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A new felt scale genus *Macroporicoccus* gen. n. (Hemiptera: Coccoidea: Eriococcidae) from China, with a redescription of *Macroporicoccus ulmi* (Tang & Hao) comb. n.

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Abstract

The Chinese species *Cryptococcus ulmi* Tang & Hao is found to be distantly related to other sampled *Cryptococcus* species based on both molecular and morphological study. A new felt scale genus, *Macroporicoccus* Nan & Wu gen. n., is erected therefore for *C. ulmi*. The new genus differs from other eriococcid genera due to the presence of large simple pores, here referred to as macrodisc pores. The adult female of *Macroporicoccus ulmi* (Tang & Hao) comb. n. is redescribed and illustrated. Some important taxonomic characters are illustrated with SEM photographs.

Key words: *Cryptococcus ulmi*, phylogeny, 18S, 28S, new genus, new combination, SEM

Introduction

Cryptococcus ulmi was originally described and illustrated by Tang and Hao (1995) based on adult female specimens collected from Shanxi Province and Beijing City under the bark of *Ulmus pumila* (Ulmaceae). Wu (2000) described and illustrated the adult male and all immature stages of both sexes and provided a key to all stages. He also briefly reported its biology based on field studies at Taigu County, Shanxi Province, between 1996 and 1998 and added a new host plant, *Syringa oblata* (Oleaceae). Gwiazdowski *et al.* (2006) used 18S ribosomal DNA sequences to investigate the phylogenetic relationships of *C. fagisuga* Lindinger to other species of *Cryptococcus* and related species in Eriococcidae. They found that *C. ulmi* is only distantly related to the other species of *Cryptococcus* they included (namely *C. nudatus* Brittin, *C. williamsi* Kosztarab & Hale and the type species, *C. fagisuga*, all of which fell within the “Gondwanan” clade of Cook and Gullan (2004)), but they found that *C. ulmi* had close relationships with representatives of Beesoniidae and Stictococcidae, and the eriococcid taxa *Cylindrococcus* spp., *Eriococcus buxi* (Boyer de Fonscolombe) and *E. williamsi* Danzig, all of which formed part of Cook and Gullan’s (2004) “BSE” clade. Our study on the phylogeny of Eriococcidae, using both 18S and 28S rDNA sequences, gave similar results (see below). *C. ulmi* has a unique type of large simple pore present on the dorsum and ventral margin. This pore was noted by Tang and Hao (1995) and was referred to as a macrodisc pore by Wu (2000). This pore has now been studied under SEM and found to be a weakly convex closed pore. Considering the differences between the morphology of the adult females of the other *Cryptococcus* species and *C. ulmi* and, bearing in mind the results of the above-mentioned molecular studies, we consider that *C. ulmi* should be removed from *Cryptococcus*, and a new genus erected. Therefore, here we introduce the new genus *Macroporicoccus* Nan & Wu, with *C. ulmi* as the type species. The adult female of *C. ulmi* is redescribed and illustrated, and SEM pictures are presented of some of the more significant characters.

Materials and methods

Morphological work. The specimens examined were either from Beijing Forestry University or were newly