



A NEW HOST RECORD FOR THE INVASIVE THIRIPS *THRIPS PARVISPINUS* KARNY FROM INDIA

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ABSTRACT

The present study on the diversity of thrips on cotton in Tamil Nadu revealed the occurrence of the invasive species *Thrips parvispinus* Karny during kharif 2019-20. The thrips were found to occur on *Gossypium barbadense* variety Suvin. The diagnostics of this species are illustrated herein. The status of new record is also discussed.

Globalisation and climate change warrant the need to monitor the occurrence of invasive insects in different cropping systems. The present study evaluates the diversity of thrips in cotton and the flowering stage was observed to harbour more thrips, and hence the species diversity was explored in detail. The results including the occurrence of *Thrips parvispinus* Karny are discussed herein.

MATERIALS AND METHODS

The study was done at the farm of ICAR-Central Institute for Cotton Research, Regional Station, Coimbatore, Tamil Nadu (11°N, 77°E and 427.6 masl) during 2019-20 kharif season. Thrips were collected from *Gossypium barbadense* variety Suvin. During flowering stage, ten plants were randomly selected for sampling. From each plant, thrips were collected from five flowers. Sampling repeated for three times at weekly intervals during flowering stage. Collected thrips were stored in 70% alcohol. Among the collected specimens *Thrips parvispinus* Karny were mounted in Canada balsam for permanent preservation and subsequently sorted out and identified using appropriate keys (Mound, 2005).

RESULTS AND DISCUSSION

Among the three thrips species recorded on cotton flowers, *Thrips parvispinus* Karny was also observed along with other common flower thrips *Thrips florum* Schmutz and *Thrips hawaiiensis* (Morgan). This is the first record of *T. parvispinus* on cotton in India. The following features segregate *T. parvispinus* from other known species of the genus *Thrips*, especially which falls within *T. orientalis* group (Fig. 1)- Ocellar setae pair III at the anterior margin of ocellar triangle; postocular setae III shorter than postocular setae I and

IV (Fig. 1F); Metanotum with median reticulations; median setae placed well behind the anterior margin; campaniform sensilla absent (Fig. 1C); First and second veins of fore wing with continuous setal row (Fig. 1I); Posterior margin of abdominal tergite VIII without comb (Fig. 1G); and abdominal sternites III–VI with discal setae, but absent on II and VII (Fig. 1D).

Thrips parvispinus, which is designated as one of the notorious pest species from South East Asia, is a serious pest on numerous agricultural and horticultural crops. *T. parvispinus*, a member of “*Thrips orientalis* group” (Mound, 2005), is a thrips of quarantine importance and has been reported from Thailand to Australia (Mound and Collins, 2000) as a serious pest on innumerable unrelated plant families. It is reported on papaya in Hawaii, greenhouse Gardenia plants in Greece, vegetable crops like chili, green beans, potato, and eggplant from other countries (Murai *et al.* 2009). Occurrence of this species in India has been first reported by Tyagi *et al.* (2015) on papaya from Bangalore. Later, Rachana *et al.* (2018) reported the same on flowers of *Dahlia rosea* in Puttur, Karnataka. This is the first record of *T. parvispinus* on cotton. The presence of this invasive pest on an agriculturally important host plant raises serious concern and is an apprehension for quarantine officials. Earlier reports of this species on different economically important host plants in Karnataka and the current report on an agriculturally important host in Tamil Nadu hint that the pest may be slowly moving across states and measures need to be strengthened so as to prevent the spread of this invasive thrips to other parts of India. Regular monitoring of *T. parvispinus* in other parts of India is also essential as it may attain pest status especially within the territory of our country. Considering the

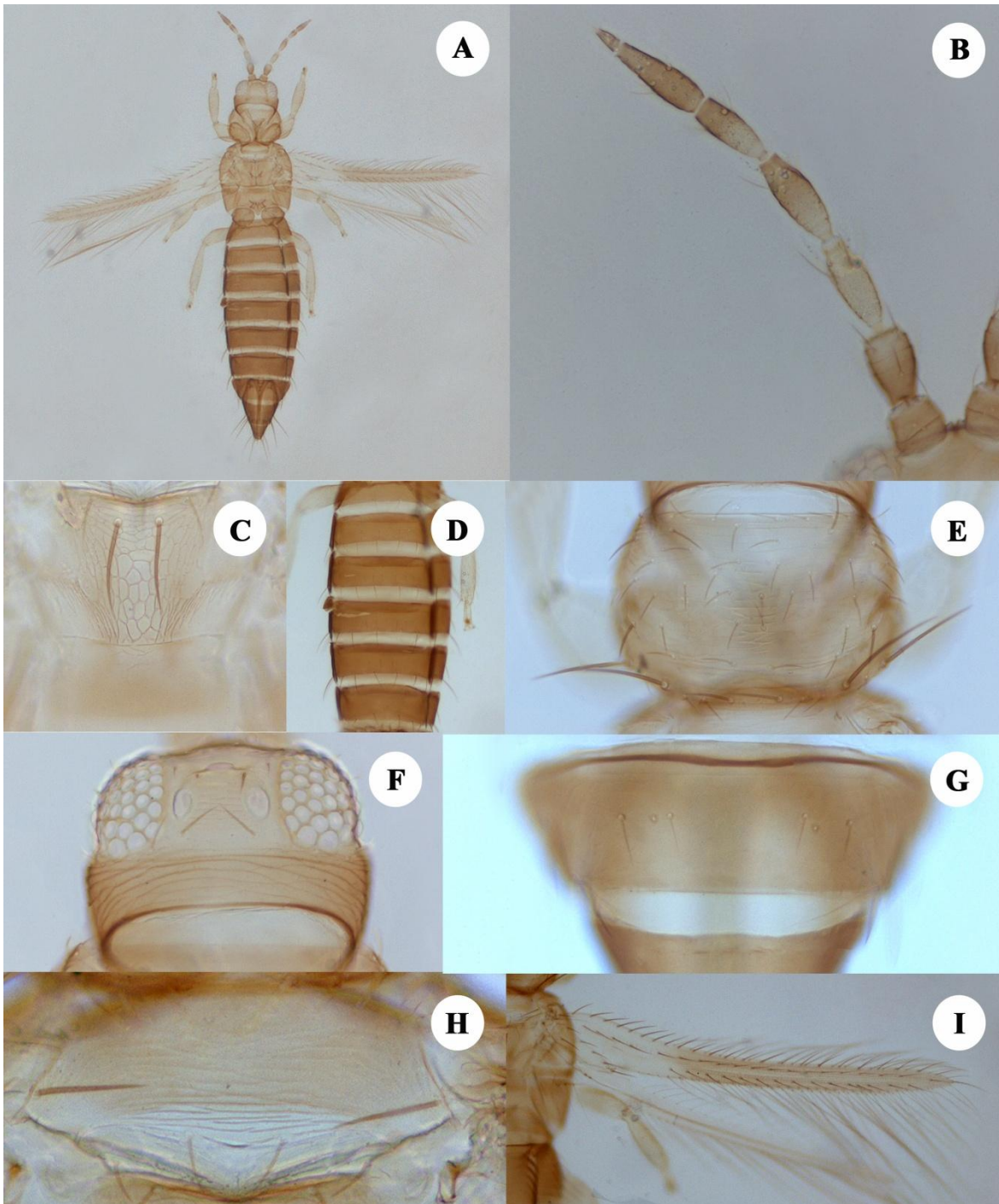


Fig. 1. *Thrips parvispinus*: A. Female; B. Antenna; C. Metanotum; D. Abdominal sternites II-VII; E. Pronotum; F. Head; G. Abdominal tergite VIII; H. Mesonotum; I. Fore wing

polyphagous nature of this thrips species, the chances of spread on economically important crops cannot be ruled out. Since *T. parvispinus* may attain major pest status on cotton, the report demands regular monitoring and surveys for this thrips species on cotton.

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