Frankliniella occidentalis (Pergande) (Thripidae: Thysanoptera) – The silent intruder?

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The Western Flower thrips (WFT), *Frankliniella occidentalis* (Pergande) (Fig. 1 and 3) is highly polyphagous and a major pest of crops worldwide. It is the most destructive pest species in the order Thysanoptera (Mound, 2002) causing direct feeding damage to a wide variety of agricultural and horticultural crops. It is an important vector of tospoviruses causing great economic loss across the world (Rugman-Jones *et al.,* 2010).

Four females of *F. occidentalis* collected on tomato in November 2014 from Bengaluru formed the basis for the first definitive record of this invasive species from India (Tyagi and Kumar, 2015) as the earlier reports of this species from India (Kulkarni, 2010; Kanara and Acharya, 2014) are suspect (EPPO, 2013). Intensive surveys in Bengaluru, from where the first specimens were collected, failed to yield specimens of the WFT, probably because they were stray individuals and not part of a thriving viable population.

In February 2016 however, 9 females and one male of *F. occidentalis* were collected on leaves of *Erythrina indica* from Ooty in the Nilgiris, Western Ghats, South India (Rachana and Varatharajan, 2018). The record of a male, for the first time from India, is significant as it indicates the presence of a breeding population. Males are also known to be more effective vectors of tospoviruses than females.

This alien invasive species is often confused with the native species, *Frankliniella schultzei* (Trybom) (Fig. 2) but can be easily distinguished from the latter by the following character combinations: ocellar setae III on the tangent between the fore and hind ocelli (Fig.5) (ocellar setae III close together between hind ocelli in *schultzei*-Fig. 4), metanotum reticulate with paired campaniform sensilla (Fig. 6) (metanotum irregularly striate without campaniform sensilla in *schultzei*-Fig. 7), postocular setae IV the same length as ocellar setae III (Fig. 5) (postocular setae iv as longas the distance between hind ocelli and shorter than ocellar setae III in *schultzei*-Fig. 4).

The more favourable climatic conditions prevailing in Ooty as compared to that of Bangalore combined with the presence of males indicate that the WFT is likely to have established itself in Ooty. The Nilgiris could now serve as the springboard from where this species could disperse to other parts of the country.

Ornamentals and potato, grown extensively in and around Ooty, are transported to various parts of the country. The Groundnut Bud Necrosis Virus vectored by the WFT poses a threat to potato cultivation in the Nilgiris, and *Xerochrysum bracteatum* (Asteraceae), the common golden everlasting daisy, native to Australia and a host plant of the WFT, is often taken out of Ooty by tourists to other parts of the country. This along with other planting material carried by tourists and farmers could aid in the dispersal of *F. occidentalis* to the temperate regions of north and south India, where it is likely to thrive in the congenial climatic conditions prevalent there. Under these circumstances, it is imperative that the quarantine mechanisms within the country are activated and strengthened to prevent the spread of this notorious pest to the rest of India from the pockets of its occurrence in southern India – particularly the Nilgiris.

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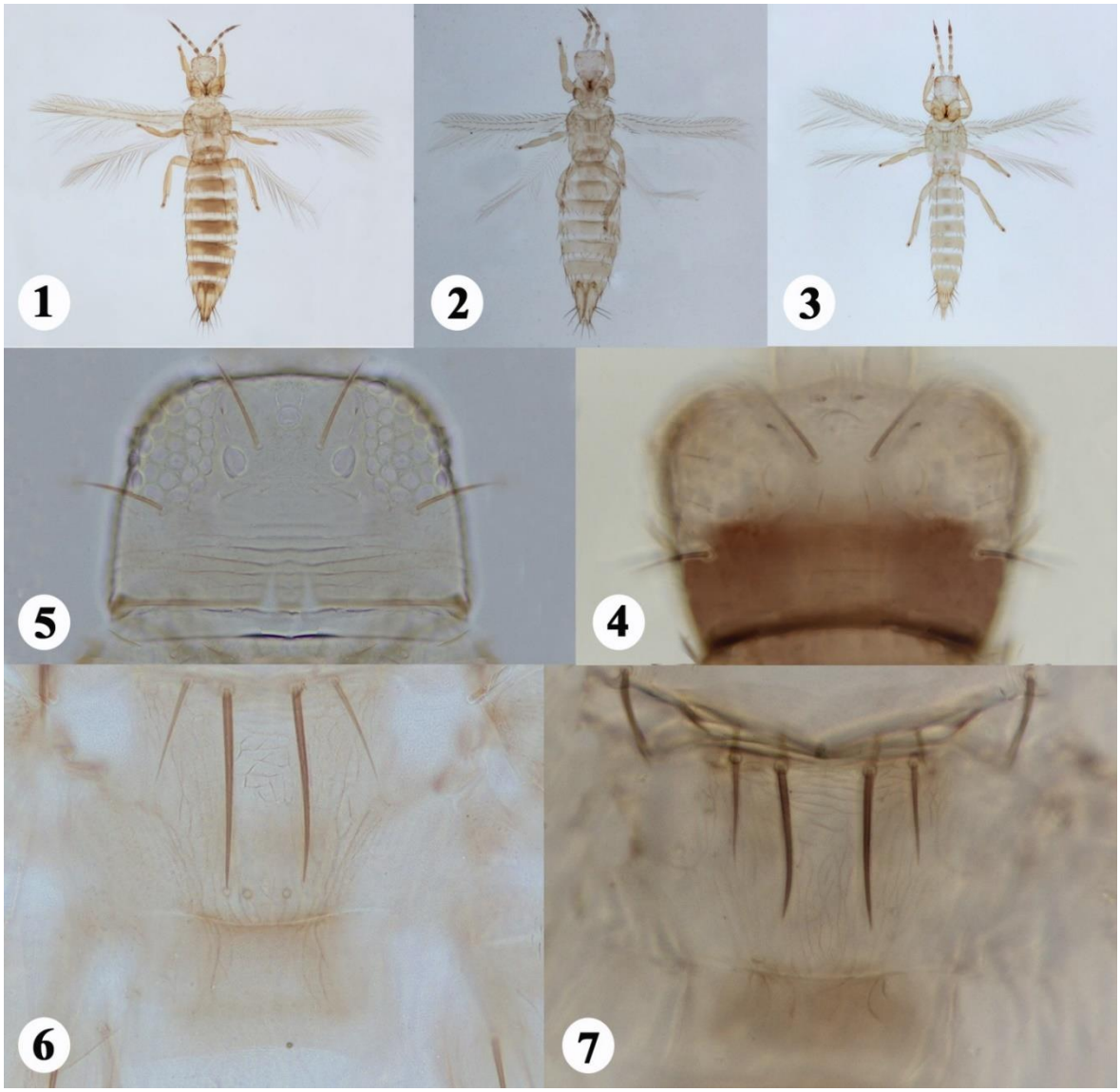

Figures 1–7: 1. Female *Frankliniella occidentalis*; 2. Female *Frankliniella schultzei*; 3. Male *F. occidentalis;* 4. Head of *F. schultzei*; 5. Head of *F. occidentalis;* 6. Metanotum of *F. occidentalis;* 7. Metanotum of *F. schultzei.*