

A new *Asca* (Acari: Mesostigmata: Ascidae) from Costa Rica

JENNIFER BEARD^{1,2}, RONALD OCHOA³ & FERNANDO E. VEGA^{4*}

¹ Queensland Museum, P.O. Box 3300, South Brisbane, 4101, Queensland, Australia

² Department of Entomology, University of Maryland, College Park, MD 20742, USA

³ Systematic Entomology Laboratory, U.S. Department of Agriculture, Agricultural Research Service, Bldg 005, BARC West, Beltsville, MD 20705, USA

^{4*} Sustainable Perennial Crops Laboratory, U. S. Department of Agriculture, Agricultural Research Service, Bldg 001, BARC West, Beltsville, MD 20705, USA. E-mail: Fernando.Vega@ars.usda.gov

Abstract

Asca nelsoni sp. nov. is described from Costa Rica, from within domatia on leaves of coffee plants, *Coffea arabica* L. (Rubiaceae), and compared with morphologically similar species *A. brachychaeta* Hurlbutt, *A. citri* Hurlbutt and *A. elongata* (Berlese).

Key words: arboreal predator, *Asca*, Ascidae, coffee, domatia, fungal spores, Rubiaceae

Introduction

A new species of *Asca* von Heyden (Acari: Mesostigmata: Ascidae) was discovered during a survey of mites occurring in the domatia of *Coffea* species at the International Coffee Germplasm Center of the Centro Agronómico Tropical de Investigación y Enseñanza (CATIE) in Turrialba, Costa Rica (Vega *et al.* 2007). Members of this genus are predatory on other mites (Moutia 1958), eggs of insects (Moussa 1956), nematodes and other arthropods (Walter 1988; Epsky *et al.* 1988), and Collembola (Karg 1961; Hurlbutt 1963). They have been reported on the leaf domatia of several plants (Walter & O'Dowd 1992; Walter 1996), as inhabitants of the phylloplane (Walter *et al.* 1993), in bark beetle galleries (Stone & Simpson 1991), termite's and bird's nests (Ryke 1961), soil and moss (Ryke 1961), etc. Species of *Asca* are often abundant on the leaves of trees and lianas in subtropical to tropical rainforests, and several members of the genus truly prefer arboreal habitats (Walter *et al.* 1993; Lindquist *et al.* 2009).

One interesting aspect of the new species from the coffee domatia is the presence of germinated fungal spores on its cuticle (Vega *et al.* 2007). We have found no other reports of fungal spores on the body of other *Asca* species, although these have been reported on several other mites, including species of Tarsonemidae, e.g., *Daidalotarsonemus deleoni* (Smiley), *Fungitarsonemus lodici* (DeLeon), *F. peregrinus* (Beer), *Tarsonemus floridanus* (Attiah), *T. scaurus* Ewing, *T. solengrandis* Ochoa, and *Xenotarsonemus vargasi* Ochoa (Ochoa *et al.* 1991). We hereby present a description for the new *Asca* species, *A. nelsoni*.

Material and methods

Measurements in micrometres (μm) were made from specimens flattened on microscope slides using a stage-calibrated ocular micrometer, and are presented in parentheses as ranges (minimum to