

## TWO NEW *AARONIELLA* SPECIES FROM WESTERN MEXICO (PSOCOPTERA: PHILOTARSIDAE)

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### RESUMEN

Se describen e ilustran las especies mexicanas *Aaroniella chamelana* y *A. hoffmannae*, provenientes de la costa de Jalisco. La primera es cercana a *A. dentata* Mockford & Evans, de Trinidad y difiere de otras especies neotropicales sin manchas basales en las setas del ala anterior en detalles genitales. La segunda es cercana a la norteamericana *A. maculosa* (Aaron) de la cual difiere en la forma del pterostigma, en la pigmentación de las pleuras torácicas y en detalles genitales.

Palabras clave: *Aaroniella*, nuevas especies, Jalisco, México.

### ABSTRACT

The Mexican species *Aaroniella chamelana* and *A. hoffmannae*, from the coast of Jalisco, are described and illustrated. The former is close to *A. dentata* Mockford & Evans, from Trinidad, and differs from other neotropical *Aaroniella* without setal spots of the forewing in genital details. The latter is close to the eastern North American *A. maculosa* (Aaron) from which it differs in the shape of the pterostigma, in the pigmentation of the thoracic pleurae and in genital details.

Key words: *Aaroniella*, new species, Jalisco, Mexico.

### INTRODUCTION

The genus *Aaroniella* was erected by Mockford in 1951, and it presently includes 38 species, distributed predominantly in the Neotropical and Oriental regions, with

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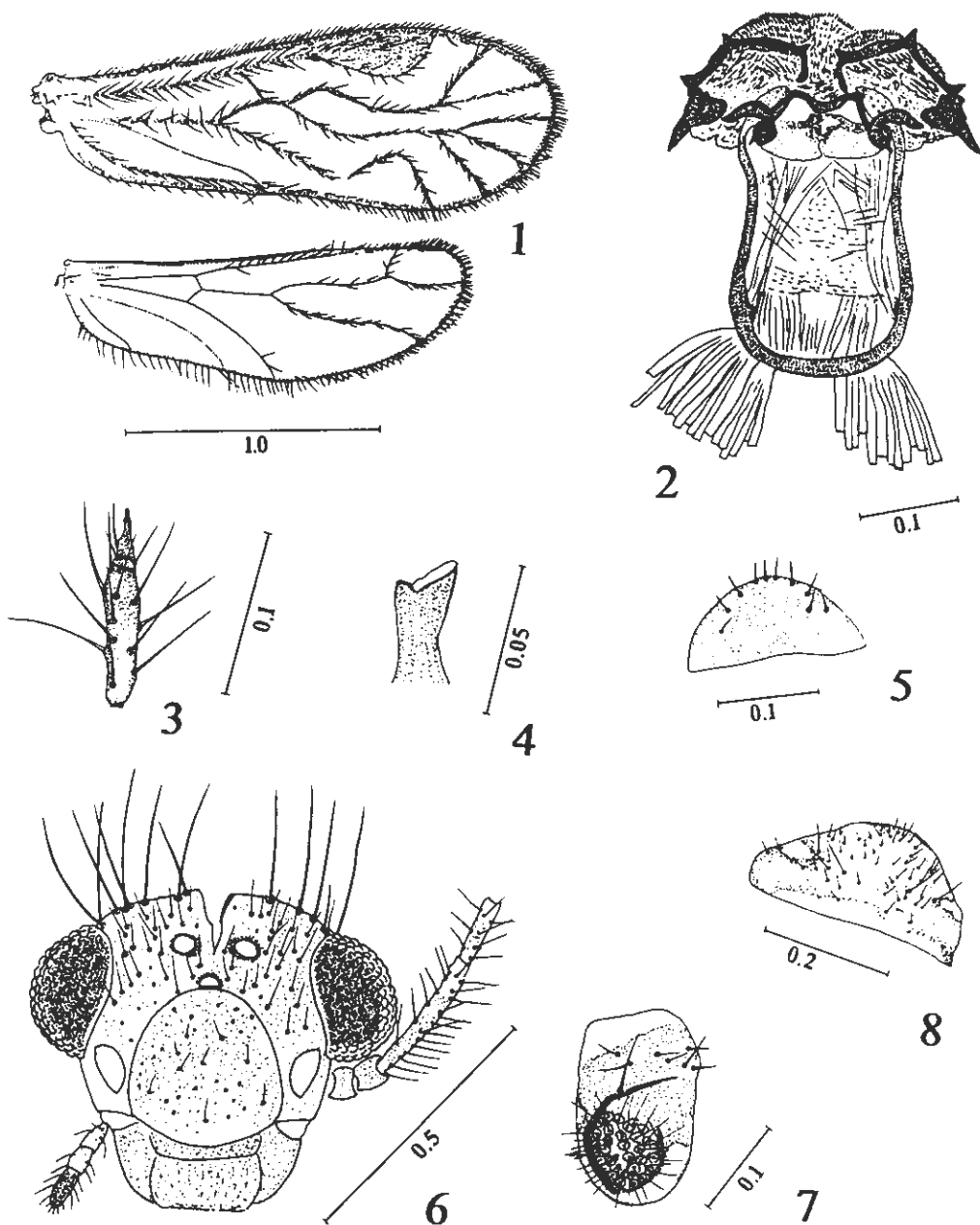
11 species in each; it is also known in the islands of Madagascar, Reunion and Mauritius (five species), the Pacific islands of Moorea, Caroline, Fiji, Tonga, New Hebrides and Samoa (five species); in Australia, New Guinea and New Zealand (four species), the U.S. (three species), and the Republic of Georgia (one species). In the neotropics, species of *Aaroniella* have been recorded in Santo Domingo, Cuba, Trinidad, the Galápagos Islands, Argentina, Brazil, Colombia, Costa Rica and Venezuela. The purpose of this paper is to describe two new species from Mexico, where the genus was previously unrecorded. Three other species of *Aaroniella* are known to occur in southeastern Mexico, in the states of Chiapas, Quintana Roo, Veracruz and Yucatán (Mockford & García Aldrete, 1996); they will be dealt with in another paper.

The specimens for microscopic study were dissected in 80% ethanol, and the head, right wings and legs and genitalia of each specimen were mounted in Euparal. Measurements of parts mounted were taken with a filar micrometer whose measuring unit is 1.36 microns for wings and 0.53 microns for other parts. Abbreviations of parts measured are the following: FW = fore wing; HW = hind wing; F = femur; T = tibia; t1, t2, t3, = tarsomeres; ctt1 = number of ctenidia on t1, fl... fn = flagellomeres; Mx4 = fourth segment of maxillary palp; IO = minimum distance between compound eyes; D = antero-posterior diameter of compound eye; d = transverse diameter of compound eye; PO = d/D. The specimens examined belong in the National Insect Collection (Instituto de Biología, UNAM, México City), where the types are deposited.

*Aaroniella chamelana* sp. nov. (♂)  
(Figs. 1-8)

**Male.** Color (in 80% ethanol). Body pale brown. Compound eyes black, ocelli clear, each with slightly pigmented halo. Maxillary palps pale brown, Mx4 dark brown. Antennae: scape and pedicel light brown, flagellomeres light brown with apices white. Fore wings hyaline, slightly fumose (Fig. 1), pterostigma light brown, veins brown, setae without basal dark spots. Tergal lobes of meso and metathorax chestnut brown, pleurae uniformly brown. Legs pale brown. Abdomen creamy white, with reddish brown subcuticular rings.

**Morphology.** Head (Fig. 6), with setae directed backward in frons and postclypeus. Vertical stem of epicranial sulcus well defined, not reaching ocellar group; lateral arms inconspicuous. Lacinial tip (Fig. 4) with small median cusp and large lateral cusp bordered with small rounded denticles. Distal flagellomere short, conical, with terminal seta truncate, about one third the length of the flagellomere (Fig. 3). Pterostigma short, distally rounded; areola postica tall, almost triangular; R-M fused for a length (Fig. 1). Hypandrium (Fig. 8), rounded posteriorly, setose, with one pale, small area on each side. Phallosome (Fig. 2) rounded anteriorly, with aedeagal arch concave. Phallosome sclerites (everted in



Figs. 1-8. *Aaroniella chamelana* sp. nov. (♀). 1, fore and hind wings; 2, phallosome; 3, flagellomeres 10 and 11; 4, lacinial tip; 5, epiproct; 6, front view of head; 7, left paraproct; 8, hypandrium. Scales in mm.

the illustration), symmetrical, in a radular matrix, each side consisting of a slender, elongate piece with four denticles; posterior end of each piece articulated to a large, triangular sclerite joining a sickle-shaped piece at base of the aedeagal arch (Fig. 2). Paraprocts (Fig. 7) broad, elongate, setose, each with a large, sensory field, with 28-32 trichobothria on basal rosettes and 1-2 central ones, without basal rosette. Epiproct (Fig. 5) rounded posteriorly, with field of setae on distal half.

**Measurements** (in microns). FW: 2045; HW: 1605; F: 374; T: 680; t1: 247; t2: 52; t3: 52; ctt1: 13; Mx4: 239; f1: 240; f2: 112; f3: 111; f4: 110; f5: 88; f6: 83; f7: 77; f8: 76; f9: 73; f10: 82; f11: 36; IO: 328; D: 234; d: 132; IO/D: 1.4; PO: 0.56.

**Type locality.** MEXICO. JALISCO. Chamela. UNAM Tropical Biology Station, low deciduous forest, 40m., 18.VI.1979, beating branches, D. Yáñez, 1 ♂ holotype.

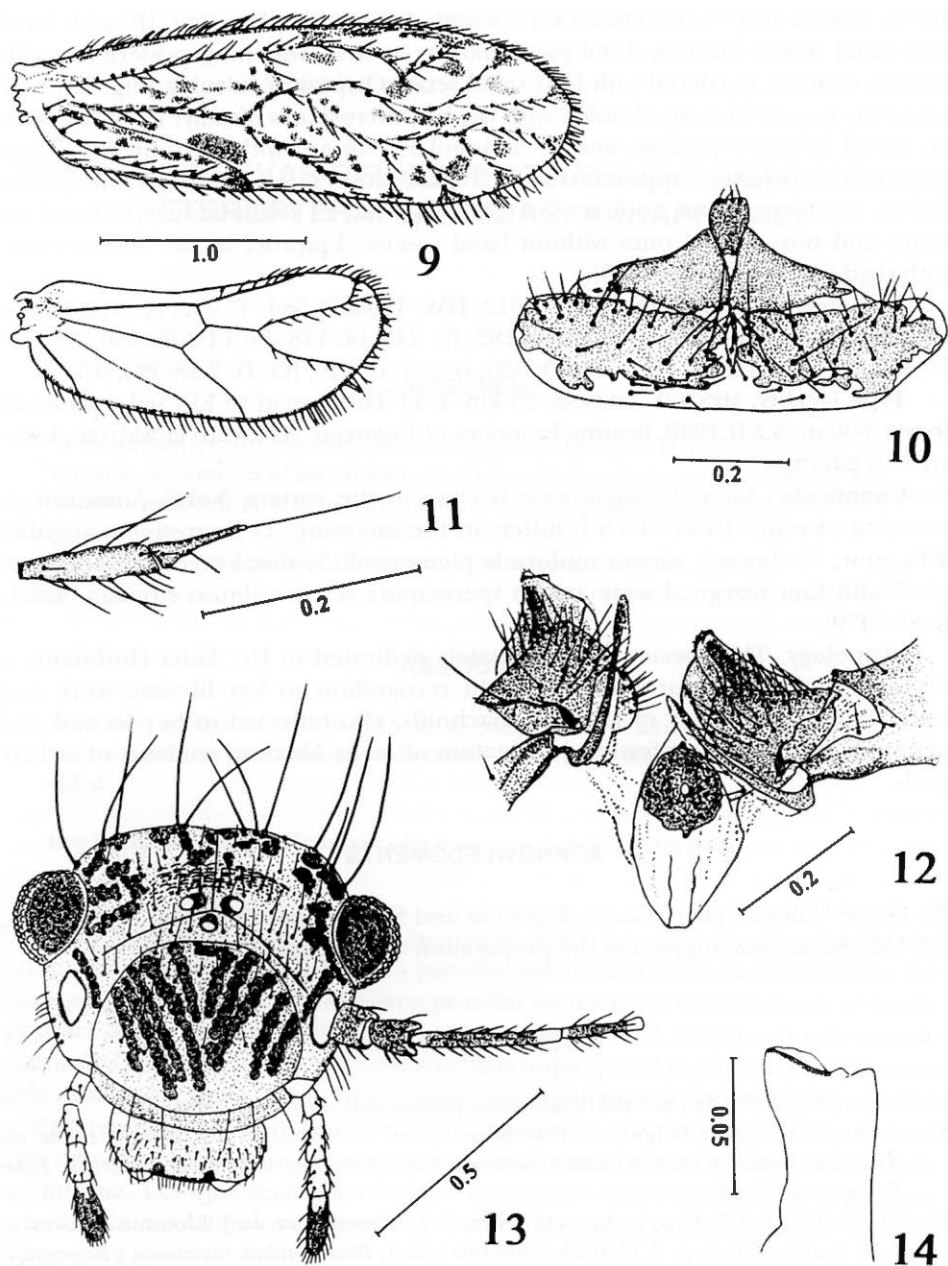
**Comments.** Several other neotropical species lack setal spots on the forewing (*A. crista*, New & Thornton; *A. glabra*, New & Thornton; *A. galapagensis*, Thornton & Woo; *A. dentata*, Mockford & Evans and *A. festiva*, Mockford & Evans), and the phallosome sclerites of *A. chamelana* are of the same general type as those of *A. dentata* from Trinidad. *A. chamelana* is unique in having the setae of the distal flagellomere very short, rather than the very elongate one, present in most species of the genus.

**Etymology.** The specific name makes reference to the type locality; so far, this species has not been found elsewhere.

*Aaroniella hoffmannae* sp. nov. (♀)  
(Figs. 9-14)

**Female.** Color (in 80% ethanol). Body creamy brown, with reddish brown spots and areas, as indicated below. Head pattern (Fig. 13). Compound eyes black, ocelli clear, with ochre centripetal crescents. Mx1 - Mx3 white, and Mx4 dark brown, with proximal end white. Antennae: scape and pedicel brown, flagellomeres dark brown, with apices white. Tergal lobes of meso and metathorax reddish brown; pleura uniformly reddish brown. Legs: coxae dark brown except in the apical areas; trochanters and femora creamy white; each femur with a brown band near distal end; tibiae creamy white, each with a dark brown band near proximal and distal ends. Tarsi reddish brown. Fore wing (Fig. 9) with radial series of spots distally, other spots as indicated. Hind wing hyaline (Fig. 9). Abdomen with reddish brown subcuticular rings.

**Morphology.** Head with backward directed setae on frons and postclypeus; setae on genae and posterior edge of postclypeus directed downward (Fig. 13). Epicranial sulcus with lateral arms well defined. Terminal seta of distal flagellomere (Fig. 11) twice as long as flagellomere. Lacinial tip (Fig. 14) with median cusp small, lateral cusp large, bearing small rounded denticles. Fore wing with pterostigma angular posteriorly, with spur; one specimen with areola postica low, small, other specimen with extra vein between M and wing margin, in the position of the



Figs. 9-14. *Aaroniella hoffmannae* sp. nov. (♀). 9, fore and hind wings; 10, subgenital plate; 11, flagellomeres 10 and 11; 12, ovipositor valvulae and spermapore sclerite; 13, front view of head; 14, lacinial tip. Scales in mm.

areola postica (Fig. 9). R-M fused for a length. Subgenital plate (Fig. 10) with basal and distal halves distinct; distal piece narrow at base, widening posteriorly, with margin straight, bordered with four small setae. Ovipositor valvulae (Fig. 12) typical of the genus: V1 long, slender, with field of microspines distally; V2 broad, with an apical spiculate process, and V3 triangular, setose. Ninth sternum with large spermapore sclerite, approximately circular, strongly pigmented. Paraprocts broad, rounded, setose, with sensory fields bearing 14 trichobothria in basal rosettes and two, central ones without basal rosette. Epiproct broad, semicircular, with field of setae on distal half.

**Measurements** (in microns). FW: 2612; HW: 1705; F: 584; T: 982; t1: 318; t2: 83; t3: 79; ctt1: 13; Mx4: 134; f1: 331; f2: 182; f3: 245; f4: 178; f5: 143; f6: 136; f7: 132; f8: 122; f9: 111; f10: 106; f11: 75; IO: 536; D: 207; d: 146; IO/D: 2.58; PO: 0.70.

**Type locality.** MEXICO. JALISCO. 25 km. E El Tuito, road to El Cuale, pine-oak forest, 600m., 3.XII.1980, beating branches of *Cupressus*, A.N. García Aldrete, holotype ♀, paratype ♀.

**Comments.** *Aaroniella hoffmannae* is close to the eastern North American *A. maculosa* (Aaron), from which it differs in the following: 1) pterostigma angular, with spur; 2) thoracic pleura uniformly pigmented; 3) distal piece of subgenital plate with four marginal setae and 4) spermapore sclerite almost circular (Mockford, 1979).

**Etymology.** This species is affectionately dedicated to Dr. Anita Hoffmann, a distinguished acarologist and scholar, in recognition to her lifetime work and leadership in the study of Mexican arachnids, also reflected in her fecund and generous role in the professional formation of many Mexican students of arthropods.

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## LITERATURE CITED

- MOCKFORD, E.L. 1951. On two north american philotarsids. *Psyche* 58: 102-107.
- MOCKFORD, E.L. 1979. Diagnoses, distribution, and comparative life history notes on *Aaroniella maculosa* (Aaron) and *A. eertmoedi* n.sp. (Psocoptera: Philotarsidae). *Gt. Lakes Entomol.* 12: 35-44.
- MOCKFORD, E.L. & A.N. GARCÍA ALDRETE. 1996. C. 16. Psocoptera, In: J. Llorente Bousquets, A.N. García Aldrete & E. González Soriano (eds.), *Biodiversidad, taxonomía y biogeografía de artrópodos de México: hacia una síntesis de su conocimiento*. Instituto de Biología, UNAM, México, D. F., pp.175-205.