THE MEXICAN PACHYTRICTIDAE  
(TROCTOMORPHA: PSOCOPtera)  

ALFONSO NERI GARCIA ALDRETE*  

RESUMEN  

Once especies de la familia Pachytricandae (Pscoptera; Troctomerph) han sido registradas en México; pertenecen a los géneros Nanopsocus (una especie), Taginella (cinco especies), Pachytrictes (cuatro especies), y Psacudium (una especie). Son descritas en este trabajo dos especies de Taginella y el macho de Pachytrictes ixtapaensis García Aldrete. Se incluye la distribución en México de las especies tratadas, así como la distribución global de todas las especies de cada género.  

Palabras clave: Pscoptera, Troctomerph, Pachytrictidae, distribución, México.  

ABSTRACT  

Eleven species of the psocid family Pachytrictidae occur in Mexico; they belong to the genera Nanopsocus (one species), Taginella (five species), Pachytrictes (four species), and Psacudium (one species). Two species of Taginella, and the male of Pachytrictes ixtapaensis García Aldrete, are here described. The Mexican records of the species treated are included, as well as the distribution of the species in each genus.  

Key words: Pscoptera, Troctomerph, Pachytrictidae, distribution, Mexico.  

INTRODUCTION  

The family Pachytrictidae includes the genera Antilopsocus, Nanopsocus, Peritroctes, Pachytrictes, Psylloneura, Taginella, Nymphotricetes, Psacudium, and Leptotricetes (Smithers, 1990). Four of these genera (Nanopsocus, Pachytrictes, Taginella, and Psacudium) occur in México, and the purpose of this paper is to document

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the distribution of their species, describe two species of Tapinella, and describe the male of Pachytroctes isiapaensis Garcia Aldrete. The specimens studied, unless otherwise indicated, were collected by the author; the types of the new species are deposited in the Insect Collection, Instituto de Biología UNAM (BUNAM). Measurements, of parts mounted in Euparal, are of lengths given in microns, and were taken with a filar micrometer, of which the measuring unit is 53 microns. The parts measured are abbreviated in the text as follows: F: femur; T: tibia; t1, t2, t3: tarsomeres 1, 2, and 3; f1...fn: flagellomeres 1...n; IO: minimum distance between compound eyes; D: antero-posterior diameter of compound eye; d: transverse diameter of compound eye; PO: d/D. Leg measurements are of the right hind leg; IO, D, and d were measured on heads mounted on slides. In the descriptions, the color is that of specimens in 80% alcohol.

**Nanospocus oceanicus** Pearman

*N. oceanicus* Pearman, 1928, Ent. mon. Mag., 64: 134

This is a pantropical species that has been recorded in Vanuatu (New Hebrides), Togo, Benin, Ivory Coast, Equatorial Guinea, Zaire, Japan, Jamaica, Réunion Is., Spain, Florida and México (Baz, 1990a). New records, not shown by Baz (1990a), are the following (A = apterous, M = macropterus): USA: LOUISIANA, Baton Rouge, L. S. U. Campus, 3.IV.1969, on dead, hanging Yucca leaves, 2 ♀. TEXAS, San Marcos, 3.IX.1971, beating Crotalaria argentea, 4 ♀. MEXICO: CHIAPAS, Bonampak Archaeological Zone, 22.V.1980, beating branches in forest, H. Brailovsky, 1 ♀ M. GUERRERO, 8 km, SW Teapan de Galeana, 21.X.1973, beating dead stems and leaves of cori, 1 ♀ M. JALISCO, Chamela, UNAM Biology Station, in nest of Icterus, 1 ♀ M; 17.IX.1988, beating branches in forest, 1 ♀ M. NAYARIT, Ixtlán del Río, 6.XI.1979, beating branches of shrubs, D. Yáñez, 1 ♀ M; María Madre Island, ca. Nayarit Campamento, 29.III.1984, beating branches of lemon tree, 6 ♀ M; beating branches in forest, 1 ♂, 2 ♀ A. NUEVO LEÓN, Guadalupe, Alamillos Ranch, NE slope of Cerro de la Silla, 26.XII.1978, on dead, hanging fronds of Sabal palm, ♀ M; on dead, hanging leaves of banana tree, 12 ♀ M. 10 km, NE Montemorelos, 25.VII.1981, on dead leaves of avocado tree, 1 ♀ M. NW slope Cerro de la Silla, ca. Monterrey, 18.IX.1977, beating vegetation, 14 ♀ M. Santiago, 8 km, W Cola de Caballo, 1400 m, 21.VIII.1978, beating oak branches with dead leaves, 2 ♀ M. 26 km, SW Linares, Santa Rosa Canyon, 600 m, 29.V.1976, on dead oak leaves, 1 ♀ M.

**Comments.** *Nanospocus* is a small genus of only five species (Table 1), three of which occur in Africa, one is endemic to Madagascar and one is pantropical (*N. oceanicus*).
This species was described on basis of five females collected in Ixtapa, Guerrero, on the Pacific Coast. One male, attributable to the same species, on basis of the pattern of pigmentation, compound eyes not reaching the vertex and sculpture of the integument, was collected in Veracruz, on the Gulf Coast, and it is here described:

*Pachytroctes (Neotroctes) istapaensis* García Aldrete (♂)  
(Figs. 15-22)

**Male.** Color. Body dark brown, with pattern as in Fig. 15. Head dark brown, compound eyes black, without ocelli. Epicranial cedysial lines well defined. Maxillary palps and antennae brown. Prothorax dark brown, notum with a small, median, less pigmented area on posterior border. Meso- and metathorax white. Legs with coxae and trochanters dark brown; femora proximally dark brown, distally white; tibiae white; with a broad brown band towards distal end; tarsomeres pale brown (Figs. 15 an 19). Abdomen dark brown; paraprocts and epiproct pale brown, clunium brown (Fig. 17).

**Morphology.** Apterous. Hypandrium (Figs. 18), long, broad, setose, rounded posteriorly, covering most of abdominal sternum. Phallosome (Fig. 16), elongate, with well defined, rounded antero-lateral extensions, and a posterior, median, rounded, heavily sclerotized structure; parameres wide at base, narrowing distally, apically blunt, as usual for the genus. Epiproct triangular, setose (Fig. 17). Sculpture of integument: vertex and front of head with echinoid granulations (Figs. 20); prothorax and abdominal tergites with granules forming rhomboid areolae, not as coarse as in head (Fig. 21), hypandrium with slender, elongate areolae, finely punctuated (Fig. 22).

**Measurements.** F: 250; T: 318, t1: 162; t2: 44; t3: 61; P4: 56; f1: 91; f2: 83; f3: 93; f4: 86; f5: 59; f6: 61; f7: 47; f8: 53; f9: 47; f10: 47; IO: 227; D: 69; d: 41; IO/D: 3.28; PO: 0.59

**Records.** MÉXICO. VERACRUZ. Los Tuxtlas, ca. Balzapote, 18.XII.1989, on dead leaves of fallen trees, forest edge, J. García Figueroa, 1 ♂ (IBUNAM).

**Comments.** The male of *P. istapaensis* is very close to the male of *P. dichromoscelis* Badonnel, described from Brazil (Badonnel, 1979); both species have the same pattern of pigmentation and similar phallosome, but differ in details of pigmentation in the males and in the posterior median structure of the phallosome, this being also more elongate in the Mexican species; the female of *P. dichromoscelis* was described from Ivory Coast, in West Africa (Badonnel, 1949a). It also differs from *P. istapaensis* on details of genitalia and pigmentation; in the latter, the pigmentation is uniform, and the head lacks an X-shaped mark, characteristic of the former.
Pachytructes maculosus García Aldrete

This species has been recorded from the Mexican states of Jalisco and Morelos (García Aldrete, 1986).

Pachytructes neoleonensis García Aldrete

This species has only been recorded in northeastern México, in several localities in the state of Nuevo León (García Aldrete, 1986).

Pachytructes pacificus García Aldrete
P. pacificus García Aldrete, 1986, Folia Entomol. Mex. 69: 11

This species is known from María Madre Island, Nayarit, and from Chamela, Jalisco; an additional record is here presented, that extends its distribution to the state of Michoacán, also on the Pacific slope: Michoacán. El Laurel, km 10, rd. Tepalcatepec—Coatlicue, 9.11.1983, under rocks, H. Brailovsky and E. Barrera, 1♀M.

The genus Pachytructes includes 24 species (Table 1), mostly African (11 species), and Neotropical (seven species); one species each are Western Palearctic, Pacific, and Australian, and three species are endemic to Madagascar. Of the African species, six (54%) have been recorded in Angola, and four of the Neotropical species (57%), have been collected in México.

Psacodium pictum Badonnel
P. pictum Badonnel, 1986a, Revue suisse Zool. 93(3): 702

This species has only been recorded on the Mexican Pacific coast, in Chamela, Jalisco.

Comment. Psacodium is a genus very similar to Tapinella, from which it differs in having lacinial apices bidentate; it only includes four species (Table 1), two of them Oriental, and two Neotropical.

Tapinella bicolorata sp. nov. (♀)
(Figs. 1-4)

Female. Color. Body pale brown, with pigmented bands as described below. Compound eyes black; a narrow, reddish brown band from each compound eye to
epistomal sulcus, enclosing antennal fossae and extending to postclypeus. Antennae reddish brown. Maxillary palps whitish, except P4, reddish brown. Thoracic pleuric ochre, pigment extending to sides of nota (Fig. 1). Legs brown; pattern of coloration of abdomen (Fig. 1), with reddish brown subcucuticular bands as indicated. Clunium with central area unpigmented, and sides reddish brown (Fig. 3).

*Morphology.* Apterous. Subgenital plate rounded posteriorly, setose; T-shaped sclerite with stem short and lateral arms distally acuminate (Fig. 2). Paraprocts elongate, setose, without sensory fields; epiproct almost trapezoidal, setose; gonapophyses elongate (Fig. 4).


*Type Locality.* MÉXICO. CHIAPAS. Lagunas de Montebello, 60 km, SE Comitán, 11.VIII.1975, 1580 m, beating oak branches with dead leaves, 1 ♀, holotype (IBUNAM).

*Records.* CHIAPAS, 60 km, NE Tapanchula, Finca Hamburgo, 850 m, on foliage of coffee trees, 8.IX.1987, G. Ibarra, 1 ♀. OAXACA, 16 km, SE Valle Nacional, 1850 m, beating dead fronds of banana trees, 1 ♀.

**Tapinella chamelana** Badonnel
*T. chamelana* Badonnel, 1986a, Revue suisse Zool. 93(3): 698

This species is only known from the Mexican Pacific coast, in the state of Jalisco, from San Patricio-Melaque to the village of Chamela (Badonnel, 1986a).

**Tapinella maculata** Mockford & Gurney
*T. maculata* Mockford & Gurney, 1956, Jour. Wash. Acad. Sci. 46(11): 360

This species is known from southern Texas, Guatemala, Belize, Jamaica, possibly Guadeloupe, in the Lesser Antilles, and in the Mexican states of Campeche, Chiapas, Nayarit, Nuevo León, Oaxaca, Quintana Roo, San Luis Potosí, Sinaloa, Tabasco, Tamaulipas and Veracruz (Badonnel, 1988; Mockford, 1975; Turner, 1975). Additional records, from Mexican states where it had not been previously recorded are the following: BAJA CALIFORNIA SUR: San Ignacio, carretera 1,110 m, 24.VIII.1974, on dead fronds of date palm and *Typha*, 13 ♀♂ A. 34 kms, S El Triunfo, 22.VII.1974, on dead fronds of fan palm and dead papaya leaves, 1 ♀, 1 ♀ M. COAHUILA: Zaragoza, 22.XII.1969, on dead stems and leaves of corn and sorghum, 1 ♀; on dead Compositae flowers in graveyard, 1 ♀ A. COLIMA: Ca. Manzanillo International Airport, 1.XII.1980, on dead fronds of banana tree, 1 ♀ A. GUERRERO: 8 km, SW Tecpan de Galeana, 21.X.1973, on dead corn leaves, 3 ♀ A. IXTAPA, ca. Zihuatanejo, 15.V.1975, sifting mangrove litter, 1 ♀ A; beating branches in forest, 1 ♀ A. JALISCO: Chamela, ca. Playa El Negrito, 22.X.1980, beating bran-
ches with dead leaves, miscellaneous vegetation, 1 QUEM. YUCATÁN: 12 km, S Progreso, 14.VII.1986, on dead leaves of fallen trees, low forest, 3 QUEM.

Tadinella olmeca Mockford
T. olmeca Mockford, 1975, Folia Entomol. Mex. 31-32: 102


Tadinella vitata sp. nov.
(Figs. 5-13)

Female. Color. Body amber creamy. Compound eyes black; maxillary palps and antennae pale brown. A narrow, reddish brown band on each side of head, from compound eyes to epistomal suture, partially enclosing antennal fossae, and extending into postclypeus. Thorax with reddish brown spots on pleurae, forming two irregular bands. Legs amber brown, coxae with ochre spots basally. Abdomen with a broad stripe on each side, the stripes irregular, each formed by the succession
of S-shaped marks on segments 1-7 (Figs. 5 and 6). Clunium unpigmented dorsally, on area next to epiproct, sides brown (Fig. 9).

**Morphology.** Apertous. Subgenital plate setose, rounded posteriorly, with a row of strong setae on posterior margin, next to T-shaped sclerite; stem of T-shaped sclerite short, arms elongate; pigmented area of subgenital plate deeply concave anteriorly (Fig. 8). Gonapophyses elongate, typical of the genus (Fig. 10). Paraprocts setose, without sensory fields; epiproct trapezial, setose (Fig. 9).

**Measurements.** F: 384; T: 428; t1: 232; t2: 54; t3: 59; P4: 96; f1: 98; f2: 108; f3: 114; f4: 108; f5: 96; f6: 95; f7: 75; f8: 80; f9: 70; f10: 75; IO: 232; D: 124; d: 82; IO/D: 1.86; PO: 0.65.

**Male. Color.** Same as the female. Lateral stripes slender, not as broad as in the female. Abdominal tergites 3-7 with a slender, sclerotized band along anterior margin (Fig. 11).

**Morphology.** Apertous. Tenth tergite with the usual pair of sclerotized apophyses; these short, rounded; each basally with a pair of setae (Fig. 12). Phallosome (Figs. 13), narrower anteriorly; parameres narrowing distally, terminally acuminate.

**Measurements.** F: 242; T: 335; t1: 99; t2: 39; t3: 46; P4: 81; f1: 80; f2: 91; f3: 95; f4: 83; f5: 87; f6: 78; f7: 66; f8: 69; f9: 61; f10: 59; IO: 172; D: 100; d: 65; IO/D: 1.72; PO: 0.65.

**Type locality.** MÉXICO. VERACRUZ. Los Tuxtlas, UNAM Biology Station, 26.VI.1979, beating vegetation in forest, holotype ♂, allotype ♀, two paratypes ♀ (IBUNAM).


A variant of *Tapinella vittata* was detected in several localities in the states of Chiapas, Hidalgo, Oaxaca, Puebla, and San Luis Potosí. This variant, of which only females are known, is here referred to as *Tapinella vittata forma semicircularis*; it presents the same pattern of body pigmentation as *T. vittata*, but the lateral abdominal stripes are considerably extended towards the middle of the tergites (Fig. 14), the pigment is more intense, the pigmentation of the clunium is similar to that of *T. vittata*, and the measurements are comparable. So far as presently known, the populations of both forms only coincide, in the same habitat, in one locality in the state of Oaxaca (ca. Valles Nacional), within the range of distribution of *T. vittata*.  

**Notes.**
As no males have been found associated with it, and until more data on distribution is available, I prefer not to treat this form as a different species from *T. vittata*.

*Tapinella vittata* forma *semicircularis* (♀)
(Fig. 14)

**Female. Color.** Body amber creamy; pattern of pigmentation as in *T. vittata*, but bands on sides of abdomen extended towards the middle of the tergites. Bands of thoracic pleuræ and abdominal stripes reddish brown, more intense than in *T. vittata*. Pigmentation of elytrum same as in *T. vittata* (Fig. 9).

**Morphology.** Apterous. Subgenital plate, gonapophyses, T-shaped sclerite, epiproct and paraprocts, same as *T. vittata*.

**Measurements.** F: 373; T: 417; t1: 227; t2: 54; t3: 57; P4: 87; fl: 98; f2: 101; f3: 109; f4: 154; f5: 90; f6: 102; f7: 78; f8: 86; f9: 68; f10: 80; fl0: 234; D: 130; d: 82; IO/D: 1.8; PO: 0.63.


*Tapinella* is a genus predominantly neotropical that includes 31 species, 13 of which occur in the Neotropical region; four species have been recorded in Africa, six occur in the Oriental and five in the Pacific regions, while two species have been recorded in Madagascar and one species each occur in the Nearctic, Paleartic and Australian regions (Table 1). The distribution data presented in Table 1, partially taken from Smithers’ *Catalogue of the Psocoptera of the World* (1967) besides pointing to the actual distributions for the species, may also reflect the effort dedicated to the study of the Pachytrocoptidae in different areas.

**ACKNOWLEDGMENTS**

I wish to thank Javier García Figueroa, Instituto de Biología, UNAM, for the male specimen of *Pachytrocoptes iterpaenonis*, and for the collection of other pachytroctids. Special thanks to Dr. C. N. Smithers, Australian Museum, Sydney, and to an anonymous reviewer, for their critical reading and useful comments and suggestions to the original manuscript.
<p>| Table 1. Species of <em>Nanopocus</em>, <em>Pachytyroctes</em>, <em>Psacudium</em> and <em>Tupinella</em>, and distribution |
|---------------------------------|----------------------------------|
| <em>Nanopocus falsus</em> Badonnel     | Angola, Reunion Is.               |
| <em>N. falsus</em> Badonnel, (n. comb.), 1977a, 927 |                                     |
| <em>Onychotroctes africana</em> Badonnel, 1973, 78 |                                     |
| <em>N. longicornis</em> Badonnel       | Madagascar                        |
| <em>N. longicornis</em> Badonnel, 1976, 1157 |                                     |
| <em>N. oceanicus</em> Pearman          | Vanuatu (New Hebrides), Togo, Benin, Ivory Coast, Zaire, Equatorial Guinea, Reunion Is., Japan, Spain, México, Jamaica, Florida |
| <em>N. oceanicus</em> Pearman, 1928, 134 |                                     |
| <em>N. pictus</em> Baz                 | Equatorial Guinea, (Bioko Island) |
| <em>N. pictus</em> Baz, 1990b, 437      | Angola                            |
| <em>Onychotroctes trifasciatus</em> Badonnel, 1969, 73 |                                     |
| <em>Pachytyroctes aegyptius</em> Enderlein (<em>Pachytyroctes</em>) | Egypt                             |
| <em>P. aegyptius</em> Enderlein, 1905, 46 |                                     |
| <em>P. acrostia</em> Thornton &amp; Woo (<em>Neotroctes</em>) | Galápagos Is.                     |
| <em>P. acrostia</em> Thornton &amp; Woo, 1973, 24 |                                     |
| <em>P. aglyphus</em> Badonnel (<em>Pachytyroctes</em>) | Angola                            |
| <em>P. aglyphus</em> Badonnel, 1955, 107 |                                     |
| <em>P. ambiatus</em> Badonnel (<em>Pachytyroctes</em>) | Angola                            |
| <em>P. ambiatus</em> Badonnel, 1955, 105 |                                     |
| <em>P. aurantiacus</em> Badonnel (<em>Pachytyroctes</em>) | Ivory Coast, Senegal              |
| <em>P. aurantiacus</em> Badonnel, 1949a, 35 |                                     |
| <em>P. australis</em> Ribaga (<em>Pachytyroctes</em>) | South Africa                      |
| <em>P. australis</em> Ribaga, 1911, 159 |                                     |
| <em>P. bicoloripes</em> Badonnel (<em>Pachytyroctes</em>) | Ivory Coast, Senegal              |
| <em>P. bicoloripes</em> Badonnel, 1949a, 33 |                                     |
| <em>P. brasilianus</em> Roseler (<em>Neotroctes</em>) | Brazil                            |
| <em>P. brasilianus</em> Roseler, 1940, 228 |                                     |</p>
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<td><em>P. velutinus</em> Badonnel</td>
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<td>P. vietieli Badonnel, 1976, 1, 155</td>
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*Psudium bilimbatum* Enderlein

*P. bilimbatum* Enderlein, 1908, 777

(Lizhong, 1987, 3, transferred *P. bilimbatum* to *Antilospocus*, but this change seems to require more fundamental).

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<tr>
<th>Common Name</th>
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Figs. 1-4. *Tapinella bicolorata* n. sp. (♀). 1. Dorsal view. 2. Subgenital plate. 3. Right paraproct, right gonapophyses, epiproct and chelium. 4. Right gonapophyses. Scales in mm. Figure 2 to scale of figure 3.
Figs. 5-10. *Tapinella vittata* n. sp. 5. Dorsal View, (♂) 6. Side View (♀) 7. Spermatheca, (♀) 8. Subgenital plate, (♂) 9. Clunium, gonapophyses, paraprocts and epiproct, (♀) 10. Right gonapophyses, (♀). Scales in mm. Figure 5 to scale of figure 6. Figure 7 to scale of figure 10.