

ISSN 1405-4094 (edición impresa)
ISSN 2007-9133 (edición online)

DUGESIANA



Diciembre 2015

Volumen 22

Número 2

DEPARTAMENTO
DE BOTÁNICA Y
ZOOLOGÍA

Disponible en línea
<http://www.revistascientificas.udg.mx/index.php/DUG/index>
<http://dugesiana.cucba.udg.mx>

Dugesiana, Año 22, No. 2, Julio-Diciembre 2015, es una publicación Semestral, editada por la Universidad de Guadalajara, a través del Centro de Estudios en Zoología, por el Centro Universitario de Ciencias Biológicas y Agropecuarias. Camino Ramón Padilla Sánchez # 2100, Nextipac, Zapopan, Jalisco, Tel. 37771150 ext. 33218, <http://dugesiana.cucba.udg.mx>, glenus-mx@gmail.com. Editor responsable: José Luis Navarrete Heredia. Reserva de Derechos al Uso Exclusivo 04-2009-062310115100-203, ISSN: 2007-9133, otorgados por el Instituto Nacional del Derecho de Autor. Responsable de la última actualización de este número: Coordinación de Tecnologías para el Aprendizaje, Unidad Multimedia Instruccional, M.B.A. Oscar Carbajal Mariscal y José Luis Navarrete Heredia. Fecha de la última modificación 14 de diciembre 2015, con un tiraje de un ejemplar.

Las opiniones expresadas por los autores no necesariamente reflejan la postura del editor de la publicación. Queda estrictamente prohibida la reproducción total o parcial de los contenidos e imágenes de la publicación sin previa autorización de la Universidad de Guadalajara.

Three new apterous *Stenus* species from the high mountains of Mexico and Guatemala (Coleoptera: Staphylinidae)¹

Tres especies nuevas ápteras de *Stenus* de zonas montanas de México y Guatemala (Coleoptera: Staphylinidae)

Volker Puthz

Burgmuseum Schlitz, Vorderburg 1, D-36110 Schlitz, Germany

ABSTRACT

Three new apterous *Stenus* species are described from the mountains of Mexico and Guatemala: *Stenus cacamatzin* sp. nov. (Mexico: Chiapas), *S. teozomoc* sp. nov. (Guatemala) and *S. tlacaelel* sp. nov. (Mexico: Queretaro).

Key words: Coleoptera, Staphylinidae, Steninae, Mexico, Guatemala.

RESUMEN

Se describen tres especies nuevas de *Stenus* de zonas montanas en México y Guatemala: *Stenus cacamatzin* sp. nov. (México: Chiapas), *S. teozomoc* sp. nov. (Guatemala) y *S. tlacaelel* sp. nov. (México: Querétaro).

Palabras clave: Coleoptera, Staphylinidae, Steninae, México, Guatemala.

In the high mountains of northern Central America one group of apterous *Stenus* species (group of *S. popocatepetlensis* Puthz) is represented by several species. Until today 13 species have been described from Mexico, Honduras and El Salvador (Puthz 2000, 2002, 2008). In this paper three new species are added from Mexico and Guatemala from collections of the Kansas Entomological Museum. The total number of species of the *popocatepetlensis*-group is now 16. Further collections in the respective area probably will increase the species number of that group.

MATERIAL AND METHODS

The morphological studies were carried out using a stereoscopic microscope (Leitz) and a Carl Zeiss compound microscope. Measurements have been taken through the binocular (1 unit = 0.025 mm). The genitalia are embedded in Euparal (soluble in alc. abs.).

Acronyms: DE= average distance between eyes; EL= greatest length of elytra; EW= greatest width of elytra; HT= holotype; HW= head width; PL= pronotal length; PM = proportional measurements (1 unit = 0,025 mm); PT/T: paratype/s; PW= pronotal width; SL= sutural length of elytra.

RESULTS

Stenus tlacaelel sp. n.

Description: Apterous, black, shlightly shiny, forebody coarsely and very densely punctate, punctation of abdomen coarse and very dense anteriorly, moderately fine and dense posteriorly; pubescence short. Paraglossae oval. Antennae

brownish. Segments 1 and 2 of maxillary palpi yellowish, segment 3 brownish. Legs reddish brown. Clypeus black, labrum dark brown, densely pubescent. Abdomen margined laterally, tarsi simple.

Length: 3.0-3.6 mm (forebody: 1.6-1.7 mm).

PM of HT: HW: 31; DE: 17; PW: 25; PL: 24.4; EW: 31; EL: 25.5; SL: 20.

Head about as broad as elytra, frons comparatively broad and flat, longitudinal furrows moderately deep, median portion about as broad as each of the lateral portions, slightly elevated to about the same level of medial eye margins; punctation very coarse and very dense, diameter of punctures about as large as apical cross section of antennal segment 2, interstices much smaller than half diameter of punctures. Antennae short, when reflexed extending to the posterior third of pronotum, penultimate segments about as broad as long. Pronotum about as long as broad, broadest in about the middle, sides from there convex anteriorly, concave posteriorly; a deep furrow along middle present; punctation very coarse and very dense, slightly coarser than on frons. Elytra trapezoidal, much broader than long, sutural impression distinct, humeral impression shallow; punctation as coarse as on pronotum, slightly less dense (fig. 8). Abdomen with moderately broad paratergites in sagittal position, paratergites 4 as broad as mesotibiae at its base, with one row of coarse punctures; basal furrows of anterior tergites moderately deep, no membranous fringe at the posterior margin of tergite 7; punctation of anterior tergites coarse and very dense, diameter of punctures on tergite 5 about as large as apical cross section of antennal segment 3, interstices smaller than half diameter of

¹343rd contribution to the knowledge of Steninae

punctures; punctures on tergite 7 as large as basal cross section of antennal segment 3, interstices nearly as large as punctures (fig. 12). Legs moderately slender, metatarsi about two thirds as long as metatibiae, segment 1 slightly shorter than segments 2-4 combined, distinctly longer than segment 5. Reticulation of abdomen distinct but shallow, reticulation of the forebody less distinct.

Male: Mesotibiae with a minute apical spine, metatibiae with a minute preapical spine. Metasternum shallowly impressed, coarsely and very densely punctate. Anterior sternites simple, sternite 5 and 6 shallowly impressed in posterior middle, sternite 7 with a shallow median impression which is finely and very densely punctate and pubescent. Sternite 8 with a narrow triangular notch in about posterior sixth of the sternite. Sternite 9 with a short apicolateral tooth. Tergite 10 rounded as posterior margin. Aedeagus (fig. 1), apical portion of median lobe triangular, apex acute with few setae, internal structures with a large, strongly sclerotized expulsion clasp and a broad sack-shaped internal structure; parameres longer than the median lobe, with three groups of different setae: 6-8 strong and short setae posteriorly, 7-10 strong and long setae apicolaterally, and 6-7 shorter and less strong setae apicomediaally.

Female: Sternite 8 obtuse angled at posterior margin. Valvifer with a distinct tooth apicolaterally. Tergite 10 rounded at posterior margin. Spermatheca (fig. 5), infundibulum large, spermathecal duct short.

Type material. Holotype (♂) and 3♂♂, 3♀♀-paratypes: MEXICO: Querétaro: Cadereyta: Chavarrias, 3 km E, 2850 m, 20°49.459'N, 99°35.191'W, oak forest litter, 27.VII.2006, R. Anderson; 1♂-paratype: Querétaro: San Joaquín: Ranas Zona Arqueológica, 2350 m, 20°55.514'N, 99°33.315'W, ibidem, 27.VII.2006, idem.- HT and PTT in the Kansas Entomological Museum, 2 PTT in coll. Puthz.

Discussion: This new species belongs to the group of *S. popocatepetlensis* Puthz. It is the sister species of *S. colimamontis* Puthz, from which it may be distinguished by the flat frons (in *S. colimamontis* the frons is distinctly concave), by the shorter elytra and by the less dense abdominal punctation (compare figs 9, 13). The genitalia of both species are very close, but the apical portion of the median lobe is stronger triangular and the internal sac of different shape. The number of the three groups of parameral setae seems to vary in different populations; so it might be possible that *S. colimamontis* and the new species may belong to one polytypic species with different subspecies in adjacent mountains. From *S. popocatepetlensis* it may be distinguished by the more triangular apical portion of the median lobe without any ventral ridges and by the different median shape of the expulsion clasp.

Etymology: The name of this new species is taken from the Aztec ruler Tlacaélel, son of Acamapichtli.

Stenus cacamatzin n. sp.

Description: Apterous, black with a slight aeneous hue, moderately shiny, forebody coarsely and densely punctate, abdominal punctation slightly coarse and moderately dense anteriorly, fine and dense posteriorly; pubescence short. Paraglossae oval. Antennae brownish. Maxillary palpi yellowish. Legs brown. Clypeus black, labrum dark brown, moderately densely pubescent. Abdomen margined laterally, tarsi simple.

Length: 2.8-3.3 mm (forebody: 1.6 mm).

PM of HT: HW: 30.5; DE: 15.5; PW: 23.5; PL: 21; EW: 29; EL: 22; SL: 17.

Head broader than elytra, frons moderately broad, longitudinal furrows distinct, median portion as broad as each of the lateral portions, elevated to about the level of medial eye margins; punctation moderately coarse and dense, diameter of punctures about as large as apical cross section of antennal segment 3, interstices mostly smaller than half diameter of punctures. Antennae short, when reflexed extending to the posterior third of the pronotum, penultimate segments nearly as broad as long. Pronotum broader than long, broadest slightly before middle, sides from there convex anteriorly, concave posteriorly; a shallow longitudinal impression is present in the middle; punctation coarse and dense, diameter of punctures about as large as apical cross section of antennal segment 2, interstices smaller than half diameter of punctures, may become larger in actual middle; an impunctate area can be seen posterolaterally. Elytra trapezoidal, much broader than long, flattened near suture; punctation coarser than on pronotum, interstices also smaller than half diameter of punctures (fig. 6). Abdomen broad, paratergites slightly bent ventrad, those of tergite 4 about as broad as metatibiae in its middle, with one row of coarse punctures; basal furrows of anterior tergites moderately deep, no membranous fringe at posterior margin of tergite 7; punctation of first tergites slightly coarse and moderately dense, diameter of punctures about as large as medial cross section of antennal segment 3, interstices as large as punctures; punctures on tergite 7 smaller than basal cross section of antennal segment 3, interstices distinctly larger than punctures (fig.10). Legs moderately slender, metatarsi about two thirds as long as metatibiae, segment 1 shorter than the three following segments combined, distinctly longer than the last segment. The complete insect is more or less shallowly reticulate.

Male: Mesotibiae with a minute apical spine, metatibiae with a minute preapical spine. Anterior sternites simple, Sternite 7 with a slightly broad, shallow apicomedian notch. Sternite 8 with a triangular notch in about posterior fourth of the sternite. Sternite 9 with a short tooth apicolaterally. Tergite 10 rounded at posterior margin. Aedeagus (fig. 3), apical portion of median lobe spade-shaped, internal structures lacking distinct expulsion hooks or clasp; parameres broad with 2 long and strong and about 20 shorter, fine setae.

Female: Unknown.

Type material. Holotype (♂): MEXICO: Chiapas: Municipio El Porvenir, El Porvenir, 2950 m, 15°28.05'N, 92°16.70'W, oak/pine/oyamel forest litter, 27.VII.1005, R. Anderson: in the Kansas Entomological Museum.

Discussion: Also this new species belongs to the group of *S. popocatepetlensis* Puthz. In my key of the group (Puthz, 2000: 124 ff.) it should be inserted at couplet 32. From *S. veracruzmontis* Puthz it may be distinguished by the less coarse punctation of frons, finer abdominal punctation and the male sexual characters, from all other members of its group by the aedeagus.

Etymology: The name of this new species is taken from the Aztec ruler Cacamatzin.

***Stenus tezozomoc* sp. nov.**

Description: Apterous, black with aeneous hue, moderately shiny, punctation of forebody coarse to very coarse, dense, abdominal punctation moderately coarse and moderately dense anteriorly, fine and moderately sparse posteriorly; pubescence short. Paraglossae oval. Antennae light brown, club slightly darker. Maxillary palpi yellow. Legs light brown, apices of femora slightly darker. Clypeus black, labrum dark brown, densely pubescent. Abdomen margined laterally, tarsi simple.

Length: 2.5-3.1 mm (length of forebody: 1.4-1.5 mm).

PM of HT: HW: 28; DE: 14; PW: 19,5; PL: 21; EW: 24; EL: 20.5; SL: 17.

Head broader than elytra, frons moderately broad, longitudinal furrows distinct, median portion about as broad as each of the lateral portions, moderately elevated to about the level of medial eye margins; punctation coarse and dense, diameter of punctures nearly as large as apical cross section of antennal segment 2, interstices much smaller than half diameter of punctures except on median portion, where they may become as large as punctures or slightly larger, and sometimes near medial eye margins posteriorly. Antennae short, when reflexed extending to the posterior third of pronotum, penultimate segments nearly as broad as long. Pronotum slightly longer than broad, broadest in about middle, sides from there shallowly convex anteriorly, moderately concave posteriorly; a median longitudinal furrow is distinct; punctation often coarser than on frons, mostly dense, diameter of punctures may become as large as medial cross section of antennal segment 2, interstices smaller than half diameter of punctures, sides of pronotum more or less impunctate. Elytra trapezoidal, broader than long, shoulders oblique; sutural impression distinct, narrow; punctation very coarse, dense, individual punctures elongated and flattened posteriorly (fig. 7). Abdomen broadly margined, paratergites slightly bent ventrad, with one row of large punctures, those of tergite 4 as broad as antennal segment 2, basal furrows of first tergites deep, no apical membranous fringe at tergite 7; punctation of first tergites moderately coarse and moderately dense, punctures of tergite 4 about as large as medial cross section of antennal segment 3, interstices mostly much smaller than punctures;

punctures on tergite 7 about as large as eye facets near medial eye margins, interstices twice as large as punctures (fig. 11). Legs slender, metatarsi about two thirds as long as metatibiae, segment 1 slightly longer than segments 2-4 combined, distinctly longer than the last segment. The whole body is more or less deeply reticulated.

Male: Legs simple. Metasternum flat, moderately coarsely and moderately densely punctate, interstices reticulate. Anterior sternites simple, sternite 5 and 6 with a very shallow emargination posteromedially. Sternite 8 with a broad and shallow notch in about posterior thirteenth of the sternite. Sternite 9 with a distinct tooth apicolaterally. Tergite 10 rounded at posterior margin. Aedeagus (fig. 2), apical portion of median lobe triangularly narrowed, apex narrow, internal structures with a broad expulsion clasp and a broad, strongly sclerotized, spatulate internal sac; parameres much longer than the median lobe, with 2 strong and very long and about 8 less long, finer apical setae.

Female: Posterior margin of sternite 8 obtusely angled. Valvifer with a distinct apicolateral tooth. Tergite 10 rounded at posterior margin. Spermatheca (fig. 4).

Type material. Holotype (♂) and 5♂♂, 5♀♀-paratypes: GUATEMALA: El Progreso, Cerro Pinalón, 2845 m, 15.08304°N, 89.92229°W, ± 56 m, cloud forest leaf litter, 1.V.2009, LLAMA09 Wm-B-01-1-03. Paratypes: 2♀♀: ibidem, 2885 m, 15.08127°N, 89.92081°W, ± 56 m, pine forest leaf litter, 1.V.2009, idem -02; 1♂, 1♀: ibidem, 2750 m, 15.08392°N, 89.93013°W, ± 55 m, cloud forest leaf litter, 1.V.2009, idem -04; 1♀: ibidem, 2715 m, 15.08411°N, 89.92239°W, ± 57 m, ibidem, idem -05; 3♂♂, 4♀♀: ibidem, 2500 m, 15.08350°N, 89.95319°W, ibidem, 2.V.2009, idem -2-02.- HT and PTT in the Kansas Entomological Museum, paratypes also in coll. Puthz.

Discussion: Also this new species belongs to the group of *S. popocatepetlensis* Puthz, where it resembles most *S. salvadorensis* Puthz and *S. lempiranus* Puthz. From both it may be distinguished by the coarser elytral punctation, from the latter also by coarser abdominal punctation, from both and from all other members of the group by the genitalia.

Etymology: The name of this new species is taken from the Aztec Queen Tezozómoc, wife of Huitzilxochtzin.

Catalogue of the species of the group of *Stenus popocatepetlensis* Puthz

- Stenus acamapichtli* Puthz, 2000: MEXICO: Guerrero.
- Stenus axayacatl* Puthz, 2000: MEXICO: Oaxaca.
- Stenus cacamatzin* n. sp.: MEXICO: Chiapas.
- Stenus colimamontis* Puthz, 2000. MEXICO: Jalisco.
- Stenus cuitlahuac* Puthz, 2000. MEXICO: Puebla.
- Stenus huitzilhuil* Puthz, 2000. MEXICO: Oaxaca.
- Stenus izcoatl* Puthz, 2000. MEXICO: Oaxaca.
- Stenus lempiranus* Puthz, 2008. HONDURAS: Lempira.
- Stenus moctezuma* Puthz, 2000. MEXICO: Tlaxcala,

Hidalgo.

Stenus popocatepetlensis Puthz, 1974. MEXICO: Distrito Federal, Michoacán.

Stenus potosimontis Puthz, 1974. MEXICO: Nuevo León.

Stenus salvadorensis Puthz, 2002. EL SALVADOR: Chalatenango.

Stenus tezomoc n. sp.. GUATEMALA: El Progreso.

Stenus tizoc Puthz, 2000. MEXICO: Oaxaca.

Stenus tlacaelel n. sp.. MEXICO: Querétaro.

Stenus veracruzmontis Puthz, 2000. MEXICO: Veracruz.

LITERATURE CITED

Puthz, V. 2000. Aptere *Stenus*-Arten aus den mexikanischen Hochgebirgen (Coleoptera: Staphylinidae). *Mitteilungen des internationalen entomologischen Vereins, Frankfurt am Main*, 25: 103-127

Puthz, V. 2002. A new apterous *Stenus* species from the mountains of El Salvador, Central America (Coleoptera: Staphylinidae) (279th Contribution to the knowledge of Steninae). *Dugesiana* 9: 51-53.

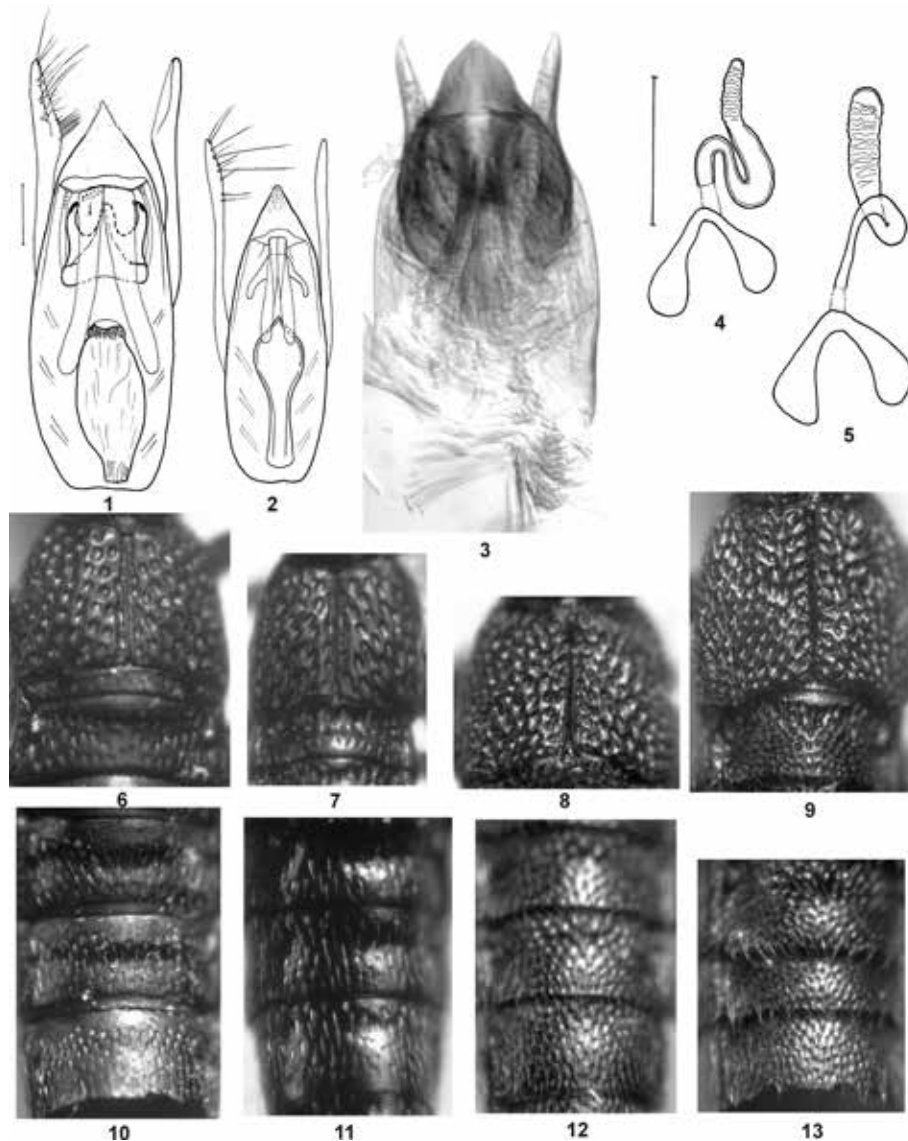
Puthz, V. 2008. *Stenus* Latreille und die segenreiche Himmelstochter (Coleoptera, Staphylinidae). *Linzer biologische Beiträge* 40: 137-230.

Received: 28 de mayo 2015

Accepted: 31 de agosto 2015

ACKNOWLEDGEMENT

My thanks are due to Dr. Zachary Falin from the Kansas Entomological Museum for providing the material treated here, and to Dr. José Luis Navarrete-Heredia for help with the manuscript.



Figures 1-13: Ventral aspect of aedeagus (1-3), spermatheca (4, 5), elytra and tergite 3 (6, 7, 9), tergites 6-8 (10-13). *Stenus tlacaelel* sp. nov. (1, 5, 8, 12; PTT), *S. tezomoc* sp. nov. (2, 4, 7, 11; PTT), *S. cacamatzin* sp. nov. (3, 6, 10; HT), *S. colimamontis* Puthz (9, 13; PT).- Scale = 0.1mm (1= 2, 3; 4 = 5).