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A New Species of *Neohydatothrips*[1] Associated with Avocado in Mexico

Una Nueva Especie de *Neohydatothrips*[1] Asociada al Aguacate en México

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Abstract. The species, habitats where it was collected, and comments on the morphology of the species compared with one from Costa Rica that conforms to a particular group of *Neohydatothrips* are discussed. The species is near *gracilipes* by the position of the interocellar setae, but is clearly segregated by the absence of sternal rows of discal microtrichia in abdominal segments III-VI, and body color darker than *gracilipes*. Another difference between the species is the sculpture of the metanotum.

Resumen. En este trabajo se presenta la descripción así como algunos datos de la biología de esta nueva especie con comentarios acerca de su morfología comparada con una especie de Costa Rica con la que se discute la conformación de un grupo de especies particular dentro de *Neohydatothrips*. Esta especie es cercana a *gracilipes* por la posición de las setas interocelares, pero se diferencia con claridad de esta por la ausencia de hileras esternales de microtrichias discales en los segmentos abdominales III-VI, como el color más oscuro que el de *gracilipes*. Otra diferencia es la esculturación del metanoto.

Introduction

Several new records and new species usually supported by specimens were found in recent studies of avocado, *Persea americana* Mill., at different geographical localities of the western region of México (Cambero et al. 2010). In the last year, several samples had been taken from avocado crops year around, and several specimens of a new species collected were clearly related to the species *gracilipes* (Mound and Marullo 1996). The species, habitats where it was collected, and comments on morphology of the species compared with one from Costa Rica that conform to a particular group of *Neohydatothrips* were discussed.

Materials and Methods

Two techniques – knockdown and sampling by insect net were used each week from January-December 2008 in five orchards of 'Hass' avocado at Nayarit,

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México. Individuals collected were prepared using a technique by Johansen and Mojica (1997). Specimens were from three of the five orchards used in the research.

Results and Discussion

Neohydatothrips narroi n.sp.

Material. Holotype female macropterous, Tepic, Nayarit, Mexico, 21° 29' 18" North, 104° 46' 18" West, 1,117 m above sea level,13-II-2008, host avocado tree canopy. Col. J. Cambero-Campos. Deposited at Colección Nacional de Insectos, Instituto de Biología, Universidad Nacional Autónoma de México (UNAM). Paratypes. 28 macropterous males and females, eight with same data as holotype; Xalisco, Nayarit, Mexico, four paratypes, three females and one male from 21° 25' 09" North, 104° 54' 54'' West, 1,035 m above sea level, 05-III-2008, host: weeds associated with the avocado orchard, col. J. Cambero-Campos. Sixteen paratypes, 11 females and five males from 21º 27' 34" North, 105º 00' 19" West, 1,787 m above sea level. Seven paratypes, 06-II-2008, host avocado tree canopy, four paratypes 13-II-2008, host avocado tree canopy, five paratypes 23-I-2008, weeds associated with avocado orchard.

Color. Mainly yellow brown, head brownish yellow with anterior margin slightly dark, pronotum and abdomen brownish yellow, abdominal antecostal ridges darker, with central section clearer than lateral sides, antennae I translucent very bright, II-VIII gradually darker. Leg femora and tibiae slightly shaded brown (Fig. 1a). Wings pale shaded with one row of stout dark setae, second vein with only one distal seta. Scale with four stout setae (Fig. 1b).

Head. Wider than long. Three pairs of ocellar setae, pairs I-II well developed and translucent. Pair III of each seta behind the first ocellus, base of the seta close to the ocellus. Eyes pale with four or five dark brown ommatidia, prominent to the head margin, with several translucent setae. Anterior and posterior third slightly striated. Mouth cone long and foreward (Fig. 1c).

Pronotum. Pronotal apodeme (pa) evident but with the same color as pronotum. Darker in anterior ridge. Striated sculpture close together. Five pairs of setae in anterior margin of the pa. A pair of posteroangular setae in the pa. Setae in the pa all translucent. Posteroangular setae stout and dark. Two pairs of well-developed anteromarginal setae translucent (Fig. 1d). Without minor discal setae. Major setae of the pronotum translucent except dark brown posteromarginals.

Mesonotum. Sculpture striated close together. Two pairs of middle setae, the internal pair anterior to the posterior pair (Fig. 1e).

Metanotum. Anterior third with sculpture striated close together, two posterior thirds with fine longitudinal striae laterally. Two pairs of setae arising on anterior margin (Fig. 1f).

Abdomen. Lateral third with several pale brown microtrichia. Abdominal segment VIII with posterior comb of fine microtrichia close together (Fig. 1g). X without microtrichia. Sterna III-VI with three or four pairs of discal setae and without discal rows of microtrichias.

Measurements (in microns). Body length 1,070. Head length 100. Pronotum length 130. pa setae 60. Forewing length 750. Scale veinal setae 42.5. Scale length 75. Antennal segment length: I 20, II 37.5, III 55, IV 50, V 42.5, VI 42.5, VII 10, and VIII 10.

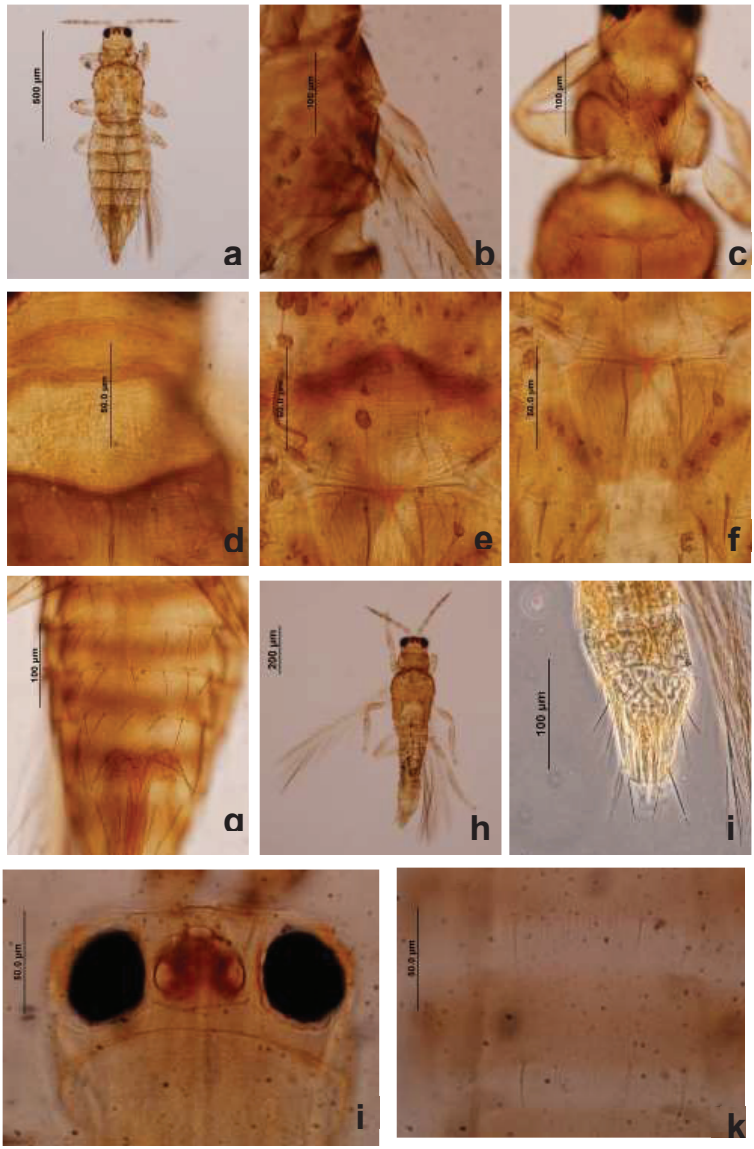

Fig. 1. (a) *Neohydatothrips narroi* holotype, general view; (b) scale of forewing; (c) mouth cone; (d) anteromarginal setae pronotum; (e) mesonotum; (f) metanotum; (g) abdomen; (h) *Neohydatothrips narroi* male alotype, general view; (i) male genitalia; (j) interocellar setae; (k) *Neohydaotothrips gracilipes*, VI-VII abdominal segments.
Fig. 1. (a) *Neohydatothrips narroi* holotipo, vista general; (b) escama del ala anterior; (c) cono bucal; (d) setas anteromarginales del pronoto; (e) mesonoto; (f) metanoto; (g) abdomen; (h) *Neohydatothrips narroi* alotipo, vista general; (i) genitalia del macho; (j) setas interocelares; (k) *Neohydaotothrips gracilipes*, segmentos abdominales VI-VII.

Male Description. Similar to female in color and structure (Fig. 1h). Smaller than female. Genitalia typical of the genus (Fig. 1i). Two pairs of accessory genital setae well developed, internal pair smaller than external. Total length in microns 750.

Etimology. The species is dedicated to the University Autónoma Agraria Antonio Narro for the effort of the institution and its professors in transmission of knowledge among generations.

Comments. The species is near *gracilipes* by position of the interocellar setae (Fig. 1j), but is clearly segregated by the absence of sternal rows of discal microtrichia on abdominal segments III-VI (Fig. 1k) and body color darker than *gracilipes*. Another difference is the sculpture of the metanotum in both species. Some characters described by Mound and Marullo (1996) are good indicators of a possible relationship between the species, the stout dark setae of vein I, the same stout setae in the scale and only three of the setae in the structure seem to be a unique feature between the two species. Specimens of the new species from Mexico were collected from avocado leaves in weeds in the crop.

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