



## Occurrence of Huang hook moth, *Hyposidra infixaria* Walker (Lepidoptera: Geometridae) in tea plantations of Dooars, West Bengal, India

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Huang hook moth, *Hyposidra infixaria* Walker (Lepidoptera: Geometridae) is common on many plants like guava, coffee, cinnamon and distributed from N.E. Himalaya to Sundaland. It is widespread in Taiwan, Borneo, mainland China, Thailand and Malaysia (Mohn, 1998) but apparently not known to be an important insect pest in these countries. Although *H. infixaria* is not commonly known to be a significant plant pest, its larvae were found to cause minor damage to the leaves of Downy rose myrtle (*Rhodomyrtus tomentosa*) (Winotai *et al.*, 2005). The larvae feed mostly on the leaves of different plants like castor bean (*Ricinus communis*) and pomegranate (*Punica granatum*). The larvae are also found to feed on new leaves of tangerine (*Citrus reticulata*) and on a large variety of other plants including round kumquat (*Fortunella japonica*), elephant ear tree (*Macaranga tanarius*) and coral tree (*Erythrina speciosa*) (Mohn, 1998). It is a lowland forest species, usually associated to forest trees (Holloway, 1993).

Tea plantations of Dooars are located between 26° 44' N to 26° 54' N latitude and 88° 55' E to 89° 28' E longitude at the foot hills of sub-Himalayan West Bengal. The area has an undulating topography with high rainfall (more than 3600 mm per annum) and a temperature range of 10° to 32° C. Owing to its unique soil and climatic conditions, tea is being grown here for more than a century. However, pest problem is one of the limiting factors here in successful tea cultivation. Das (1994) reported the occurrence of eight different species of looper including the tea common looper (*Biston supressaria*) on tea in North east India including Dooars but that did not include *Hyposidra infixaria*.

During 2006-07, a new looper pest was recorded from various tea gardens of Dooars. We found that the species was distributed over the entire region and

damaging the tea bushes severely. The larvae of this species were collected and reared in laboratory under aseptic conditions on tea shoots till pupation and adult emergence. On emergence, some specimens were sent to ZSI, Kolkata for identification. The insect was identified as *Hyposidra infixaria*. Various growth phases are given in Fig. 1.

The morphology of adult moths is in accordance to the description of Holloway (1993). Great variation was noticed in wing colour, ranging from straw to grayish or pale brownish and black (in some moths). Many specimens have a longitudinal sub-costal line in this colour. Fasciation is crisp and linear. The males have bi-pectinate antennae, smaller than the females with a small tuft of hairs at the tip of their abdomen. Wingspan is 44-53 mm in female and 33-38 mm in male. Fully grown larva is speckled brownish grey with transverse rows of whitish dots and is about 50 mm long. These white markings are more prominent in earlier instars.

The adult females lay clusters of bluish green eggs in crevices of the bark of shade trees. After hatching, the young larvae are found to get dispersed by wind with their silken threads and settle on the vegetations including tea. Some are also found to feed on shade trees where they hatched. There are 5 to 6 larval instars and under laboratory condition, total developmental period (oviposition to adult eclosion) ranged from 4-5 weeks in summer and 8-9 weeks in winter. The young larva feeds by making minute holes on tender tea leaves while the grown up larva prefers semi mature to mature leaves. Pupation generally occurs in soil around the collar region of tea bush. However, in old tea sections, lots of pupae were found in the cracks of tea bushes itself.

Besides tea, larvae of *H. infixaria* are found on number of plants in Dooars. Its host range included

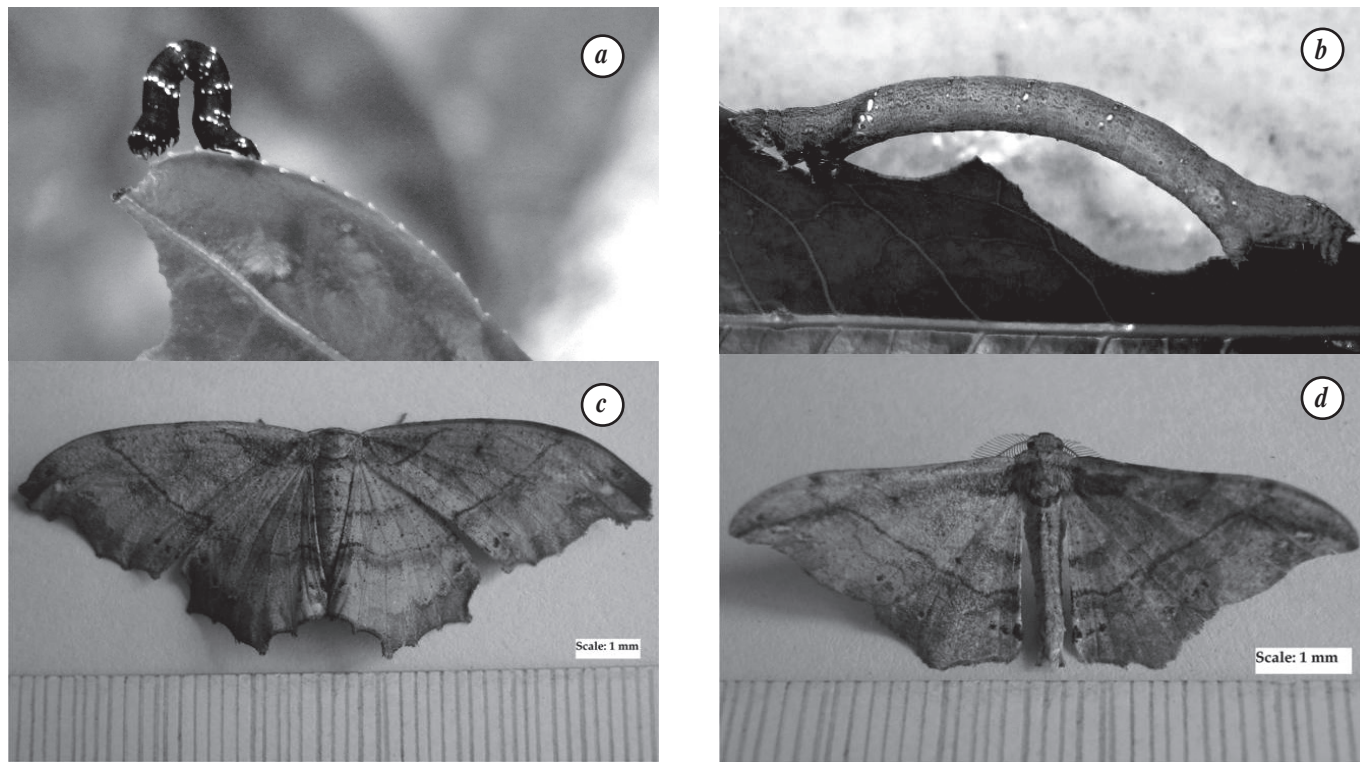


Fig. 1. Growth phases of *H. infixaria*  
 a) Early instar looper, b) Full grown looper, c) Female moth, d) Male moth

*Erechthetes* sp., an un-identified weed species, *Acacia lenticularis*, *Cassia* spp., *Chikrasia tabularis*, *Derris robusta*, *Indigofera teysmanii*, Bodher (?), Jarul (*Lagerstroemia indica*) and *Albizzia* spp. The foliage of different ornamentals and fruit plants like Mussanda, Ixora, Rose, Guava, Pomegranate and Citrus are also found to be infested with this insect.

*Hyposidra talaca*, another species of *Hyposidra*, is also found to be a major defoliating pest of tea in Dooars tea plantations (Basu Majumder and Ghosh, 2004). However, the former is more common in this region and has wider host range. These species together with others are found to cause extensive damage to tea bushes all round the year. During the summer of 2007, an out break of looper was encountered at various tea gardens of Dooars due to some unknown factors. The intensity of the looper infestation was so severe that 100 percent area of some gardens was under its attack and the estimated crop loss was upto 48% (Anonymous, 2008).

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