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# A new species of *Frankliniella* with 7-segmented antennae from Mexico (Thysanoptera, Thripinae)

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## Abstract

*Frankliniella veracrucensis* **sp. n.** is described from flowers of *Salvia leucantha* [Lamiaceae] in Veracruz, Mexico. This is the fourth *Frankliniella* species known with seven antennal segments, and a key to the *Frankliniella* species with antennae 7-segmented is provided.

**Key words:** Thrips, *Frankliniella*, *Salvia leucantha*, Central America

## Introduction

*Frankliniella* is a genus of about 230 species, 90% of which are from the Neotropics (ThripsWiki 2016; Mound and Marullo 1996). From Mexico, 52 species have been described, many by Dr. Roberto Johansen (references in ThripsWiki 2016), and it is claimed that there are more than 100 *Frankliniella* species in this megadiverse country (Lindig 2010). Despite this species diversity, the genus is remarkably homogeneous in body form. Mound and Nakahara (1994) listed the diagnostic characters of *Frankliniella*, and they stated that only three species were known with 7-segmented antennae, all the rest having eight segments. One of these three species, *aztecus* from Mexico, had been placed in a separate genus *Bolbothrips*, because the median metanotal setae arise behind the anterior margin of this sclerite (Crawford 1945) in contrast to all species of *Frankliniella*. Despite this, *Bolbothrips* was placed as a synonym of *Frankliniella* by Beshear (1982), who described *Frankliniella georgiensis* from Georgia (USA), with the head similar in shape to *aztecus*, but with ocellar setae III wider apart and the metanotal median setae arising at the anterior margin. The generic synonymy has been maintained by most subsequent workers (Mound & Marullo 1996; Nakahara 1997). One specimen collected during this study in Perote (Veracruz, Mexico) at 2500 m altitude, in flowers of *Juniperus mexicana* (Cupressaceae), has the characters of *aztecus* given by Crawford (1945) also Mound and Marullo (1996). The third species in this group, *F. jamaicensis*, was based on six females from Jamaica and one female from Cuba (Sakimura & O'Neill 1979). This is a yellow species and is a member of the *Frankliniella minuta*-group, in which species have unusually short setae on the head and pronotum. In *jamaicensis* ocellar setae III are far apart on the anterolateral margins of the ocellar triangle. The aim of this paper is to describe a fourth species of *Frankliniella* with 7-segmented antennae, as part of studies on the biodiversity of thrips in tropical Mexico.

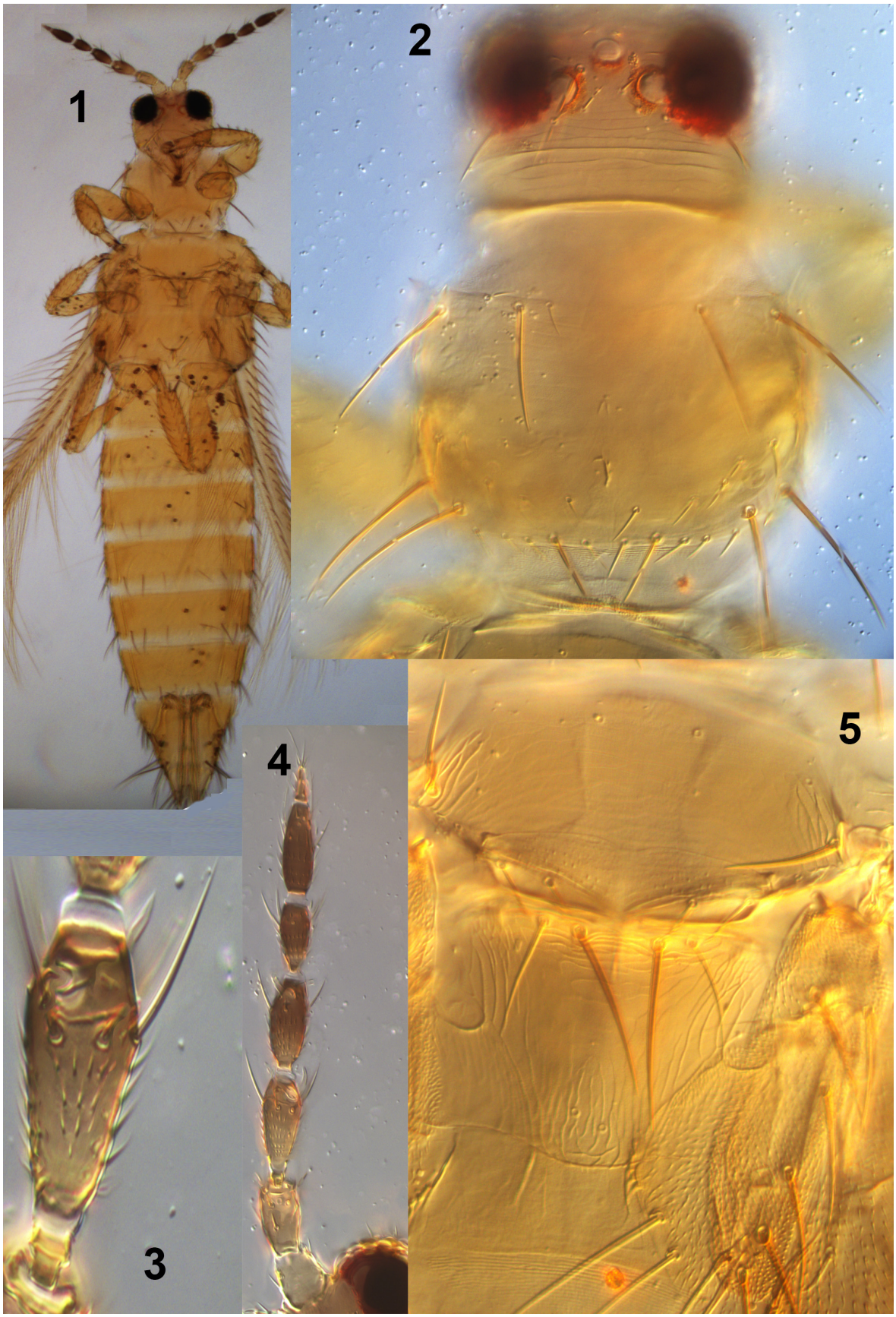
## ***Frankliniella veracrucensis* sp.n.**

(Figs 1–12)

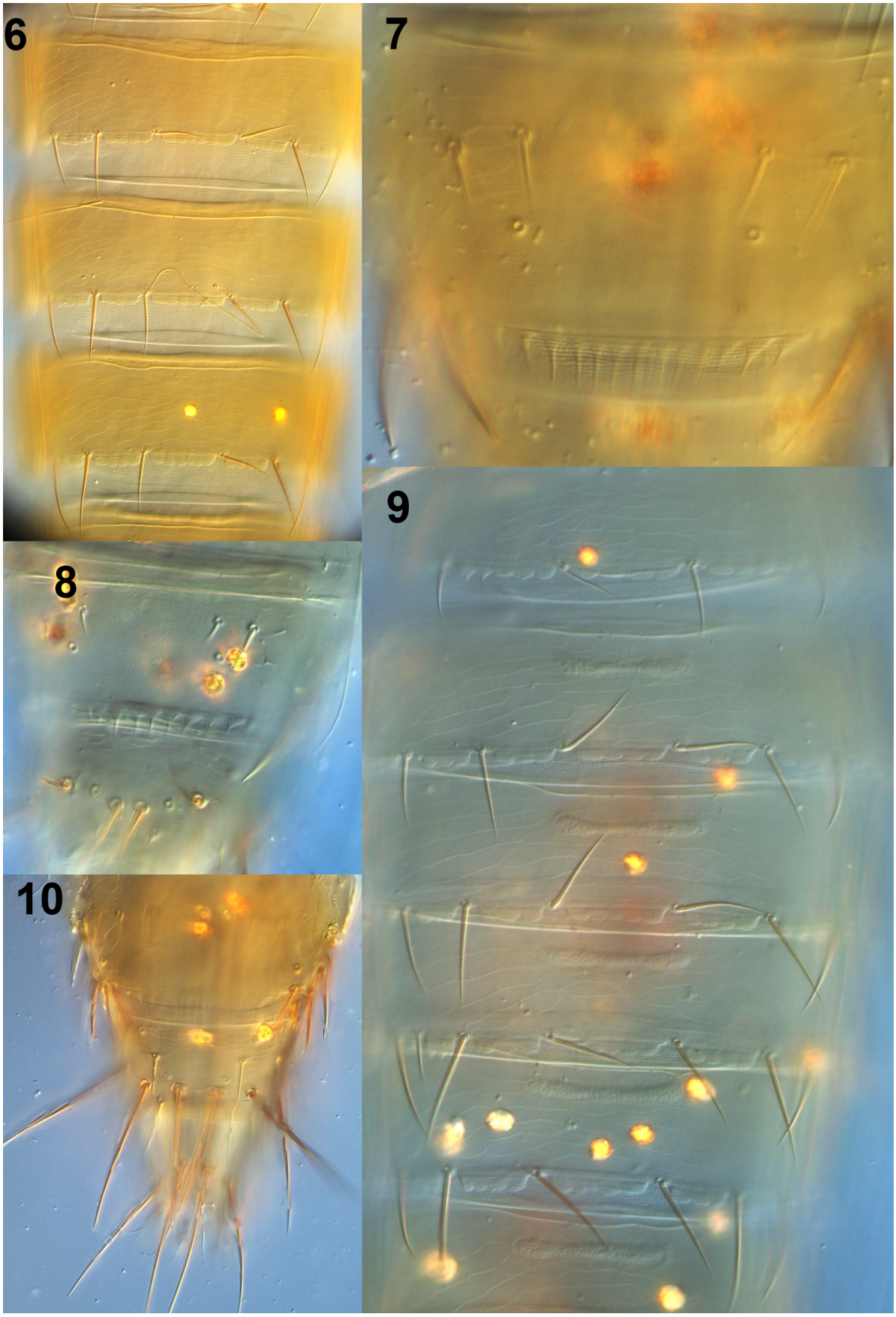
*Female macroptera*. Body colour (after maceration) yellow including legs and tergites (Fig.1). Fore wings weakly shaded brown (Fig.11). Antennal segment I white yellowish, II yellow brownish, remaining segments dark brown, III paler in the middle and basal part, IV–V paler at base (Fig. 4); major setae of head and pronotum dark brown (Fig. 2).

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**FIGURES 1–5**. *Frankliniella veracrucensis*: **1.** Habitus female; **2.** Head and Pronotum female; **3.** Antennal segment III female; **4.** Antenna female; **5.** Mesonotum and metanotum female.




**FIGURES 6–10**. *Frankliniella veracrucensis*: **6.** Sternites female; **7.** Tergite VIII female; **8.** Tergite VIII male; **9.** Sternites male; **10.** Tergites VIII–X female.







**FIGURES 11–12**. *Frankliniella veracrucensis*: **11.** Fore wing female; **12.** Pronotum, mesonotum and metanotum male.

Head (Fig. 2) with ocellar setae III arising between the two parallel tangents of the anterior and posterior ocelli; postocular setae I present, III exceptionally long. Antennal segment III pedicel short but surmounted by an enlarged collar like an inverted cone, scarcely 1.5 times as wide as pedicel (Fig. 3); VI constricted at base. Pronotum with 2 pairs of anteromarginal (am) minor setae. Metanotal campaniform sensilla present (Fig. 5). Fore wing clavus with 5 veinal and 1 discal seta. Tergites with two faint lines of sculpture anteromedially, but none posteromedially; IV with ctenidia well developed; comb on VIII well developed with microtrichia long on triangular bases, median teeth about as long as median setae of tergite VI (Fig. 7); tergite IX setae S1 1.5 time as long as tergite X (Fig. 10).

*Measurements (holotype female in microns).* Body length 1295. Head, length 94; width 141; ocellar setae III 52; postocular setae III45. Pronotum, 127; width 141; major setae, anteromarginal (am) minor 18, am 65, anteroangular (aa) 87, pm I 18, posteromarginal (pm) II 42, pm VI 88, pm VIII 88. Metanotum setae, lateral 43, median 88. Fore wing length 780. Tergite VIII comb median teeth length 13. Tergite IX length 62, setae B1 103. Tergite X, length 60, setae B1 98. Antennal segments I–VII length 27, 37, 54, 36, 32, 45, 17.

*Male macroptera.* Similar to female in colour and structure (Figs. 8 and 12); sternites III–VII each with a long and oval pore plate (Fig. 9).

*Measurements (paratype male in microns)*. Body length 1071. Head, length 95; ocellar setae III 53. Sternite V pore plate length 52, width 7.

**Material studied**. Holotype female, **Mexico**, Veracruz, Coatepec, cloud forest on flowers of *Salvia leucantha*, 12.V.2014 (Arturo Goldarazena) [Institut Royal des sciences naturelles de Belgique, Bruxelles, Belgium IRSNBIG 33.339/001]. Paratypes: 2 females and 3 males collected with holotype [IRSNBIG 33.339/002].

**Comments.** This new species is unique in the combination of the following character states: Body yellow, antennae 7-segmented, ocellar setae III well developed on the anterior margins of the ocellar triangle, pronotum with two pairs of very long setae on anterior margin (anteroangulars and anteromarginals), metanotum with campaniform sensilla, and tergite VIII with complete comb of long microtrichia.

Despite sharing the unusual condition within the genus *Frankliniella* of 7-segmented antennae, there is no evidence that the four species considered here form a single clade. *F. jamaicensis* is particularly distant; it is a member of the *minuta* Group, with the chaetotaxy of the head and pronotum (Sakimura & O'Neill 1979: Fig. 4c) very similar to that of *minuta* (Moulton). The two species, *aztecus* and *georgiensis*, are similar to each other in head shape, but they differ from each other in cephalic and metanotal chaetotaxy, thus are possibly not closely related. If the number of antennal segments is ignored, then the new species described here, *veracrucensis*, is more similar to *F. pasta* and *F. altura* from Costa Rica, according to the descriptions in Mound and Marullo (1996). These *Frankliniella* species with a reduced number of antennal segments have been collected only in the Meso-American and Caribean areas; none have been recorded from the Neotropics despite the richness of the tropical fauna.

### *Frankliniella* species with 7-segmented antennae

1. Body colour brown; metanotal median setae arising behind the anterior margin of this sclerite . . . . . *aztecus*
- Body and legs yellow; metanotal setae arising at anterior margin . . . . . 2
2. Ocellar setae III minute, 8–10 microns long, less than 2.0 times as long as longitudinal diameter of a hind ocelus... *jamaicensis*
- Ocellar setae III more than 36–40 microns long, at least 2.5 times as long as longitudinal diameter of a hind ocellus . . . . . 3
3. Tergite VIII with comb of microtrichia well-developed, long and regular, teeth long arising on triangular bases; pronotal major anteromarginal setae 65 microns long, as long as half length of pronotum; metanotum with campaniform sensilla . . . . . *veracrucensis* **sp.n.**
- Tergite VIII with comb of microtrichia weakly developed in lenght, sparse; pronotal major anteromarginal setae 14–22 microns long; metanotum without campaniform sensilla. . . . . *georgiensis*


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