

A record of *Diachea silvaepluvialis*

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Abstract: *Diachea silvaepluvialis* is said to be a very rare species. This paper reports and illustrates the second record of this species from Australia, from a location about 2500 kilometres away from that of the first record.

Keywords: Australia, *Diachea silvaepluvialis*, suburban garden

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Introduction

Diachea silvaepluvialis was first described from Dominica by Farr (1969), who included two simple drawings with her description. Cavalcanti et al. (2009) provided detailed drawings and black and white macro and micro photographs, Lado et al. (1999) included SEM photographs of spores and lime crystals, and there are colour photographs of fruiting bodies on the Myxotropic website (<https://www.myxotropic.org/>). Stephenson (2021) noted the species as exceedingly rare and known from only a few localities worldwide, and his was the first published report of the species from Australia (but without an illustration), based on a collection from Western Australia. The collection reported herein is from a suburb of Canberra in eastern Australia, about 2500 kilometres away. A search for this species on GBIF (2022) showed that, outside Australia, it is known from the American tropics, Japan, and Liberia (almost all records being from the American tropics), and Farr (1976) mentioned an Indian specimen.

Brief description and collection details

The fruiting bodies are about one millimetre tall, with the orange-brown stalk occupying about half the height. The iridescent sporotheca is globose with a diameter of about half a millimetre. Lime is present only in the stalk, which is densely packed with colourless crystals. The stalk continues as a columella that extends to about the middle of the sporotheca. The well-developed capillitium is a dark brown net composed of smooth, brown, threads with numerous sharply pointed free ends. Spores are very dark in mass, paler purple-brown in transmitted light, 10-14 μ , and spinulose (but unevenly so).

Habitat and substrate: In a suburban garden, on the underside of an old fence paling that had been lying on the ground for many years. The paling was weathered but still firm with only a superficial rot at most.

Specimen studied: Australian Capital Territory, Macquarie; 35°15'02" S, 149°03'58" E, 600 m elevation, 15 March 2020, H. Lepp 6358 (deposited at the Australian National Herbarium, Canberra).

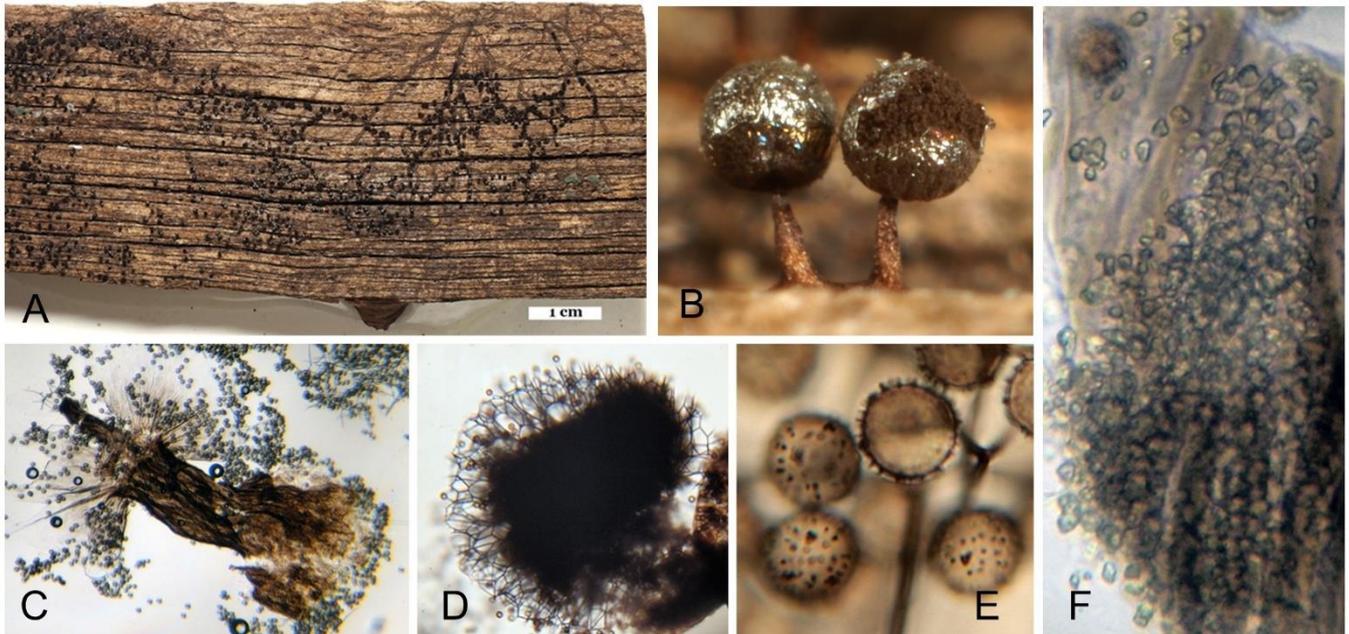


Figure 1. The collection H. Lepp 6358 (A) and detail of two fruiting bodies (B). Squash mount (C) showing the stalk/columella. About a third of the way in from the left there is a small portion of the basal part of the peridium as a collar-like structure, with the columella extending a little towards the upper left. The capillitium is densely packed with spores (D), which are unevenly ornamented (E) and the stalk is densely packed with lime crystals (F).

Observations

The fence paling was in a narrow area between a driveway and the fence between yards of contiguous houses. The paling was sitting with a jumble of cut branches on a bed of leaf litter and woodchips. The area has no overhead tree or shrub cover and gets many hours of sunlight, especially during summer. However, the leaf litter/woodchip bed is well shaded by the jumbled branches, with slow evaporative water loss from the bed after rain. Hence that bed helps maintain a humid microhabitat below the jumble, except during extended dry periods. Canberra has a temperate climate. Temperatures are generally in the range 0-30°C although in most years there are some days a few degrees below zero and summer temperatures may at times exceed 35°C. Annual rainfall is usually between 550 and 600 millimetres.

Stephenson (2021) indicated that the brown to orange stalk is enough to distinguish this from other Australian species of *Diachea*. Farr (1969) noted two other species of *Diachea* with orange stalks—*D. thomasi* and *D. megalospora*—each with colored lime crystals. The only other species with a similarly coloured stalk appears to be *D. arboricola* (Keller *et al.* 2004) in which the spores are uniformly spinose

and the threads of the capillitium arise primarily from the tip of the columella. In the other species the capillitium arises throughout the length of the columella.

Acknowledgements

I studied this collection using the facilities at the Australian National Botanic Gardens (ANBG). Although messages may be left for me via the email address of an ANBG employee, I am not an employee of the ANBG, and my comments or opinions need not be endorsed by the ANBG. I thank Steve Stephenson for looking at the photographs I had sent him when I wondered if I had really found such a rarely seen species in my garden.

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