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## Three new brachelytrous *Discodon* and *Polemium* (*Brachypolemium*) from Peru (Coleoptera, Cantharidae, Silinae)

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<https://zoobank.org/References/89729F8F-E3F5-4E4A-9F44-F78469B222E0>

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**Abstract.** – The subgenus *Brachypolemium* Wittmer, 1950, of the genus *Polemium* LeConte, 1852, included only one species from Bolivia, *P. (B.) dimorphus* Wittmer, 1950. Two new species from Peru are assigned to this subgenus: *Polemium (Brachypolemium) antauta* n. sp. (Puno) and *P. (Brachypolemium) rodriguezae* n. sp. (Junin). Another new brachelytrous Silinae is described in the genus *Discodon* Gorham, 1881: *D. huancavelica* n. sp. (Huancavelica). Illustrations of habitus, main morphologic characters, male genitalia, keys to genera and species, and a distribution map are provided.

**Résumé.** – **Trois nouveaux *Discodon* et *Polemium* (*Brachypolemium*) brachélytres du Pérou (Coleoptera, Cantharidae, Silinae).** Le sous-genre *Brachypolemium* Wittmer, 1950, du genre *Polemium* LeConte, 1852, n'était connu que par une espèce, *P. (B.) dimorphus* Wittmer, 1950, de Bolivie. Deux nouvelles espèces du Pérou sont rattachées à ce sous-genre : *Polemium (Brachypolemium) antauta* n. sp. (Puno) et *P. rodriguezae* n. sp. (Junin). Un autre Silinae brachélytre est rattaché au genre *Discodon* Gorham, 1881: *D. huancavelica* n. sp. (Huancavelica). Les illustrations des habitus, des principaux caractères morphologiques, des genitalia des mâles, des clés des genres et des espèces ainsi qu'une carte de répartition sont proposés.

**Keywords.** – Neotropical region, taxonomy, morphology, new species.

Recent surveys in the Peruvian Andes, carried out by fellow entomologists in Peru, have brought back three new species of brachelytrous Cantharidae. They can be classified in the genus *Discodon* Gorham, 1881, and the subgenus *Brachypolemium* Wittmer, 1950, of the genus *Polemium* LeConte, 1851.

The genera *Polemium* and *Discodon* are only defined by male characters located in the claws of the tarsi (*Discodon* having meso- and metatarsi anterior claw bifid) and the shape of the pronotum (LECONTE, 1852; CHAMPION, 1914; RAMSDALE, 2002; CONSTANTIN, 2008). Within the genus *Polemium*, a subgenus *Brachypolemium* was erected for a Bolivian taxon, differing in the shortened elytra, which leave three abdominal segments free; in the female, the elytra are even more reduced, about as long as the pronotum and the metathoracic wings are completely absent (WITTMER, 1950).

The genus *Polemium* contains more than 100 species, 17 of which are from the Nearctic region and the others from the Neotropics, among which 10 have been recorded from Peru. The genus *Discodon*, created by GORHAM (1881) for a series of Mexican and Central American species, comprises almost 400 species, most of them are found in South America between sea-level and 3000 m, and 48 among them have

been recorded from Peru (DELKESKAMP, 1977; CONSTANTIN & CHABOO, 2016). Until now, the subgenus *Brachyplemius* was monotypic and no brachelytrous *Discodon* was known.

Nevertheless, brachelytry is observed in several groups of Cantharidae. In the subfamily Cantharinae, the taxa concerned are living at high altitude in the Alps, in the Greater Caucasus among the genus *Podistra* Motschulsky, 1839 (KAZANTSEV, 2023) or in the Himalayas as *Themus alticola* Kopetz, 2016, and *T. flavipes* Kopetz, 2016, found in Nepal between 4000 m and 5000 m (KOPETZ, 2016). In the subfamily Malthininae, brachelytry occurs in some *Malthodes* Kiesenwetter, 1852 living in high altitude. Other short-elytra and apterous Malthininae are found in sub-arid areas of northern Morocco, including *Apteromalthinus pithanoides* Escalera, 1913, occurring between Tangiers, Alcazarquivir and Meknes (ESCALERA, 1913) and several *Malthodes*. The subfamily Chauliognathinae includes several genera *Maronius* Gorham, 1881, *Lobetus* Kiesenwetter, 1852, and the entire tribe Ichthyurini, living in the yungas and lowland of the cordillera, whose representatives are fully winged and brachelytrous. Another remarkable case is *Chauliognathus apterus* Ollif, 1889, from Lord Howe Island, Australia.

Within the subfamily Silinae, brachelytry is rarely found. A very special brachelytrous, apterous *Silis moreti* Constantin, 2009, was found in Ecuador at 4400 m (CONSTANTIN, 2009). The three new Peruvian Silinae come from stations at high altitude, between 3600 and 4560 m. There are also *Brachysilidius* Pic, 1949, with two species living on high mountains in East Africa, and a few brachelytrous species in *Silis* s. str. (former *Crudosilis* Kazantsev, 1994) in China, e.g. *Silis wrasei* Kazantsev & Kopetz, 2019.

## MATERIAL AND METHODS

The specimens here described were found among the material collected by the staff of entomologists of the Natural History Museum of the University Mayor de San Marcos of Lima (MUSM) during field works of biological inventories and stored in the collection of the entomological laboratory. The specimens were dry-mounted on mounting cards. After having been softened by immersion in lukewarm water and extraction of the male genitalia, the specimens were mounted on point board for habitus photographs, then re-glued on larger boards for preventing antennae or legs break.

The photographic illustration of the habitus was carried out on a macrophotography bench fitted with Canon 65 mm 1-5× objective, combining the fusion of around forty focal planes with Helicon Focus 8. Photographs of the aedeagus, mounted in a drop of DMHF mounting medium, were taken on a Cambridge compound microscope fitted with 10× objective. The line drawings are obtained by tracing microphotographs with Illustrator CC. Morphological terminology follows that proposed, when possible, by MAGIS (1968), BRANCUCCI (1980), RAMSDALE (2010) and BIFFI & GEISER (2020). The tarsal claws are designated as anterior and posterior, according to their orientation while on the move.

**Abbreviations of institutions.** – MUSM, Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima, Peru; NHMB, Naturhistorisches Museum, Basel, Switzerland.

**Abbreviations for measurement indices.** – *a-I ... a-XI*, antennomere I ... antennomere XI; **AL**, antennal length, full extended; **EL**, elytron length from humerus to apex; **EW**, elytra combined width at the base; **HW**, head width including the eyes; **IAW**, width between the antennal sockets; **IOW**, interocular width; **OL**, greatest length of the eye in lateral view; **PL**, pronotum length; **PW**, pronotum width; **TL**, total length between clypeus and apex of abdomen.

## TAXONOMY

## GENERIC KEY TO MALE PERUVIAN SILINAE

Silinae can be recognised among Cantharidae by:

- maxillary palpomeres I-III of unequal length;
- tibial spurs robust and clearly visible;
- fourth tarsomere usually split across at the base;
- abdomen with eight visible segments, IX and X invaginated;
- division of the male sternite VIII reaching the base;
- male sternite IX symmetrical when developed.

The females are hard to distinguish since the diagnose of genera depends on male's features (CONSTANTIN, 2008; MOTIKA *et al.*, 2023).

1. Scutellum of the male projecting a long, straightened blade. Pronotum of the male with antero-lateral tuberosities and postero-lateral expansion. Elytral pubescence very short, thin and adpressed ..... *Peltariosilis* Wittmer  
- Scutellum of the male without projection ..... 2
2. Pronotum strongly transverse, often enlarged towards the base. Lateral margin and basal angles of pronotum of the male strongly modified, either featuring long spines or foliaceous expansions. Anterior claws of the male protarsi with a small basal lobe, those of the meso- and metatarsi simple. Mandibles narrow and slender, those of the female basally angled ..... *Silis* Charpentier  
- Pronotum usually less transverse. Anterior claws of the male protarsi with a developed basal lobe, those of meso- and metatarsi lobed with a variable basal lobe or split at the apex. Mandibles arched in both sexes ..... 3
3. Pronotum transverse with anterior edge often rounded. Lateral margin of pronotum of male incised near the base, in front of the basal corners. Anterior claw of protarsi with an large rounded basal lobe; anterior claw of mesotarsi and metatarsal apically bifid ..... 4  
- Pronotum of variable width with anterior edge barely rounded. Lateral margin of pronotum of male thin and incised near the middle. Anterior claw of protarsi, mesotarsi and metatarsi with reduced basal expansion, apically simple without division ..... 5
4. Antennae enlarged and flattened. Pronotum narrow, trapezoidal. Elytra with three indistinct costae. Pronotal and elytral pubescence adpressed, velvety and dense .....  
..... *Discodon (Falsopolemius)* Pic  
- Antennae slender, not flattened. Pronotum wider. Elytra without costae .....  
..... *Discodon (Discodon)* Gorham
5. Elytra fully developed, covering the hind wings and the abdomen, the last visible tergite (pygidium) often partly uncovered ..... *Polemius (Polemius)* Leconte  
- Elytra strongly reduced, leaving uncovered large part of the abdomen. Hind wings atrophied or wanting ..... *Polemius (Brachypolemius)* Wittmer

*Polemius (Brachypolemius) dimorphus* Wittmer, 1950

**Type material.** - HOLOTYPE: ♂, Bolivia, [Cochabamba province], Tunari mountains, 4000 m, leg. R. Zischka (NHMB).

PARATYPE: 1 ♀, same locality and collector (NHMB).

**Note on the collector.** - Rodolfo (Rudolf) Zischka (1895-1980) was a Czech politician who emigrated to Bolivia between 1939 and 1962. He settled in Cochabamba, where he owned a sawmill, also practising naturalist activities, writing catalogues of Bolivian entomological fauna and sharing his local collections with several museums and taxonomists (RÖDER & STRAUSS, 1999). The Tunari mountain station is located 30 km NW of Cochabamba, ca. 17°15'S - 66°18'W (fig. 32A)

**Redescription of male holotype.** – Body length 6.2 mm. Head black, in front of antennal sockets brownish yellow. Pronotum yellow on front and lateral margins, disc with a black macula. Scutellum brown. Elytra yellow with a median black macula from the base to mid-length. Antennae brown. Maxillary and labial palpi, legs, mesothorax, metathorax, abdomen brown, the distal margin of each ventrite yellow (fig. 1, 7).

Head including eyes 1.04 times as wide as pronotum, the clypeus prominent and narrowly notched. Eyes convex, the interocular space 0.70 times as wide as the head. Frons broad, not depressed between the eyes. Temples short, convex. Cephalic integument smooth, lustrous, very thinly punctate, pubescent with yellow setae. Antennae 0.68 times as long as the body, the antennomeres microgranulose, densely pubescent of brownish yellow setae. Antennomeres not compressed: I claviform, II subsphaerical, III-X slender, subcylindrical, VIII-XI with a pale stria (fig. 13).

Pronotum 1.32 times wider than long. Front margin regularly arched, front corners rounded, lateral edges straight, feebly narrowing toward the base, shallowly notched at mid-length. Basal edge furrowed and raised. Integument smooth, lustrous, covered with sparse yellow setae.

Elytra shortened, feebly dehiscent, leaving uncovered the last three tergites. Integument rugulose, microreticulate, covered with backwardly erected yellow setae. Hind wings reduced.

Legs slender. Tibiae barely curved. Metatarsi three quarters as long as tibiae. All claws thin, narrowly enlarged at the base, not bifid (fig. 28-29).

Abdomen weakly sclerotised; tergite VIII wide; tergite IX medially incised; sternite VIII divided right to its base (fig. 24).

Aedeagus. Ventral wall of tegmen triangular, lateral margins narrowing towards the apex, thickened by a flat bead, distal margin rounded with small median incision. Dorsal lobes of tegmen developed, forming two divergent, apically rounded lobes separated by a V-shaped emargination. Median lobe membranous, wide. Internal sac dorsally with a median canaliculate sclerite; ventrally with a pair of short lateral sclerites and several blunt denticles (fig. 20).

**Dimensions of holotype.** – TL: 6.2 mm; AL: 4.2 mm; HW: 1.46 mm; IOW: 1.02 mm; OL: 0.37 mm; IAW: 0.38 mm; PL: 1.06 mm; PW: 1.40 mm; EL: 3.2 mm; EW: 1.48 mm. Length of the antennomeres, in mm: *a*-I: 0.42; *a*-II: 0.2; *a*-III: 0.34; *a*-IV: 0.38; *a*-V: 0.36; *a*-VI: 0.39; *a*-VII: 0.38; *a*-VIII: 0.40; *a*-IX: 0.39; *a*-X: 0.39; *a*-XI: 0.44.

**Female paratype.** – Differs strongly from the male by the reduced, triangular elytra with rounded apex leaving uncovered the abdomen (fig. 2, 8), and the short antennae (fig. 14).

Head yellow with a brown macula on occiput and vertex between the eyes. Pronotum yellow. Elytra rufous. Abdomen rufous, last tergite yellow with a basal reddish brown macula, last ventrite yellow. Antennae brown, base of the first antennomere yellow. Legs yellow, the apical half of tibiae and the tarsi brown. Last tergite wide, its apical edge rounded. Last ventrite with apical edge triangularly emarginate.

**Dimensions of the female paratype.** – TL: 7.3 mm; AL: 2.8 mm; HW: 1.50 mm; IOW: 1.12 mm; OL: 0.40 mm; IAW: 0.58 mm; PL: 1.14 mm; PW: 1.70 mm; EL: 1.12 mm; EW: 1.60 mm. Length of the antennomeres, in mm: *a*-I: 0.39; *a*-II: 0.17; *a*-III: 0.27; *a*-IV: 0.22; *a*-V: 0.23; *a*-VI: 0.23; *a*-VII: 0.23; *a*-VIII: 0.21; *a*-IX: 0.21; *a*-X: 0.19; *a*-XI: 0.24.

### ***Polemius (Brachypolemius) antauta n. sp.***

<https://zoobank.org/NomenclaturalActs/710fe2a0-60ce-4f64-b9ae-696ad2c69388>

**Type material.** – HOLOTYPE: ♂, “Peru, PUNO, [Melgar province], Antauta, 14°14'59"S-70°20'06", 4561 m, 19-21.IX.2011, B. Medina y P. Sánchez” (MUSM).

PARATYPE: 1 ♂, same locality and date (MUSM).

**Description of male holotype.** – Body length 5.8 mm. Head brownish black, in front of antennal sockets brownish yellow. Pronotum yellow, disc with two elongate fulvous maculae. Scutellum yellow. Elytra brown, the humeral region yellow. Antennae brown. Maxillary and labial palpi, legs, mesothorax, metathorax, abdomen fulvous, the last four abdominal segments brown (fig. 3, 9).

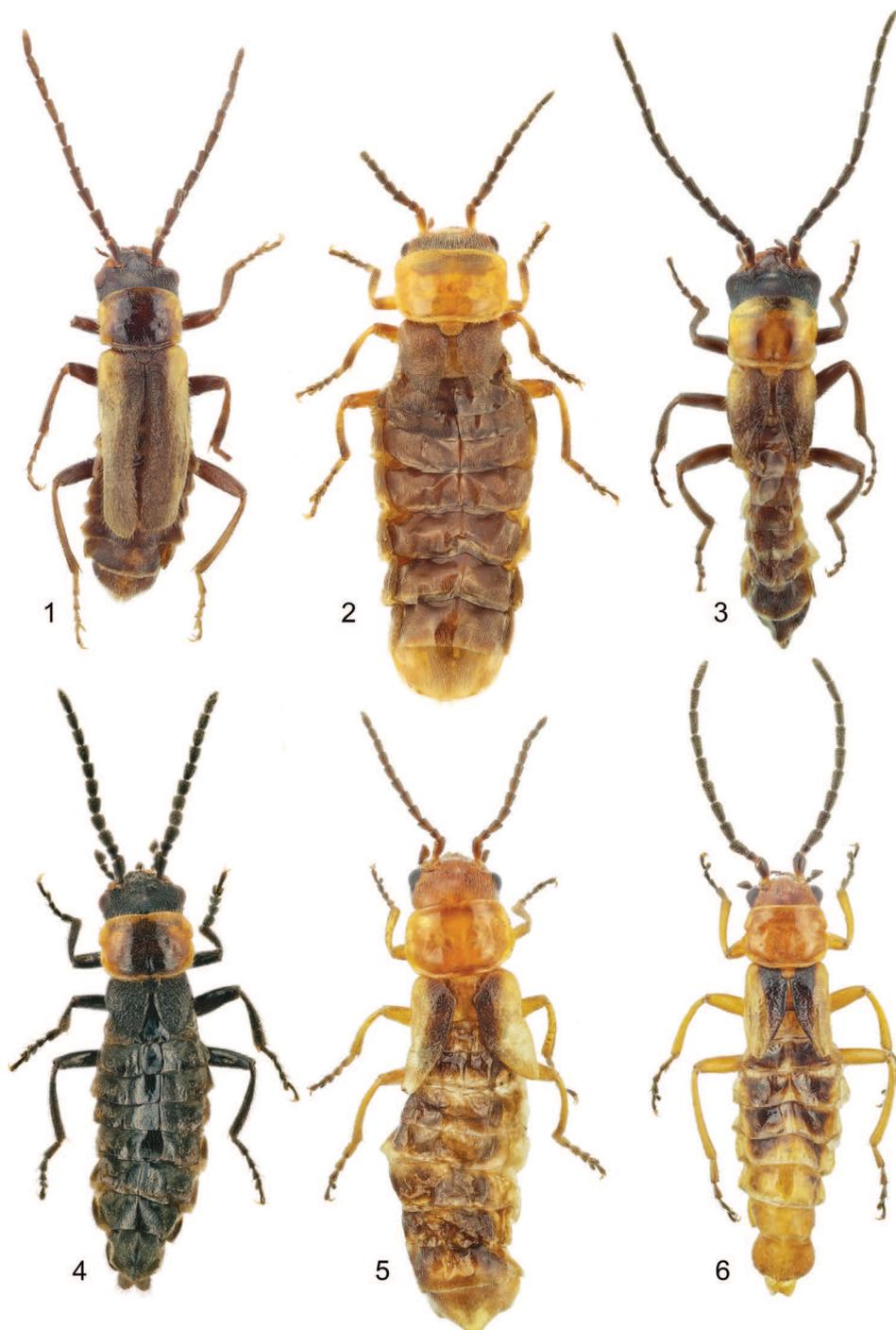


Fig. 1-6. – Habitus of brachelytrous Silinae. – 1-2, *Polemius (Brachypolemius) dimorphus* Wittmer : 1, ♂ holotype (total length, TL, 6.2 mm); 2, ♀ paratype (TL, 7.3 mm). – 3, *P. (B.) antauta* n. sp., ♂ holotype (TL, 5.8 mm). – 4, *P. (B.) rodriguezae* n. sp., ♂ holotype (TL, 4.6 mm). – 5-6, *Discodon huancavelica* n. sp. : 5, ♀ paratype (TL, 6.5 mm); 6, ♂ holotype (TL, 7.3 mm).

Head including eyes 1.06 times as wide as pronotum, the clypeus feebly prominent and narrowly incised. Eyes feebly convex, the interocular space 0.72 times as wide as the head. Frons broad, shallowly depressed between the eyes. Temples short, straight. Cephalic integument smooth, lustrous, very thinly punctate, pubescent with yellow setae. Antennae 0.67 times as long as the body, the antennomeres microgranulose, densely pubescent of fulvous setae. Antennomeres not compressed: I claviform, II subspherical, III-X slender, subcylindrical; all without stria or line (fig. 15).

Pronotum 1.28 times wider than long. Front margin arched, front corners obtusely rounded, lateral edges straight, without notch at mid-length, basal corners obtuse. Lateral and basal edges furrowed and raised. Integument smooth, lustrous, covered with yellow setae.

Elytra extremely abbreviated, strongly dehiscent, covering only the first tergite and the base of the second. Each elytron triangular, about twice as long as wide, lateral edge arched, internal edge sinuous, apex narrow, integument rugulose, microreticulate, covered with backwardly erected yellow setae. Hind wings wanting.

Legs slender. Tibiae barely curved. Metatarsi as long as tibiae. All claws thin, with reduced basal dilatation, not apically bifid.

Abdomen weakly sclerotised. Tergite VIII triangular. Tergite IX apically incised. Sternite VIII divided in two lobes with rounded summits (fig. 25).

Aedeagus. Ventral wall of tegmen broad, lateral margins convergent and thickened by a flat bead, distal margin rounded with minute median incision. Dorsal lobes of tegmen developed, forming two divergent, apically rounded lobes separated by a U-shaped emargination. Median lobe membranous, wide. Internal sac dorsally with a median sclerite with blunt, incised tip; ventrally with two pairs of minute sclerites (fig. 21).

*Female.* – Unknown.

*Dimensions of holotype.* – TL: 5.8 mm; AL: 3.9 mm; HW: 1.36 mm; IOW: 0.98 mm; OL: 0.30 mm; IAW: 0.40 mm; PL: 1.0 mm; PW: 1.28 mm; EL: 1.34 mm; EW: 1.24 mm. Length and width of the antennomeres, in mm: *a-I*: 0.39 × 0.18; *a-II*: 0.18 × 0.15; *a-III*: 0.34 × 0.17; *a-IV*: 0.35 × 0.16; *a-V*: 0.38 × 0.15; *a-VI*: 0.38 × 0.15; *a-VII*: 0.38 × 0.15; *a-VIII*: 0.36 × 0.14; *a-IX*: 0.38 × 0.13; *a-X*: 0.35 × 0.12; *a-XI*: 0.46 × 0.11. Body length of ♂ paratype: 5.6 mm.

*Differential diagnosis.* – *Polemium (Brachypolemium) antauta* n. sp. differs from other Cantharidae Silinae by body colour entirely black with orange yellow pronotum, short antennae, strong brachelytry. Male genitalia are close to those of *P. (Brachypolemium) dimorphus* but differ in the broad lateral bead of tegmen and the short elytra.

*Etymology.* – The specific name refers to the name of the locality of origin, the district of Antauta, about 25 km SE of Macusani (fig. 32B). Noun in apposition.

*Natural history.* – Collected with pitfall trap in the periphery of a high-altitude mining area.

### *Polemium (Brachypolemium) rodriguezae* n. sp.

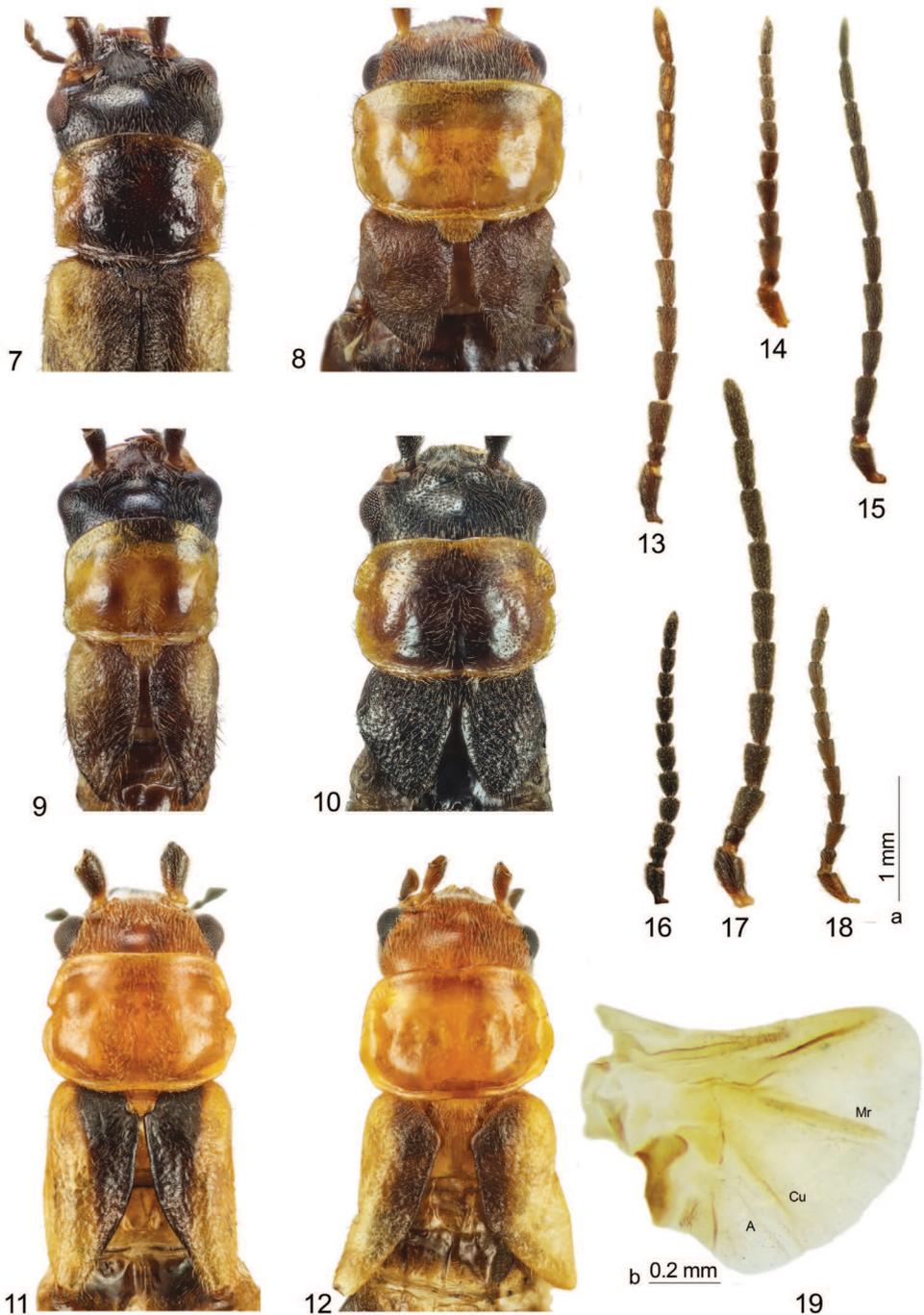
<https://zoobank.org/NomenclaturalActs/a3f45592-4358-45ce-bccc-3d36dc311959>

*Type material.* – HOLOTYPE: ♂, "Peru, Junin, Carhuamayo 11 km NE, laguna Yanacocha, pitfall, 10°51'23"S-75°39'21", 4341 m, 15.XII.2018, leg. M. Rodríguez" (MUSM).

PARATYPES: 2 ♂, from the same locality, date and collector (1 in MUSM, 1 in NHMB).

*Description of male holotype.* – Body length 4.6 mm. Head black. Pronotum and sides of prothorax orange yellow. Elytra, scutellum, antennae, maxillary and labial palpi, legs, mesothorax, metathorax and abdomen black (fig. 4, 10).

Head including eyes 0.93 times as wide as pronotum, the clypeus feebly prominent and narrowly emarginate. Eyes small, feebly convex, the interocular space 0.75 times as wide as the head. Frons broad, flattened between the eyes. Temples short, moderately convex. Cephalic integument smooth, thinly punctate, more densely on the occipital region, with yellowish setae.



**Fig. 7-19.** – Brachelytrous Silinae. – 7-12, Forebody: 7-8, *Polemius (Brachypolemius) dimorphus* Wittmer (7, ♂; 8, ♀); 9, *P. (B.) antauta* n. sp., ♂; 10, *P. (B.) rodriguezae* n. sp., ♂; 11-12, *Discodon huancavelica* n. sp. (11, ♂; 12, ♀). – 13-18, Right antenna: 13-14, *P. (B.) dimorphus* (13, ♂; 14, ♀); 15, *P. (B.) antauta* n. sp., ♂; 16, *P. (B.) rodriguezae* n. sp., ♂; 17-18, *D. huancavelica* n. sp. (17, ♂; 18, ♀). – 19, Right wing of the male of *Discodon huancavelica*. Scale a: figs. 13-18; scale b: fig. 19.



**Fig. 20-23.** – Male genitalia, dorsal view. – **20**, *Polemus (Brachypolemus) dimorphus* Wittmer. – **21**, *P. (B.) antauta* n. sp. – **22**, *P. (B.) rodriguezae* n. sp. – **23**, *Discodon huancavelica* n. sp. (*ms*, median sclerite of internal sac; *vw*, ventral wall of tegmen; *dis*, denticles of internal sac; *dl*, dorsal lobe of tegmen). Microphotographs in transmitted light.

Antennae 0.55 times as long as the body, the antennomeres microreticulate and densely pubescent of short brown setae. Antennomeres not compressed: I claviform, II minute, spherical, III-X distally widened; all without stria or line (fig. 16).

Pronotum 1.43 times wider than long, feebly transversally convex. Front margin straight, front corners obtuse, lateral edges convex, interrupted by a narrow notch in front of mid-length, basal corners arched with basal edge. Lateral and basal edges furrowed and raised. Integument smooth, lustrous, covered with very thin yellow setae.

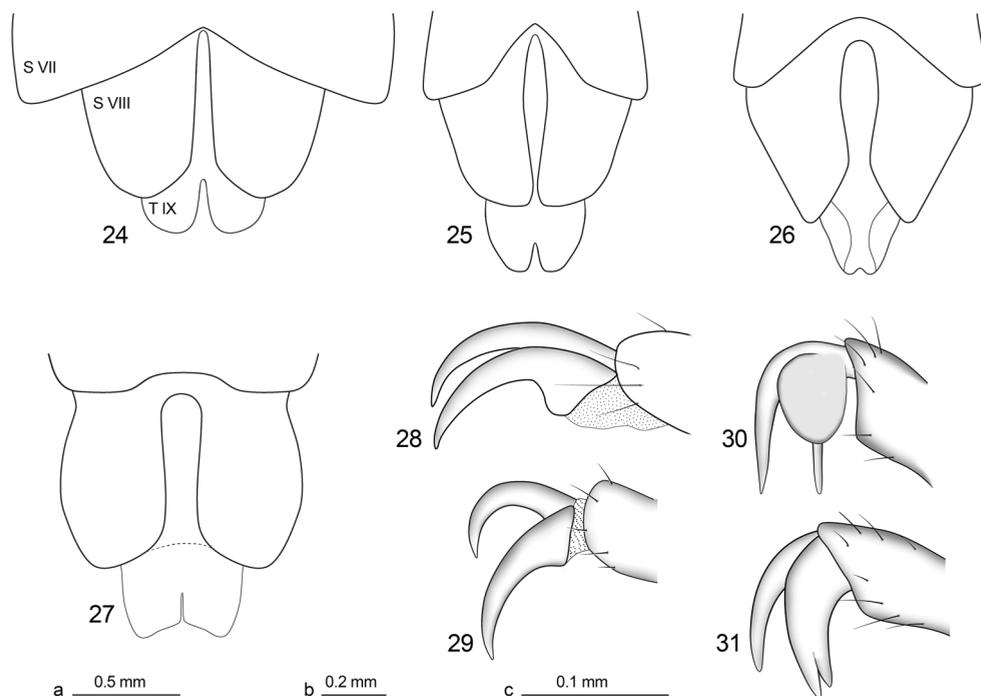
Elytra extremely abbreviated, strongly dehiscent, covering only the first tergite and the base of the second. Each elytron triangular, as long as wide, lateral edge convex, internal edge straight, apex narrowly rounded, integument rugulose, covered with adpressed thin yellow setae. Hind wings wanting.

Legs slender. Meso- and metatibiae slightly curved. Meso- and metatarsi as long as tibiae. All claws thin, with reduced basal dilatation, not apically bifid

Abdomen weakly sclerotised. Tergites I-V with spiracles dorsally exposed and surrounded with a patch of whitish setae. Tergite VIII wider than VII, with two posterior concavities. Tergite IX incised. Sternite VIII divided till the base, forming two lobes with narrow tips (fig. 26).

Aedeagus. Ventral wall of tegmen broad, lateral margins slightly convergent and thickened with a bead, distal margin truncate with minute median incision. Tegmen dorsal folds developed, forming two elongate, apically rounded lobes separated by a narrow emargination. Median lobe membranous, basally wide, narrowed apically. Internal sac with a pair of contiguous median sclerites, ventrally hooked (fig. 22).

*Female.* – Unknown.



**Fig. 24-31.** – Males of *Polemius* (*Brachypolemius*) and *Discodon*. – **24-27**, Abdominal ventrites: **24**, *P. (B.) dimorphus* Wittmer; **25**, *P. (B.) antauta* n. sp.; **26**, *P. (B.) rodriguezae* n.sp.; **27**, *D. huancavelica* n. sp. – **28-29**, *P. (B.) dimorphus*: **28**, anterior claw of right protarsus; **29**, anterior claw of right metatarsus. – **30-31**, *D. huancavelica* n. sp.: **30**, anterior claw of right protarsus, front view; **31**, anterior claw of right metatarsus. Scale a: figs. 24, 25, 27; scale b: fig. 26; scale c: figs. 28-31.

**Dimensions of holotype.** – TL: 4.6 mm; AL: 2.55 mm; HW: 1.12 mm; IOW: 0.84 mm; OL: 0.30 mm; IAW: 0.39 mm; PL: 0.84 mm; PW: 1.20 mm; EL: 0.8 mm; EW: 0.92 mm. Length and width of the antennomeres, in mm: *a*-I: 0.27 × 0.16; *a*-II: 0.13 × 0.13; *a*-III: 0.22 × 0.19; *a*-IV: 0.23 × 0.17; *a*-V: 0.23 × 0.17; *a*-VI: 0.23 × 0.16; *a*-VII: 0.23 × 0.15; *a*-VIII: 0.23 × 0.15; *a*-IX: 0.23 × 0.14; *a*-X: 0.23 × 0.13; *a*-XI: 0.35 × 0.13. Body length of ♂ paratypes: 4.7 and 5.0 mm.

**Differential diagnosis.** – *Polemium* (*Brachypolemium*) *rodriguezae* n. sp. differs from other Cantharidae Silinae by black body colour with orange yellow pronotum, short antennae, strong brachelytry. Male genitalia are similar to *P. (Brachypolemium) dimorphus* but differ in the broad lateral bead of ventral wall, the larger dorsal lobes of tegmen.

**Etymology.** – Respectfully dedicated to Maryzender Rodríguez-Melgarejo, biologist and entomologist at the MUSM, specialist of neotropical Coleoptera Staphylinidae.

**Natural history.** – The specimens were collected by a pitfall trap around the north edge of the laguna Yanacocha (fig. 32C), a major regional freshwater reserve under recent environmental monitoring (LAMADRID & NINALAYA, 2020).

The vegetation (fig. 33) is a Pajonal, whose dominant herbaceous plants are *Stipa ichu* Ruiz & Pav., 1798, and several *Calamagrostis* spp. (Poaceae), also used for Camelid grazing activity (llamas and alpacas). *Polemium (Brachypolemium) rodriguezae* was observed in traps set during the rainy season in XII.2018, while trapping in VIII.2018 and VI.2019 did not collect other specimens. The same traps collected also the recently described Staphylinidae Oxytelinae, *Homalotrichus yana* Pérez, Rodríguez & Asenjo, 2018 (PÉREZ *et al.*, 2018) (M. Rodríguez, pers. comm.).

### ***Discodon huancavelica* n. sp.**

<https://zoobank.org/NomenclaturalActs/D352E6A1-1F8D-474C-96DF-0FFC6203DD1F>

**Type material.** – HOLOTYPE: ♂, Peru, Huancavelica, Angaraes province, distrito de Ccochacasa, mina Julcani, 12°58'33.87"S -74°49'1.446"W, 3621 m, 19.IX.2019, Pajonal-Matorral, leg. M. Rodríguez (MUSM).

PARATYPES: 1 ♂, 1 ♀, same locality, date and collector (MUSM).

**Description of male holotype.** – Body length 7.3 mm. Head yellowish orange with two small brownish maculae on occipital region. Pronotum yellowish orange. Scutellum yellow. Elytra yellow, each elytron with a triangular black macula on the internal third. Antennae, maxillary and labial palpi brown. Legs yellow with tarsi brown. Mesothorax, metathorax, abdomen yellow except tergites II-V brown (fig. 5, 11).

Head including eyes 0.88 times as wide as pronotum, the clypeus feebly prominent and narrowly incised. Eyes convex, the interocular space 0.68 times as wide as the head. Frons broad, flattened between the eyes. Temples short. Cephalic integument smooth, lustrous, very thinly punctate, pubescent with yellow setae. Antennae 0.56 times as long as the body, the integument of antennomeres I-II smooth, III-XI microgranulose, all densely pubescent with brownish yellow setae. Antennomeres not compressed: I conical, II spherical, III-X distally widened; all without stria or line (fig. 17).

Pronotum 1.38 times wider than long, transversally convex. Front margin straight, front corners obtuse, lateral edges convex, with a deep notch in front of mid-length, basal corners arched. Lateral and basal edges furrowed and raised. Integument smooth, lustrous, covered with yellow setae.

Elytra extremely abbreviated, strongly dehiscent, covering only the first tergite and the basal half of the second. Each elytron triangular, about twice and half as long as wide, lateral and internal edges convex, apex narrow, integument shallowly rugulose, microreticulate, covered with backwardly erected yellow setae.

Hind wings present but atrophied, 0.9 mm long when developed. Venation is hardly recognizable in the radial field; main veins media, cubitus, anal (Mr, Cu, A) reduced to distal sclerotisation; a common sclerite in the proximal anal field (fig. 19).

Legs slender. Tibiae barely curved. Meso- and metatarsi as long as meso- and metatibiae. Protarsi with anterior claw with strongly developed basal lobe; mesotarsi and metatarsi with anterior claw thickened and short apical split (fig. 30-31).

Abdomen weakly sclerotised. Tergite VIII wide, lateral edges convex. Tergite IX medially incised. Sternite VIII divided till the base, the lobes broad and apically rounded (fig. 27).

Aedeagus. Ventral wall of tegmen broad, lateral margins subparallel, thickened by a bead and distally rounded. Dorsal lobes of tegmen developed, triangular with apical margins sinuous separated by a broad V-shaped emargination. Median lobe basally membranous, apically sclerotised in two acute tips. Internal sac dorsally with a median sclerite, ventrally with two pairs of minute sclerites (fig. 23).

**Dimensions of holotype.** – TL: 7.3 mm; AL: 4.1 mm; HW: 1.38 mm; IOW: 0.94 mm; OL: 0.40 mm; IAW: 0.34 mm; PL: 1.14 mm; PW: 1.58 mm; EL: 1.76 mm; EW: 1.50 mm. Length and width of the antennomeres, in mm: *a-I*: 0.48 × 0.22; *a-II*: 0.17 × 0.17; *a-III*: 0.35 × 0.21; *a-IV*: 0.36 × 0.20; *a-V*: 0.41 × 0.19; *a-VI*: 0.42 × 0.17; *a-VII*: 0.40 × 0.17; *a-VIII*: 0.40 × 0.17; *a-IX*: 0.41 × 0.16; *a-X*: 0.40 × 0.16; *a-XI*: 0.51 × 0.15. Body length of ♂ paratype: 6 mm.

**Female paratype.** – Body length 6.5 mm. Differs from the male by the shorter antennae, the lateral margin of pronotum not incised at mid-length, the claws simple, the complete lack of hind wings (fig. 6, 12, 18).

**Dimensions of female paratype.** – TL: 6.5 mm; AL: 2.4mm; HW: 1.32 mm; IOW: 0.94 mm; OL: 0.33 mm; IAW: 0.5 mm; PL: 1.06 mm; PW: 1.56 mm; EL: 1.66 mm; EW: 1.50 mm.

**Differential diagnosis.** – *Discodon huancavelica* n. sp. differs from other Cantharidae Silinae by yellowish orange body colour, the elytra yellow with internal black macula, strong brachelytry. Male genitalia are peculiar by the apical sclerites of the median lobe and the numerous spines of the internal sac.

**Etymology.** – The specific name refers to the name of the department of origin. The locality is located at 64 km SE of Huancavelica (fig. 32D). Noun in apposition.



Fig. 32. – Distribution map in southern Peru and northern Bolivia. – A, *Polemium (Brachypolemium) dimorphus* Wittmer. – B, *P. (B.) antauta* n. sp. – C, *P. (B.) rodriguezae* n. sp. – D, *Discodon huancavelica* n. sp.

**Natural history.** – *Discodon huancavelica* was collected with pitfall traps in the matorral-pajonal area in the vicinity of a mining area. The vegetation cover is a mixed herbaceous and shrubby vegetation composed of *Stipa* sp. and a small bushy Asteraceae (fig. 34). The pitfall traps were installed on a west-facing slope (M. Rodríguez, pers. comm.).



**Fig. 33-34.** – Biotopes. – **33**, Laguna Yanacocha (Junin), installation of pitfall trap in a steppe vegetation at 4300 m, type-station of *Polemium* (*Brachypolemium*) *rodriguezae* n. sp. – **34**, Matorral-pajonal near Ccochacasa (Huancavelica), pitfall trap and yellow pans at 3600 m, type station of *Discodon huancavelica* n. sp. (Photographs 33 and 34 by Maryzender Rodríguez, MUSM).

KEY TO SPECIES OF SUBGENUS *BRACHYPOLEMIUS* WITTMER AND BRACHELYTROUS *DISCODON*

1. Head, pronotum and elytra testaceous yellow, the latter with a triangular black macula covering the base and narrowing distally. Antennae and legs brownish yellow. Elytra as long as head and pronotum together. Abdominal tergites yellow, each with a broad basal dark macula (♂ and ♀) ..... *Discodon huancavelica* n. sp.  
- Head brown or black ..... 2
2. Head, antennae, elytra, legs and abdomen black. Pronotum orange with an extended brown discal macula. Elytra shorter than pronotum. Antennomeres very short (♂) .....  
..... *Polemium (Brachypolemium) rodriguezae* n. sp.  
- Elytra reddish brown or brown with yellow humeral macula ..... 3
3. Elytra elongate, two and half times longer than combined width at the base, leaving uncovered the last three tergites ..... *Polemium (Brachypolemium) dimorphus* Wittmer, ♂  
- Elytra strongly reduced ..... 4
4. Elytra reddish brown, shorter than pronotum and leaving uncovered the whole abdomen. Antennae very short ..... *Polemium (Brachypolemium) dimorphus* Wittmer, ♀  
- Elytra brown with yellow humeral macula. Antennae long (♂) .....  
..... *Polemium (Brachypolemium) antauta* n. sp.

## DISCUSSION

The inclusion of these short-elytra species in the subgenus *Brachypolemium* is convenient for taxonomy and identification. But we have to keep in mind that the difference between *Brachypolemium* and the remaining *Polemium* are only in the characters related to the reduction of elytra and hind wings. This phenomenon is mainly correlated to natural selection from living in high altitudes, occurring independently in different lineages of *Polemium*, *Silis* Charpentier, 1825, and *Discodon*. But there are several environmental conditions that may affect the presence/absence and the length of wings and elytra (FERREIRA *et al.*, 2023). KASANTSEV & KOPETZ (2019) found several cases of brachelytrous *Lycocerus* Gorham, 1889, and *Themus* Motschulsky, 1858, among the Chinese fauna. KAZANTSEV (2023) indirectly concluded that the elytra reduction occurred multiple times within the different *Podistra* (Cantharinae) lineages.

If this could be confirmed, then *Brachypolemium* would only represent an artificial grouping of species. A phylogenetic study might be useful to clarify the case.

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## REFERENCES

- BIFFI G. & GEISER M., 2020. - A revision of *Peltariosilis* Wittmer (Coleoptera: Cantharidae), a surprisingly diverse Amazonian radiation. *Papéis Avulsos de Zoologia*, 60 (special issue) : e202060.16. <https://doi.org/10.11606/1807-0205/2020.60.special-issue.16>
- BRANCUCCI M., 1980. - Morphologie comparée, évolution et systématique des Cantharidae (Insecta: Coleoptera). *Entomologica Basiliensia*, 5 : 215-388

- CHAMPION G. C. 1914. – II. Revision of the Mexican and Central American Telephorinae (Fam. Telephoridae), with descriptions of new species. *Transactions of the Entomological Society of London*, **1914** : 16-146, pl. III-IX. <https://doi.org/10.1111/j.1365-2311.1915.tb02520.x>
- CONSTANTIN R., 2008. – A contribution to the genus *Plectonotum* Gorham, 1891, in Ecuador (Coleoptera, Cantharidae). *Entomologica Basiliensia & Collectionis Frey*, **30** : 49-74.
- CONSTANTIN R., 2009. – A contribution to the genus *Silis* Charpentier, 1825, in Ecuador (Coleoptera, Cantharidae). *Entomologica Basiliensia et Collectionis Frey*, **31** : 55-87.
- CONSTANTIN R. & CHABOO C. S., 2016. – Beetles (Coleoptera) of Peru: A Survey of the Families. Cantharidae Imhoff, 1856. *Journal of the Kansas Entomological Society*, **89** (2) : 195-201. <https://doi.org/10.2317/18151005.1>
- DELKESKAMP K., 1977. – *Coleopterorum Catalogus Supplementa*, pars 165, fasc. 1. Editio secunda. Cantharidae. The Hague : Dr W. Junk ed., 485 p.
- ESCALERA M. DE LA, 1913. – Un nuevo género de Maltinido (Cantharidae) de Marruecos. *Boletín de la Real Sociedad Española de Historia Natural*, **13** : 322-323.
- FERREIRA V., BARBOSA F., BOCAKOVA M. & SOLODOVNIKOV A., 2023. – An extraordinary case of elytra loss in Coleoptera (Elateroidea: Lycidae): discovery and placement of the first anelytrous adult male beetle. *Zoological Journal of the Linnean Society*, **199** (2) : 553-566. <https://doi.org/10.1093/zoolinnean/zlad026>
- GORHAM H. S., 1881. – Malacoderma. Fam. Telephoridae. Pp. 65-106. In Godman F. D. & Salvi O. (eds): *Biologia Centrali-Americana. Insecta. Coleoptera*. Vol III. Part 2 [1880-1886]. London: Dulau & Co, B. Quaritsch, XII + 372 p., 13 pl.
- KAZANTSEV S. V., 2023. – A review of soldier beetles of the genus *Podistra* Motschulsky, 1839 (Coleoptera: Cantharidae) of the Greater Caucasus, with the description of two new species. *Zootaxa*, **5293** (2) : 349-360. <https://doi.org/10.11646/zootaxa.5293.2.8>
- KAZANTSEV S. V. & KOPETZ A., 2019. – New apterous cantharids from China (Insecta: Coleoptera: Cantharidae). *Vernate*, **38** : 197-219.
- KOPETZ A., 2016. – Zur Kenntnis der Gattungen *Themus* Motschulsky, 1858 und *Cyrebion* Fairmaire, 1891 in Mittel- und Ostasien (Coleoptera, Cantharidae). *Entomologische Blätter und Coleoptera*, **112** (1) : 245-267
- LAMADRID M. J. & NINALAYA H. P., 2020. – *Sostenibilidad hídrica de la laguna Yanacocha al 2030 con relación al abastecimiento de la población de Carhuamayo, Junín*. Tesis de la Universidad César Vallejo, Lima-Perú, 261 p.
- LECONTE J., 1852. – Synopsis of the Lampyridae of Temperate North America. *Proceedings of the Academy of Natural Sciences of Philadelphia*, **5** : 331-347.
- MAGIS N., 1968. – Morphologie comparée de l'abdomen du mâle des Cantharidae Silini (Coléoptères, Cantharoidea). *Le Naturaliste Canadien*, **95** (5) : 1041-1053.
- MOTIKA M., KUSY D., BIFFI G., GEISER M., KAZANTSEV S. V., BILKOVA R., JAHODAROVA E., VOGLER A. P. & BOCAK L., 2023. – Untangling the evolution of soldier beetles (Coleoptera: Cantharidae) and the evaluation of the morphological phylogenetic signal in a soft-bodied elateroid lineage. *Cladistics*, **39** (6) : 548-570. <https://doi.org/10.1111/cla.12555>
- PÉREZ L., RODRÍGUEZ M. & ASENJO A., 2018. – Two new species of *Homalotrichus* Solier, 1849 (Coleoptera: Staphylinidae) from Peru. *Zootaxa*, **4459** (2) : 376-386. <https://doi.org/10.11646/zootaxa.4459.2.10>
- RAMSDALE A. S., 2002. – Family 64. Cantharidae (p. 202-218). In : Arnett H. R., Thomas M. C., Skelley P. E. & Frank J. H. (eds), *American beetles, volume 2. Polyphaga: Scarabaeoidea through Curculionoidea*. Boca Raton : CRC Press, 861 p.
- RAMSDALE A. S., 2010. – Cantharidae Imhoff, 1856 (p. 153-162). In : Leschen R. A., Beutel R. G. & Lawrence J. F. (eds), *Handbook of Zoology, Part 38. Coleoptera, Vol. 2. Morphology and Systematics (Elateroidea, Bostrichiformia, Cucujoidea)*. Berlin, New York : Walter de Gruyter, 786 p. <https://doi.org/10.1515/9783110911213.153>
- RÖDER W. & STRAUSS H. A., 1999. – *Biographisches Handbuch der deutschsprachigen Emigration nach 1933-1945, band 1, Politik, Wirtschaft, Öffentliches Leben*. De Gruyter, 875 p. <https://doi.org/10.1515/9783110968545>
- WITTMER W. 1950. – 9. Beitrag zur Kenntnis der neotropischen Malacodermata (Col.). *Revista de Entomologia*, **21** (1-2) : 247-257.