



INCIDENCE OF MANGO STEM MINER *SPULERINA ISONOMA* (MEYRICK) AND FIRST RECORD OF ITS PARASITOID

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ABSTRACT

Incidence of mango stem miner *Spulerina isonoma* (Meyrick) (Lepidoptera: Gracillariidae), a poorly known pest, is recorded from Tamil Nadu, India. Details on the symptoms of damage and life stages of the pest are given and illustrated. *Chelonus* sp. (Hymenoptera: Braconidae) is recorded as its parasitoid for the first time.

Key words: Mango, stem miner, Lepidoptera, symptoms, diagnosis, life stages, distribution, parasitoid, new record, India

Mango is attacked by over 400 species of insects in India (Tandon and Verghese, 1985; Reddy et al., 2018). Of these, only a few attain pest status and are economically important and several of them are obscure pests. During surveys for pests of mango in Tamil Nadu, the incidence of mango stem miner *Spulerina isonoma* (Meyrick) (= *Acrocercops isonoma* Meyrick) (Lepidoptera: Gracillariidae: Acrocercopinae) was observed on a low to moderate scale on some mango cultivars. This insect was originally described under the genus *Acrocercops* by Meyrick (1916) and *Acrocercops isonoma* Meyrick is listed as its current valid name by LepIndex (Beccaloni et al., 2003), the database hosted by the Natural History Museum, London. In the Global Taxonomic Database of Gracillariidae (De Prins and De Prins, 2020), *Spulerina isonoma* (Meyrick) is cited as its current valid name. It was originally described from “Pusa, Bengal”, and it is also known to occur in Southeast Asia (Malaysia, Thailand) and Australia (Eastern Australia, Northern Territory) (Chin et al., 2010). Incidence of this pest on mango was recorded from Tamil Nadu, India, during 2016-18. A brief account of the symptoms of damage and developmental stages of the pest is given here in view of the rarity of the pest. There is no record of any natural enemies of this pest from India at present. Herein, parasitization by *Chelonus* sp. (Hymenoptera: Braconidae) for the first time on this host.

MATERIALS AND METHODS

The specimens were collected during surveys conducted for pests of mango during 2016-18 in Tamil

Nadu. Lifestages were brought to the laboratory and natural enemies, if any, were documented. Photographs of the symptoms of damage and lifestages were taken with a Nikon D750 DSLR camera and Leica DMC 4500 digital camera attached to Leica M205A stereomicroscope. The adult moths were identified by comparison with the description given by Meyrick (1916).

RESULTS AND DISCUSSION

The pest was found on the mango cultivars Imam Pasand and Totapuri in the research farm of the National Research Centre for Banana, Trichy. The symptoms of damage and the life stages are briefly described and illustrated below. The infested trees can be identified by the presence of characteristic, dirty white or creamy white blisters at the bases of young shoots and emerging flushes of mango (Fig. 1a-d). These blisters (Fig. 1e-g) could be observed on mango stem long after the emergence of adult moths and layers of the blisters peel off easily when disturbed. The original description by Meyrick (1916) indicates it was “bred from larva mining in the leaf of *Mangifera indica*”, but mining on the leaf was not observed in any plants we surveyed.

The larvae are yellowish white and have a distinctive, segmented appearance (Fig. 1h, i). They feed under the epidermis at the bases of young shoots and flushes of mango resulting in the formation of characteristic whitish, papery thin blisters or mines. The larvae remain hidden inside the mines and continue to feed and come out just before pupation. Pupation takes place inside transparent silken cocoons on leaves (Fig. 1j, k),

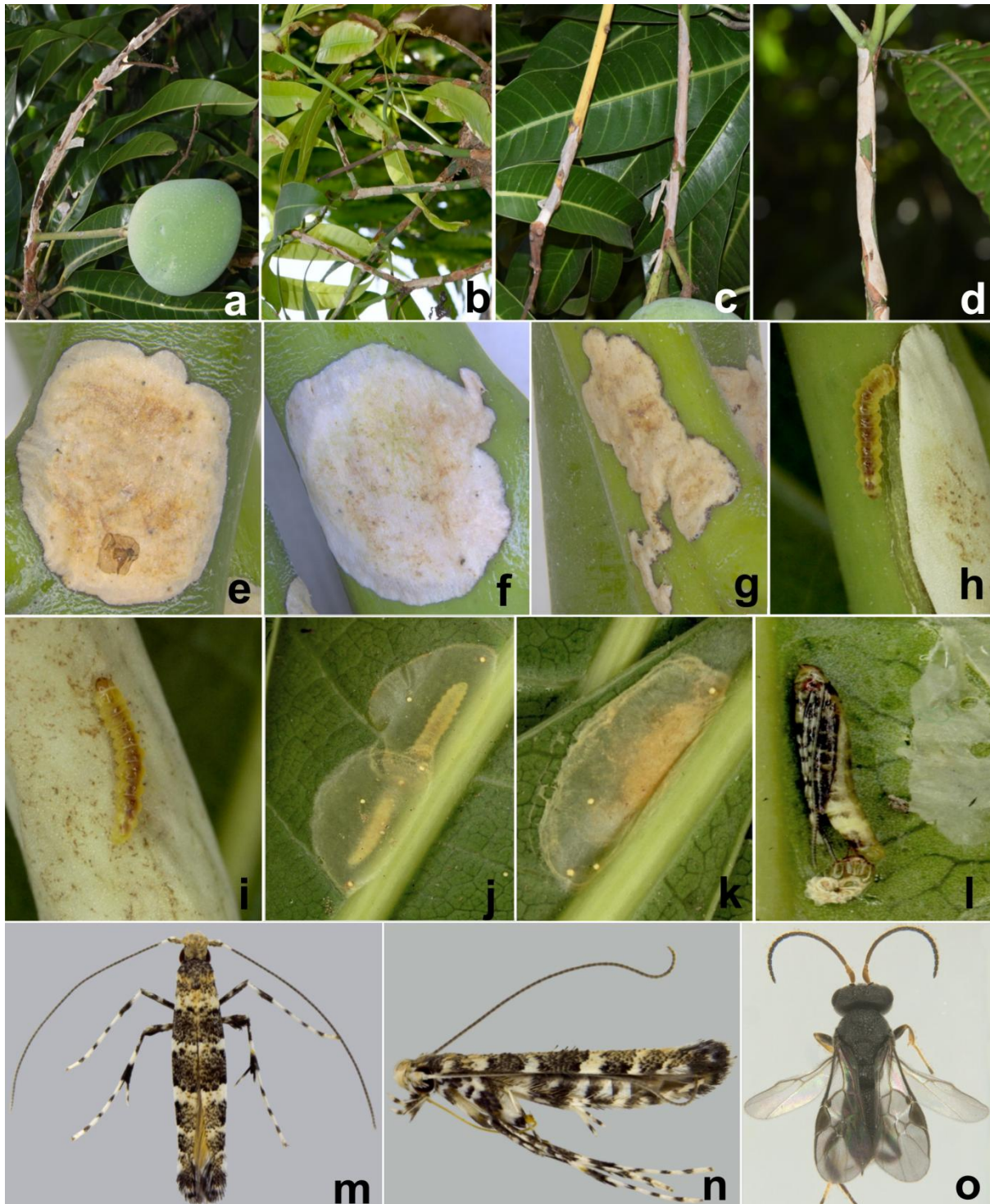


Fig. 1. *Spulerina isonoma*: a-g. Symptoms of damage; h, i. Larva; j, k. Pupation in silken cocoon; l. Pupa, exposed; m. Adult, dorsal view; n. Adult, lateral view; o. *Chelonus* sp., a parasitoid of *S. isonoma*.

usually around the leaf midrib and the pupa (Fig. 1l) is thin, elongate and white with black markings and very long antennae reaching up to the apex. The adult moth (Fig. 1m, n) is narrow and elongate with lanceolate wings. The forewings are covered with brownish scales irrorated with black and have transverse whitish fasciae and a much smaller, crescentic white spot near apex, with elongate, grayish yellow marginal cilia. One egg parasitoid, *Ooencyrtus ooi* Noyes (Hymenoptera: Encyrtidae) has been recorded on this pest in Malaysia (De Prins and De Prins, 2019). Here *Chelonus* sp. (Fig. 1o) (Hymenoptera: Braconidae) is reported as a parasitoid of *S. isonoma* for the first time. The stage of parasitization could not be observed, but *Chelonus* spp. are usually known to be egg-larval parasitoids.

At present, mango is the only known host plant of this insect and very little information is available about it in the Indian literature on mango pests. It does not cause economically significant levels of damage on flowering and fruiting as feeding does not kill the shoots and mango fruit production is unaffected (AGDAWR, 2015). Studies from Thailand do not indicate any adverse effects on mango production (Kuroko and Lewvanich, 1993). Reports from Australia indicate its potential for further spread through propagating material is low to nil as usually the oldest portion of shoots is mined by the larvae and the infestation in the form of papery blisters is easy to detect (AGDAWR, 2015). The absence of published information on this insect from India, its native home, is also indicative of its minor importance as a pest of mango.

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