



Studies on neotropical Phasmatodea V: Notes on certain species of *Pseudosermyle* Caudell, 1903, with the descriptions of three new species from Mexico (Phasmatodea: Diapheromeridae: Diapheromerinae: Diapheromerini)

OSKAR V. CONLE¹, FRANK H. HENNEMANN² & PAOLO FONTANA³

¹Goldbachweg 24, 87538 Bolsterlang, Germany. E-Mail: conle@phasmatodea.com

²Triftstrasse 104, 67663 Kaiserslautern, Germany. E-Mail: hennemann@phasmatodea.com

³Università di Padova, Dipartimento Agronomia Ambientale e Produzioni Vegetali – Entomologia AGRIPOLIS, Viale dell'Università, 16 35020 Legnaro (Padova), Italy. Website: www.phasmatodea.com

Abstract

Six species of *Pseudosermyle* Caudell, 1903 occurring in Mexico are discussed. Three new species from Mexico are described and illustrated, all of which are closely related to *Pseudosermyle phalangiphora* (Rehn, 1907): *P. chorreadero* n. sp. from both sexes, *P. procera* n. sp. and *P. claviger* n. sp. from the males only. The males of *P. inconguens* (Brunner v. Wattenwyl, 1907) and *P. tolteca* (Saussure, 1859) are re-described and illustrated. Detailed descriptions and illustrations are furthermore provided for both sexes and the eggs of *P. phalangiphora* (Rehn, 1907).

Taxonomic problems caused by misidentifications and wrong synonymies of previous authors concerning to these six species are clarified. A lectotype is designated for *Pseudosermyle inconguens* (Brunner v. Wattenwyl, 1907). *Ocnophila crudis* Brunner v. Wattenwyl, 1907 and *Dyme depressa* Brunner v. Wattenwyl, 1907 are shown to be junior synonyms of *P. phalangiphora* Rehn, 1907.

Key words: Phasmatodea; Diapheromeridae; Diapheromerinae; Diapheromerini; *Pseudosermyle*; Mexico; Belize; Guatemala; Honduras; *P. chorreadero* n. sp.; *P. claviger* n. sp.; *P. inconguens*; *P. phalangiphora*; *P. procera* n. sp.; *P. tolteca*; new species; new synonyms; keys; lectotype

Introduction

Examination of extensive material shows the Mexican phasmid fauna to be apparently rich and highly diverse but up to date very poorly studied, with only about 90 species recorded so far. The high biodiversity of Mexico is explained by its geographical position and its rather complex topography, which includes mountains with altitudes up to 5700 m, as well as various types of environments and climatic zones ranging from dry lowland savannah and grasslands in the north to tropical rainforest in the south. The northern and central regions between the Cordillera Occidental and Cordillera Oriental represent a transition zone between the faunas of the Nearctic and Neotropical Realms, termed the “Mexican transition zone” (Morrone, 2006).

A survey of the Mexican orthopteroid insects was carried out from 2004 through 2006 and is still ongoing. This has so far resulted in several expeditions under the leadership of one of the authors (Paolo Fontana, Italy). Besides many interesting Orthoptera of various orders, large numbers of Phasmatodea were collected from numerous localities. In addition to this recently collected material, more than 1000 specimens from the Instituto de Biología, Universidad Nacional Autónoma de México (UNAM) are at hand for examination and will support upcoming studies on the Phasmatodea of Mexico by the authors.

The extensive material collected during 2004–2006 shows the great importance of new collections for our understanding of the diverse Mexican fauna, as these can serve precise locality data, information on the habi-

tats and preferably even the host-plants of the insects collected. Material from both sources contains numerous species which are new to science and show several representatives of Diapheromerinae in particular to exhibit a wide range of intraspecific variation and tendency to develop distinct colour morphs in Mexico. Each locality in Mexico reveals new species and geographical forms of described species, the latter of which appear to be rather constant in each locality. This fact decidedly increases the difficulty in differentiating species and defining specific characters.

This paper is the fifth part of an on-going study of the neotropical Phasmatodea (written by the first two authors) and deals with the discussion of six species of *Pseudosermyle* Caudell, 1903, three of which are newly described. Extensive comparison of specimens from a wide range of localities has shown the shape and structure of the terminal abdominal segments and external genitalia, like the cerci or terminal appendix of the poculum of ♂♂, to be the most prolific characters for the distinction of species. ♀♀ appear to be apparently difficult to distinguish and are almost impossible to attribute to a certain species, without having specimens in copula. Therefore, the present study puts the main emphasis on features of the ♂♂ genitalia.

Abbreviations

ANSP:	Academy of Natural Sciences, Philadelphia / USA.
BMNH:	The Natural History Museum, London / England.
MHNG:	Muséum d'histoire naturelle, Geneva / Switzerland.
MNHN:	Muséum d'Histoire naturelle, Paris / France.
NHMW:	Naturhistorisches Museum, Vienna / Austria.
UNAM:	Instituto de Biología, Universidad Nacional Autónoma de México / México.
FH:	Private collection Frank H. Hennemann, Kaiserslautern / Germany.
OC:	Private collection Oskar V. Conle, Bolsterlang / Germany
HT:	Holotype
PT:	Paratype
LT:	Lectotype
PLT:	Paralectotype

Pseudosermyle Caudell, 1903

Type-species: *Pseudosermyle banksii* Caudell, 1903: 871, by original designation.

Comments. Caudell (1903: 867) established *Pseudosermyle* for five United States species, provided a key and designated the newly described *P. banksii* from Texas (Brazos County) as the type-species. Zompro (2001a: 216) provided a brief diagnosis of the genus and a preliminary list of species. Currently (Otte & Brock, 2005: 291 ff.), 21 species are attributed to *Pseudosermyle*, several of which are only known from the type-specimen(s) or a single sex. Three new species from Mexico are described below. Due to the very fractional knowledge of the genus no generic diagnoses can be provided with confirmation. The very diverse structure of the male genitalia and the cerci in particular, indicate the genus as presently treated may contain several distinct generic units. However, any broader discussion on this subject or eventual splitting of the genus is only possible with extensive research and examinations of the complete vast amount of museum specimens and realisation of new collections in Central America. The aim of the present paper restricts to the descriptions of the three new species found among material from the UNAM collection.

Therefore the keys presented below can only be provisional but appear to be warranted for easier determination.

Distribution. Southwestern USA and Central America.

List of species discussed below:

1. *Pseudosermyle chorreadero* **n. sp.** [Mexico: Chiapas]
2. *Pseudosermyle claviger* **n. sp.** [Mexico: Veracruz]
3. *Bacunculus incongruens* Brunner v. Wattenwyl, 1907: 336. [Mexico: Veracruz]
4. *Sermyle phalangiphora* Rehn, 1907: 229. [Mexico, Belize & Guatemala]
= *Ocnophila crudis* Brunner v. Wattenwyl, 1907: 312. **n. syn.**
= *Dyme depressa* Brunner v. Wattenwyl, 1907: 327. **n. syn.**
5. *Pseudosermyle procera* **n. sp.** [Mexico: Veracruz]
6. *Bacteria tolteca* Saussure, 1859: 62. [Mexico]

Keys to the six species discussed below:

Female (Those of *P. claviger* **n. sp.**, *P. incongruens* (Brunner v. Wattenwyl, 1907) and *P. procera* **n. sp.** are not known)

1. Pronotum with four prominent spines *tolteca*
- Pronotum without prominent spines 2
2. Mesofemora longer than mesonotum; cerci not projecting over anal segment, rounded apically
..... *chorreadero* **n. sp.**
- Mesofemora distinctly shorter than mesonotum; cerci projecting over anal segment, pointed towards the
apex..... *phalangiphora*

Male

1. Cerci forked apically..... 2
- Cerci not forked apically..... 5
2. Sternite IX bearing a dextralateral appendix, projecting distinctly over poculum..... 3
- Sternite IX with a very indistinct dextralateral appendix, not projecting over poculum.. *chorreadero* **n.sp.**
3. Anal segment distinctly wider than long; left cercus at best as long as right cercus; both cerci shorter than
anal segment *incongruens*
- Anal segment at best as wide as long; left cercus distinctly longer than right cercus; left cercus longer than
anal segment 4
4. Mesonotum < 7x longer than wide; arms of left cercus widely diverging *phalangiphora*
- Mesonotum > 10x longer than wide; arms of left cercus pipe wrench-like *procera* **n. sp.**
5. Cerci straight or only very indistinctly down-curving; sternite IX distinctly longer than wide, without a
sinistral dorsolateral spine *tolteca*
- Cerci very distinctly incurving; sternite IX distinctly shorter than wide, bearing a broad sinistral dorsolat-
eral spine..... *claviger* **n. sp.**

***Pseudosermyle chorreadero* n. sp.**

(Figs. 1–3, 15–16)

HT, ♂: Mexico, Chiapas, El Chorreadero, 13.IX.1980, Coll. C.R.B. (UNAM).

PT, ♀: Mexico, Chiapas, El Chorreadero, 13.IX.1980, Coll. C.R.B. (UNAM).

Distribution: Mexico (Chiapas: El Chorreadero).

Etymology: This new species is named after the type-locality El Chorreadero, a waterfall in the Chiapas district of Mexico.

Differentiation: ♂♂ are distinguished from the other species with forked cerci, *P. incongruens* (Brunner v. Wattenwyl, 1907), *P. phalangiphora* (Rehn, 1907) and *P. procera* n. sp., by: the strongly reduced dextrolateral appendix of sternite IX, which does not project over the apex of the poculum; the strongly reduced dorsal arm of the right cercus, and the long mesofemora which are distinctly longer than the mesonotum. ♀♀ differ from *P. phalangiphora* (Rehn, 1907) by: the more distinct spines of the head and thorax; longer mesofemora which are at least as long, or longer than the mesonotum, and the shorter, apically rounded cerci. From *P. tolteca* (Saussure, 1859) ♂♂ differ by the lack of the four prominent spines on the pronotum and longer mesofemora which are at least as long, but usually longer than the mesonotum.

Description: The following descriptions of the ♀ and ♂ are based on the dried and pinned types, which probably lost their original colouration during the preservation. Therefore the colouration is only described briefly.

♀♀ (Fig. 16): Medium-sized (body length 70.3 mm) and rather robust for the genus. Complete body surface, but head and thorax in particular, densely covered with granules and small spines. General colouration of head and body brown or green. Legs brown to dark-brown with indistinct dark and pale patches. Antennae uniformly pale to mid brown in basal half and faintly annulated with yellow afterwards.

Head: Elongate, at best 1.5 x longer than wide, parallel-sided, oval in cross-section; vertex flat and covered with many minute spines. Between the eyes with two sharply pointed spines (length 0.5–1 mm). Eyes small, circular and strongly convex. Antennae distinctly longer than head and thorax combined (broken in the PT and probably reaching as far as to the posterior margin of tergite IV). Antennomeres very short and decreasing in length towards apices of antennae, densely covered by minute setae. Scapus dorsoventrally flattened, rectangular and about 2x longer than wide. Pedicellus cylindrical, broader than following antennomeres and about half the length of scapus.

Thorax: Complete surface densely covered with large granules and minute spines, longitudinal dorsomedian line very indistinct. Meso- and metathorax slightly broadened towards the posterior. Pronotum parallel-sided, as wide but slightly shorter than the head, 1.3x longer than wide and slightly constricted medially. Transverse median depression very distinct, slightly curved and reaching to lateral margins of segment. Mesothorax elongate and round in cross-section, mesonotum about 4x longer than pronotum and 4–5x longer than wide. Metanotum 2x longer than wide, about half as long as mesonotum, parallel sided. Pro-, meso- and metasternum simple.

Abdomen: Hardly longer than head and thorax combined. Dorsal surface less distinctly granulose than thorax but with a distinct longitudinal dorsomedian carina reaching from the median segment to the anal segment. Otherwise, tergites with several longitudinal carinae. Transverse fissure between median segment and metanotum distinct and almost straight. Median segment transverse, about 2x wider than long, and about 1/3 the length of the metanotum. Segments II–III slightly increasing, IV–VII decreasing in width. Segments II–VII slightly increasing in length, II 1.2, VI 1.6x VII, and VII 1.7–2x longer than wide. Tergites VIII and IX about as wide as long, strongly convex and shorter than anal segment. VIII and IX the shortest and narrowest, III–V the longest and widest tergites. Anal segment longer than IX, parallel sided, with the median carina very distinct and the posterior margin rounded with a broad median incision. Lateral margins with a faint concave excavation near the bases of the cerci. Sternites II–VII simple and granulose. VII with an indistinct praeopercular organ formed by a small medial notch at posterior margin. Supraanal plate short with the apex angulate and not reaching the posterior margin of anal segment. Subgenital plate small, flat and scoop-shaped, at best reaching half way along anal segment (Fig. 3), minutely setose and with apex very sharply pointed. Cerci small, short, triangular in cross-section, tapered towards a blunt and rounded apex, not projecting over anal segment. Gonapophyses elongate, slender, apically up-curving, and completely covered by the subgenital plate.

Legs: All rather long and slender, profemora slightly longer than mesonotum, mesofemora at least as long as mesonotum, hind legs distinctly projecting over apex of abdomen. All distinctly carinated, destitute of teeth or spines and with all carinae minutely bristled. Profemora considerably compressed and curved basally. Mesofemora without sub-basal lobes on the ventral carinae (at least in the unique ♀ known).

♂♂ (Fig. 15): Medium-sized (body length 60.2 mm) rather slender and elongate. Body smooth and slightly shiny, head with two blunt tubercles between the eyes. General colouration of head and body dark brown with dark green longitudinal stripes along the lateral surfaces of the meso- and metathorax. Legs of same general colour as body, but with distinct yellow annulations. Antennae uniformly pale to mid brown in basal half, very indistinctly annulated with yellow in the apical half.

Head: As in female but smooth, without granules or spines and between the eyes with two low blunt tubercles. Eyes as in female. Antennae as in female, but relatively longer and possibly projecting the apex of the abdomen (broken in HT).

Thorax: Complete surface smooth and partly shiny. Meso- and metathorax round in cross-section and slightly constricted medially. Pronotum parallel-sided, slightly shorter and as wide as the head, 1.3–1.5x longer than wide, slightly constricted medially. Transverse median depression distinct, slightly curved and reaching lateral margins of segment. Mesonotum more slender and 5–6x longer than pronotum, 6–7x longer than wide, slightly widened at the posterior and anterior margins. Metanotum 4–5x longer than wide, about 2/3 the length of mesonotum and slightly widened at the posterior and anterior margins. Pro- meso- and metapleurae and sterna smooth and simple.

Abdomen: As long as head and thorax combined. Surface smooth and partly shiny. Transverse fissure between median segment and metanotum distinct and almost straight. Median segment hardly wider than long, ¼ the length of metanotum. Segments II–VII longest and most slender segment, parallel sided, 3–5x longer than wide. Tergite VIII wider than VII, slightly widened towards the posterior, about as long as wide. IX narrower than VIII, medially constricted and hardly longer than wide. Anal segment widest, strongly convex and prominently widened towards a broad, rounded posterior margin. Sternites II–VII smooth and shiny. Supraanal plate very small and hardly visible in dorsal aspect. Cerci very prominent and nearly equal in length to another, about as long as anal segment, triangular in cross-section and incurving (Fig. 2). Left cercus forked at about two thirds the length, the dorsal branch directed somewhat dorsad and nearly as long as the other branch which is produced horizontally; covered with minute pale setae. Right cercus like left cercus, but dorsal branch reduced to a very small blunt heap. Vomer dark brown, longer than wide, elongate and longitudinally separated into two equal parts. Dextral appendix of sternite IX reduced to a very small conical apex, not projecting the poculum. Poculum of moderate size and slightly pointed towards the apex (Fig. 1).

Legs: Generally as in female but more slender and mesofemora distinctly longer than mesonotum. Mesofemora without lobes.

Pseudosermyle claviger n. sp.

(Figs. 4–5, 17)

HT, ♂: Mexico, Veracruz, Santiago Tuxtla, Cerro del Vigía, 12.VI–9.IX.1964 (UNAM).

PT, ♂: Mexico, Veracruz, Cerro del Vigía, leg. Carlos, 1996 (coll. OC).

Distribution: Mexico: Veracruz.

Etymology: The specific name *claviger* (lat. = carrier of the club) refers to the club-shaped cerci of ♂♂.

Differentiation: Closely related to *P. tolteca* (Saussure, 1859) with which it has the club-shaped cerci and elongate body in common. ♂♂ however differ by the distinctly incurving cerci and the distinctly shorter than wide sternite IX which bears a distinct sinistral dorsolateral spine.

Description: The following description of the ♂ is based on the dried and pinned types. Attention is to be drawn to the colour, as the dried specimens are not in a very good condition and probably lost their original colour.

♂♂ (Fig. 17): Large (body length 67.3–70.7 mm), very slender and elongate for the genus. Body smooth, head with two minute, blunt tubercles between the eyes. General colouration of body and head pale to mid brown with indistinct greenish longitudinal stripe along the lateral surfaces of meso- and metathorax. Terminal three segments of abdomen of somewhat paler colouration than rest of body. Legs of same general colour as body, but partly indistinctly yellowish annulated. Antennae uniformly pale to mid brown in basal half, very indistinctly annulated with yellowish segments in apical half.

Head: Elongate, 1.5x longer than wide, slightly narrowed towards the posterior, oval in cross-section. Vertex flat and smooth, between the eyes with two low blunt tubercles. Eyes small, circular and strongly convex. Antennae distinctly longer than head and thorax combined, projecting over apex of abdomen. Antennomeres very short and decreasing in length towards apices of antennae; all densely setose. Scapus dorsoventrally flattened, rectangular and about 2x longer than wide. Pedicellus cylindrical, broader than following antennomeres and about half the length of scapus.

Thorax: Meso- and metathorax round in cross-section and slightly constricted medially. Pronotum parallel-sided, slightly shorter and more slender than head, 1.5 x longer than wide, slightly constricted medially. Transverse median depression distinct, slightly curved and reaching to lateral margins of segment. Mesonotum elongate, about 8x longer and more slender than pronotum, at least 12–15x longer than wide, slightly widened at the posterior and anterior margins. Metanotum about 8x longer than wide, about 2/3 the length of mesonotum, slightly widened at the posterior and anterior margins. Pro- meso- and metapleurae as well as sterna smooth and simple.

Abdomen: As long as head and thorax combined. Surface smooth. Transverse fissure between median segment and metanotum distinct and almost straight. Median segment slightly longer than wide, 1/6 the length of metanotum. Segments II–VI longest and most slender, parallel sided and of uniform length 4–5x longer than wide. VII shorter than VI, 4x longer than wide. Tergite VIII widest, broader than VII, widened towards the posterior margin, distinctly swollen in the posterior half and longer than wide. IX narrower than VIII and X, constricted medially and transverse, being 2x wider than long. Anal segment narrower than VIII, about as wide as long, strongly convex and moderately tapered towards a rounded, but medially incised posterior margin. Sternites II–VII smooth and shiny. Supraanal plate very small and not visible from dorsal aspect. Cerci club-shaped, distinctly incurving, thickened apically and bearing a small blunt sub-apical tubercle at the interior surface (Fig. 5). Both round in cross-section, longer than anal segment and covered with many minute pale setae. Sternite IX wider than long, as long as anal segment and bearing a distinct sinistral dorsolateral spine with a flattened apex (Fig. 4). Poculum small and simple, cup-shaped, posterior margin slightly projecting over anal segment.

Legs: All long and slender, profemora slightly longer than mesonotum, mesofemora shorter than mesonotum, hind legs distinctly projecting over apex of abdomen. All distinctly carinated, destitute of teeth or spines and with all carinae minutely bristled. Profemora considerably compressed and curved basally.

Pseudosermyle incongruens (Brunner v. Wattenwyl, 1907)

(Figs. 6–7, 18)

Bacunculus incongruens Brunner v. Wattenwyl, 1907: 336. **LT** [by present designation], ♂: Atoyac, Vera Cruz, Schumann; Collectio Br.v.W.; det. Br.v.W. *Bacunculus incongruens*; 23.861

(NHMW, No. 680). [**not** **PLT**'s from Guatemala (Teapa, Senahu & Purula) in NHMW and BMNH ◊ These are *P. phalangiphora* (Rehn, 1907)].

Shelford, 1908: 352.

Pseudosermyle incongruens, Zompro, 2001a: 216.

Otte & Brock, 2005: 291 (in part).

Heteronemia phalangiphora, Hebard, 1932: 217. [invalid synonymisation with *incongruens*]

Brock, 1993: 19 (in part).

Brock, 1998: 34 (in part).

Material examined [1 ♂]: 1 ♂: Mexico, Fortin, Veracruz, 9.VIII.1985, via T.W. Taylor, BMNH(E) 2005-98 (BMNH).

Distribution: Mexico (Veracruz).

Differentiation: ♂♂ differ from the three other species with forked cerci, *P. phalangiphora* (Rehn, 1907), *P. chorreadero* n. sp. and *P. claviger* n. sp., by: anal segment distinctly wider than long; left cercus at best as long as, but usually shorter than the right cercus; both cerci shorter than anal segment, and appendix of sternite IX strongly incurving.

Description: The following description of the ♂♂ is predominantly based on the dried and pinned LT in NHMW. The colour of live specimens may differ slightly from the description here given, although the specimen is very well preserved.

♂♂ (Fig. 18): Medium-sized (body length 53.0 mm) and rather robust for the genus. Body smooth and shiny. Head with two minute, blunt spines between the eyes. General colouration of head and body mid brown with indistinct longitudinal greenish stripes along the lateral sides of the meso- and metathorax. Legs of same general colour as body, but indistinctly annulated with pale yellow. Antennae uniformly pale to mid brown in basal half, very indistinctly annulated with yellowish segments in apical half.

Head: Elongate, 1.5x longer than wide, slightly narrowed towards the posterior, oval in cross-section. Vertex flat and smooth, without granules, between the eyes with two low blunt spines. Eyes of moderate size, circular and strongly convex. Antennae distinctly longer than head and thorax combined, probably projecting the end of abdomen. Antennomeres very short and decreasing in length towards apices of antennae, all densely setose. Scapus dorsoventrally flattened, rectangular and about 2x longer than wide. Pedicellus cylindrical, broader than following antennomeres and about half the length of scapus.

Thorax: Complete surface smooth and partly shiny. Meso- and metathorax round in cross-section and slightly constricted medially. Pronotum parallel-sided, slightly shorter and as broad as the head, 1.3–1.5x longer than wide, slightly constricted medially. Transverse median depression distinct, slightly curved and reaching to lateral margins of segment. Mesonotum elongate, 5–6x longer and more slender than pronotum, 6–7x longer than wide, slightly widened at the posterior and anterior margins. Metanotum 4–5x longer than wide, about 2/3 the length of mesonotum and slightly widened at the posterior and anterior margins. Promeso- and metapleurae as well as sterna simple and smooth.

Abdomen: As long as head and thorax combined. Entire surface smooth and partly shiny. Transverse fissure between median segment and metanotum distinct and almost straight. Median segment hardly wider than long, ¼ the length of metanotum. Segments II–VII longest and narrowest, parallel sided and 3–5 x longer than wide. Tergite VIII broader than VII, slightly widened towards the posterior, about as long as wide. IX more slender than VIII, medially constricted and hardly longer than wide. Anal segment broadest segment, distinctly wider than long, strongly convex and prominently widened towards a rounded posterior margin. Sternites II–VII simple, smooth and shiny. Supraanal plate very small and not visible from dorsal aspect. Cerci very prominent and broad, nearly of equal length and shorter than anal segment (Fig. 7). Both triangular in cross-section, curved inwards, left cercus at best as long as right cercus. Cerci forked at about 2/3 the way off the base, the dorsal branch directed somewhat dorsad and equal in length to the lower branch, which is produced horizontally. Both covered with a few minute pale setae. Sternite IX on the right bearing a strongly incurving appendix with a laterally flattened apex, which is longer than the anal segment and clearly projects over the posterior margin of that segment (Fig. 6). Poculum of moderate size, pointed towards apex and projected by the finger-like, incurved dextralateral appendix of sternite IX.

Legs: All rather long and slender, profemora slightly longer than mesonotum, mesofemora slightly longer than mesonotum, hind legs distinctly projecting over apex of abdomen. All distinctly carinated, destitute of teeth or spines and with all carinae minutely bristled. Profemora considerably compressed and curved basally.

Comments: Brunner v. Wattenwyl (1907: 336) described *Bacunculus incongruens* based on 11 ♂♂ from four localities in the collections of NHMW and BMNH. Careful examination of the syntype-series has shown this to consist of two distinct species and all specimens except the ♂ from Atoyac in NHMW to be typical *P. phalangiphora* (Rehn, 1907). Consequently, and although the ♂ in NHMW does not match the body length given by Brunner v. Wattenwyl (60.0 mm) this is here selected as the lectotype of *B. incongruens* in order to fix Brunner v. Wattenwyl's species. This solution appears more appreciable rather than synonymising *B. incongruens* with *P. phalangiphora* (Rehn, 1907) and describing the ♂ from Atayoc as a new species. Hebard, 1932: 217 synonymized *B. incongruens* with *P. phalangiphora* but the synonym is invalid due to Hebard did not select a lectotype and was obviously not aware of the type series to represent two distinct species.

Pseudosermyle phalangiphora (Rehn, 1907)

(Figs. 8–10, 19–20, 23–25)

Sermyle phalangiphora Rehn, 1907: 229. **HT**, ♂: Belize, Br. Honduras; *Sermyle phalangiphora* Rehn; Type No. 5144;

Heteronemia phalangiphora (Rehn) det. Hebard 1931 (ANSP).

Hebard, 1932: 217.

Marquez, 1962: 280, fig.1 & 2. [Description of ♀]

Bacunculus phalangiphora, Shelford, 1908: 353.

Heteronemia phalangiphora, Brock, 1993: 19 (in part).

Brock, 1998: 34 (in part).

Pseudosermyle phalangiphora, Zompro, 2001a: 216.

Otte & Brock, 2005: 292.

Ocnophila crudis Brunner v. Wattenwyl, 1907: 312. **HT**, ♀: Museum Paris, Mexique, Salle 97-5##;

Type; 24, *Libethra crudis* Brunner v. Wattenwyl (MNHN). **n. syn.**

Shelford, 1908: 346.

Heteronemia crudis, Hebard 1932: 217.

Otte & Brock, 2005: 158.

Dyme depressa Brunner v. Wattenwyl, 1907: 327. **HT**, ♀ (nymph): Las Mercedes, 3000ft., Champion;

Collectio Br.v.W.; det. Br.v.W., *Dyme depressa* Br.; 23.8636 (NHMW, No. 664). **n. syn.**

Shelford, 1908: 348 (in part).

Brock, 1993: 19 (in part).

Bacteria depressa, Brock, 1998: 25 (in part).

Otte & Brock, 2005: 63 (in part).

Bacunculus incongruens Brunner v. Wattenwyl, 1907: 337 (in part- **only PLT's**). **PLT**, ♂: Teapa, Tabasco, Feb., H.H.S.;

Collectio Br.v.W.; det. Br.v.W. *Bacunculus incongruens* (NHMW, No. 680); **PLT**, ♂: Teapa, Tabasco, Feb., H.H.S.;

Collectio Br.v.W.; det. Br.v.W. *Bacunculus incongruens*; 23.860 (NHMW, No. 680); **PLT**, ♂: Senahu, Vera Paz,

Champion; Collectio Br.v.W.; det. Br.v.W. *Bacunculus incongruens*; 23.857 (NHMW, No. 680); **PLT**, ♂: Purula,

Vera Paz, Champion, Godman-Salvin Coll., 1908-168, B.C.A. Orth. II, *Bacunculus incongruens*, Brunn. (BMNH);

PLT, ♂: Purula, Vera Paz, Champion; Godman-Salvin Coll., 1908-168, B.C.A. Orth. II, *Bacunculus incongruens*,

Brunn., 40 (BMNH); **PLT**, 4 ♂♂: Senahu, Vera Paz, Champion; Godman-Salvin Coll., 1908-168, B.C.A. Orth. II,

Bacunculus incongruens, Brunn. (BMNH); **PLT**, ♂: Teapa, Tabasco, Jan., H.H.S., 41, B.C.A. Orth. II, *Bacunculus*

incongruens, Brunn.; Godman-Salvin Coll., 1908-168 (BMNH); **PLT**, ♂: Senahu, Vera Paz, Champion; 39, B.C.A.

Orth. II, *Bacunculus incongruens*, Redt., Godman-Salvin Coll., 1908-168; *Bacunculus incongruens*, Brunner, 1907

det. John Huxley, 1964 (BMNH).

Pseudosermyle incongruens, Otte & Brock, 2005: 291 (in part).

Material examined [47 ♂♂, 47 ♀♀, 1 ♂ (nymph), 5 ♀♀ (nymphs), eggs]: MEXICO: 1 ♂, 1 ♀, 2 ♀♀ (nymphs): Mexiko, Yucatan, Nähe Akumal, Aktun Chen, 2km von der Küste entfernt, 5–10m, 19.09.2002, leg. Conle & Friede (coll. OC); 1 ♀: Mexiko, Yucatan, Nähe Coba, km40 auf der Strasse von Tulum nach

Coba, 5–10m, 22.09.2002, leg. Conle & Friede (coll. OC); 15 ♂♂, 20 ♀♀, 1 ♂ (nymph), 3 ♀♀ (nymphs): Mexico, Veracruz, Santiago Tuxtla, Cerro del Vigia, 12.VI–9.IX.1964 (UNAM); 2 ♀♀: Mexico, Veracruz, Los Tuxtlas, Estación de Biología, 08.09.1977 (UNAM); 1 ♀: Mexico, Veracruz, Los Tuxtlas, Estación de Biología, 27.2.1969 (UNAM); 2 ♂♂: Mexico, Tabasco, Teapa, coll. Noct., 26.07.1962 (UNAM).

BELIZE: 10 ♂♂, 10 ♀♀: Ex Zucht O.Conle 2002, Zuchtstamm aus Belize (coll. OC); 5 ♂♂, 10 ♀♀, eggs: Ex ovo, B. Kneubühler 2006, Belize, Belmopan, leg. J. Meerman (coll. OC); 10 ♂♂, 2 ♀♀, eggs: ex Zucht: F. Hennemann, urspr.: Belize (via A. Harman), 2002–2003, PSG 237 (coll. FH, No's 0468-1 to 12 & E1); 1 ♂: Honduras, Middlesex, Stann Creek Dist., 125m, BMNH(E) 2005-98 (BMNH).

GUATEMALA: 1 ♂: Guatemala, Tamahu, Alta Verapaz, 1100m, 25.XI.1966, via T. Taylor, BMNH(E) 2005-98 (BMNH); 1 ♂: Guatemala, Baléu, Mpio, San Cristóbal, 1350m, 26.VIII.1966, via T. Taylor, BMNH(E) 2005-98 (BMNH); 1 ♂: Guatemala, Baléu, Mpio, San Cristóbal, 1350m, 30.VIII.1966, via T. Taylor, BMNH(E) 2005-98 (BMNH).

Distribution: Mexico (Veracruz, Tabasco, Campeche, Quintana Roo & Yucatan), Belize (all districts), Guatemala (Baja Verapaz & Alta Verapaz).

Differentiation: Closely related to *P. incongruens* (Rehn, 1907) and *P. chorreadero* n. sp. with which ♂♂ share the apically forked cerci. From the first ♂♂ differ by: the longer than wide anal segment; the left cercus being distinctly longer than the right; and the less distinctly incurving appendix of sternite IX. From *P. chorreadero* n. sp. it differs by: the prominent dextrolateral appendix of sternite IX which projects over the poculum of ♂♂, and shorter mesofemora which are at best equal in length (♂♂) or distinctly shorter than the mesonotum (♀♀), as well as the less distinct spines of the head and thorax and longer, apically rounded cerci of ♀♀.

Description: The following descriptions of the ♀ and ♂ are based on wild and captive reared specimens from Mexico and Belize. The colouration is described from live specimens.

♀♀ (Fig. 20): Medium-sized to large (body length 70.0–93.0mm), rather robust for the genus (maximum body width 7.2 mm). Head bearing two small, black sharply pointed spines between the eyes. General colouration of head, body and legs variable, ranging from uniformly dark green to pale or dark brown, sometimes overlaid with indistinct black speckles and patches or longitudinal lines. Eyes pale brown to greyish marbled. Antennae uniformly pale to mid brown in basal half, very indistinctly annulated with yellowish segments in apical half.

Head: Elongate, 1.5 x longer than wide, parallel-sided, oval in cross-section; vertex flat, covered by many indistinct rows of small granules. Between the eyes with two sharply pointed apices (length 0.5–1mm). Eyes small, circular and strongly convex. Antennae distinctly longer than head and thorax combined, reaching to posterior margin of tergite IV. Antennomeres very short and decreasing in length towards apices of antennae, all densely covered with minute setae. Scapus dorsoventrally flattened, rectangular and about 2x longer than wide. Pedicellus cylindrical, broader than following antennomeres and about half the length of scapus.

Thorax: Complete surface densely covered with small granules, longitudinal dorsomedian line very indistinct. Some specimens may have two small blackish dorsal spines close to the posterior margins of the meso- and metanotum. Meso- and metathorax round in cross-section and slightly broadened towards the posterior. Pronotum slightly shorter and as wide as head, 1.3x longer than wide, slightly constricted medially. Transverse median depression prominent, slightly curved and reaching to both lateral margins of segment. Mesonotum 4–5x longer than pronotum, 5x longer than wide and gently broadened towards the posterior. Metanotum 2.5x longer than wide, half as long as mesonotum, parallel sided. Pro-, meso- and metasternum simple and structured like the dorsal surface.

Abdomen: Hardly longer than head and thorax combined. Surface less distinctly granulose than thorax, with longitudinal dorsomedian carina being more distinct; this runs from the median segment to the anal segment. Tergites with several longitudinal carinae. Some specimens may have two small blackish spines close to the posterior margin of the tergites I–VII. Transverse fissure between median segment and metanotum distinct

and almost straight. Median segment transverse, at least 2x wider than long, and $\frac{1}{4}$ to $\frac{1}{3}$ the length of metanotum. Segment II–III slightly increasing, IV–VII decreasing in width. II–VI slightly increasing in length II 1.2x, VI 1.6 x, VII 1.7–2.0x longer than wide. Tergites VIII and IX about quadrate, shorter than anal segment, strongly convex and with a slight longitudinal median keel. VIII and IX the shortest and narrowest, III–V the longest and widest segments. Anal segment with a distinct median carina, parallel sided and posterior margin rounded with a wide median incision. Lateral margins with a faint concave excavation near the bases of the cerci. Sternites II–VII simple and rugulose. VII with an indistinct preopercular organ formed by a medial notch at the posterior margin. Supraanal plate short with an angulate apex, not reaching posterior margin of anal segment. Subgenital plate small, flat and lanceolate, reaching posterior margin of segment IX, minutely setose and apex sharply pointed. Cerci small, short, triangular in cross-section, lanceolate in dorsal and ventral aspect, tapered towards a distinctly pointed apex and projecting over anal segment. Gonapophyses elongate, slender, apically up-curving and in most specimens projecting over subgenital plate; not reaching to posterior margin of anal segment (Fig. 10).

Legs: All rather long and slender, profemora slightly longer than mesonotum, mesofemora distinctly shorter than mesonotum, hind legs distinctly projecting apex of abdomen. All distinctly carinated, destitute of teeth or spines and with all carinae minutely bristled. Profemora considerably compressed and curved basally. Mesofemora with a \pm developed sub-basal lobe on the antero- and posteroventral carinae; this may be prominent and foliaceous or completely absent.

♂♂ (Fig. 19): Medium-sized (body length 53.5–67.0mm), moderately slender and elongated for the genus. General colouration of body strongly variable, ranging from green, over straw to brown or even reddish-brown. Along the lateral surfaces of meso- and metathorax with greenish or bluish green longitudinal stripes. Legs of same general colour as body and with faint yellowish annulations. Antennae uniformly pale to mid brown in basal half, very indistinctly annulated with yellowish segments in apical half (sometimes uniformly brown).

Head: As in ♀♀ but smooth, without granules or spines. Between the eyes with two low blunt tubercles. Eyes as in ♀♀. Antennae as in ♀♀, but longer and projecting over apex of abdomen.

Thorax: Completely smooth and partly shiny, except a few minute granules on the mesonotum in certain specimens. Meso- and metathorax round in cross-section and slightly constricted medially. Pronotum slightly shorter and as wide as head, 1.3–1.5x longer than wide, slightly constricted medially. Transverse median depression distinct, gently curved and reaching to both lateral margins of segment. Mesonotum 5–6x longer and more slender than pronotum, 6–7x longer than wide, slightly widened at the posterior and anterior margins. Metanotum 4–5x longer than wide, about $\frac{2}{3}$ the length of mesonotum, slightly widened at the posterior and anterior margins. Pro-, meso- and metapleurae and sterna simple and structured like the dorsal surface.

Abdomen: As long as head and thorax combined. Surface smooth and partly shiny. Transverse fissure between median segment and metanotum distinct and almost straight. Median segment hardly wider than long, $\frac{1}{4}$ the length of metanotum. Segments II–VII longest and narrowest, parallel sided, 3–5x longer than wide. Tergite VIII wider than VII, slightly widened towards the posterior, about as long as wide. IX more slender than VIII, medially constricted and hardly longer than wide. Anal segment widest, about as wide as long, strongly convex and prominently widened towards the rounded posterior margin. Sternites II–VII simple, smooth and shiny. Supraanal plate very small and hardly visible in dorsal aspect. Cerci very prominent, triangular in cross-section, incurving and of unequal length. Left cercus longer than anal segment and 1.5x longer than right cercus (Fig. 9). Both cerci forked about $\frac{2}{3}$ of the base, the dorsal branch directed somewhat dorsad and shorter than the lower branch which is produced horizontally; covered with minute black setae. Left cercus of similar structure but more rudimentary forked. Vomer dark brown, longer than wide, elongate and longitudinally separated into two equal parts. Sternite IX on the right side bearing a slightly incurving, finger-like appendix with a laterally flattened apex, which is longer than the anal segment and distinctly projects over that segment. Poculum of moderate size and pointed tapered towards the apex, projected by the finger-like dextro-

lateral appendix of sternite IX (Fig. 8). The shape of the poculum shows considerable intraspecific variation and even differs slightly individually.

Legs: Generally as in ♀♀ but more slender and mesofemora nearly as long as mesonotum. Mesofemora without lobes.

Eggs (Figs. 23 & 24): All eggs examined for the following description were laid by captive reared specimens and were thus fully developed. The structure of the capsule surface and size shows considerable variation.

General colouration plain pale to mid brown, sometimes greyish. Micropylar plate somewhat darker and surrounded by a broad blackish margin. Capsule barrel-shaped, about 1.7x longer than wide, oval in cross-section, lateral surfaces convex in the centre. In lateral aspect the polar-area has an indistinct impression. Anterior margin of capsule simple. Capsule surface strongly rugulose with many irregular, hump-like structures; lower spaces in between densely granulose. Micropylar plate of moderate size, positioned in centre of dorsal capsule surface, oval, slightly less than 1.5x longer than wide and covering almost 1/3 of capsule length. Outer margin swollen, inner section smooth or at least less roughly structured than rest of capsule. Median line very prominently swollen and reaching to polar-area. Micropylar cup small and strongly convex, positioned close to the posterior margin of plate. Operculum oval, nearly flat and with a roughly circular, slightly elevated central region; otherwise structured like capsule but less distinct.

Measurements (in mm): length: 2.7–3.3, width: 1.6–2.0, height: 1.8–2.2, length of micropylar plate: 0.8–1.0.

Comments: Examination of the types of *Ocnophila crudis* Brunner v. Wattenwyl, 1907 in MNHN and *Dyme depressa* Brunner v. Wattenwyl, 1907 in NHMW has proven both species to be synonymous with *Pseudosermyle phalangiphora* (Rehn, 1907). Shelford, 1908: 348 lists three females of *Dyme depressa* Brunner v. Wattenwyl, 1907 from BMNH and considered one of them to be a type, but he did not refer to a unique specimen of the series. Brock (1993: 19 & 1998: 25) and Otte & Brock (2005: 63) listed the specimens as syntypes. In fact they are no types, as Brunner v. Wattenwyl described this species from a unique specimen from “Las Mercedes” in NHMW and did not mention any material in BMNH. Only one of the specimens in BMNH is labelled “Las Mercedes”, the other two specimens are from “Cerro Zunil” and “Purula, Vera Paz”, two locations not mentioned by Brunner v. Wattenwyl, 1907. Only the HT in NHMW matches with the measurements given by Brunner v. Wattenwyl, the specimens in BMNH are distinctly smaller. The ♀ nymph from “Cerro Zunil” in BMNH is most certainly a different species, as it has the posterior margin of the subgenital plate distinctly rounded (pointed in *phalangiphora*) and the apices of the meso- and metafemora obtusely swollen.

Detailed examination of the original syntype-series of *Bacunculus incongruens* Brunner v. Wattenwyl, 1907 in NHMW and BMNH has shown all paralectotypes to represent *P. phalangiphora* (Rehn, 1907) (◇ see comments on *P. incongruens* above).

Biology & breeding: *P. phalangiphora* (Rehn) is apparently common in the tropical parts of the Yucatan Peninsular and surrounding districts, undoubtedly being the most common species of the order in that region. It may be rather abundant in certain localities but never occurs in locally concentrated masses like species of the related *Diapheromera* Gray, 1835, often do.

P. phalangiphora has been cultured in Europe since the mid 1990's from stock originating in Belize and was subsequently included on the Phasmid Study Group culture-list as culture No. 237 “*Pseudosermyle* sp.”. In 2006 new stock was imported from Belmopan, Belize by Dr. B. Kneubühler (Switzerland). These specimens are remarkable for being distinctly larger than those of the first stock, but do not differ in any other aspect. *P. phalangiphora* is easy to rear in humid conditions and temperatures between 22–26 °C. Wet ground should be avoided and plenty of ventilation provided. Alternative food-plants accepted in captivity in Europe include bramble (*Rubus fruticosus*, Rosaceae), rose (*Rosa* spp., Rosaceae) and oak (*Quercus robur* & *Q. petraea*, Fagaceae).

***Pseudosemyle procera* n. sp.**

(Figs. 11–12, 21)

HT, ♂: Mexico, Veracruz, Santiago Tuxtla, Cerro del Vigia, 12.VI–9.IX.1964 (UNAM).

PT (7 ♂♂): 5 ♂♂: Mexico, Veracruz, Santiago Tuxtla, Cerro del Vigia, 12.VI–9.IX.1964 (UNAM); 1 ♂: Mexico, Veracruz, Cerro del Vigia, leg. Carlos, 1996, (coll. OC); 1 ♂: Mexico, Veracruz, Los Tuxtlas, Estación de Biología, 01.02.1978 (UNAM).

Distribution: Mexico (Veracruz).

Etymology: This new species is named “*procera*” (lat. = slender, elongate) referring to its very slender habitus.

Differentiation: Closely related to *P. phalangiphora* (Rehn, 1907), *P. chorreadero* n. sp. and *P. incongruens* (Brunner v. Wattenwyl, 1907) with which it shares the forked cerci. It is however easily distinguished from these three species by the much more slender body and characteristically pipe wrench-like left cercus (Fig. 12).

Description: The following description is based on the dried and pinned types. Hence care must be taken with the description of the colouration below, due to this may differ from live specimens.

♂♂ (Fig. 21): Medium-sized (body length 56.3–63.0 mm) and very slender for the genus. Body smooth; head with two minute, blunt spines between the eyes. General colouration of head and body dark-brown. Legs dark brown and sometimes reddish, very indistinctly annulated with drab-yellow. Antennae uniformly pale to mid brown in basal half, very indistinctly annulated with yellowish segments in apical half.

Head: Elongate, 1.5x longer than wide, slightly narrowed towards the posterior, oval in cross-section. Vertex flat and smooth, without granules between the eyes with two low blunt spines. Eyes small, circular and strongly convex. Antennae slightly longer than the body. Antennomeres very short and decreasing in length towards apices of antennae, all densely covered with minute setae. Scapus dorsoventrally flattened, rectangular and about 2x longer than wide. Pedicellus cylindrical, broader than following antennomeres and about half the length of scapus.

Thorax: Completely smooth. Meso- and metathorax round in cross-section and slightly constricted medially. Pronotum shorter and narrower than the head, 1.5x longer than wide and slightly constricted medially. Transverse median depression distinct, slightly curved and reaching to lateral margins of segment. Mesonotum elongate, 5–6x longer and more slender than pronotum, about 10x longer than wide, slightly widened at the posterior and anterior margins. Metanotum 6x longer than wide, about 2/3 the length of mesonotum, slightly widened at the posterior and anterior margins. Pro-, meso- and metapleurae and sterna simple and structured like the dorsal surface.

Abdomen: As long as head and thorax combined. Surface smooth. Transverse fissure between median segment and metanotum distinct and slightly down-curving. Median segment about as wide as long, 1/5 the length of metanotum. Segments II–VII longest and narrowest, parallel sided and 4–5x longer than wide. Tergite VIII widest, broader than VII, widened towards the posterior and longer than wide. IX narrower than VIII, medially constricted and hardly longer than wide. Anal segment wider than IX but narrower than VIII, hardly longer than wide, strongly convex and slightly widened towards a rounded, medially broadly excavated posterior margin. Sternites II–VII simple and smooth. Supraanal plate very small and not visible in dorsal aspect. Cerci prominent, long, slender and unequal in length. Left cercus almost 1.5x longer than right cercus but shorter than anal segment, covered with a few minute pale setae (Fig. 12). Triangular in cross-section, moderately incurving and forked at about 2/3 off the base. Left cercus conspicuously pipe wrench-like, right cercus lacking the outer branch. Sternite IX on the right bearing a moderately incurving, finger-like appendix with a pointed apex, which is longer than the anal segment and distinctly projects over the posterior margin of that segment (Fig. 11). Poculum of moderate size, slightly tapered towards the apex and projected by the finger-like dextralateral appendix of sternite IX.

Legs: All rather long and slender, profemora slightly longer than mesonotum, mesofemora slightly shorter than mesonotum, hind legs distinctly projecting over apex of abdomen. All distinctly carinated, destitute of teeth or spines and with all carinae minutely bristled. Profemora considerably compressed and curved basally.

***Pseudosermyle tolteca* (Saussure, 1859)**

(Figs. 13–14, 22)

Bacteria tolteca Saussure, 1859: 62. **HT**, ♂: *Bacunculus mexicanus* Sauss., Montes Mexicani, M. H.de.Saussure, (MHNG). Saussure, 1869: 367. [Description of ♀]

Kirby, 1904: 348. [as synonym of *Heteronemia mexicana* Gray, 1835]

Zompro & Brock, 2003: 25. [as synonym of *Heteronemia mexicana* Gray, 1835]

Otte & Brock, 2005: 159. [as synonym of *Heteronemia mexicana* Gray, 1835]

Heteronemia mexicana, Saussure, 1870: 152, pl. 3: 10, 11 & 11a (♂ & ♀). [Erroneous synonymisation of *Bacteria tolteca* Saussure]

Bacunculus mexicanus, Brunner v. Wattenwyl, 1907: 333.

Pseudosermyle sp., Zompro, 2001b: 222.

Material examined [6 ♂♂]: 1 ♂: Coll. Br.v.W.; Mexico, Deyrolle; det. Br.v.W. *Bacunculus mexicanus*; 6002; *Pseudosermyle* sp. det. O. Zompro IX.1999 (NHMW, No. 683); 1 ♂: Coll. Br.v.W.; Mexico, Deyrolle; det. Br.v.W. *Bacunculus mexicanus*; 23/6002 (NHMW, No. 683); 1 ♂: Coll. Br.v.W.; Mexico, Saussure; det. Br.v.W. *Bacunculus mexicanus*; 8672 (NHMW, No. 683); 1 ♂: Coll. Br.v.W.; Mexico, Saussure; det. Br.v.W. *Bacunculus mexicanus* (NHMW, No. 683); 1 ♂: Coll. Br.v.W.; Mexico, Deyrolle; det. Br.v.W. *Bacunculus mexicanus*; 6002 b (NHMW, No. 683); 1 ♂: Bilimek, Mexico, 1883; Collectio Br.v.W.; det. Br.v.W. *Bacunculus mexicanus* (NHMW, No. 683).

Distribution: Mexico (Cordillère orientale, Mexitlan & Bilimek).

Differentiation: Closely related to *Pseudosermyle claviger* n. sp. with which it shares the club-shaped cerci and very slender, elongate body of ♂♂. ♂♂ differ from *P. claviger* n. sp. by: the more or less straight cerci; distinctly longer than wide sternite IX and lack of the sinistral dorsolateral spine of sternite IX. ♀♀ clearly differ from *P. phalangiphora* (Rehn, 1907) and *P. chorreadero* n. sp. by the distinct spination of the head and thorax, and presence of four prominent spines on the pronotum.

Description: As no ♀♀ were at hand only a brief characterization is given below, based on the illustration of Saussure (1870: fig. 10).

♀♀: Large (body length 85.0–89.0 mm) for the genus. General shape of body similar to that of *P. phalangiphora* (Rehn, 1907). Head and complete thorax dorsally covered with numerous spines of variable size. Two prominent spines between the eyes. Four distinct spines on the pronotum. Cerci short, not projecting over posterior margin of anal segment. Saussure (1869: 367) mentioned the general colouration of the body to be green in live specimens.

♂♂ (Fig. 22): Large (body length 71.0–85.0 mm), very slender and elongate for the genus. Body smooth; head with two minute blunt tubercles between the eyes. General colouration of head and body pale to mid brown with indistinct greenish longitudinal stripes along the lateral surfaces of the meso- and metathorax. Legs of same general colour as body, but partly with faint yellowish annulations. Antennae uniformly pale to mid brown in basal half, very indistinctly annulated with yellowish segments in apical half.

Head: Elongate, 1.5x longer than wide, slightly narrowed towards the posterior, oval in cross-section. Vertex flat and smooth, without granules, between the eyes with two low blunt tubercles. Eyes small, circular and strongly convex. Antennae longer than body. Antennomeres very short and decreasing in length towards apices of antennae, densely covered with minute setae. Scapus dorsoventrally flattened, rectangular and about 2x longer than wide. Pedicellus cylindrical, broader than following antennomeres and about half the length of scapus.

Thorax: Completely smooth. Meso- and metathorax round in cross-section and slightly constricted medially. Pronotum slightly shorter and more slender than head, 1.5x longer than wide and slightly constricted medially. Transverse median depression distinct, slightly curved and reaching to lateral margins of segment. Mesonotum very elongate, about 8x longer and more slender than pronotum, at least 12–15x longer than wide and slightly widened at the anterior and posterior margins. Metanotum 8x longer than wide, about 2/3 the length of mesonotum, slightly widened at posterior and anterior margins. Pro-, meso- and metapleurae and sterna simple and structured like the dorsal surface.

Abdomen: As long as head and thorax combined. Surface smooth. Transverse fissure between median segment and metanotum distinct and almost straight. Median segment slightly longer than wide, 1/6 the length of metanotum. Segments II–VII longest and most slender, parallel sided and 4–5x longer than wide. Tergite VIII wider than VII, distinctly swollen in posterior half and widened towards the posterior, longer than wide. IX more slender than VIII and X, medially constricted and at least 2x wider than long. Anal segment widest, distinctly wider than long, strongly convex and tapered towards a rounded, medially incised posterior margin. Sternites II–VII simple, smooth and shiny. Supraanal plate very small and not visible in dorsal aspect. Cerci club-shaped, more or less straight, conspicuously thickened apically, round in cross-section and slightly shorter than anal segment; covered with a few minute pale setae (Fig. 14). Sternite IX forming a simple tube lacking any appendix or spine, distinctly longer than wide and longer than anal segment. Poculum small and simple, posterior margin slightly projecting over anal segment (Fig. 13).

Legs: All long and slender, profemora slightly longer than mesonotum, mesofemora shorter than mesonotum, hind legs distinctly projecting over apex of abdomen. All distinctly carinated, destitute of teeth or spines and with all carinae minutely bristled. Profemora considerably compressed and curved basally.

TABLE 1. Measurements of *Pseudosermyle chorreadero* n. sp., *Pseudosermyle claviger* n. sp., *Pseudosermyle incongruens* (Brunner v. Wattenwyl, 1907) and *Pseudosermyle procera* n. sp. [mm]

	<i>P. chorreadero</i> n. sp. HT, ♂ (UNAM)	<i>P. chorreadero</i> n. sp. PT, ♀ (UNAM)	<i>P. claviger</i> n. sp. HT* & PT, ♂♂ (UNAM & OC)	<i>P. incongruens</i> LT, ♂ (NHMW)	<i>P. procera</i> n. sp. HT* & PT, ♂♂ (UNAM & OC)
Body:	60.2	70.3	67.3 – 70.7	53.0	56.3 – 63.0
Pronotum:	2.5	3.9	2.6	2.6	2.9 – 3.5
Mesonotum	15.5	16.6	19.7 – 21.1	14.4	16.6 – 18.1
Metanotum:	8.4	7.8	10.4 – 12.0	9.0	8.7 – 10.2
Median segment:	2.3	3.0	2.4 – 2.9	1.7	1.7 – 1.9
Profemora:	22.2	19.1	22.9 – 23.6	20.0	21.1 – 21.7
Mesofemora:	18.5	17.5	16.7 – 19.0	15.5	15.7 – 16.7
Metafemora:	22.5	22.2	16.0 – 23.0	19.3	19.5 – 21.1
Protibiae:	26.5	22.8	27.3 – 27.8	22.0	23.6 – 25.3
Mesotibiae:	21.0	19.4	20.4 – 21.1	19.3	15.8 – 16.7
Metatibiae:	31.1	26.9	26.3 – 27.5	27.6	24.9 – 26.6
Antennae:	>44.0	>31.0	>49.8	>30.0	>60.0

* The measurements of the largest specimen belong to the holotype.

Comments: Saussure (1859: 62) originally described *Bacteria tolteca* from a single ♂ in MHNG and subsequently, (1869: 367) described the ♀. Saussure (1870: 152) provided illustrations of both sexes (pl. 3: 10, 11 & 11a) and erroneously synonymised *B. tolteca* with *Heteronemia mexicana* Gray, 1835, which is clearly a distinct species. The ♀♀ described by Saussure (1869) are unique for *Pseudosermyle* Caudell due to having

numerous, prominent spines on the head and thorax but appear to be the corresponding sex, as Saussure (1870: 154) stated to have collected 11 ♀♀ and 15 ♂♂ many of which were in copula in the Cordillère orientale near Mexititlan.

TABLE 2. Measurements of *Pseudosermyle phalangiphora* (Rehn, 1907) and *Pseudosermyle tolteca* (Saussure, 1859) [mm]

	<i>P. phalangi- phora</i> HT, ♂ (ANSP)	<i>P. phalangiphora</i> ♂♂ PLT's of <i>incon- gruens</i> (BMNH & NHMW)	<i>P. phalangi- phora</i> ♂♂	<i>P. phalangi- phora</i> ♀♀	<i>P. tolteca</i> ♂♂ *	<i>P. tolteca</i> ♀♀ *	<i>P. tolteca</i> ♂♂ (NHMW)
Body:	62.1	54.5–60.5	53.5–67.0	70.0–93.0	77.0–85.0	85.0–89.0	71.0– 76.5
Pronotum:	2.8	2.5–2.9	2.8–3.2	3.4–4.8	21.0–23.0	22.0–24.0	
Mesonotum	15.1	13.7–17.2	12.6–16.2	19.4–22.2	14.5–16.0	13.0–14.0	
Metanotum:	8.7	8.2–10.1	7.9–10.2	9.2–11.7	26.0–29.0	25.0–26.0	
Median segment:	1.8	1.7–2.0	1.9–2.5	2.1–3.2			
Profemora:	18.8	18.3–21.1	18.7–21.5	18.3–24.5			
Mesofemora:	15.0	15.2–16.0	14.2–17.8	14.0–18.4			
Metafemora:	19.9	18.9–21.2	18.6–22.7	18.5–25.6			
Protibiae:	23.5	23.8–25.7	20.1–27.5	19.4–25.7			
Mesotibiae:	18.2	17.1–19.7	15.4–19.9	13.7–18.3			
Metatibiae:	26.4	21.2–26.6	20.5–28.4	19.9–28.5			
Antennae:	>52.0	57.0–62.0	47.0–64.0	51.0–63.0			

* after Saussure, 1870: 152.

Acknowledgements

The following curators are thanked for access to the corresponding collections, loan of specimens and providing required data or photos: Dr. Enrique Mariño Pedraza (UNAM University, Colección Nacional de Insectos, Ciudad de Mexico), Dr. C. Amedegnato & S. Poulain (MNHN), Dr. U. Aspöck (NHMW), Dr. G. W. Beccaloni & J. Marshall (BMNH) and J. Weintraub (ANSP).

Furthermore, the authors would like to thank Dr. Bruno Kneubühler (Switzerland) who kindly provided live eggs and specimens of *Pseudosermyle phalagiphora* (Rehn, 1907) from Belmopan, Belize.

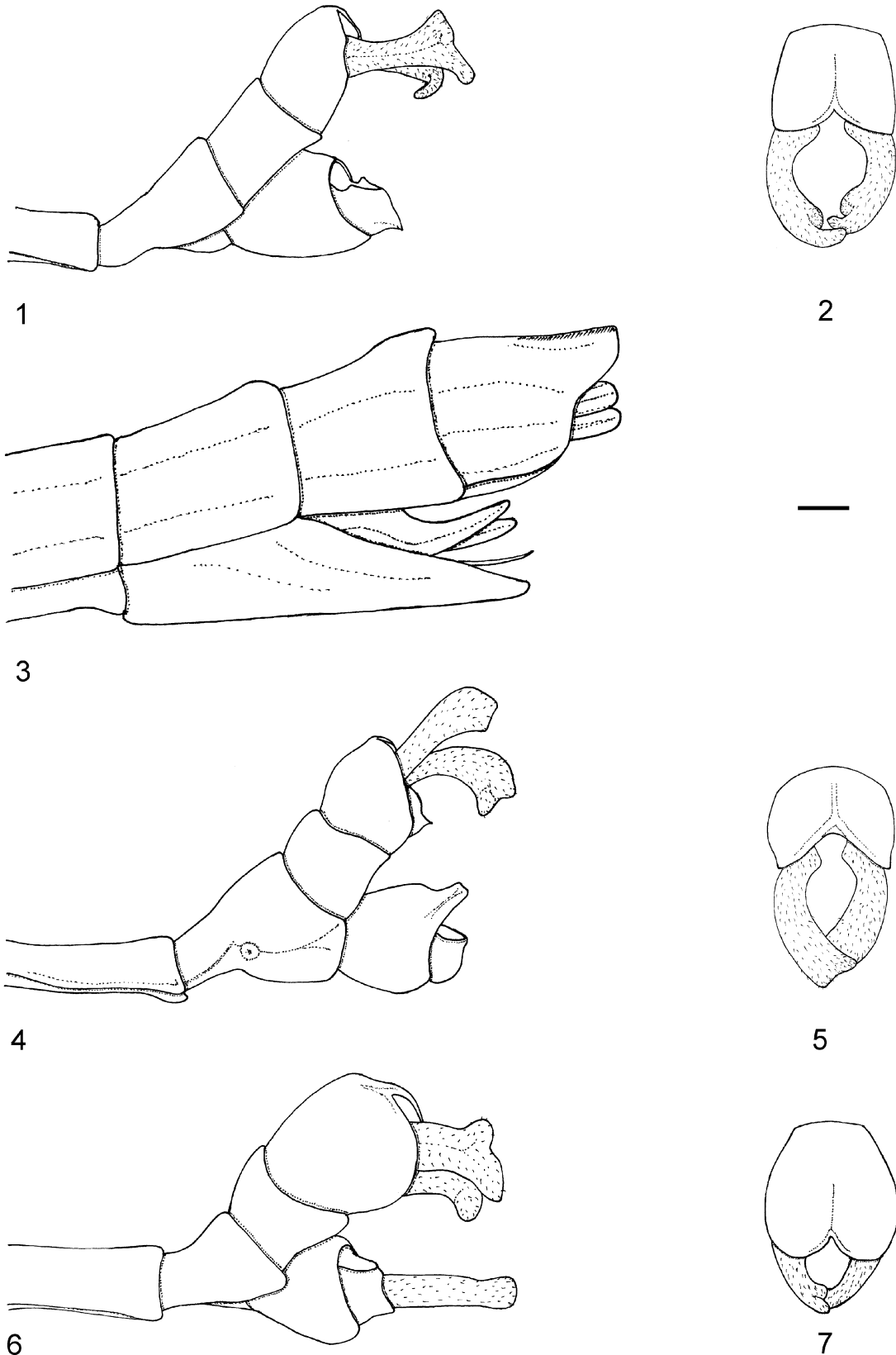
We also want to thank Dr. Patricia Lucero Garcia Garcia for her support and cooperation during the expeditions in 2004–2006.

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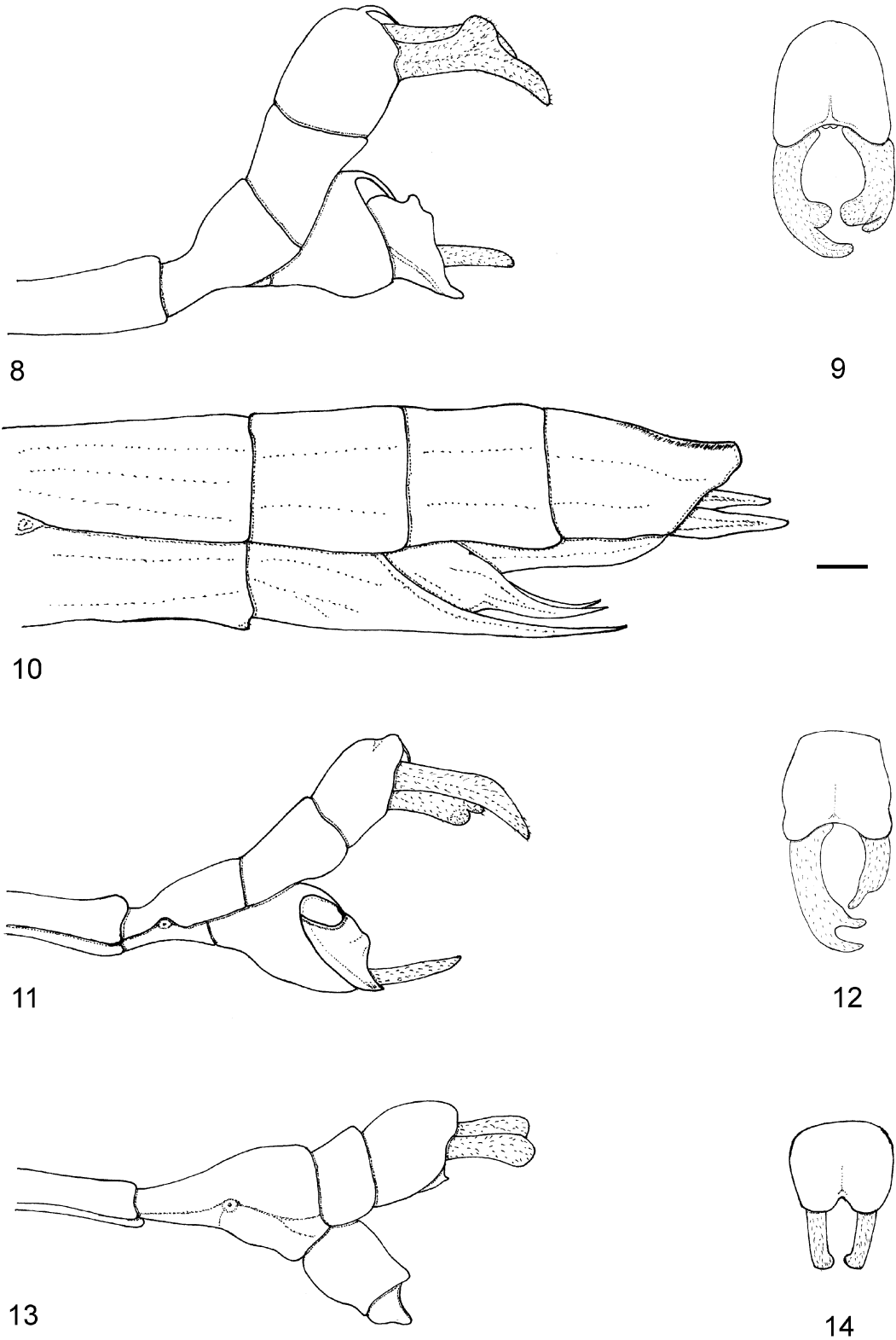
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FIGURES 1–7. [scale = 1 mm] 1. *Pseudosermyle chorreadero* n. sp. ♂, terminal abdominal segments (lateral view). 2. *Pseudosermyle chorreadero* n. sp. ♂, cerci (dorsal view). 3. *Pseudosermyle chorreadero* n. sp. ♀, terminal abdominal segments (lateral view). 4. *Pseudosermyle claviger* n. sp. ♂, terminal abdominal segments (lateral view). 5. *Pseudosermyle claviger* n. sp. ♂, cerci (dorsal view). 6. *Pseudosermyle incongruens* (Brunner v. Wattenwyl, 1907) ♂, terminal abdominal segments (lateral view). 7. *Pseudosermyle incongruens* (Brunner v. Wattenwyl, 1907) ♂, cerci (dorsal view).



FIGURES 8–14. [scale = 1 mm] 8. *Pseudosermyle phalangiphora* (Rehn, 1907) ♂, terminal abdominal segments (lateral view). 9. *Pseudosermyle phalangiphora* (Rehn, 1907) ♂, cerci (dorsal view). 10. *Pseudosermyle phalangiphora* (Rehn, 1907) ♀, terminal abdominal segments (lateral view). 11. *Pseudosermyle procera* n. sp. ♂, terminal abdominal segments (lateral view). 12. *Pseudosermyle procera* n. sp. ♂, cerci (dorsal view). 13. *Pseudosermyle tolteca* (Saussure, 1859) ♂, terminal abdominal segments (lateral view). 14. *Pseudosermyle tolteca* (Saussure, 1859) ♂, cerci (dorsal view).



FIGURES 15–20. [scale = 10 mm] 15. *Pseudosermyle chorreadero* n. sp. ♂, HT, (UNAM). 16. *Pseudosermyle chorreadero* n. sp. ♀, PT, (UNAM). 17. *Pseudosermyle claviger* n. sp. ♂, HT, (UNAM). 18. *Pseudosermyle incongruens* (Brunner v. Wattenwyl, 1907) ♂, LT, (NHMW). 19. *Pseudosermyle phalangiphora* (Rehn, 1907) ♂, (coll. OC). 20. *Pseudosermyle phalangiphora* (Rehn, 1907) ♀, (coll. OC).



FIGURES 21–24. Fig. 21–22: [scale = 10 mm]; Figs. 23–24: [scale = 1 mm] 21. *Pseudosermyle procera* n. sp. ♂, PT, (UNAM). 22. *Pseudosermyle tolteca* (Saussure, 1859) ♂, (NHMW). 23. *Pseudosermyle phalangiphora* (Rehn, 1907) egg (dorsal view), (coll. OC). 24. *Pseudosermyle phalangiphora* (Rehn, 1907) egg (lateral view), (coll. OC).



FIGURE 25. *Pseudosermyle phalangiphora* (Rehn, 1907) live ♀ and ♂.

