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A new species of *Chaeridiona* Baly (Coleoptera: Chrysomelidae: Cassidinae: Oncocephalini) infesting ginger (*Zingiber officinale* Roscoe) and turmeric (*Curcuma longa* L.) in India and redescription of *Chaeridiona pseudometallica* Basu

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Abstract

Chaeridiona mayuri n. sp. infesting ginger (*Zingiber officinale* Roscoe) and turmeric (*Curcuma longa* L.) in southern India is described and illustrated. *Cheilocostus speciosus* (J. Koenig) C. D. Specht, *Globba sessiliflora* Sims and *Zingiber zerumbet* (L.) Smith are reported as additional host plants. *Chaeridiona pseudometallica* Basu is redescribed and illustrated. A key to the species of Indian *Chaeridiona* is provided.

Key words: taxonomy, insect pest, key, Costaceae, Zingiberaceae

Introduction

Zingiberaceae is considered a ‘spice family’ as it includes many spices and aromatic crops such as ginger, galangal, turmeric, small cardamom, large cardamom, mango ginger, black zedoary, long and round zedoary, Indian arrowroot and grain of paradise. Ginger (*Zingiber officinale* Roscoe) and turmeric (*Curcuma longa* L.), both of South-east Asian origin, are important spices used universally. Ginger, an essential ingredient of cuisine and food processing, is also used in traditional Indian, Chinese and Japanese systems of medicine (Ravindran & Babu 2005). Curcumin, the major active ingredient of turmeric, is a potential anticancer agent, for both chemopreventative and chemotherapeutic purposes and also has antioxidant, anti-inflammatory, anti-atherosclerotic and a variety of other medicinal properties (Aggarwal *et al.* 2007; Beevers & Huang 2011). However, there is also accumulating evidence that curcumin may not be so effective and safe (Burgos-Morón *et al.* 2010). Turmeric is also used as a dye, besides being associated with life and culture in myriad ways (Ravindran 2007). India is the largest producer and consumer of both ginger and turmeric.

Staines (2004) reviewed cassidines, including hispines, associated with Zingiberales. Bhumannavar’s (1991) report of *Gonophora masoni* Baly on uncultivated species of *Curcuma* Roxb. in south Andaman and Reid’s (1998) record of *Anisodera* Chevrolat, *Gonophora* Chevrolat and *Micrispa* Gestro on Zingiberaceae in Java were not cited in the above review. Kumar *et al.* (1994) reviewed insect pests of cultivated ginger and turmeric in India, including five genera of leaf beetles. The Chrysomelidae purported to infest ginger elsewhere are limited to *Pharangispa alpiniae* Samuelson and *P. purpureipennis* Maulik in the Solomon Islands (Devasahayam & Koya 2005), but these were originally described from the non-commercial genera *Alpinia* Roxb. and *Costus* L. Thirteen species belonging to eight genera of Chrysomelidae infest cultivated turmeric worldwide (Devasahayam & Koya 2007). None of the leaf beetles reported on cultivated ginger or turmeric, are hispine Cassidines.

Chaeridiona Baly, 1869, an Oriental genus of hispine Cassidinae, comprises nine described species (Staines 2007). These are wedge shaped, brown to dark red to coppery or metallic green leaf beetles restricted to Commelinaceae and Zingiberaceae (Jolivet 1989; Jolivet & Hawkeswood 1995; Staines 2007). Maulik’s (1937) record of *Chaeridiona metallica* Baly, 1869, on turmeric, *Curcuma*, was the first record of a host plant of the genus. Kalshoven (1957) reported *Chaeridiona metallica* as a leaf miner of *Curcuma* (Staines 2004, Santiago-Blay 2004

Chaeridiona on turmeric in the economic entomology literature and the authors have never come across *Chaeridiona metallica* on cultivated turmeric, instead it was collected on uncultivated wild Zingiberaceae in the jungles of Western Ghats. Obviously, this is the only confirmed report of hispine Cassidinae on ginger. The egg of *Chaeridiona* remains unknown.

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