

Notes on Japanese Myxomycetes (V)*—A New Species of *Diachea* Found on Moss Covering an Old Concrete Wall

Yukinori Yamamoto

1010–53, Ohtsu-ko, Kochi-shi, 781–5102, Japan

Abstract *Diachea muscicola*, a new myxomycete species, was found on moss covering an old concrete wall along the road in Toyama Prefecture, central Japan. This new species is characterized by an orange stalk and spores that are the largest among all known species of *Diachea*.

Key words: *Diachea muscicola*, Japan, myxomycetes, taxonomy.

In Japan, concrete walls are often built along the road to prevent landslides. With time, the walls get covered by moss, on which a large quantity of myxomycetes belonging to the order Physarales grow during and after the rains in summer (June–July) and fall (September–October) (Yamamoto, 2004, 2006). An interesting myxomycete was found on moss covering an old concrete wall during the 2007 annual meeting of the Japanese Society of Myxomycetology held in Toyama Prefecture. Examination revealed that the myxomycete was an undescribed species. Its description and illustration are provided in this paper.

Diachea muscicola Y. Yamam., sp. nov. [Fig. 1]

Sporocarpia gregaria vel aggregata, stipitata, raro subsessilia, usque ad 1.2 mm alta. Sporotheca plerumque globosa, circa 0.5 mm diam., metallica, iridescens, interdum caerulea. Stipes robustus, calcareus, usque ad 2/3 altitudinis sporocarpium metiens, apice usque ad 200 μ m diam., prope basin vulgo valde expansus, supra aurantiacus, in parte inferiore candidus vel pallide aurantiacus, cum crystallis calcis intus et extus. Hypothallus calcareus, aurantiacus vel candidus. Peridium gracile, membranaceum, paene hyalinum. Dehiscencia irregularis superne.

Columella elongationem stipitis formans, usque ad 1/2 altitudinis sporothecae attingens, paene conica, aurantiaca versus aurantiaculosa. Capillitium e columella radians, divisum dichotome et anastomosans, reticulum incompletum formans, fuscum, cum extremis multis acutis. Sporae globosae, interdum ellipsoideae, 17.9–20.8 μ m diam. ubi globosae, paene atrae luce reflexa, cinereobrunneae luce transmissa, cum area aliquantum pallida, valde et irregulariter verrucosae, verrucae magnae, parvae vel connatae. Plasmodium ignotum. Holotypus: YY-31002 (TNS)

Fructifications sporocarpous, rarely subplasmodiocarpous. Sporocarps gregarious or crowded, stipitate, rarely sessile, up to 1.2 mm tall. Sporotheca nearly globose, ca. 0.5 mm in diameter, metallic, iridescent, sometimes bluish. Stalk robust, calcareous, up to 2/3 the length of sporocarp, up to 200 μ m in diameter at the apex, usually distinctly expanded near the base, orange in the upper part, white or pale orange in the lower part, with lime crystals within and also on the surface. Hypothallus calcareous, orange or white. Peridium thin, membranous, nearly transparent. Dehiscence irregular from above. Columella a continuation of the stalk, up to 1/2 the height of sporotheca, nearly conical, orange to pale orange. Capillitium radiating from the columella, usually divided dichotomously and anastomosed to form an incomplete net, dark brown, with many pointed free ends. Spores globose, sometimes ellip-

* Notes on Japanese Myxomycetes (IV), in *Bulletin of the National Science Museum, Tokyo, Series B*, 26: 107–122, 2000.

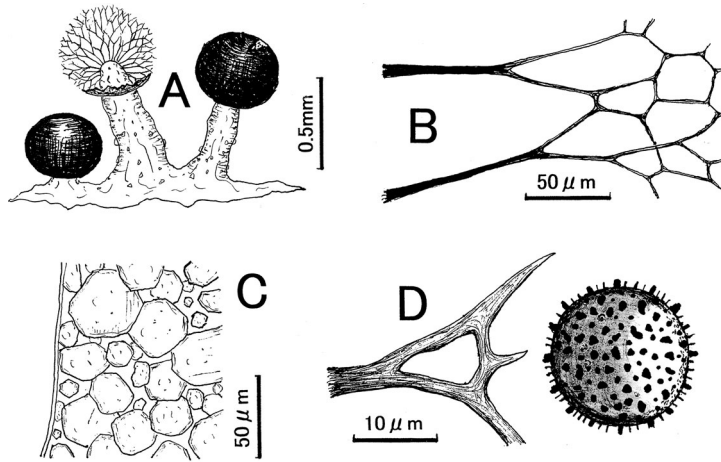


Fig. 1. *Diachea muscicola* (YY-31002). A: Three stalked sporocarps. B: Apical part of capillitium. C: Lime crystals in a stalk. D: Apical part of capillitium and a spore.

soid, 17.9–20.8 μm in diameter (mean = 19.1, sd = 0.77, n = 20) when globose, nearly black in mass, grayish brown by transmitted light, somewhat paler on one side, distinctly and irregularly verrucose. Plasmodium not observed.

Specimens examined: YY-30944 (on moss covering a concrete wall, Shogawa-cho, Tonami-shi, Toyama Pref., Japan, collected by Y. Yamamoto, 28 VII 2007, mixed with *Diderma chondrioderma* and *Diderma rugosum*), and YY-31002 and YY-31003 (on moss covering a concrete wall, Shogawa-cho, Tonami-shi, Toyama Pref., Japan, collected by T. Kimura, 31 VII 2007).

Holotype: YY-31002 in TNS. Isotype: YY-31003.

Etymology: Latin *muscus* + *-cola* (moss + dweller).

Japanese name: Koke-jikuhokori.

This new species is characterized by its orange stalk and spores that are the largest among all known species of the genus *Diachea*. With regard to the orange stalk, it is somewhat similar to *D. arboricola* H. W. Keller et M. Skrabal, *D. megalospora* K. S. Thind and Manocha, *D. silvaeplyualis* M. L. Farr, *D. thomasii* Rex, and *D. verrucospora* Nann-Bremek and Y. Yamam. However, *D. muscicola* differs from the above-mentioned species as follows. In *D. arboricola*, the apex and

base of the capillitium threads are pale and the spores are 11–14.5 μm in diameter (Keller *et al.*, 2004). In *D. megalospora*, the distinctly verrucose spores have a few clusters of small warts and are (12.8–)13–14(–16) μm in diameter (Thind and Manocha, 1964; Martin and Alexopoulos, 1969). In *D. silvaeplyualis*, the columella reaches to the tip of the sporotheca and its irregularly spinulose spores have denser small warts and are 10–14 μm in diameter (Farr, 1976). In *D. thomasii*, the pale verruculose spores have larger darker clusters of small warts and are 11–13 μm in diameter (Rex, 1892; Martin and Alexopoulos, 1969). Further, in *D. verrucospora*, the spores have scattered spines with discoid tips and are 12–17 μm in diameter (Nannenga-Bremekamp and Yamamoto, 1987).

Acknowledgements

My sincere thanks go to Dr. Hiromitsu Hagiwara for reading the manuscript. I am also thankful to Mr. Takahiro Kimura for providing valuable specimens.

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