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Previous volumes (2010-2017): 250 € / year (4 issues)
Acarologia, CBGP, CS 30016, 34988 MONTFERRIER-sur-LEZ Cedex, France

The digitalization of Acarologia papers prior to 2000 was supported by Agropolis Fondation under the reference ID 1500-024 through the « Investissements d’avenir » programme (Labex Agro: ANR-10-LABX-0001-01)

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EIGHT NEW SPECIES OF PSEUDOSCHÖNGASTIA FROM MEXICO AND PANAMA WITH A REVISED KEY TO SPECIES
(ACARINA: TROMBICULIDAE)

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Since Brennan and Jones (1959) reviewed Pseudoschöngastia Lipovsky 1951, much more material confirming their generic concept has been received. Their redescriptions of the genus is expanded as follows:

Larvae of the subfamily Trombiculinae. Cheliceral blades with tricuspid cap and an additional ventral tooth. Palpal tibial claw trifurcate. Palpal tarsus with 5 branched setae and a tarsala. Posterolateral setae on or off scutum, most often the latter. Sensillae broadly expanded. Eyes 2/2 in a plate, the anterior larger, the posterior sometimes obsolescent. As a rule, 2 pairs of dorsal humeral setae. Body usually multisette, in engorged specimens ellipsoidal to quadrate and mildly constricted. Legs short and thickened. Femora of legs II and III fused, semi-fused or, rarely, divided. Two or 3 pairs of ventral humeral setae between coxae II and III. Anus at level of 4th to 5th rows of ventral setae. Postanal setae similar in form to dorsal setae. Cheliceral bases, capitular sternum, scutum, and all leg segments punctate. Parasitic on small mammals, especially rodents, lagomorphs, and insectivores.

Five new species from Mexico collected by Dr. G. W. Wharton and 3 from Panama by Maj. Gordon Field are described, and a key to the 19 recognized species is given. The descriptions are reduced to essentials. Supraspecific characters and the condensed diagnoses in the key are not repeated, and it seems that little is to be gained by enumerating the branched setae of the legs.

In those forms in which the posterolateral setae are extrascutal, AP and PW have little or no significance but are included in scutal measurements of the holotype to aid in its identity.

Key to Species.

1. PL’s on scutum ........................................... 2
   PL’s off scutum ........................................ 6
2. One genualae I ........................................... 3
   Two genualae I ........................................ 5
3. Genualae II and III present, sternal setae 2-4 (Coahuila, Mex.) whartoni n. sp.
   Genualae II and III absent, sternal setae 2-2 ............................... 4
4. Palpal genual seta nude, sensillae ovate, tarsala I > tarsala II (Chiapas, Veracruz, Mex.) ............................. aberrans Brennan and Jones, 1959
   Palpal genual seta branched, sensillae capitate, tarsala I = tarsala II (Chiapas, Michoacan, Mex.) .......................... hoffmannae n. sp.
5. (2) Galeal seta and palpal laterotibial seta branched (Puebla, Mex.) ..... intrinseca n. sp.
   Galeal seta and palpal laterotibial seta nude (Michoacan, Puebla, Mex.) .......................... inexcita n. sp.
6. (1) Genualae II and III present .................................... 7
   Genualae II and III absent (Chiapas, Mex.) hypopsia Brennan and Jones, 1959
7. Two genualae I ........................................... 8
   Three genualae I ......................................... 11
8. Sternal setae 2-4 (California, U.S.A.) occidentalis Brennan, 1952
   Sternal setae 2-2 ........................................ 9
9. Palpal genual seta nude (Kansas, Colorado, U.S.A.) jarneri Lipovsky, 1951
   Palpal genual seta branched .................................. 10
10. Galeal seta nude, AM < AL (Chimaltenango, Guatemala; Coahuila, Michoacan.
    Morelos, Veracruz, Mex.) guatemalensis Brennan, 1952
    Galeal seta branched AM > or = AL (Hidalgo, Michoacan, Morelos, Veracruz,
    D. F., Mex.) pedregalensis (Hoffmann, 1951) ......................................
11. (7) Palpal genual seta nude .................................. 12
    Palpal genual seta branched .................................. 15
12. Palpal dorso- and ventrotibial seta branched (Veracruz, Mex.) extrinseca n. sp.
    Palpal dorso- and ventrotibial seta nude .................................. 13
13. Dorsal setae about 80, AM > AL (Chiapas, Guerrero, Mex.) scultula Brennan and Jones, 1959
    Dorsal setae less than 80, AM < AL .............................. 14
14. Dorsal setae about 60, long, SB about 28 μ (C. Z., Panama) zona n. sp.
    Dorsal setae about 48, shorter, SB about 18 μ (C. Z., Panama) abdittiva n. sp.
15. (11) Galeal seta branched, number and arrangement of posteroesternal and coxal III setae abnormal (Chiapas, D. F., Mex.) anomala (Hoffmann, 1951)
    Galeal seta nude, number and arrangement of posteroesternal and coxal III setae normal .................................... 16
16. AM little longer than AL, sensillae broad ovate, tarsala I > tarsala II (Chiapas, Mex.) .................... diazi (Hoffmann, 1948)
    AM much shorter than AL, sensillae capitate, tarsala I = or < tarsala II ... 17
17. Palpal dorso- and ventrotibial seta branched, stem of sensilla bulbous near base (C. Z., Panama) ................................. bulbifera n. sp. Palpal dorso- and ventrotibial seta nude, stem of sensilla not bulbous near base. 18

18. Tarsala I = tarsala II, setules of sensillae weak and inconspicuous, microgenuala I and microtibiala I long (Sacatepequez, Guatemala; Guerrero, Jalisco, Michoacan, Morelos, Veracruz, Mex.) ......................... audyi Brennan and Jones, 1958 Tarsala I < tarsala II, setules of sensillae strong and conspicuous, microgenuala I and microtibiala I short (Kansas, Missouri, Texas, U.S.A.) ......................... hungerfordi Lipovsky, 1951 (type species)

**Pseudoschongastia abditiva**, n. sp.

*(Fig. 1).*

*Type data:* Holotype and 3 paratypes, RML No. 35338, off *Oryzomys talamana* (rice rat), Cerro Azul, Panama, 8 February 1936.

Holotype and a paratype in the Rocky Mountain Laboratory, one paratype in the United States National Museum, one paratype in the Chicago Natural History Museum.

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![Fig. 1. — *P. abditiva* n. sp. Scutum. Anterior surface of sensilla, right; posterior surface, left.](image)

Length and width of holotype, engorged, 474 by 375 microns.

*Gnathosoma:* Moderately punctate. Palpal setae B/N/NNN. Galeal seta nude.

Legs: Segmentation 7-6-6. Specialized setae: Leg I — 3 genualae (14 μ), microgenuala (5 μ); 2 tibialae (12 and 13 μ), microtibiala (4 μ); tarsala (13 μ), microtarsala, sub- and parasubterminala, pretarsala. Leg II — genuala (11 μ); 2 tibialae (9 μ); tarsala (12 μ), microtarsala, pretarsala. Leg III — genuala (14 μ), tibia (15 μ).

Body setae: Dorsal setae similar to scutals, r8 to 28 μ, increasing in length laterally and posteriorly, 2-2 humerals plus 50. Ventral setae 2-2 sternals, 2-2 humerals, plus about 40.

Pseudoschongastia bulbifera, n. sp. 
(Fig. 2).

Type data: All material from Canal Zone unless otherwise specified.

Holotype and 10 paratypes, RML No. 35248, off Sigmodon hispidus chiriquensis (cotton rat), 22 December 1954. Paratypes: RML No. 35220, opossum, Galeta Point, 16 February 1954, 1; RML No. 35229, Proachimys semispinosus panamensis, Galeta Point, 23 February 1954, 1; RML No. 35232, Marmosa mitis isthmica, 10 March 1954, 1; RML No. 35247, Zygodontomys cherriei ventriosus, 22 December 1954, 3; RML No. 35302, Philander opossum fuscofusus, 17 March 1955, 1; RML No. 35306, P. s. panamensis, Cerro Azul, Panama, 24 January 1956, 2; RML No. 35312, Oryzomys caliginosus chrysomelas, Cerro Azul, Panama, 26 January 1956, 1; RML No. 35316, Z. c. ventriosus, National Forest, 3 March 1955, 2; RML No. 35325, Liomys adspersus, National Forest, 9 March 1955, 1; RML No. 35326, Oryzomys talamancae talamancae, National Forest, 10 March 1955, 1; RML No. 35398, O. i. talamancae, Cerro Azul, Panama, 8 February 1956, 1; RML No. 35282, M. m. isthmica, 2 February 1955, 2; RML No. 35242, S. h. chiriquensis, Summit Gardens, 15 September 1954, 1.

Holotype and some paratypes in the Rocky Mountain Laboratory, other paratypes in the United States National Museum, the Chicago Natural History Museum, the British Museum, the South Australian Museum and the Institute of Acarology (University of Maryland).

Length and width of holotype, engorged, 453 by 371 microns.

Gnathosoma: Moderately and rather evenly punctate. Palpal setae B/B/BBB, the laterotibial rarely nude. Galeal seta nude.

Legs: Segmentation 7-6-6. Specialized setae: Leg I — 3 genualae (17 μ), microgenuala (6 μ); 2 tibialae (13 and 14 μ), microtibiala (5 μ); tarsala (13 μ), microtarsala, sub- and parasubterminala, pretarsala. Leg II — genuala (12 μ); 2 tibialae (10 and 11 μ); tarsala (13 μ), microtarsala, pretarsala. Leg III — genuala (15 μ); tibiala (14 μ).

Fig. 2. — *P. bulbifera* n. sp. Scutum. Posterior surface of sensilla.

Body setae: Dorsal setae similar to scutal setae, 31 to 41 μ, increasing in length laterally and posteriorly, 2-2 humerals plus about 42. Ventral setae, 2-2 sternals, 2-2 humerals, plus about 42.

*Pseudoschongastia extrinseca*, n. sp.
(Fig. 3).

Type data: Holotype and 21 paratypes, RML No. 35511, off *Peromyscus mexicanus* (white-footed mouse), Veracruz, Mexico, 17 October 1950.
Holotype and some paratypes in the United States National Museum, other paratypes in the Rocky Mountain Laboratory, the Institute of Acarology (University of Maryland), the British Museum, and the Chicago Natural History Museum.

Length and width of holotype, partly engorged, 371 by 216 microns.

**Gnathosoma** : Moderately and evenly punctate. Palpal setae B/N/BNB. Galeal seta nude.

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**Legs** : Segmentation 7-6-6, segments moderately punctate. **Specialized setae** : Leg I — 3 genualae (15 μ), microgenualae (5 μ); 2 similar tibialae (15 μ), microtibialae (5 μ); tarsalae (21 μ), microtarsalae, sub- and parasubterminalae, pretarsalae. Leg II — genuala (12 μ); 2 tibialae (10 μ); tarsala (14 μ), microtarsala, pretarsala. Leg III — genuala (12 μ); tibialae (11 μ).

**Body setae** : Dorsal setae similar to scutal setae, 26 to 33 μ, increasing in length posteriorly, 2-2 humeralse plus about 74. Ventral setae 2-2 sternals and 3-3 humerals plus about 52.

Data on labels indicate that living larvae of this species are white.

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Fig. 3. — *P. extrinseca* n. sp. Scutum. Anterior surface of sensilla, left; posterior surface, right.
Pseudeschengastia hoffmannae, n. sp.
(Fig. 4).

_Type data:_ Holotype and 4 paratypes, RML No. 35445, off _Blarina_ sp. (shrew) Michoacan, Mexico, 9 August 1950; 3 paratypes, RML No. 35459, _Liomys pictus_ (spiny mouse), Michoacan, 10 August 1950.

Holotype and a paratype in the United States National Museum, other paratypes in the Rocky Mountain Laboratory, the British Museum, and the Institute of Acarology (University of Maryland).

Length and width of holotype, partly engorged, 350 by 225 microns.

_Fig. 4._ — _P. hoffmannae_ n. sp. Scutum. Anterior surface of sensilla, right: posterior surface, left.

_Other Material:_ One specimen off _Baionymus musculus nigrescens_, Tuxtla, Chiapas, Mexico, 26 August 1953, Deane P. Furman and Douglas Price.


_Scutum:_ As figured. AM and AL's with long branches; capitate sensillae with large and few setules. Measurements of holotype: AW-41, PW-57, SB-23, ASB-20, PSB-16, AP-28, AM-30, AL-17, PL-33.
Legs: Segmentation 7-7-6 or 7-6-6, segments moderately punctate. Specialized setae: Leg I — 1 genuala (17 μ), microgenuala (5 μ), 2 tibialae (11 and 13 μ), microtibiala (4 μ); tarsala (10 μ), microtarsala proximal to it, sub- and parasubterminala, pretarsala. Leg II — 0 genuala; 2 tibialae; tarsala (10 μ), microtarsala, pretarsala. Leg III — 0 genuala; tibiala (13 μ).

Body setae: Dorsal setae like posterolateral scutals, 23 to 28 μ, 2-2 humerals plus about 38. Ventral setae 2-2 sternals, 2-2 humerals, plus about 36.

Named for Señora Anita Hoffmann-Sandoval, Escuela Nacional de Ciencias Biologicas, Mexico, D. F., who discovered the first species belonging to Pseudoschongastia.

Pseudoschongastia inevicta, n. sp.

(Fig. 5).

Type data: Holotype and 10 paratypes, RML No. 35484, off Baiomys musculus, Puebla, Mexico, 8 September 1950; 2 paratypes, RML No. 35455, off Blarina sp., Michoacan, Mexico, 9 August 1950.

Fig. 5. — P. inevicta n. sp. Scutum. Anterior surface of sensilla, right; posterior surface, left.
Holotype and a paratype in the United States National Museum, other paratypes in the Rocky Mountain Laboratory, the British Museum, the Institute of Acarology (University of Maryland), and the Chicago Natural History Museum. Length and width of holotype, partly engorged, 350 by 228 microns.

_Gnathosoma:_ Palpal setae B/B/BNB. Galeal seta nude.


_Legs:_ Segmentation 7-6-6. _Specialized setae:_ Leg I — 2 genualae (12 μ), microgenualae (4 μ); 2 tibialae (11 and 12 μ), microtibialae (4 μ); tarsala (12 μ), microtarsala, sub- and parasubterminala, pretarsala. Leg II — genuala (9 μ); 2 tibialae (8 and 9 μ); tarsala (13 μ), microtarsala, pretarsala. Leg III — genuala (12 μ); tibiala (12 μ).

_Body setae:_ Dorsal setae similar to scutal, 23 to 28 μ, 2-2 humerals plus about 60. Ventral setae 2-2 sternals, 2-2 humerals plus about 50.

**Pseudoscengastia intrinseca**, n. sp.
(Fig. 6).

_Type data:_ Holotype and 3 paratypes, RML No. 35515, off _Neotomodon alstoni_, Popocatepetl, Puebla, Mexico, 28 October 1950.

Holotype in the United States National Museum, 1 paratype in the Rocky Mountain Laboratory, 1 paratype in the Institute of Acarology (University of Maryland).

Length and width of holotype, partly engorged, 390 by 227 microns.


_Legs:_ Segmentation apparently 7-7-7, at least femoral fusions of legs II and III not entire; segments punctate, most densely on coxae.

_Specialized setae:_ Leg I — 2 genualae (15 μ), microgenualae (4 μ); 2 tibialae (13 μ) the distal blunt, the proximal more acuminate, microtibialae (4 μ); tarsala (14 μ), microtarsala, sub- and parasubterminala, pretarsala. Leg II — genuala (11 μ), 2 tibialae (9 and 11 μ); tarsala (13 μ), microtarsala, pretarsala. Leg III — genuala (11 μ), tibiala (10 μ). _Body setae:_ Dorsal setae like scutal setae, with long branches, 33 to 42 μ, increasing in length posteriorly, 2-2 humerals plus about 60. Ventral setae 2-2 sternals and 2-2 or 3-3 humerals plus about 60.

The living larvae are white.
Fig. 6. — *P. intrinseca* n. sp. Scutum. Anterior surface of sensilla, left; posterior surface, right.

**Pseudoschöngastia whartoni**, n. sp.

(Fig. 7).

*Type data*: Holotype and 5 paratypes, RML No. 35552, off *Peromyscus* sp. (white-footed mouse), Coahuila, Mexico, 9 December 1950; 5 paratypes, RML No. 35551, off *Neotoma* sp. (wood rat), same locality and date.

Holotype and a paratype in the United States National Museum, other paratypes in the Rocky Mountain Laboratory, the British Museum, the Institute of Acarology (University of Maryland), and the Chicago Natural History Museum.

Length and width of slightly engorged holotype, 380 by 196 microns.

*Gnathosoma*: Densely punctate basally, capitular sternum sparsely punctate. Palpal setae B/B/BNB, the laterotibial occasionally forked. Galeal seta branched.


*Legs*: Segmentation can be interpreted as either 7-6-6 or 7-7-7, segments sparsely punctate, especially the coxae. **Specialized setae**: Leg I — I genua.
(10 μ), microgenuala; 2 tibialae (8 and 10 μ), at about same level distally, microtibiala; tarsala (11 μ), microtarsala, sub- and parasubterminala, pretarsala.

Leg II — genuala (7 μ); 2 tibialae (6 and 7 μ), thin tarsala (19 μ), microtarsala, pretarsala. Leg III — genuala (10 μ); tibiala (10 μ).

**Fig. 7.** — *P. whartoni* n. sp. Scutum. Anterior surface of sensilla, right; posterior surface, left.

*Body setae*: Dorsal setae like scutal setae, with semi-appressed branches, 22 to 25 μ, 2-2 humerals plus about 50. Ventral setae 2-4 sternals and 2-2 humerals plus about 60.

Named for Dr. George W. Wharton, Professor and Head, Department of Zoology, University of Maryland.

**Pseudoschongastia zona**, n. sp.

(Fig. 8).

*Type data*: All material from Canal Zone, Panama. Holotype and a paratype, RML No. 35292, off *Liomys adspersus* (spiny mouse), Curundu, 8 July 1954;

**Fig. 8.** — *P. zona* n. sp. Scutum. Anterior surface of sensilla, right; posterior surface, left.

Holotype and some paratypes in the Rocky Mountain Laboratory, other paratypes in the United States National Museum, the Chicago Natural History Museum, the British Museum, and the Institute of Acarology (University of Maryland). Length and width of holotype, nearly engorged, 372 by 258 microns.

*Gnathosoma*: Palpal setae B/N/NNN. Galeal seta nude.

Legs: Segmentation 7-6-6, segments punctate. Specialized setae: Leg I — 3 genualae (16 μ), microgenualae (5 μ); 2 tibialae (12 μ), microtibialae (5 μ); tarsala (16 μ), microtarsala, sub- and parasubterminala, pretarsala. Leg II — genuala (10 μ), 2 tibialae (9 μ); tarsala (13 μ), microtarsala, pretarsala. Leg III — genuala (12 μ); tibiala (II μ).

Body setae: Dorsal setae like the scutal setae, 23 to 33 μ, increasing in length laterally and posteriorly, 2-2 humerals plus 60. Ventral setae 2-2 sternals, 2-2 humerals, plus about 50.

Summary.

An expanded redescription of the genus Pseudoschongastia Lipovsky, 1951 is given with a key to the 19 included species. Eight new species are described: P. abditiva, holotype, off Oryzomys, P. bulbifera off Sigmodon, P. zona off Liomys, all from Panama; P. extrinseca off Peromyscus, P. hoffmannae off Blarina, P. ineicita off Baiomys, P. intrinseca off Neotomodon, P. whartoni off Peromyscus, all from Mexico.

REFERENCES


