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Nematodes from galls on Myrtaceae. IV. *Fergusobia* from flat leaf galls on *Eucalyptus* and *Corymbia*, with descriptions of two new species

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Abstract

Two new species of *Fergusobia* are described. Both were collected from flat leaf galls from South Australia, one on *Eucalyptus microcarpa* and the other on *E. porosa*. *Fergusobia microcarpa* n. sp. Davies is characterised by the combination of a C-shaped parthenogenetic female with a short, broadly rounded conoid tail, an arcuate to open C-shaped infective female with an hemispherical tail tip, and arcuate to J-shaped males with angular spicules and short peloderan bursa. *Fergusobia porosae* n. sp. Davies is similar in having an arcuate to C-shaped parthenogenetic female with a small conoid tail, an almost straight to arcuate infective female with an hemispherical tail tip, and males that are almost straight to barely J-shaped with angular spicules and short peloderan bursa. They differ in that the bodies of parthenogenetic and infective females of *F. microcarpa* n. sp. are more curved than in *F. porosae* n. sp. Other known similar forms of *Fergusobia*/*Fergusonina* galls are outlined and the larval shield morphologies of their associated mutualistic *Fergusonina* fly species are discussed where known. An inventory of all known *Fergusobia*/*Fergusonina* associations from flat leaf galls from *Corymbia* spp. and *Eucalyptus* spp. is presented. Relationships of *Fergusobia* nematodes were inferred from analysis of sequences of 28S rDNA D2/D3 domains and a portion of mitochondrial DNA cytochrome oxidase subunit I (mtCOI). Nematodes from flat leaf galls appeared in two clades.

Key words: *Eucalyptus*, Neotylenchidae, *Fergusonina*, Australia, morphology, taxonomy, DNA sequencing, molecular phylogeny

Introduction

Nematodes of the genus *Fergusobia* (Tylenchida: Neotylenchidae) and flies of the genus *Fergusonina* (Diptera: Fergusoninidae) induce galls of various forms on some Myrtaceae (Currie 1937, Giblin-Davis *et al.* 2004, Taylor 2004, Taylor *et al.* 2005). Host genera for the association include *Eucalyptus*, *Syzygium*, *Melaleuca*, *Angophora*, *Metrosideros*, *Leptospermum*, and *Corymbia* (Currie 1937, Tonnoir 1937, Colbran 1964, Harris 1982, Taylor 2004, Davies & Giblin-Davis 2004, Taylor *et al.* 2005, Taylor *et al.* 2007, Taylor & Davies 2008, R. Adair pers. com.). In general, any one particular *Fergusobia*/*Fergusonina* mutualism produces galls of one morphological form (Giblin-Davis *et al.* 2004b; Davies *et al.* 2010a), although size is variable. *Fergusobia* is a speciose genus, with 23 described species, and many more undescribed species represented in the Waite Insect and Nematode Collection (WINC) (Davies *et al.* 2010a).

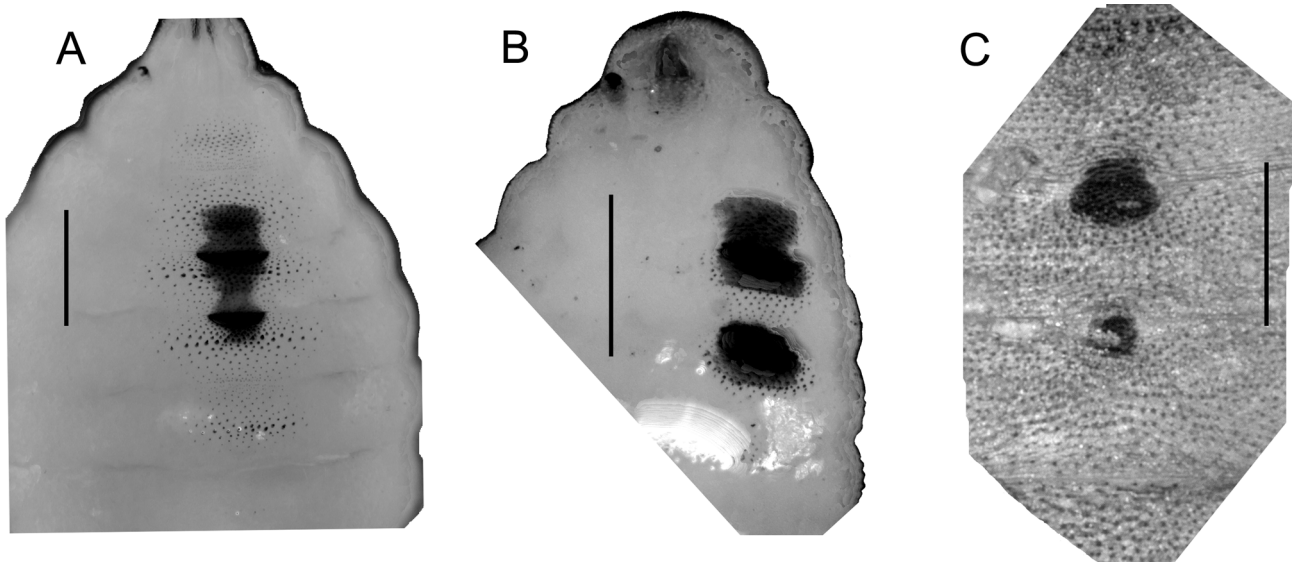


FIGURE 8. Shield forms from L3 larvae of *Fergusonina* spp. from flat leaf galls (automontage images): A, from *E. odorata*; B, from *E. siderophloia*; C, from *E. porosa*. Scale bars = 0.5 mm.

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