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Flea weevils of the genus *Synorchestes* Voss (Coleoptera, Curculionidae, Curculioninae, Rhamphini), with description of a second species from India

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Abstract

A second species of *Synorchestes* Voss, *S. indicus* **sp. nov.** is described from India. The species is a gall maker on *Persea bombycina* (King ex Hook.f) Kosterm. (Lauraceae), a very unusual habit among Rhamphini reported here for the first time. *Synorchestes grisescens* Voss genitalia is illustrated and a key to the two species is provided.

Key words: taxonomy, new taxa, Rhamphini, India, gall-maker, Lauraceae

Introduction

Flea weevils of the Rhamphina (Curculioninae: Rhamphini) are a peculiar small group, characterized by their hind femora being swollen and modified for jumping. A total of eight genera are known from the Oriental Region (Alonso-Zarazaga & Lyal, 1999), and a cladistic analysis of the genera was conducted by Kojima & Morimoto (1996).

Synorchestes is presently a monotypic genus known from China (Fukien) and Taiwan (Voss, 1958; Morimoto & Miyakawa, 1996). According to their analysis, *Synorchestes* is sister to *Imachra* + *Sphaerorchestes* and constitutes one of the principal clades among the Rhamphina (Kojima & Morimoto, 1996). Until now, no biological information has been available for *Synorchestes* although Kojima (2011) predicted an association with Lauraceae based upon the phylogenetic position he proposed for the genus when he established a new genus, *Megorchestes*, which he thought might be related to *Synorchestes*. Kojima (2011) also predicted a unique larval habit for *Sphaerorchestes*, *Synorchestes* and *Megorchestes*, other than leaf-mining, based upon their spherical and/or convex body form. Such a habit was realized to be true when a second species of *Synorchestes* was discovered from India as a gall-maker of stems of *Persea bombycina* (King ex Hook.f) Kosterm. (Lauraceae). This is the first substantiated gall-making habit reported in this tribe.

Material and methods

All studied specimens were collected by hand picking from *Persea bombycina* (King ex Hook.f) Kosterm. (Lauraceae), at the locality of Jorhat (a district of Assam) India. Methods and morphological terminology follows Kojima (2011). Line diagrams were drawn with a drawing tube attached on a Leica DM 1000, Leica MZ16 A and Nikon Eclipse E200 stereozoom microscope. Photographs were taken with a Leica DFC425 C digital camera attached to a Leica M205 FA stereozoom microscope, and Keyence VHX-1000 digital microscope. Scanning Electron Microscopy (SEM) was done on a Zeiss EVO MA10 and images were taken at 15 kV EHT and 50 Pa. The holotype of the new species described herein and all paratypes are deposited in NPC (National Pusa Collection), Division of Entomology, Indian Agricultural Research Institute, New Delhi, India.