



A new record of the genus *Calonema*, with the new species *Calonema gansuence* from China

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Abstract

The genus *Calonema* is recorded from China for the first time as the new species *Calonema gansuence*, described on the basis of material collected from Qilian Mountain, Gansu Province, China. This new species is characterized by its brick brown sporocarps, relatively thick peridium and spores (about 9–12 µm in diam.) marked with rows of warts. A description, scanning electron micrographs and a key to all of the species in the genus *Calonema* are provided herein. Holotype specimens are deposited in the Herbarium of the Mycological Institute of Jilin Agricultural University (HMJAU), Changchun, China.

Key words: Myxogastrids, SEM, slime molds, taxonomy

Introduction

Myxomycetes are common inhabitants of decaying plant material throughout the world. They are particularly abundant in forested regions where decaying logs, stumps, and dead leaves provide a plentiful supply of potential substrates (Eliasson 2013; Rollins 2013, Stephenson & Stempen 1994). This taxonomic group of organisms consists of more than 900 species worldwide (Li & Li 1989; Kirk *et al.* 2008).

The genus *Calonema* was established by Morgan in 1893, and five species—*Calonema aureum* Morgan, *C. foliicola* Estrada, J. M. Ramirez & Lado, *C. cornuvioides* Chassain & Nann.-Bremek., *C. dissipatum* Nann.-Bremek. and *C. gesinkii* Nann.-Bremek.—are currently known (Kirk *et al.* 2008; Lado 2005–2013). While not previously reported from China, sporocarps of a member of the genus *Calonema* were found on the bark surface of a dead log in Gansu Province, China, in August 2012. This specimen is morphologically different from all other members of this genus and is described herein as a species new to science.

Materials & methods

Sporocarps and the microscopic structures that make them up were examined by light and scanning electron microscopy (Martin & Alexopoulos 1969, Zhang & Li 2013). Permanent slides were prepared with Hoyer's reagent (Martin & Alexopoulos 1969). Slide mounts were made according to Robbrecht (1974) by spreading portions of the capillitium in a drop of 94% alcohol, determining the colour after one minute, and then adding Hoyer's reagent. Colour terms are given according to the Flora of British Fungi (Royal Botanic Garden Edinburgh 1969).

More than ten sporocarps were observed under a stereomicroscope (20×) and more than 20 spores under an optical microscope (100×). The sporocarps, portions of the capillitium, and spores were measured with the use of a Nikon DM1000 microscope and photographed with a Canon G15 camera. For ultrastructural observations, the sporocarps were attached to a mounting block, coated with gold using a Hitachi E-1010 sputter, and examined with a Hitachi S-4800 scanning electron microscope at 10 kV at the Changchun Institute of Applied Chemistry, Chinese Academy of Sciences. The specimens were deposited in the Herbarium of the Mycological Institute, Jilin Agricultural University (HMJAU).