



***Contarinia manii* sp. n. (Diptera, Cecidomyiidae): inducer of a remarkable gall on *Acacia ferruginea* in southern India**

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Abstract

Contarinia manii (Diptera: Cecidomyiidae) is described as a new species, on the basis of adults reared from remarkable 'cylinder-piston' galls formed from contiguous leaflets of *Acacia ferruginea* D.C. in southern India. These galls have been known since 1952 but adults were not reared until 2007. The new species, and another Indian species, *Contarinia ramachandrani* (Mani), induce similar but distinct galls on the same host plant. A third species, *Contarinia carolinae* Gagné, induces leaf galls on *Acacia senegal* in Kenya. Comparison of adult, pupal and larval morphology indicate that these three species may represent a monophyletic group associated with complex leaf galls on *Acacia*, in East Africa and India.

Key words: Cecidomyiidae, *Contarinia*, *Acacia*, India

Introduction

Mani (1973) in *Plant Galls of India*, described two galls on an *Acacia* species collected from Walayar Forest in the Western Ghats of southern India that he had recorded in an earlier paper (Mani, 1953). Both galls are remarkable because of the unusual way in which they develop. Each gall is formed from two contiguous leaflets. The upper leaflet forms a solid, cylindrical protrusion of tissue into a cavity formed by the lower leaflet and a single gall midge larva develops within the cavity (Figs. 1 and 2). The galls of both species may develop in continuous interlocked series so that single leaflets provide both the upper and lower sections of the galls (Fig. 3). Mani recorded and illustrated the first of these as the 'cylinder-piston' gall no. 453, attributed to *Lobopteromyia* sp., and the second as the 'barrel-shaped' or 'hourglass-shaped' gall no. 456, attributed to *Lobopteromyia ramachandrani* Mani, a species that he had described and named, based on a single reared male (Mani, 1953). The development of the galls of the two species was later studied by Rohfritsch (1971, 1973 and 1974) and she provided detailed accounts of the morphology, anatomy and development of the two different galls. *Lobopteromyia* Felt is a monotypic North American genus and the Indian species were reassigned to *Contarinia* Rondani by Gagné (1973).

Mani did not have reared adults from the 'cylinder-piston' gall, and therefore refrained from formally describing the species, but in 2007 adults were reared by Dr Saminathan Amerjothy, Dean of Science, Department of Plant Biology and Plant Biotechnology, Presidency College, Chennai, India. This makes it possible to describe and name the species and to place it provisionally in *Contarinia*.

Material and methods

Adults were reared from galls collected in India in 2007. They were preserved in 70% ethanol soon after emergence and were examined in the UK during 2008-2009. Some specimens were cleared in a saturated solution of phenol in 70% propanol for examination and photography using a Zeiss GFL bright-field and phase-contrast microscope. Temporary slides were made using Hoyer's medium and permanent slides were