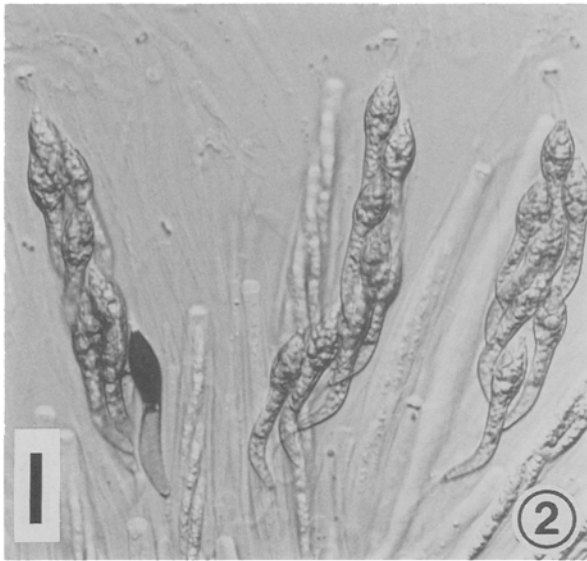


Fig. 1. *Cercophora terricola*, NEI 4458.

A. Perithecium. B. Perithecial peridium. C. Perithecial hair. D. Ascus. E. Ascospores. F. Conidiogenous cells and conidia.

Figs. 2-7. *Cercophora terricola*, NEI 4458.

2. Ascus and ascospores. 3. Apical portion of the ascus. 4. Ascospores. 5. Conidiogenous cells and conidia. 6. Neck of perithecium in vertical section. 7. Section of perithecial peridium. Scale bars=20 µm.



to dark brown, covered below with straight or flexuous, rigid, thick-walled, brown hairs, smooth-walled, sometimes irregularly swollen, up to 100 μm long, 2–4 μm wide near the base, rounded at the tip, sometimes ramified; neck black, opaque, conical to broadly cylindrical, 95–280 \times 120–220 μm , bare or with a few short, straight, brown hairs measuring 20–70 μm long, with an ostiole measuring 80–130 μm in diam, consisting of stout tufts of swollen, obtuse cells, cracking longitudinally when crushed; periphyses numerous, hyaline. Perithecial peridium thin, ca 20 μm thick, areolate, of textura intricata-textura angularis; outer layer consisting of brown, thick-walled cells measuring 2–4 μm in diam; inner layer of hyaline, thin-walled, angular cells. Paraphyses hyaline, filiform or ventricose, slightly longer than asci and mixed with them, usually 4–6 μm wide, septate. Asci 8-spored, cylindrical to clavate, 170–215 \times 16–18 μm , tapering and truncate above, with a thickened apical ring, ca 1.5 μm high and 4 μm in diam, non-amyloid, without a subapical globulus, below with a long stipe measuring 40–50 μm long. Ascospores 2–3 seriate, at first one celled, hyaline, vermiform, 42–46 \times 5–6 μm , sigmoid or geniculate below, smooth, with lash-like gelatinous appendages at both ends, 18–24 \times 1.5–2 μm , then swelling above, becoming transversely uniseptate and two celled; upper cell olive brown to dark brown, ellipsoidal, 20–24(–28) \times (7–)8–10 μm , smooth, truncate at the base, conical at the apex with a subapical germ pore measuring ca 1 μm in diam; lower cell hyaline, cylindrical, 22–25 \times 5–6 μm , slightly swollen near the middle, smooth, geniculate near the lower end, often collapsing at maturity; gelatinous appendages hyaline, lash-like, 8–24 \times 1.5–2 μm , attached symmetrically to both ends of the spore, not swelling in water, comparatively persistent.

Conidia holoblastic, one-celled, mostly solitary, borne on the submerged hyphae terminally or laterally, hyaline, globose to subglobose, 3–4 μm in diam, with a truncate base measuring 1 μm wide and a rounded apex, smooth-walled.

At 37°C, growth is somewhat slower than at 25°C, with aerial hyphae rather abundant, showing floccose.

Habitat: on river sediment.

Specimen examined: NEI 4458, in dried culture isolated from river sediment, Sakai River, Kitataki-gun, Nagasaki Pref., Japan, 4 December 1974, coll. S. Ueda. The holotype has been deposited with the Natural History Museum and Institute, Chiba, Japan.

Cercophora was created by Fuckel in 1870, but Chenantais (1919) established the new genus *Lasiosordaria* and transferred a number of *Cercophora* species to his genus. Müller and von Arx (1973) accepted *Lasiosor-*

daria. However, Lundqvist (1972) revived *Cercophora* to accommodate non-stromatic members of *Bombardia* (Fr.) Karst. on the basis of perithecial characteristics, and kept the name of *Bombardia* for stromatic ones. From an ecological viewpoint, *Cercophora* species have been classified into three groups with respect to their habitation (i. e. coprophilous, lignicolous, and terricolous), though they have rarely been found in soils. This fungus is the third terricolous species and close to *C. silvatica* Lundq., but distinguished from it in having larger ascospores with a shorter hyaline cell. The measurements of ascospores of *C. silvatica* are 14–18 \times 7–9 μm , and those of their hyaline cells are 27–36 \times 3 μm . In addition, some members of *Cercophora* have a phialoconidium anamorph, but this fungus has the aleurioconidium one, apart from any of the hitherto described species.

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