



***Cissococcus* Cockerell (Hemiptera: Coccoidea: Coccidae), a unique gall-inducing soft scale genus on Vitaceae from South Africa, with description of a new species**

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Abstract

The gall-inducing genus *Cissococcus* Cockerell is revised to include two species. The family placement of *Cissococcus* has been uncertain, but characters of the first-instar nymph and adult male clearly show that *Cissococcus* is a soft scale insect (Coccidae) and is therefore the only member of the Coccidae known to induce a complex covering gall. All stages of the type species, *C. fulleri* Cockerell, are described and illustrated, plus the adult and third-instar female and first-instar nymph of a new, closely-related species, *C. braini* Hodgson & Millar **sp. n.** Both species are known only from wild vines in the southeast and *C. fulleri* also in the northeast of South Africa, but each induces a unique gall and each appears to be restricted to a different species of *Rhoicissus* (Vitaceae). The galls of each species are described and figured, and gall induction in the Coccidae is briefly discussed.

Key words: *Rhoicissus*, Eriococcidae, Cissococcinae

Introduction

Scale insects or Coccoidea are sap-sucking insects related to the Psylloidea (jumping plant lice), Aphidoidea (aphids) and Aleyrodoidea (whiteflies). South Africa has a diverse fauna of scale insects with a total of at least 570 described species (data from Ben-Dov *et al.* (2008) modified by records from SANC collated by IMM), comprising five species of Acleridae (Hodgson & Millar, 2002), 16 species of Asterolecaniidae (Giliomee & Kozár, 2008), six species of Cerococcidae, 119 species of Coccidae, three species of Conchaspidae, six species of Dactylopiidae (all introduced), approximately 250 species of Diaspididae, four species of Eriococcidae (three of which are introduced), one species of Halimococcidae, 14 species of Kerriidae, eight species of Lecanodiaspididae, 10 species of Margarodidae, 10 species of Monophlebidae, seven species of Ortheziidae, and 109 species of Pseudococidae (Millar, 2002). Of the above, about 100 species of scale insects have been introduced to South Africa, but recent collections suggest that there are many indigenous species waiting to be described. Native gall-inducing scale insects are rare in South Africa, where the only described species inducing galls are several species of Asterolecaniidae that induce pit galls on their host plants (Giliomee & Kozár, 2008), a diaspidid, *Discodiaspis gallamformans* Ben-Dov, galling the twigs of *Zygophyllum* (Ben-Dov, 1974), the eriococcid *Calyciococcus merwei* Brain that induces complex galls on the leaves of *Apodytes* (Gullan *et al.*, 2006), two species of mealybug, *Diversicrus longulum* De Lotto on *Elytropappus* (De Lotto, 1971) and *Grewiacoccus gregalis* Brain which induces pouch galls on the leaves of *Grewia* (Brain, 1918; De Lotto, 1969), and one species of soft scale, *Cissococcus fulleri* Cockerell (Cockerell, 1902; Hodgson, 1994).

Cissococcus fulleri is unusual in that it induces large, woody covered galls on wild vines of the genus *Rhoicissus* (Vitaceae), and is the only soft scale worldwide definitely known to induce a complex gall that fully covers the