
A REVIEW OF THE MEXICAN GENUS *Microxythrips* JOHANSEN AND MOJICA (INSECTA, THYSANOPTERA: THRIPINI, APTINOTHRIPINA)

Una revisión del género mexicano *Microxythrips* Johansen y Mojica
(Insecta, Thysanoptera: Thripini, Aptinothripina)
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ABSTRACT

The Mexican genus *Microxythrips* was reviewed and redefined herein in this paper. The Type-species *mexicanus* was reconsidered with the examination of additional adults of both sexes, since it was known from a single male. A second new species was described. Illustrations of the head, antennae, thorax and abdomen of the adults of both species are included, as well as measurements and illustrations of the eggs from both species.

Key words: Thysanoptera, Aptinothripina, *Microxythrips*, Mexico.

RESUMEN

El género mexicano *Microxythrips* fue revisado y redefinido en este trabajo. La especie Tipo *mexicanus* fue reconsiderada con el examen de más ejemplares adultos de ambos sexos, ya que se le conocía de un sólo ejemplar macho. También se describe una segunda especie. Se incluyen ilustraciones de cabeza, antenas, tórax y abdomen de ambas especies, así como medidas e ilustraciones de los huevecillos de ambas especies.

Palabras clave: Thysanoptera, Aptinothripina, *Microxythrips*, México.

MICROXYTHRIPS Johansen et Mojica

Microxythrips Johansen et Mojica, 1989: 201

Type-species by original monobasic designation:

Oxythrips mexicanus Johansen, 1983.

Diagnosis. Very small species (0.648-0.729 mm in length). Body color clear yellow, with abundant yellow to orange subintegumental pigment. Antennae bicolored. Fore wings predominantly grayish brown. Ocellar pigment red in fresh specimens, becoming orange in mounted specimens. Body setae dark brown. Head in dorsal aspect (Figs. 1, 8, 11), wider than long; occiput with parallel open striae, cheeks serrate due to this sculpture. Compound eyes ellipsoid, regularly faceted, pilose and moderately protuding; ocelli equidistant between the compound eyes, the anterior one directed forwards; anteo-cellular setae of pairs I-II forming a transverse row; interocellar setae of pair III, of varying position between ocelli; a pair of short postoculars on each side. Antenna 8-segmented (Figs. 2, 9, 12); I-II wider than the rest, II with a dorsal apical sense areola, between three equidistant setae; III globose, with a subbasal ring anterior to pedicel, which is fungiform, with annulae only; IV-VI globose, with annulae and microtrichia; segments III-IV each with a forked trichone (dorsal and ventral respectively); segments V-VI each with simple sense cones. Mouth-cone pointed and projected towards posterior margin of prosternum; maxillary palps trisegmented; labial palps bisegmented. Thorax; pronotum (Figs. 1, 8, 11) wider than long (longer than head), almost smooth, but with some open transverse striae at center and posterior margin, chaetotaxy of regular short setae arranged in rows, as follows: anteromarginals, laterals, median-transverse, posterior submarginals, posteromarginals, one strong epimeral seta on each side; pterothorax, mesosternum with furca provided with a thin long spinula (Fig. 5). Mesonotum (Figs. 6, 13) with lateral fine striae and, transverse open parallel striae, with four posteromarginal setae; metanotum (Figs. 6, 14) transverse, with equiangular polygonal reticulation at center, median pair of setae near anterior margin. Legs moderately long, slender, tarsi each bisegmented (Fig. 1). Fore wings saber-shaped (Figs. 17-18), fore vein with discontinuous setae; hind vein with continuous scattered setae, except in basal fourth; fringe cilia of the undulate type. Abdomen, robust in adult female, slender in male; sternites II-VII each with a posteromarginal row of setae; males without glandular areas on sternites II-VII; tergite IX (females) with setae IX i longer than IX ii-iii (Figs. 7, 15); tergite X (females) with setae X i-X ii subequal; males with segment IX (tergite) very much developed, setae IX i lanceolate and short, IX ii moderately long; tergite X (males) with long and strong caudal

setae.

Specific differential characters. Antennal and wing coloration. Body size: head, thorax and abdomen vary in their proportions, as well as antennal segments (length and wide). The morphology of head, pronotum, and the sculpture of meso- and metanotum are variable. Chaetotaxy of head, pronotum and fore wing veins are interspecific variable. The tergite VIII has a complete comb of setae in posterior margin or, it does not bear it.

Comments. Genus *Microxythrips* was created with the sole Holotype (male) of *M. mexicanus*, previously assigned to genus *Oxythrips* Uzel (Johansen, 1983; Johansen y Mojica, 1986). The main generic differentiation characters between *Oxythrips* and *Microxythrips* were as follows: adults of *Microxythrips* have the antennal segment III with a subbasal ring forwards of the fungiform pedicel, and lack microtrichia in the annulae, whereas segments IV-VI have annulae with microtrichia; the size of head, the pronotal chaetotaxy, and the strong pair of lanceolate setae on tergite IX, in the male. Adults of the species in genus *Microxythrips*, resemble those in genus *Oxythrips* (Johansen & Mojica, 1986) in the followings shared characters: a) general body morphology and coloration; b) head shape; c) antennae 8-segmented (with forked trichones in segments III-IV); d) pronotal chaetotaxy. However, adults of *Microxythrips* are much smaller; the antennal segment III has annulae without microtrichia; males do not have sternal glandular areas, and tergite IX only has a pair of strong and short lanceolate setae. In this first review of the genus, more female and male specimens of the Type-species *mexicanus* were available, thus allowing a redefinition of this species. The discovery of a second new species, with different antennal and wing coloration, together with the presence of a complete comb of setae in tergite VIII allowed to develop a better and more complete diagnosis of this genus. Two species groups can be differentiated on the basis, of the absence (Group *Mexicanus*) or, presence (Group *Leonilavazquezae*) of the posteromarginal comb of setae in tergite VIII.

Key to the species of *Microxythrips*

1. Tergite VIII without a comb of setae; interocellar setae between posterior ocelli; fore wings dark grayish brown; length: 0.651 (male)-0.729 (female) mm; from eastern and western Mexico

M. mexicanus (Johansen)

- Tergite VIII with a complete comb of setae; interocellar setae between fore and hind ocelli; fore wings dark grayish brown, clear hyaline in basal one fourth; length: 0.648 (female) mm; from western Mexico

M. leonilavazquezae sp. nov.

Microxythrips mexicanus (Johansen)

(Figs.1-10, 17)

Oxythrips mexicanus Johansen, 1983:117

Oxythrips mexicanus Johansen;

Johansen and Mojica, 1986:387

Microxythrips mexicanus (Johansen); Johansen and

Mojica, 1989:202; new combination.

The original description of this species was based in the adult Holotype male only. Recently, further specimens of both sexes were available. Thus, we include the new description of the female (Figs. 1-7), as follows: virtually like the male, in body coloration and morphology, except: the more robust abdomen, and the larger body proportions (length in mm): 0.729 versus 0.651 of the male.

Measurements in mm (N= 1 female). Body length: 0.729 completely distended. Head, dorsal length: 0.060; width at eyes: 0.100, behind eyes: 0.096, at middle: 0.098, basal: 0.090. Interocellar setae: 0.008; postoculars: 0.010; compound eyes, length: 0.040, width: 0.034; fore ocellus: 0.010, hind: 0.006. Antennal segments, length (width): I 0.020 (0.020); II 0.022 (0.018); III 0.026 (0.014); IV 0.028 (0.016); V 0.030 (0.014); VI 0.034 (0.010); VII 0.008 (0.006); VIII 0.012 (0.004). Pronotum, length: 0.090; width at middle: 0.124; chaetotaxy, anteroangulars: 0.012; anteromarginals: 0.006; epimerals: 0.016; posteromarginals, I: 0.012; II 0.010; III: 0.008. Mesothorax, width: 0.160; metathorax, width: 0.162. Fore wings, basal width: 0.050, at middle: 0.020; chaetotaxy, fore vein: 4+3+1+1+1; hind vein: 04. Abdomen, width at segment IV:

0.180; tergite IX setae, IX i: 0.056, IX ii: 0.040; tergite x seta, x i: 0.066.

Egg, length: 0.164; greatest width: 0.070.

Material examined. Holotype (male) of *Oxythrips mexicanus*. Mexico; Hidalgo: Sierra de Zacualtipan (Sierra Madre Oriental), Cañada del Río Tlaltepingo, near Otongo (Cía. Minera Autlán), 900 m; December 7, 1980; in cortical musci on *Pinus oocarpa* (R. M. Johansen), in IBUNAM.

Jalisco: Chamela, Estación de Biología Tropical, UNAM; August 18, 1982; 4 (female, female); 2 (male, male); November 25, 1993; 1 (female), 1 (male) by canopy fogging in Tropical Deciduous Forest (Chan Yen, J.A. Gomez, A. Pescador, A. Rodríguez), in IBUNAM; *Idem et Ibidem*, May 14, 1993; 1 (female), 1 (male) (J.A. Gomez, A. Pescador, A. Rodríguez), in IBUNAM; *Idem et Ibidem*, February 25, 1993; 1 (female) (G. Castaño, A. Pescador, A. Cadena); in IBUNAM.

Microxythrips leonilavazquezae sp nov.

(Figs. 11-16, 18)

Holotype (female). Body color, clear yellow, except: antennal segments, IV yellowish brown; V-VIII dark chestnut. Fore wings dark chestnut brown in apical three fourths, clear hyaline in basal one fourth. Head (Fig. 11), much broader (2.16 times) than long; antecellar setae of pairs I-I-II, advanced; interocellar setae (pair III) longer, between fore and hind ocelli. Antennae typical (Fig. 12). Mouth-cone very long (1.90 times longer than head), reaching posterior margin of prosternum. Pronotum (Fig. 11) very much longer (2.12 times) than head; almost smooth, with some confluent transverse striae on posterior margin; chaetotaxy as follows: four anteromarginals; an irregular median transverse row of six setae; two pairs of median posterior submarginals; eight posteromarginals; one strong epimeral on each side. Pterothorax, mesonotum (Fig. 13) hexa-gonal-oblong, smooth in anterior half, with open transverse striae in posterior half, and with two pairs of posteromarginals setae at center; metanotum (Fig. 14), with equiangular polygonal reticulation at center, middle pair of setae near center. Fore wings (Fig. 18), with the following chaetotaxy, fore vein: 3+2+1+1+1; hind vein: seven scattered setae. Tergite VIII (Fig. 15), with a complete comb of setae in posterior margin. Tergite x with longitudinal suture.

Measurements in mm (Holotype female). Body length: 0.648.

Head, dorsal length: 0.050; width at eyes: 0.106, behind eyes: 0.104, at middle: 0.108, basal: 0.104. Interocellar setae: 0.006; postoculars: 0.008. Compound eyes, length: 0.040, width: 0.030; fore ocellus: 0.010, hind: 0.008. Antennal segments, length (width): I 0.020 (0.022); II 0.026 (0.020); III 0.026 (0.014); IV 0.028 (0.014); V 0.030 (0.014); VI 0.044 (0.014); VII 0.008 (0.006); VIII 0.012 (0.004). Pronotum, length: 0.106; width at middle: 0.122; chaetotaxy: anteromarginals: 0.006; epimerals: 0.010; posteromarginals, I: 0.010; II: 0.010; III: 0.010.

Mesothorax, width: 0.152; metathorax, width: 0.146. Fore wings, basal width: 0.040. Abdomen, width at segment IV: 0.190; tergite IX setae, IX i: 0.058, IX ii: 0.056; tergite X setae X i: 0.056.

Egg, length: 0.166; greatest width: 0.076.

Material examined. Holotype (female), Paratype (female). México; Jalisco: Chamela, Estación de Biología Tropical, UNAM.; February 25, 1993 (Holotype), November 25, 1993 (Paratype), by canopy fogging in Tropical Deciduous Forest (G. Castaño, A. Pescador, A. Cadena), in IBUNAM.

Comments. *Microxythrips leonilavazquezae* sp nov., is different from *M. mexicanus* in the following characters: antennal segments I-III clear yellow; fore wings dark chestnut brown, clear hyaline in basal one fourth; the broader head, with antecellar setae (pairs I-II) advanced; interocellar setae located between fore and hind ocelli; pronotum longer and more smooth, with different chaetotaxy (epimerals shorter); tergite VIII with a complete comb of setae in posterior margin.

Dedication

We are very happy, to dedicate this species, as a tribute of gratitude and friendship, to the memory of the Mexican lepidopterist and Entomology teacher Dr. Miss Leonila Vázquez-García.

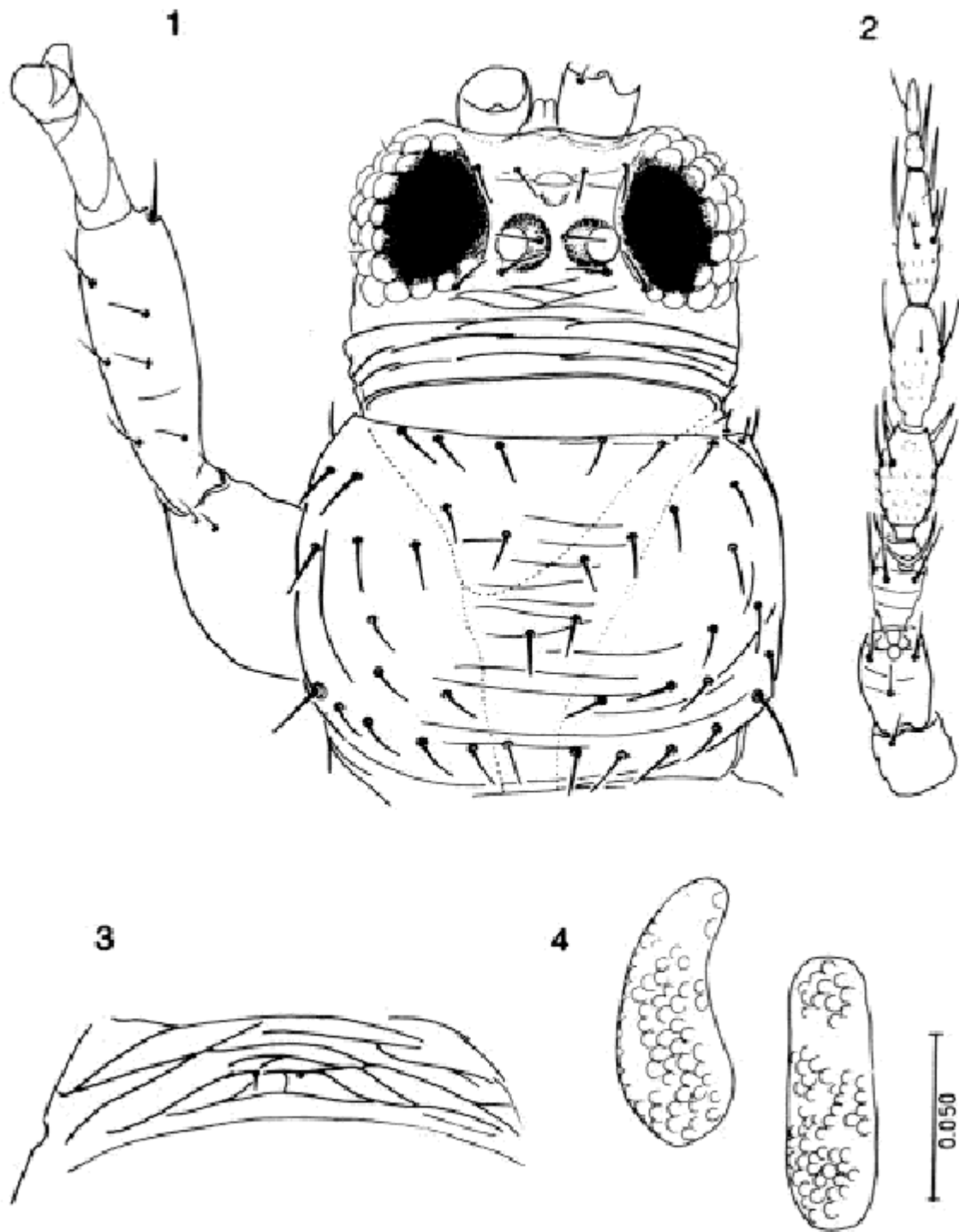
Acknowledgements

The authors are grateful for the friendly cooperation of the following colleagues from the Facultad de Ciencias,

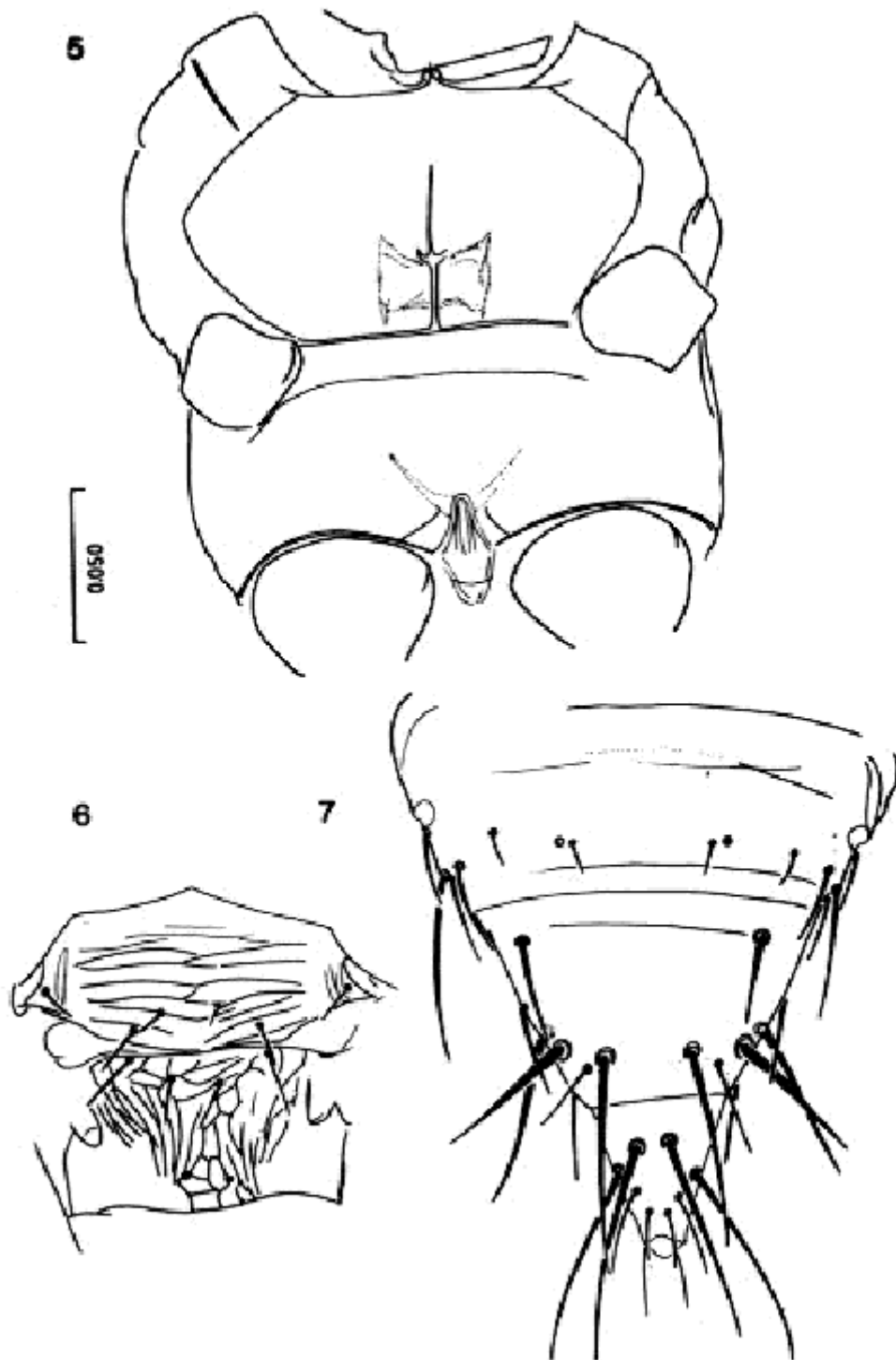
UNAM., who collected material at Chamela, Jalisco: José Guadalupe Palacios, Chan Yen, J.A. Gómez, A. Pescador, A. Rodríguez and A. Cadena.

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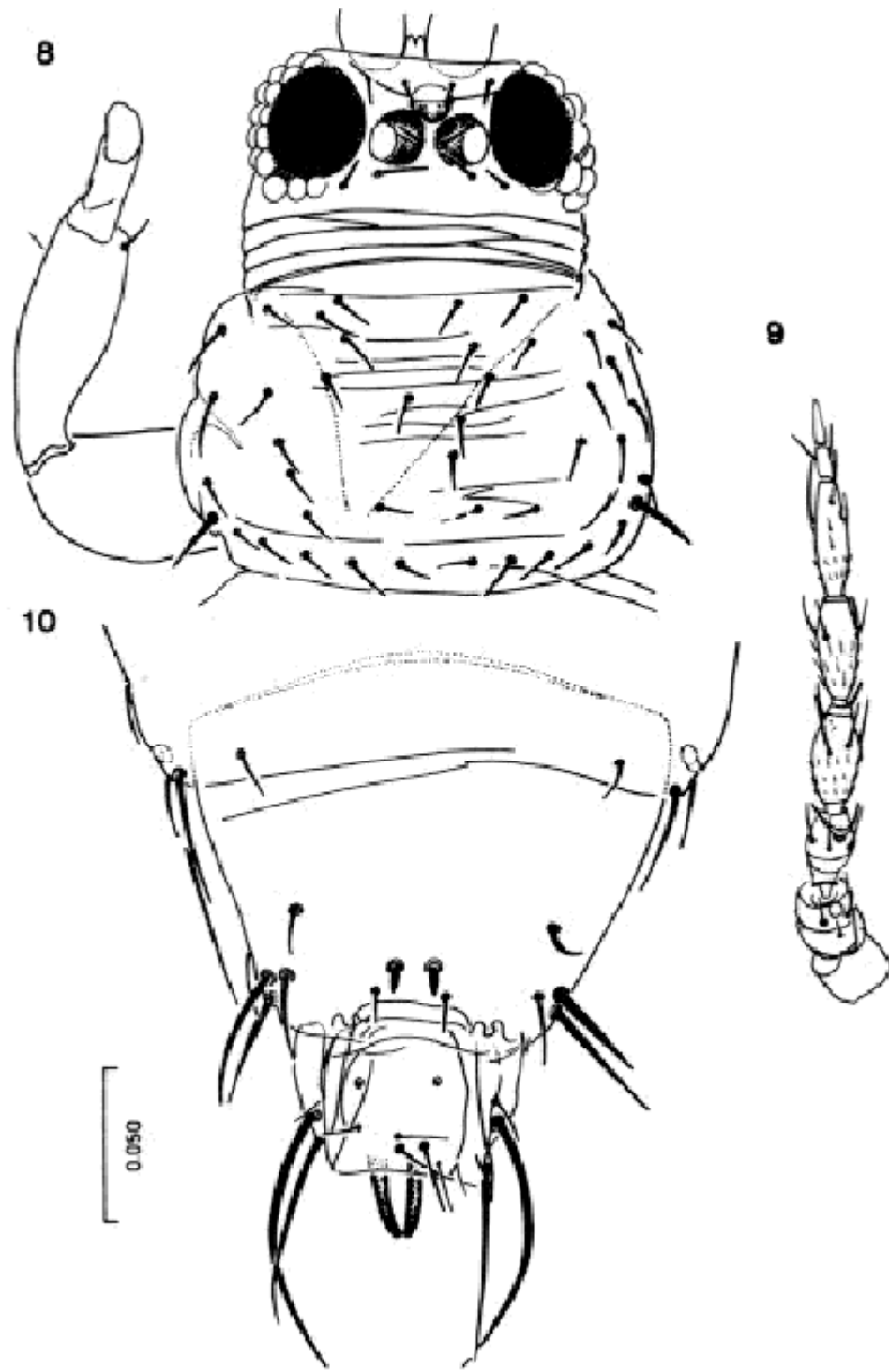
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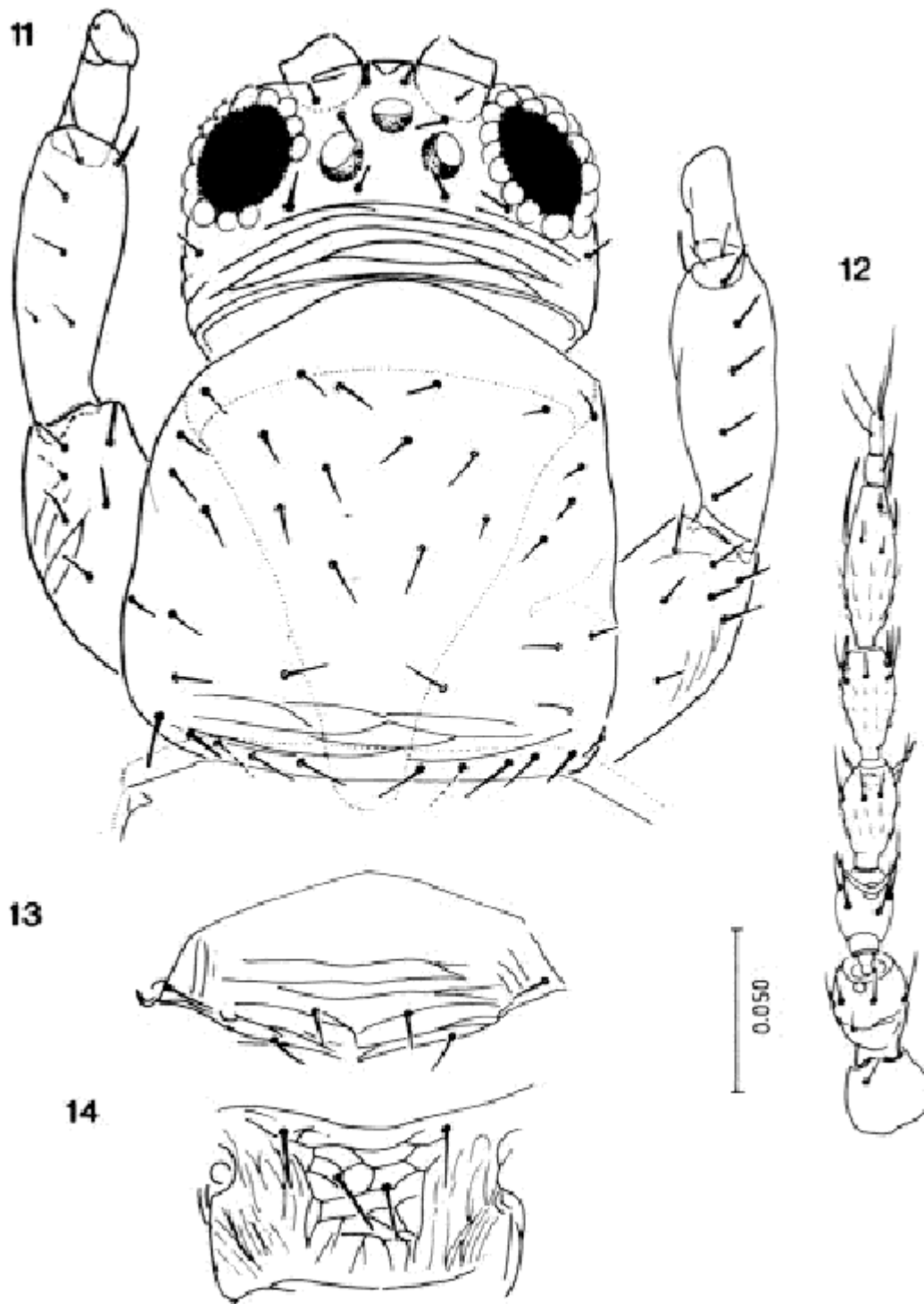
Figures 1-3. Dorsal views of *Microxythrips mexicanus* (Johansen) adult (female). 1. Head, pronotum and left leg; 2. Right antenna; 3. Tergite I. 4. *idem*, eggs (lateral and dorsal views). Scale in mm, same (1 000 X) for all figures.



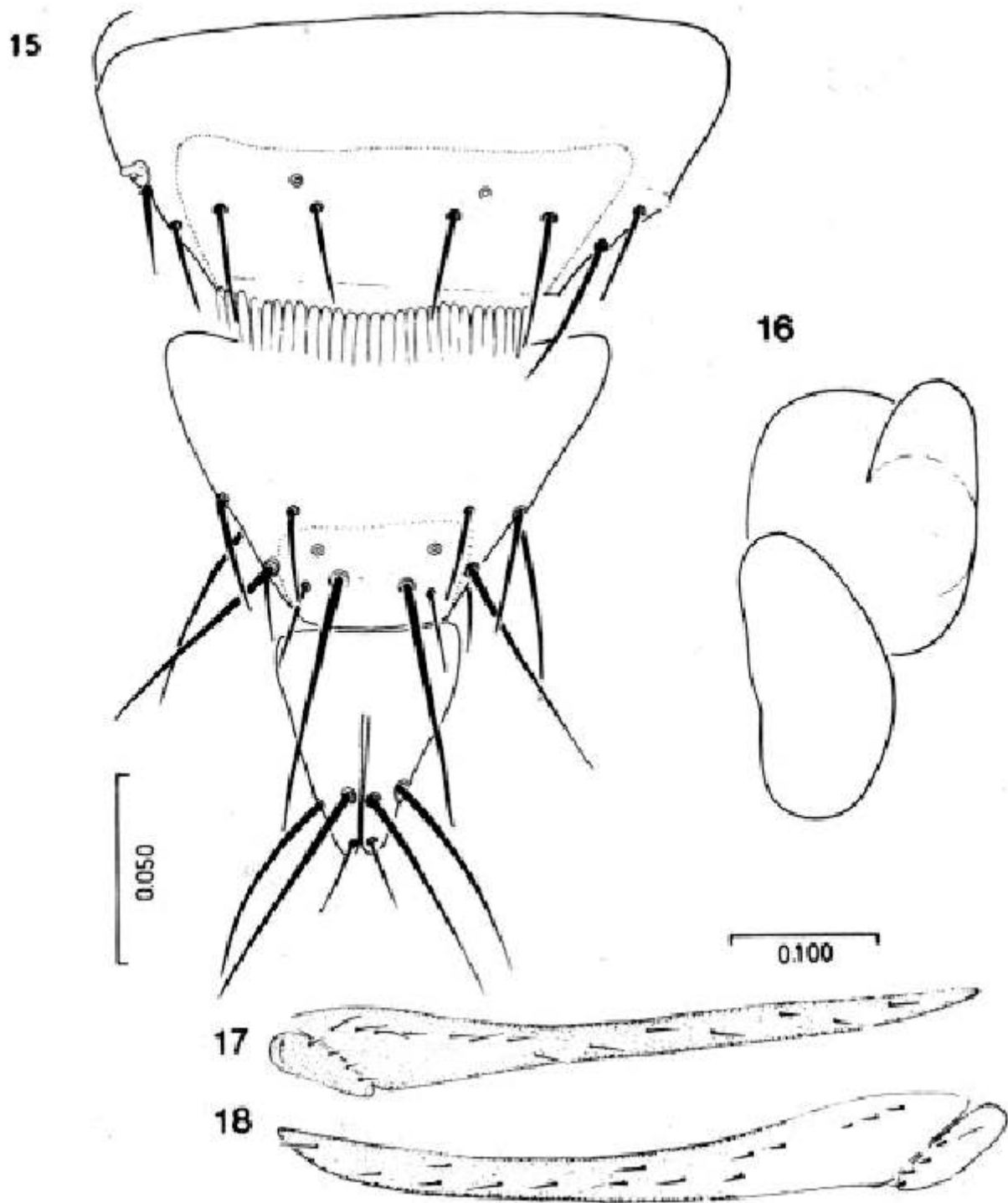
Figures 5-7 Dorsal and ventral views of *Microxythrips mexicanus* (Johansen) adult (female). 5. Pterosternum (ventral view); 6. Meso-anal metanotum; 7. Tergites VIII-X. Scale in mm, same (1000 X) for all figures



Figures 8-10. Dorsal view of *Microxythrips mexicanus* (Johansen) adult (male). 8. Head, pronotum and left leg; 9. Right antenna; 10. Tergites VIII-X. Scale in mm, same (1 000 X) for all figures.



Figures 11-14. Dorsal views of *Microxythrips leonilavazquezae* sp nov. Holotype (female). 11. (corrected) Head, pronotum and legs; 12. Right antenna; 13. Mesonotum; 14. Metanotum. Scale in mm, same (1 000 X) for all figures



Figures 15-16, 18. Dorsal views of *Microxythrips leonilavazquezae* sp nov. Holotypoe (female). 15. (corrected) Tergites VIII-X; 16. Eggs; 18. Left fores wing. Fig. 17. *M. mexicanus* (F), dorsal view of right fore wing. Scales in mm, same (1 000 X) for figures 15-16 same (400 x) for figures 17-18.