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## On some Athetini from Armenia and adjacent regions (Coleoptera: Staphylinidae: Aleocharinae)

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**A b s t r a c t :** Nine species of Athetini from Armenia are described and illustrated, eight of them for the first time: *Atheta (Atheta) brevapicalis* nov.sp. (South Armenia); *A. (A.) hamulata* nov.sp. (South Armenia); *A. (Dimetrota) bispinosa* nov.sp. (Armenia, Georgia); *A. (D.) senticollis* nov.sp. (North Armenia); *A. (Oreostiba) altiviva* BENICK, 1974 (widespread in Armenia); *A. (O.) semialba* nov.sp. (widespread in Armenia); *A. (O.) abscisa* nov.sp. (widespread in Armenia); *A. (O.) brevitheca* nov.sp. (widespread in Armenia); *Liogluta armeniaca* nov.sp. (Central and South Armenia). Three synonymies are proposed: *Atheta hansseni* STRAND, 1943 = *A. brachati* ASSING, 2013, nov.syn.; *Liogluta granigera* (KIESENWETTER, 1850) = *L. trigemina* (EPPELSHEIM, 1880), nov.syn.; *L. funesta* EPPELSHEIM, 1890 = *L. nigrobusta* ASSING, 2016, nov.syn. A lectotype is designated for *Homalota trigemina* EPPELSHEIM, 1880.

**K e y w o r d s :** Coleoptera, Staphylinidae, Aleocharinae, Athetini, *Liogluta*, *Atheta*, Armenia, taxonomy, new species, descriptions, new synonymies, new subgeneric assignment, lectotype designation.

### Introduction

According to SCHÜLKE & SMETANA (2015), only ten species of Athetini had been recorded from Armenia by the end of 2014, seven of *Atheta* THOMSON, 1858, one of *Hydrosmecta* THOMSON, 1858, one of *Liogluta* THOMSON, 1858, and one of *Pycnota* MULSANT & REY, 1873. A preliminary research of faunistic literature dealing with the Staphylinidae fauna of Armenia revealed that this list is not complete. Nevertheless, in view of the fact that the Athetini is a mega-diverse tribe represented in the Palaearctic region by about 2000 species or more in numerous genera, it can be concluded that more than a hundred species should be present in Armenia and that next to nothing is known about the Athetini fauna of this country at present.

Two field trips to Armenia, one of them conducted by Matúš Kocian (Prague) in 2015 and the other by Michael Schülke (Berlin) and the first author in summer 2016 yielded approximately 8000 specimens of Staphylinidae, among them numerous undescribed species of Aleocharinae. The new taxa of *Geostiba* THOMSON, 1858 and *Oxypoda* MANNERHEIM, 1830 were dealt with by ASSING (2016b, c). The staphylinid material from Armenia included more than a thousand specimens of Athetini belonging to approximately 50 species, several of them unnamed. In the present paper, only those unnamed taxa (one of *Liogluta* and seven of *Atheta*) are described that are represented by mature males and females; those of which only singletons or teneral specimens are available remain unnamed for the time being. Other species recorded from Armenia will be

addressed in a comprehensive study of the Staphylinidae fauna of Armenia, which is currently in preparation.

## Material and methods

The material treated in this study is deposited in the following collections:

MHNG ..... Muséum d'Histoire Naturelle, Genève (G. Cuccodoro)  
 MNB ..... Museum für Naturkunde, Berlin (including coll. Schülke) (J. Frisch, M. Schülke)  
 NHMW ..... Naturhistorisches Museum Wien (H. Schillhammer)  
 cAss..... private collection Volker Assing, Hannover  
 cFel ..... private collection Benedikt Feldmann, Münster  
 cKal..... private collection Mark Kalashian, Yerevan  
 cKoc ..... private collection Matúš Kocian, Prague  
 cVog..... private collection Jürgen Vogel, Görlitz  
 cWun..... private collection Paul Wunderle, Mönchengladbach

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). The images were created using a photographing device constructed by Arved Lompe (Nienburg) and CombineZ software, as well as a digital camera (Nikon Coolpix 995).

Body length was measured from the anterior margin of the labrum to the abdominal apex, the length of the forebody from the anterior margin of the labrum to the posterior margin of the elytra, head length along the middle from the anterior margin of the clypeus to the posterior carina of the head, elytral length at the suture from the apex of the scutellum to the posterior margin of the elytra, and the length of the median lobe of the aedeagus from the apex of the ventral process to the base of the capsule. The "parameral" side (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect.

The typology of the pronotal pubescence pattern follows that of BENICK & LOHSE (1974).

## Results

### *Atheta (Atheta) brevapicalis* nov.sp. (Figs 1-6, 11-13)

**Type material:** Holotype ♂: "ARMENIA [39] - 25 km SW Kapan, 39°04'01"N, 46°16'10"E, 2150 m, near stream, sifted, 10.VII.2016, V. Assing / Holotypus ♂ *Atheta brevapicalis* sp. n. det. V. Assing 2017" (cAss). Paratypes: 1 ♂, 1 ♀: same data as holotype (cAss).

**E t y m o l o g y :** The specific epithet (adjective: with short apex) alludes to the apically short ventral process of the aedeagus, one of the characters distinguishing this species from the similar *A. pechlaneri* SCHEERPELTZ, 1933.

**D e s c r i p t i o n :** Body length 3.6-4.7 mm; length of forebody 1.7-2.1 mm. Coloration: body black, elytra with or without an oblique and posteriorly dilated dark-yellowish band; legs with blackish-brown femora, yellowish-brown to brown tibiae, and yellowish tarsi; antennae black; maxillary palpi black with yellowish palpomere IV.

Head (Fig. 1) approximately 1.1 times as broad as long; punctation very fine and moderately dense, sparse in median dorsal portion; microsculpture pronounced and composed of isodiametric meshes, rendering the dorsal surface nearly matt. Eyes distinctly longer than distance from posterior margin of eye to posterior constriction of head. Antenna (Fig. 2) 1.3-1.4 mm long; antennomeres IV smaller than V, weakly transverse or as long as broad, V-X of gradually increasing width and weakly transverse, X less than 1.5 times as broad as long, and XI longer than the combined length of IX and X, but shorter than the combined length of VIII-X.

Pronotum (Fig. 1) 1.22-1.24 times as broad as long and 1.24-1.26 times as broad as head, broadest in anterior half; punctation fine and rather dense; microsculpture similar to that of head, composed of isodiametric meshes; pubescence directed anteriorly along midline and predominantly transversely laterad in lateral portions (type I).

Elytra (Fig. 1) approximately 1.05 times as long as pronotum; punctation very dense and fine; interstices with pronounced isodiametric microreticulation. Hind wings fully developed.

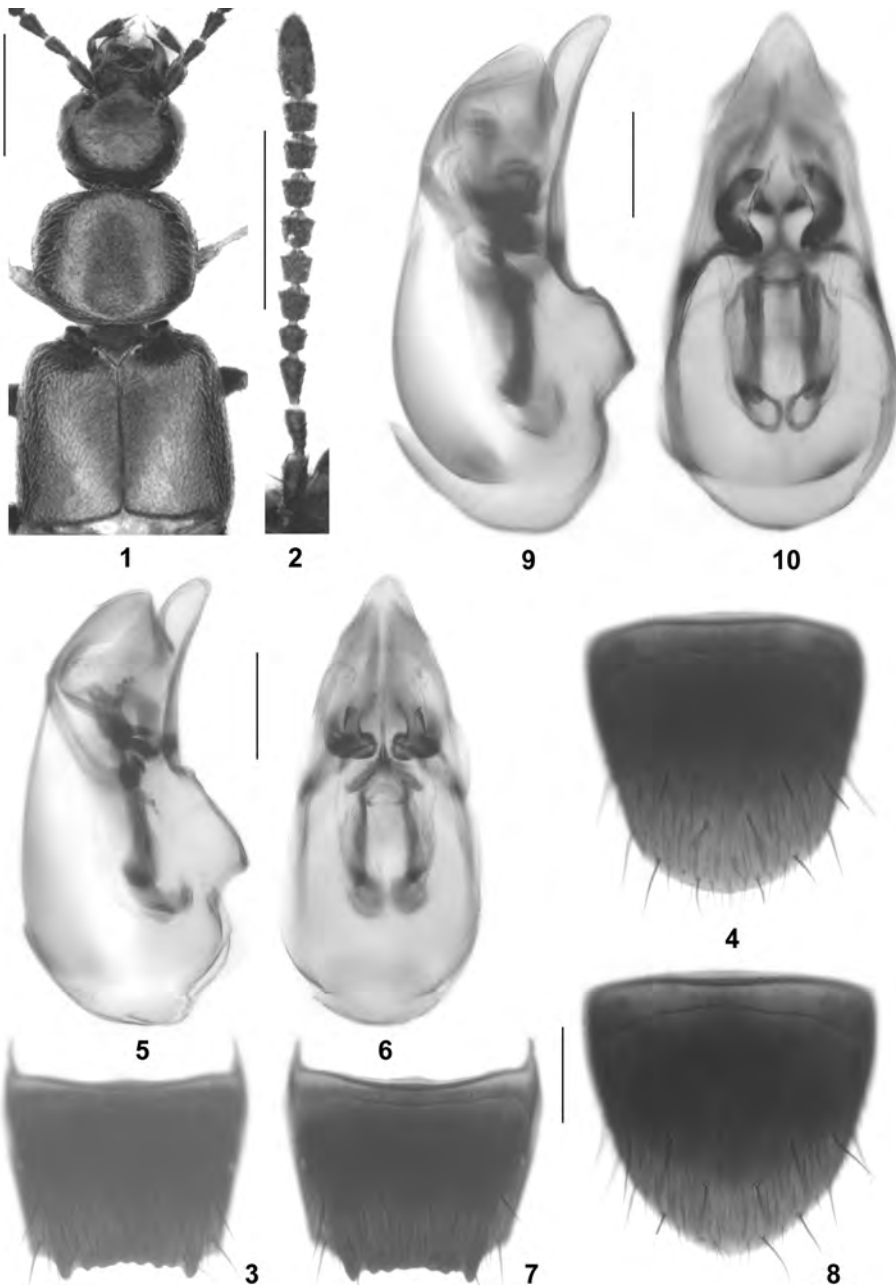
Abdomen narrower than elytra; tergites III-V with, tergite VI without anterior transverse impressions; punctation fine and moderately dense on anterior tergites, gradually becoming sparser and finer towards posterior tergites; microsculpture shallow, but distinct, composed of transverse meshes; tergite VIII subject to pronounced sexual dimorphism.

♂: posterior margin of tergite VIII weakly concave and coarsely crenulate in the middle, on either side with a pronounced tooth (Fig. 3); sternite VIII (Fig. 4) longer than tergite VIII and with strongly convex posterior margin; median lobe of aedeagus 0.41-0.43 mm long and shaped as in Figs 5-6.

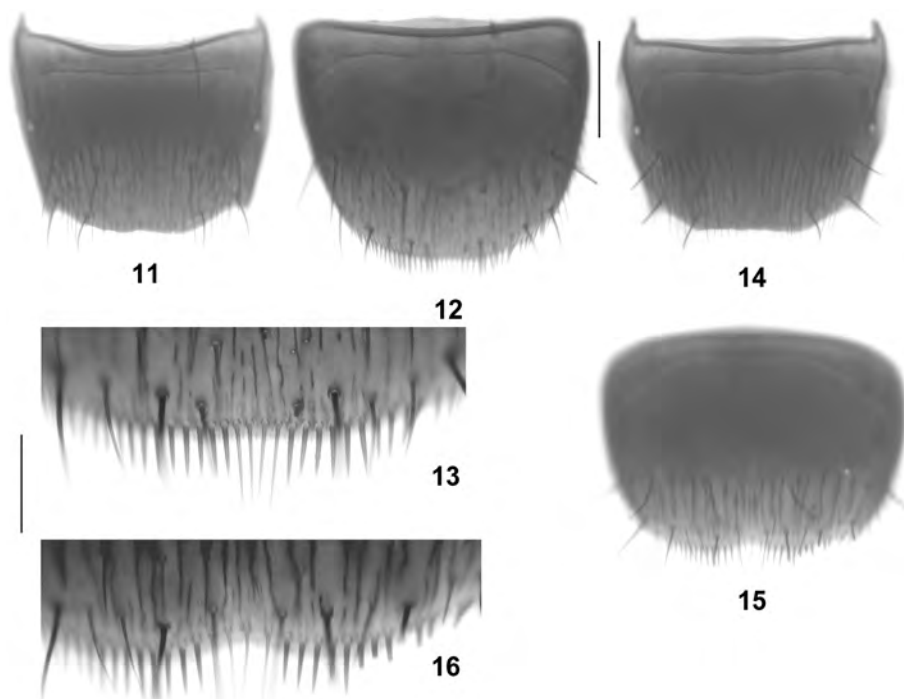
♀: posterior margin of tergite VIII bisinuate (Fig. 11); sternite VIII (Figs 12-13) strongly transverse and slightly longer than tergite VIII, posterior margin indistinctly concave in the middle and with stout marginal setae; spermatheca similar to that of *A. heymesii* HUBENTHAL, 1913 (lost in the process of preparing it for photographing and consequently not figured).

**Comparative notes:** As can be inferred from the similar external and sexual characters, *A. brevapicalis* is closely allied to the widespread *A. pechlaneri*, which too has been collected in Armenia. It differs from this species by more distinct punctation of the abdomen, a smaller median lobe of the aedeagus with a shorter apex, a broader crista apicalis, and with internal structures of different shape (*A. pechlaneri*: median lobe approximately 0.5 mm long, with a shorter crista apicalis in lateral view), and by the indistinct median concavity of the female sternite VIII (in *A. pechlaneri* with pronounced median excision). For comparison, the primary and secondary sexual characters of *A. pechlaneri* from Armenia are illustrated in Figs 7-10, 14-16.

**Distribution and natural history:** The type locality is situated to the southwest of Kapan, South Armenia. The specimens were sifted from debris and litter of *Salix* near a stream at an altitude of 2150 m.



**Figs 1-10:** *Atheta brevipicalis* (1-6) and *A. pechlaneri* from Armenia (7-10): (1) forebody; (2) antenna; (3, 7) male tergite VIII; (4, 8) male sternite VIII; (5-6, 9-10) median lobe of aedeagus in lateral and in ventral view. Scale bars: 1-2: 0.5 mm; 3-4, 7-8: 0.2 mm; 5-6, 9-10: 0.1 mm.



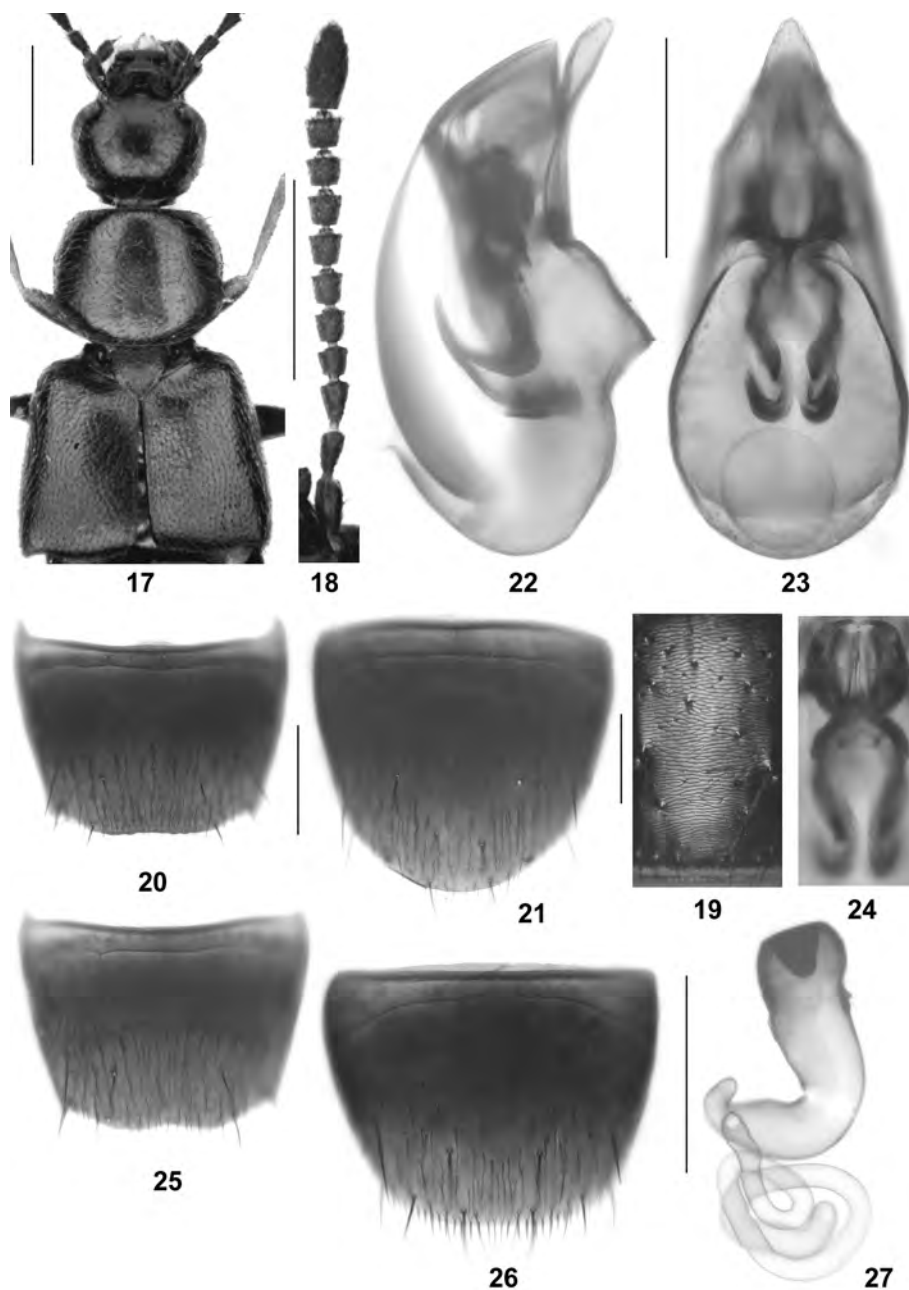
**Figs 11-16:** *Atheta brevapicalis* (11-13) and *A. pechlaneri* from Armenia (14-16): (11, 14) female tergite VIII; (12, 15) female sternite VIII; (13, 16) postero-median portion of female sternite VIII. Scale bars: 11-12, 14-15: 0.2 mm; 13, 16: 0.1 mm.

***Atheta (Atheta) hamulata* nov.sp. (Figs 17-27)**

**Type material:** Holotype ♂: "ARMENIA [9] - S Martuni, Sulema Pass, 39°57'58"N, 45°14'13"E, 2340 m, near stream, 29.VI.2016, V. Assing / Holotypus ♂ *Atheta hamulata* sp. n. det. V. Assing 2017" (cAss). Paratypes: 33♂♂, 4♀♀ [partly teneral]: same data as holotype (cAss, cVog, MNB); 6♂♂: "ARMENIA [9a] - S Martuni, Sulema Pass, 39°57'58"N, 45°14'13"E, 2340 m, rocky slope, 29.VI.2016, V. Assing" (cAss, MNB); 1♀: "ARMENIA [20a] - 35 km NW Sisian, 39°41'01"N, 45°46'46"E, 2080 m, bushes nr. stream sifted, 3.VII.2016, V. Assing" (cAss); 1♂: "ARMENIA [39] - 25 km SW Kapan, 39°04'01"N, 46°16'10"E, 2150 m, near stream, sifted, 10.VII.2016, V. Assing" (cAss); 1♂: "ARMENIA [AR16-33] WSW Kapan, S Meghri Pass, 39°05'56"N, 46°09'47"E, 2090 m, stream valley, litter near stream sifted, 8.VII.2016, leg. M. Schülke" (MNB).

**Etymology:** The specific epithet is an adjective derived from the Latin noun hamulum (small hook) and alludes to both the shape of the distal portion of the spermatheca and the shapes of the internal structures of the aedeagus in lateral view.

**Description:** Body length 3.2-4.5 mm; length of forebody 1.7-2.1 mm. Coloration: body black; legs with blackish femora, pale-brown tibiae, and dark-yellowish tarsi; antennae black; maxillary palpi black with pale-brown palpomere IV.



**Figs 17-27:** *Atheta hamulata*: (17) forebody; (18) antenna; (19) median portion of tergite VII; (20) male tergite VIII; (21) male sternite VIII; (22-23) median lobe of aedeagus in lateral and in ventral view; (24) internal structures of aedeagus in ventral view; (25) female tergite VIII; (26) female sternite VIII; (27) spermatheca. Scale bars: 17-18: 0.5 mm; 20-27: 0.2 mm; 19: 0.1 mm.

Head (Fig. 17) 1.05-1.09 times as broad as long; punctation fine, moderately dense in lateral portions and sparse in median portion of dorsal surface; microsculpture pronounced and composed of isodiametric meshes. Eyes slightly longer than distance from posterior margin of eye to posterior constriction of head. Antenna (Fig. 18) 1.3-1.4 mm long; antennomeres IV-X weakly transverse, X less than 1.5 times as broad as long, and XI nearly as long as the combined length of VIII-X.

Pronotum (Fig. 17) 1.23-1.30 times as broad as long and 1.20-1.25 times as broad as head, broadest in anterior half; punctation very fine and moderately dense; microsculpture similar to that of head, composed of isodiametric meshes; pubescence directed anteriorly along midline and predominantly diagonally postero-laterad and transversely laterad in lateral portions (type I).

Elytra (Fig. 17) 1.03-1.10 times as long as pronotum; punctation very dense and fine, more distinct than that of head and pronotum; interstices with isodiametric microreticulation. Hind wings fully developed.

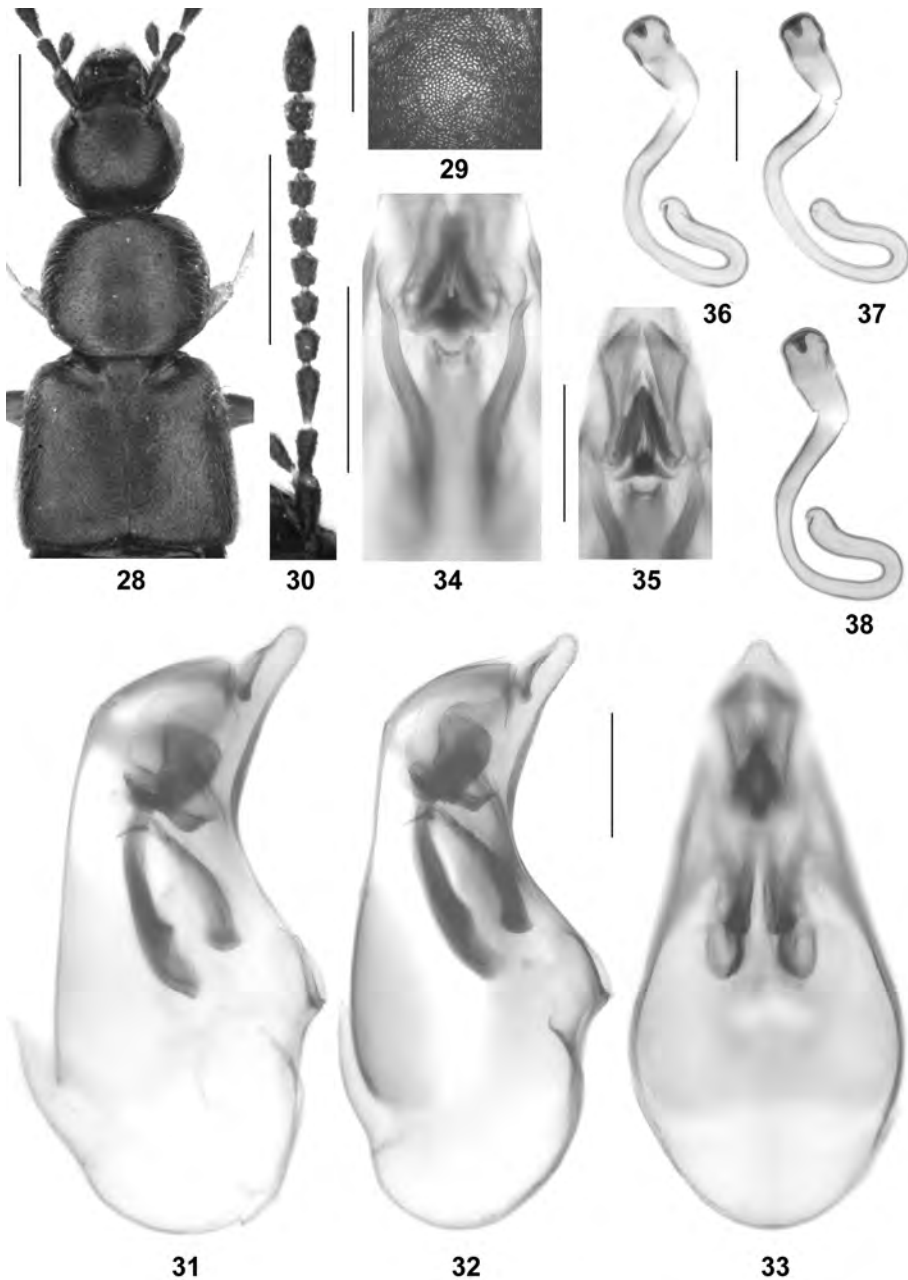
Abdomen narrower than elytra; tergites III-V with, tergite VI without anterior transverse impressions; punctation rather dense and distinct on tergite III, gradually becoming sparser towards posterior tergites, sparse and very fine on tergites VII-VIII; microsculpture shallow, but distinct, composed of transverse meshes (Fig. 19); tergite VIII subject to moderate sexual dimorphism.

♂: posterior margin of tergite VIII truncate and not distinctly crenulate in the middle, laterally angled, but without tooth (Fig. 20); sternite VIII (Fig. 21) longer than tergite VIII and with strongly convex posterior margin; median lobe of aedeagus approximately 0.5 mm long and shaped as in Figs 22-24.

♀: posterior margin of tergite VIII (Fig. 25) weakly concave in the middle, laterally not angled; sternite VIII (Fig. 26) distinctly transverse and slightly longer than tergite VIII, posterior margin without distinct concavity in the middle; distal portion of spermatheca simply curved, proximally with a hook-shaped process; proximal portion of spermatheca with relatively few coils (Fig. 27).

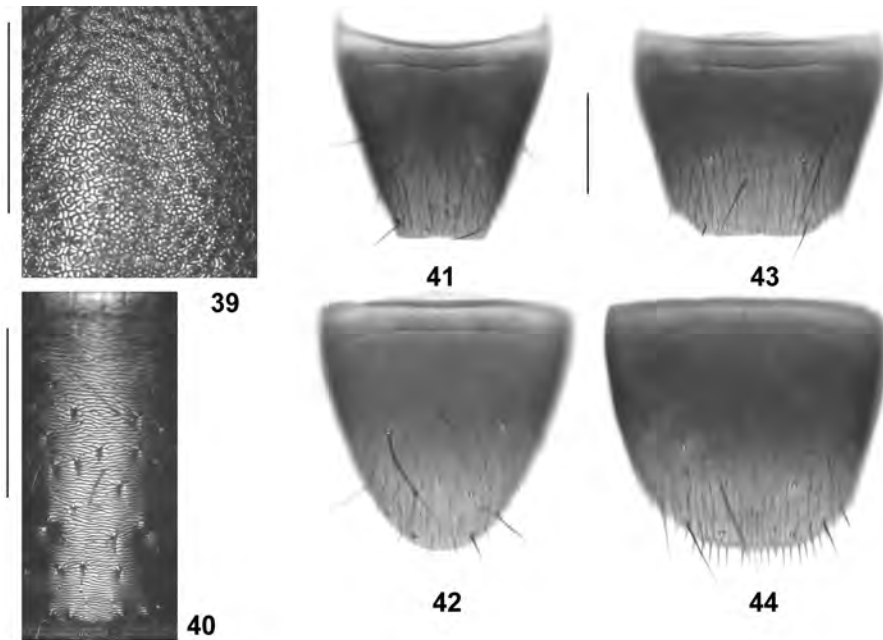
**Comparative notes:** Among the species of *Atheta* sensu strictu, *A. hamulata* is characterized by relatively small body size, a uniformly black body, relatively massive antennae with a rather long antennomere XI, and by the primary and secondary sexual characters, particularly the shape and internal structures of the median lobe of the aedeagus and the shape of the spermatheca. It is distinguished from the dark-coloured, relatively small, and widespread *A. ebenina* MULSANT & REY, 1873 by even darker coloration (particularly of the elytra and the legs), even smaller size, a longer and more slender antennomere XI, finer punctation of the forebody, the shape of the male tergite VIII (*A. ebenina*: posterior margin broadly, distinctly concave and crenulate), the shape of the aedeagus, and the shape of the spermatheca.

**Distribution and natural history:** The known distribution is confined to few localities in South Armenia. The specimens were sifted from debris and litter in moist habitats, mostly near small streams, at altitudes of 2080-2340 m. For a photo of the type locality see ASSING (2016c: figure 8). Some of the specimens from the type locality are teneral. The sex ratio is strongly biased in favour of males (5.7: 1).



**Figs 28-38:** *Atheta bispinosa*: (28) forebody; (29) median dorsal portion of head; (30) antenna; (31-33) median lobe of aedeagus in lateral and in ventral view; (34-35) internal structures of aedeagus in ventral view; (36-38) spermatheca. Scale bars: 28, 30: 0.5 mm; 29, 31-38: 0.1 mm.





**Figs 39-44:** *Atheta bispinosa*: (39) median portion of pronotum; (40) median portion of tergite VII; (41) male tergite VIII; (42) male sternite VIII; (43) female tergite VIII; (44) female sternite VIII. Scale bars: 0.2 mm.

***Atheta (Dimetrota) bispinosa* nov.sp. (Figs 28-44)**

**Type material:** Holotype ♂: "ARMENIA [4] - N Yerevan, NW Hrazdan, 40°41'40"N, 44°29'16"E, 2500 m, W-slope, sifted, 26.VI.2016, V. Assing / Holotypus ♂ *Atheta bispinosa* sp. n. det. V. Assing 2017" (cAss). Paratypes: 108♂♂, 94♀♀ [partly slightly teneral]; same data as holotype (cAss, cFel, cVog, cWun, MHNG, MNB, NHMW); 122 exs.: same data, but leg. Schülke (MNB); 1♀: "ARMENIA [AR16-01] N Yerevan, W Hrazdan, 2020 m, 40°31'13"N, 44°30'38"E, grassy slope with scattered oak, litter and roots, sifted, 26.VI.2016, leg. M. Schülke" (MNB); 1♂, 1♀: "ARMENIA [2] - N Yerevan, W Hrazdan, 40°32'02"N, 44°33'16"E, 2130 m, litter sifted, 25.VI.2016, V. Assing" (cAss); 1♀: "ARMENIA [3] - N Yerevan, W Hrazdan, 40°30'28"N, 44°34'12"E, 1870 m, forest, sifted, 25.VI.2016, V. Assing" (cAss); 12♂♂, 10♀♀: "ARMENIA [5] - N Yerevan, NW Hrazdan, 40°40'07"N, 44°28'22"E, 2100 m, W-slope, sifted, 26.VI.2016, V. Assing" (cAss); 11 exs.: same data, but leg. Schülke; 3♂♂, 2♀♀: "ARMENIA [6] - N Yerevan, NW Hrazdan, 40°38'07"N, 44°30'05"E, 2010 m, mixed forest, 27.VI.2016, V. Assing" (cAss); 3 exs.: same data, but leg. Schülke (MNB); 7♂♂, 9♀♀: "ARMENIA [7] - N Yerevan, NW Hrazdan, 40°38'06"N, 44°27'37"E 2110 m, litter sifted, 28.VI.2016, V. Assing" (cAss); 4 exs.: same data, but leg. Schülke (MNB); 2 exs.: "ARMENIA [AR16-08] N Yerevan, NW Hrazdan, 40°33'45"N, 44°23'41"E, 2000 m, mixed deciduous forest margin, litter sifted, 28.VI.2016, leg. M. Schülke" (MNB); 2♀♀: "ARMENIA [11] - 50 km NW Sisian, Jermuk, 39°50'02"N, 45°40'21"E, 2110 m, oak forest, 30.VI.2016, V. Assing" (cAss); 2 exs.: same data, but leg. Schülke (MNB); 2♀♀: same data, but "[11a]... 3.VII.2016" (cAss); 8♂♂, 6♀♀: same data, but "[11b]... 12.VII.2016" (cAss, MNB); 1♀: "ARMENIA [12] - 40 km NW Sisian, Vorotan P., 39°42'36"N, 45°40'30"E 1960 m, dry oak forest, 30.VI.2016, V. Assing" (cAss); 1♀: "ARMENIA [16] - 30 km NW Sisian, 39°46'33"N, 45°56'05"E, 2960 m, grassy slope, sifted, 2.VII.2016, V. Assing" (cAss); 2♂♂, 1♀: "ARMENIA [23] - WSW Kapan, Meghri Pass, 39°07'00"N, 46°09'38"E, 2520 m, litter & roots, 6.VII.2016, V. Assing" (cAss); 1♀: "ARMENIA [28] - WSW Kapan, S Meghri Pass, 39°06'10"N, 46°10'47"E, 2310 m, oak litter, 6.VII.2016, V. Assing" (cAss); 2♂♂: "ARMENIA - Aragazotn, Byurakan env., 40°23'42"N, 44°18'40"E 1930 m, 26.V.2016, leg. A. & J. Müller" (cAss); 3♂♂,

1♀: "ARMENIA, above Jermuk, sifting of plant leavings near snow residues, 2400 m, 39.839053N, 45.693496E, 21.V.2015, M. Kocian lgt." (cKoc); 1♀: "ARMENIA, Goris, E slope, deciduous forest, leaf litter sifting, 1700 m, 25.V.2015, 39.516611N, 46.322847E, M. Kocian lgt." (cKoc); 1♀: "ARMENIA, Goris env., above Verishen, sifting, 1880 m, 26.V.2015, 39.558515N, 46.316772E, M. Kocian lgt." (cKoc); 3♂♂: "N41°48'37 E43°31'04 (4), GEORGIA: Samzche-Dschawach., Timotesubani 1144 m, Brachat & Meybohm, 13.V.2016" (cAss); 1♂: "N42°47'53 E42°38'01 (17), GEORGIA: Ratscha, Lentekhi 10 km W, 1100 m, Brachat & Meybohm, 20.V.2016" (cAss).

**E t y m o l o g y**: The specific epithet (Latin, adjective) alludes to the pair of long sclerotized spines in the internal sac of the aedeagus.

**D e s c r i p t i o n**: Body length 3.5-4.6 mm; length of forebody 1.5-2.0 mm. Coloration: body black, with the elytra sometimes partly indistinctly paler blackish-brown; legs with the femora yellowish-brown to brown and the tibiae and tarsi dark-yellowish; antennae blackish; maxillary palpi blackish with palpomere IV yellowish.

Head (Figs 28-29) approximately as long as broad or weakly transverse; punctuation fine and moderately dense, barely visible in the pronounced microreticulation. Eyes slightly longer than distance from posterior margin of eye to posterior constriction of head. Antenna (Fig. 30) 1.15-1.40 mm long; antennomeres IV weakly oblong, V-VI approximately as long as broad or weakly transverse, VII-X weakly transverse, X distinctly less than 1.5 times as broad as long, and XI approximately as long as the combined length of IX and X.

Pronotum (Figs 28, 39) relatively weakly transverse, 1.15-1.20 times as broad as long and approximately 1.25 times as broad as head, broadest in anterior half; punctuation dense and fine, though slightly more distinct than that of head; microsculpture pronounced and composed of isodiametric meshes; pubescence directed anteriad along midline and predominantly diagonally postero-laterad and transversely laterad in lateral portions (type I).

Elytra (Fig. 28) approximately as long as pronotum (or nearly so); punctuation dense and fine; interstices with isodiametric microreticulation. Hind wings fully developed. Metatarsomere I approximately as long as metatarsomere II; mesotibial seta nearly twice as long as width of mesotibia in the middle.

Abdomen narrower than elytra; tergites III-V with, tergite VI without shallow anterior transverse impressions; punctuation rather dense and distinct on tergites III-V, sparser and very fine on tergites VI-VIII; microsculpture distinct, composed predominantly of long transverse meshes (Fig. 40); tergite VIII subject to moderate sexual dimorphism.

♂: tergite VIII (Fig. 41) strongly tapering posteriad, posterior margin truncate or weakly concave in the middle, laterally distinctly angled; sternite VIII (Fig. 42) strongly tapering posteriad and with strongly convex posterior margin; median lobe of aedeagus (Figs 31-33) approximately 0.5 mm long and with short ventral process; internal sac with a pair of long sclerotized spines and other structures of characteristic shapes (Figs 34-35).

♀: tergite VIII (Fig. 43) weakly tapering posteriad, posterior margin truncate or weakly concave in the middle, laterally not angled; posterior margin of sternite VIII with broadly convex posterior margin and a row of modified long and stout marginal setae (Fig. 44); spermatheca (Figs 36-38) with slender distal and proximal portions, maximal extension approximately 0.3 mm.

**C o m p a r a t i v e n o t e s**: In habitus, coloration, and other characters, *A. bispinosa* resembles the widespread and common *A. putrida* (KRAATZ, 1856), but differs by a

relatively larger and less transverse pronotum, on average shorter elytra, less pronounced lateral angles of the posterior margin of the male sternite VIII, a larger median lobe of the aedeagus with a less marked crista apicalis (lateral view), a differently shaped ventral process (lateral view), and internal structures of different shapes, as well as by the more slender and proximally not distinctly dilated spermatheca. For illustrations of the primary sexual characters of *A. putrida* see BRUNDIN (1954).

**Comment:** When making the name *Dimetrota* available, Mulsant & Rey (1873) included two species, *Homalota laetipes* Mulsant & Rey, 1873 (today a junior synonym of *Atheta vaga* (Heer, 1839)) and *H. tristicula* Mulsant & Rey, 1873 (now a synonym of *Atheta cadaverina* (Brisout de Barneville, 1860)), without designating a type species. Blackwelder (1952) subsequently designated *Homalota tristicula* as the type species. Apparently unaware of this, Brundin (1954) followed the concept of previous authors in his revision of *Dimetrota*, an interpretation that has been adopted by most subsequent authors, too, and that does not include *A. cadaverina* and allied species. As a result, the species currently included in *Dimetrota* (for the Palaearctic species see Schülke & Smetana 2015) clearly form a polyphyletic group.

The two new species assigned to *Dimetrota* in the present paper, *A. bispinosa* and *A. senticollis*, belong to *Dimetrota* sensu Brundin (1954) and are not closely related to *A. cadaverina*.

**Distribution and natural history:** This species was found in several localities both in North and South Armenia, as well as in two localities in Georgia. The vast majority of specimens (> 320 specimens) was collected in the type locality, a grassy west slope with scattered willow at an altitude of 2500 m (Assing 2016b: figure 41), by sifting leaf litter and roots. The remainder was sifted from litter and grass roots in forests, forest margins, bush habitats, and alpine grassland at altitudes of 1100-2960 m. Some of the specimens are more or less distinctly teneral.

***Atheta (Dimetrota) senticollis* nov.sp.** (Figs 45-56)

**Type material:** Holotype ♂: "ARMENIA - Dsegh env. (Tsover Lake), 40.950°N, 44.685°E, 1390 m, 23.V.2016, leg. A. & J. Müller / Holotypus ♂ *Atheta senticollis* sp. n. det. V. Assing 2017" (cAss). **Paratypes:** 1 ♂ [teneral], 1 ♀: same data as holotype (cAss).

**Etymology:** The specific epithet (from the Latin adjective *sensus*: rough, uneven) alludes to the uneven surface of the pronotum.

**Description:** Body length 4.0-4.5 mm; length of forebody 1.8-2.0 mm. Coloration: body completely black or with the elytra partly slightly paler, blackish-brown; legs with the femora yellowish-brown to dark-brown and the tibiae and tarsi dark-yellowish; maxillary palpi black with palpomere IV yellowish.

Head (Figs 45-46) 1.06-1.09 times as broad as long; punctation fine and moderately dense, barely visible in the pronounced microreticulation, somewhat sparser in median dorsal portion. Eyes much longer than distance from posterior margin of eye to posterior constriction of head. Antenna (Fig. 47) approximately 1.2-1.3 mm long; antennomeres IV approximately as long as broad, V-X weakly transverse, X slightly less than 1.5 times as broad as long, and XI approximately as long as the combined length of IX and X.

Pronotum (Figs 45, 48) 1.16-1.19 times as broad as long and approximately 1.2 times as broad as head, broadest in anterior half; dorsal surface somewhat uneven; punctation

dense and distinct, coarser than that of head; microsculpture pronounced and composed of isodiametric meshes; pubescence directed anteriorad along midline, predominantly diagonally postero-laterad and transversely laterad in lateral portions (type I).

Elytra (Fig. 45) approximately as long as pronotum; punctation very dense and distinct, coarser than that of pronotum; interstices with isodiametric microreticulation. Hind wings fully developed. Metatarsomere I approximately as long as metatarsomere II; mesotibial seta approximately twice as long as width of mesotibia in the middle.

Abdomen narrower than elytra; tergites III-V with, tergite VI without shallow anterior transverse impressions; punctation rather dense and distinct on tergites III-V, sparser on tergites VII-VIII, somewhat intermediate on tergite VI; microsculpture distinct, composed of transverse meshes (Fig. 49); tergite VIII subject to pronounced sexual dimorphism.

♂: posterior margin of tergite VIII strongly modified, in the middle truncate and distinctly serrate, laterally with a pronounced spine-shaped process on either side (Fig. 83); sternite VIII (Fig. 85) with strongly convex posterior margin; median lobe of aedeagus (Figs 52-53) 0.47 mm long; ventral process relatively long and slender, apically weakly curved in lateral view; internal sac with a pair of sickle-shaped structures and with other dark structures.

♀: posterior margin of tergite VIII slightly truncately produced and weakly concave in the middle (Fig. 54); posterior margin of sternite VIII broadly convex and with a row of modified long and stout marginal setae (Fig. 55); spermatheca with slender distal and proximal portions (Fig. 56).

**Comparative notes:** In habitus, coloration, the shape of the female tergite VIII, and the shape of the spermatheca, this species strongly resembles *A. bispinosa*, from which it differs by an uneven surface of the pronotum, more distinct punctation of the pronotum and the elytra, a male tergite VIII of completely different shape, and by the shape and internal structures of the median lobe of the aedeagus.

**Distribution and natural history:** The type locality is situated near Dsegh in North Armenia at an altitude of 1390 m. The specimens were probably collected with a flight trap in a beech forest. One of the paratypes is teneral.

### ***Atheta (Dimetrota) hansseni* STRAND, 1943**

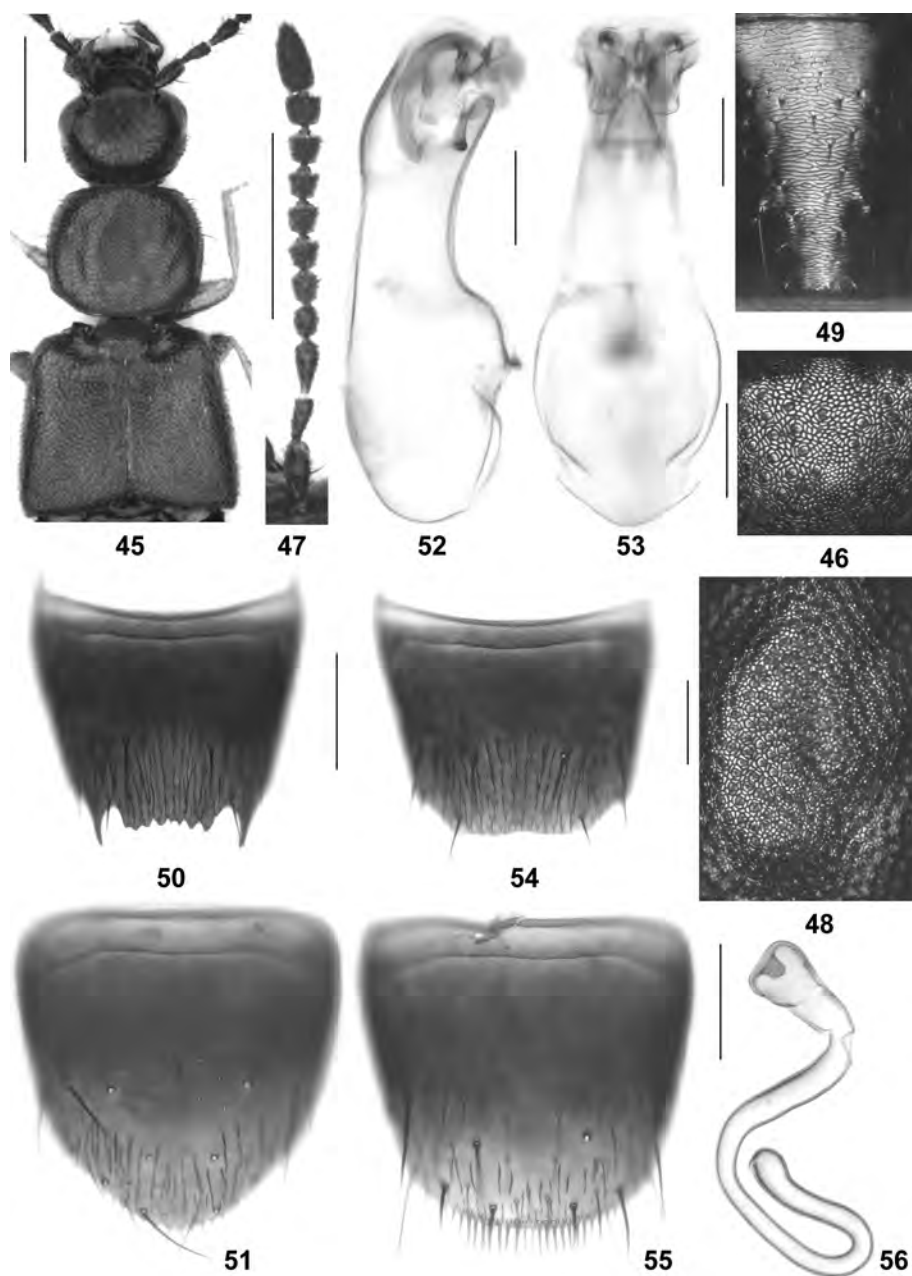
*Atheta brachati* ASSING, 2013: 115 f.; **nov.syn.**

**Material examined:** Armenia: 1♂, ca. 50 km NW Sisian, Jermuk, 39°50'N, 45°40'E, 2110 m, oak forest, litter and roots sifted, 3.VII.2016, leg. Assing (cAss); 1♂, same data, but 12.VII.2016 (cAss).

**Comment:** The original description of *A. brachati* is based on a male holotype and a male paratype from Bolu Province, Turkey. A revision of the types revealed that they are conspecific with *A. hansseni*.

*Atheta hansseni* is closely allied to *A. cadaverina*, the type species of *Dimetrota*, whereas it is clearly not closely related to the new species assigned to this subgenus above, which belong to *Dimetrota* sensu BRUNDIN (1954).

The two males listed above represent the first records from Armenia.



**Figs 45-56:** *Atheta senticollis*: (45) forebody; (46) median dorsal portion of head; (47) antenna; (48) median portion of pronotum; (49) median portion of tergite VII; (50) male tergite VIII; (51) male sternite VIII; (52-53) median lobe of aedeagus in lateral and in ventral view; (54) female tergite VIII; (55) female sternite VIII; (56) spermatheca. Scale bars: 45, 47: 0.5 mm; 50-51, 54-55: 0.2 mm; 46, 48-49, 52-53, 56: 0.1 mm.

### Species of the subgenus *Oreostiba* GANGLBAUER, 1895

Previously, only one species of *Oreostiba*, *Atheta altiviva* BENICK, 1974, had been recorded from Armenia. During the field trip conducted in 2016 five species of the subgenus were found: *A. altiviva*, *A. tibialis* (HEER, 1839) (a common and widespread species distributed from the British Isles eastwards to the Caucasus region), and three undescribed species with more restricted distributions. The latter three species and *A. altiviva* are externally highly similar, reliably identified only based on the sexual characters, and often found syntopically (up to three species in the same locality in various combinations). While the shape of the median lobe of the aedeagus is highly distinctive and subject to very little intraspecific variation, the spermatheca is of remarkably variable shape. In consequence, a major problem encountered when studying these species was matching the females to the corresponding males. This was mainly done based on the occurrence across the sampled localities, in the case of *A. altiviva* and *A. semialba* also on the average relative size of the head.

All the species (re-)described below are readily distinguished from *A. tibialis* by smaller size and a more slender habitus alone.

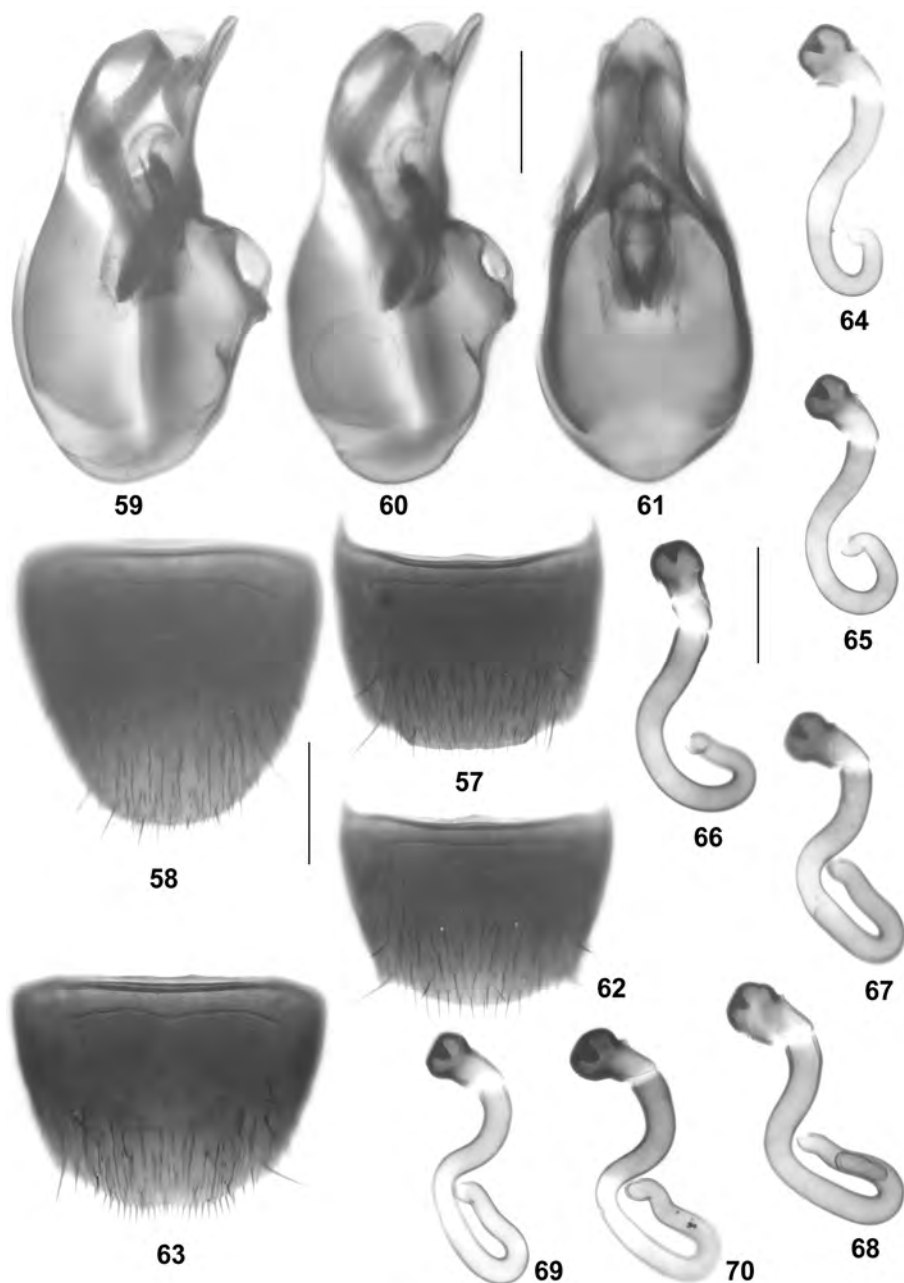
#### *Atheta (Oreostiba) altiviva* BENICK, 1974 (Figs 57-70)

*Atheta (Oreostiba) altiviva* BENICK, 1974: 31 f.

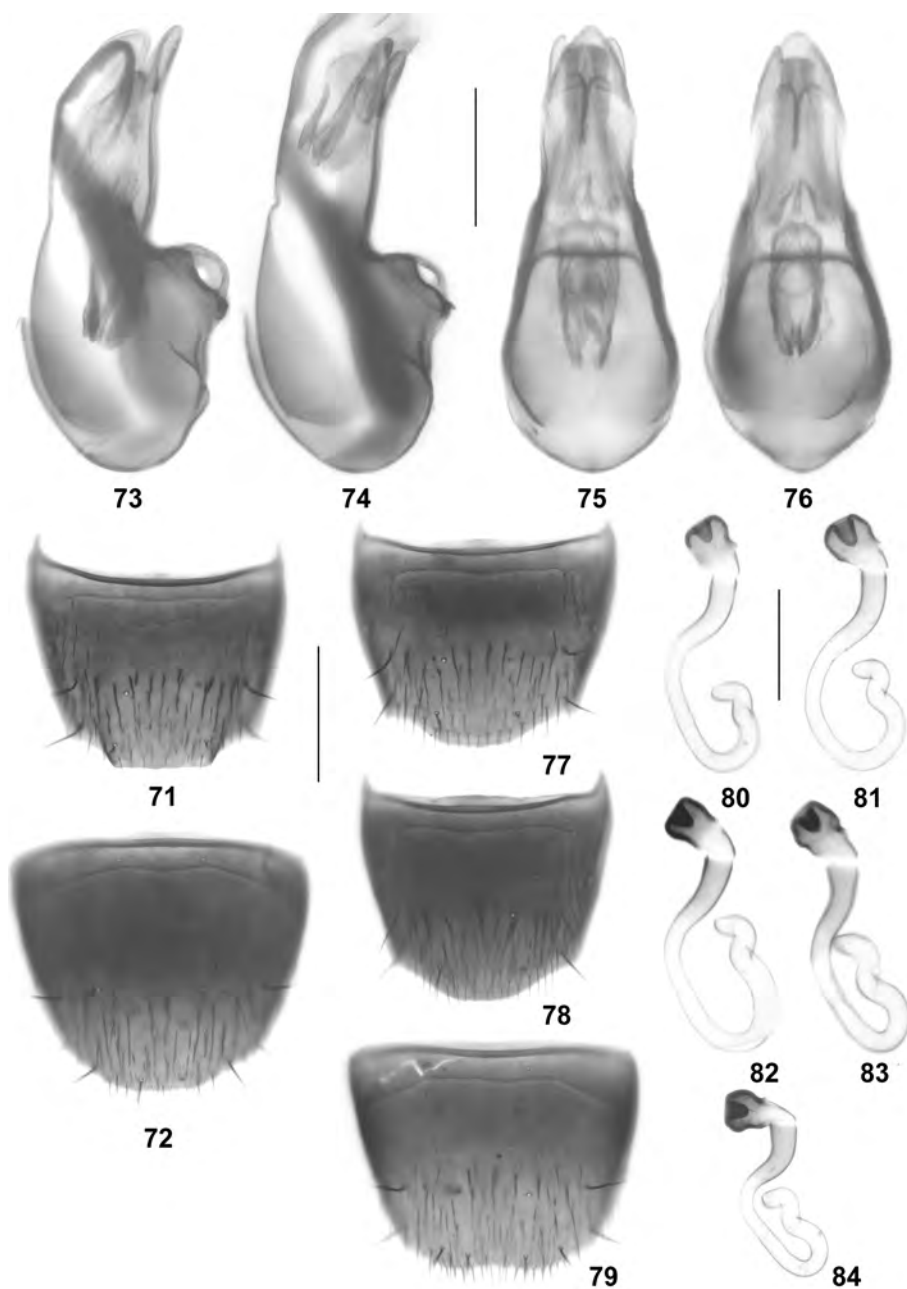
Type material examined: **Holotype** ♂: "♂ / 6 / Sevan, Ushtapalar, 3000 m, ASSR - 1-8-48/ *Atheta altiviva* G.Bek Typus ♂" (cKal). **Paratypes**: 1 ♀: "5 / Kaputdshukh Pass, 3500 m, ASSR. 4.8.50 / *Atheta altiviva* ♀ Allo-Typus / Paratypus *Atheta semialba* sp. n., det. V. Assing 2017" (cKal); 1 ♀: "Dzhermuk Sarzali, ASSR. 25.7.57 / Nr 6 / *Atheta altiviva* G.Bek Paratypus" (cKal); 1 ♀ [without spermatheca]: "Sisian, Kotshbekhsky Pass, ASSR. 23.7.50 / *Atheta altiviva* G.Bek Paratypus" (cKal).

**Comment**: The original description is based on a male holotype from "Idstevan, Kloster Kiranz... an der nördl. Grenze von Armenien und Azerbeidshan" and an unspecified number of paratypes found "an verschiedenen Fundorten in Russisch-Armenien in Höhen zwischen 2000 und 3500 m". Four type specimens were located in the Khnzorian collection (cKal): a male labelled as the holotype, a female labelled as the allotype, and two females labelled as paratypes. The status of the specimen labelled as the holotype is doubtful, since the locality label does not correspond to the type locality indicated in the original description. It is, however, conspecific with a male paratype in the Benick collection (MHNG), which was collected in the same locality as the allotype and which had been examined by the second author. The allotype is not conspecific with the holotype, but belongs to *A. semialba*.

**Additional material examined**: Armenia: 3 ♂♂, S Martuni, Sulema Pass, 39°58'N, 45°14'E, 2340 m, slope with small stream and scattered bushes, litter and roots near stream sifted, 29.VI.2016, leg. Assing (cAss); 1 ♂, 30 km NW Sisian, 39°47'N, 45°56'E, 2960 m, grassy slope with rocks, roots and debris sifted, 2.VII.2016, leg. Assing (cAss); 3 ♀♀, 30 km NW Sisian, 39°47'N, 45°56'E, 3000 m, snowfields, under stones and debris sifted, 2.VII.2016, leg. Assing (cAss); 3 ♂♂, 11 ♀♀, N Sisian, near Mt. Tsugh, 39°41'10"N, 46°03'13"E, 3300 m, soil and debris near snowfields sifted, 4.VII.2016, leg. Assing & Schülke (cAss, cVog, MNB); 1 ♀, N Sisian, near Mt. Tsugh, 39°41'N, 46°03'E, 3300 m, meadows, partly near snowfields, under stones, 4.VII.2016, leg. Assing (cAss); 1 ♂, Aragatzotn, Mt. Aragats, 40°26'N, 44°14'E, 2680 m, 26.V.2016, leg. A. & J. Müller (cAss).

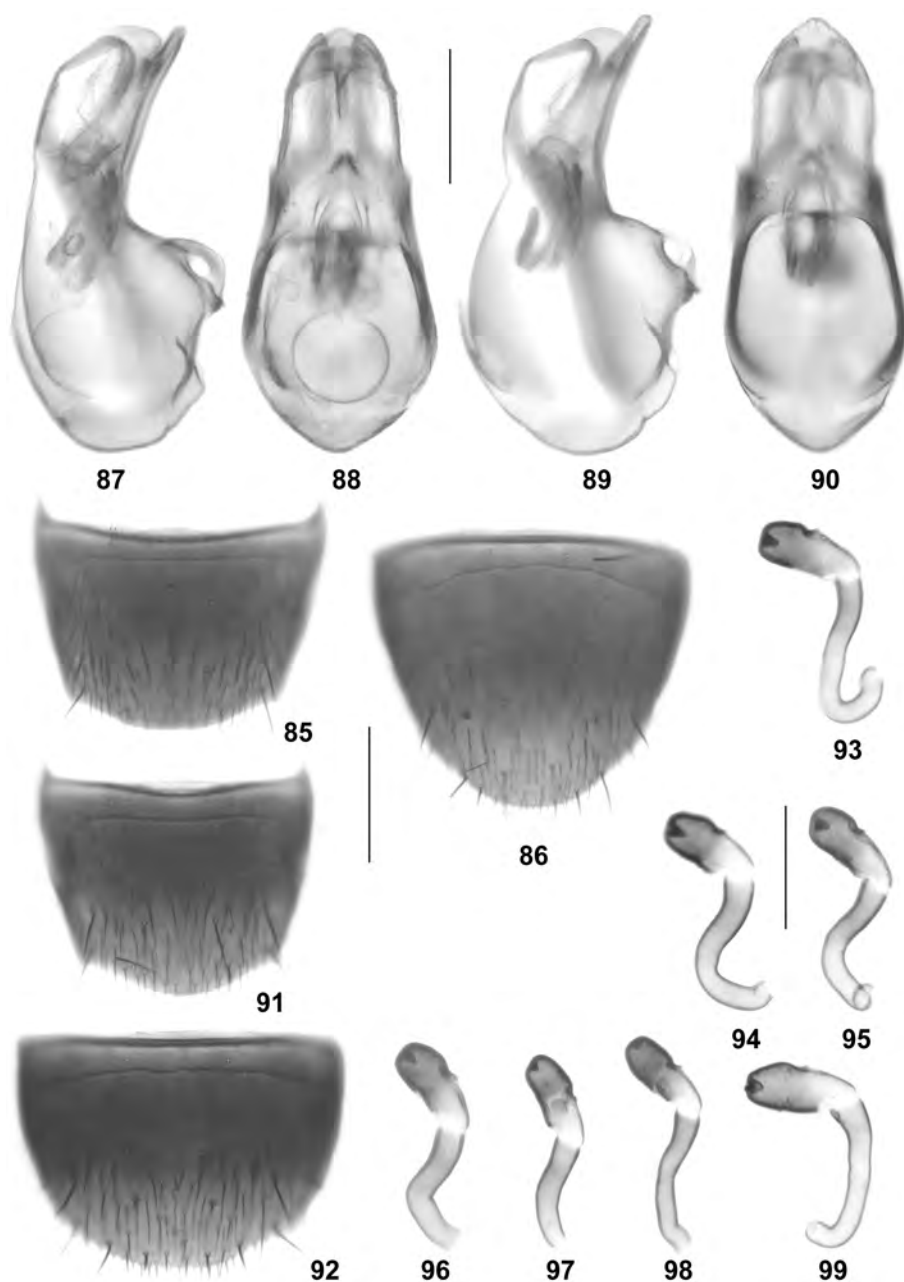


**Figs 57-70:** *Atheta altiviva* (64: paratype): (57) male tergite VIII; (58) male sternite VIII; (59-61) median lobe of aedeagus in lateral and in ventral view; (62) female tergite VIII; (63) female sternite VIII; (64-70) spermatheca. Scale bars: 57-58, 62-63: 0.2 mm; 59-61, 64-70: 0.1 mm.

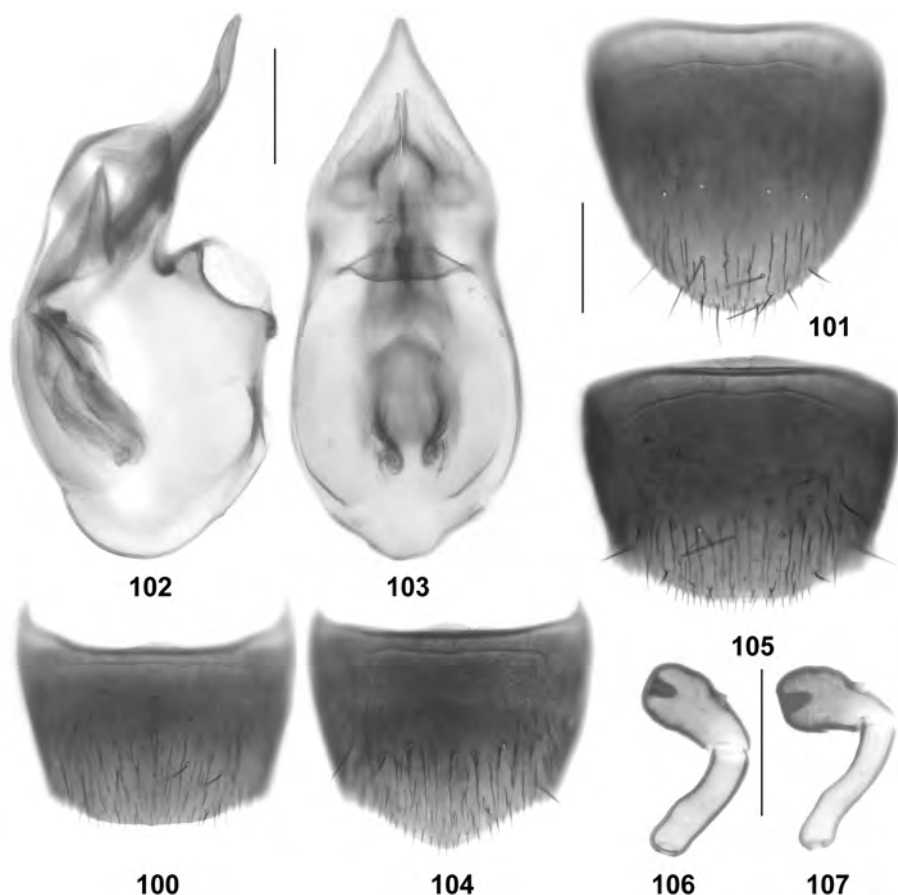


**Figs 71-84:** *Atheta semialba*: (71) male tergite VIII; (72) male sternite VIII; (73-76) median lobe of aedeagus in lateral and in ventral view; (77-78) female tergite VIII; (79) female sternite VIII; (80-84) spermatheca. Scale bars: 71-72, 77-79: 0.2 mm; 73-76, 80-84: 0.1 mm.





**Figs 85-99:** *Atheta abscisa*: (85) male tergite VIII; (86) male sternite VIII; (87-90) median lobe of aedeagus in lateral and in ventral view; (91) female tergite VIII; (92) female sternite VIII; (93-99) spermatheca. Scale bars: 85-86, 91-92: 0.2 mm; 87-90, 93-99: 0.1 mm.



**Figs 100-107:** *Atheta brevitheca*: (100) male tergite VIII; (101) male sternite VIII; (102-103) median lobe of aedeagus in lateral and in ventral view; (104) female tergite VIII; (105) female sternite VIII; (106-107) spermatheca. Scale bars: 100-101, 104-105: 0.2 mm; 102-103, 106-107: 0.1 mm.

**Redescription:** Body length 3.2-3.9 mm; length of forebody 1.4-1.7 mm. Coloration: body black; legs blackish with paler tarsi; antennae black; maxillary palpi black with palpomere IV pale-yellowish.

Head weakly transverse; punctation fine and moderately dense, somewhat sparser in median dorsal portion; microsculpture distinct, composed of isodiametric meshes. Eyes approximately as long as distance from posterior margin of eye to posterior constriction of head (or nearly so). Antenna approximately 1.0-1.1 mm long; antennomeres IV-V approximately as long as broad or weakly transverse, VI-X of gradually increasing width and increasingly transverse, X approximately 1.5 times as broad as long, and XI as long as, or slightly longer than, the combined length of IX and X.

Pronotum 1.15-1.20 times as broad as long and 1.15-1.20 times as broad as head, broadest in anterior half; punctation and microsculpture similar to those of head; pubescence

directed posteriad along midline, predominantly transversely laterad or diagonally postero-laterad in lateral portions (type II).

Elytra 1.05-1.10 times as long as pronotum; punctation dense and very fine, barely noticeable in the pronounced microsculpture. Hind wings fully developed. Metatarsomere I slightly longer than metatarsomere II.

Abdomen narrower than elytra; tergites III-V with, tergite VI without anterior transverse impressions; punctation moderately dense and distinct on anterior, sparse and fine on posterior tergites; microsculpture distinct, that of tergites VI and VII predominantly composed of short transverse, or a mix of short transverse and isodiametric meshes; posterior margin of tergite VII with palisade fringe; tergite VIII subject to sexual dimorphism.

♂: posterior margin of tergite VIII broadly projecting in the middle, median portion more or less truncate (Fig. 57); sternite VIII (Fig. 58) with strongly convex posterior margin; median lobe of aedeagus (Figs 59-61) approximately 0.4 mm long, with blade-shaped ventral process and with more or less distinctly sclerotized internal structures; parameres 0.43-0.45 mm long.

♀: tergite VIII (Fig. 62) strongly transverse, posterior margin broadly and rather weakly convex; posterior margin of sternite VIII broadly convex, in the middle with or without very shallow concavity (Fig. 63); spermatheca of rather variable shape (Figs 64-70), proximal portion often partly semitransparent.

**Comparative notes:** For characters distinguishing this species from similar Armenian congeners see the comparative notes in the following sections.

**Distribution and natural history:** The species is known from several localities in both North and South Armenia. The specimens were found primarily in grassland by sifting debris and roots (partly near streams), or by turning stones, at elevations of 2340-3300 m.

### ***Atheta (Oreostiba) semialba* nov.sp.** (Figs 71-84)

**Type material:** Holotype ♂: "ARMENIA [21] - N Sisian, near Mt. Tsugh, 39°41'10"N, 46°03'13"E, 3300 m, near snow, 4.VII.2016, V. Assing / Holotypus ♂ *Atheta semialba* sp. n. det. V. Assing 2017" (cAss). Paratypes: 2♂♂, 1♀: same data as holotype (cAss, cVog); 2♂♂, 2♀♀: same data, but leg. Schülke (MNB, cVog); 1♀: "ARMENIA [5] - N Yerevan, NW Hrazdan, 40°40'07"N, 44°28'22"E, 2100 m, W-slope, sifted 26.VI.2016, V. Assing" (cAss); 2♂♂, 4♀♀: "ARMENIA [8] - N Yerevan, NW Hrazdan, 40°33'45"N, 44°23'41"E, 2000 m, forest margin, 28.VI.2016, V. Assing" (cAss, cVog); 1♀: "ARMENIA [20a] - 35 km NW Sisian, 39°41'01"N, 45°46'46"E, 2080 m, bushes nr. stream sifted, 3.VII.2016, V. Assing" (cAss); 1♂: "ARMENIA [28a] - WSW Kapan, S Meghri Pass, 39°06'10"N, 46°10'47"E, 2310 m, *Formica* nest, 6.VII.2016, V. Assing" (cAss); 1♂, 2♀♀: "ARMENIA [39] - 25 km SW Kapan, 39°04'01"N, 46°16'10"E, 2150 m, near stream, sifted, 10.VII.2016, V. Assing" (cAss). 3♂♂, 2♀♀: "ARMENIA, Vorotan pass, sifting - grass and plant leavings, 2250 m, 23.V.2015, 39.681390N, 45.720964E, M. Kocian lgt." (cKoc, cAss); 1♂, 2♀♀: "ARMENIA, near Vorotan pass, sifting - grass and plant leavings, 2160 m, 27.V.2015, 39.686492N, 45.693326E, M. Kocian lgt." (cAss). For an additional paratype see the type material of *A. altiviva*.

**Etymology:** The specific epithet (Latin, adjective: half-pale) alludes to the extensively transparent proximal portion of the spermatheca.

**Description:** External characters as in *A. altiviva*, except that the head is on average slightly smaller in relation to the pronotum.

♂: posterior margin of tergite VIII broadly projecting in the middle (slightly more so than in *A. altiviva*), median portion more or less truncate (Fig. 71); sternite VIII (Fig. 72) with strongly convex posterior margin, relatively shorter than in *A. altiviva*; median lobe of aedeagus (Figs 73-76) much smaller and more slender than in *A. altiviva*, 0.30-0.33 mm long, with slender ventral process (ventral view), and with weakly sclerotized internal structures; parameres approximately 0.35-0.36 mm long.

♀: tergite VIII (Figs 77-78) transverse, but somewhat less so than in *A. altiviva*, posterior margin convex (more so than in *A. altiviva*); posterior margin of sternite VIII (Fig. 79) convex, in the middle concave (this concavity more distinct than in *A. altiviva*); spermatheca of somewhat variable shape (Figs 80-84), proximal half transparent and somewhat twisted.

**Comparative notes:** For characters distinguishing *A. semialba* from *A. altiviva* and other similar Armenian consubgenera see the description above and the comparative notes in the following sections, respectively.

**Distribution and natural history:** The specimens were collected in several localities (grassland, bushland, forest margins, near streams) across North and South Armenia by sifting litter, debris, and roots at altitudes of 2000-3500 m, partly together with *A. altiviva*, *A. brevitheca*, and/or *A. abscisa*.

***Atheta (Oreostiba) abscisa* nov.sp.** (Figs 85-99)

**Type material:** Holotype ♂: "ARMENIA [39] - 25 km SW Kapan, 39°04'01"N, 46°16'10"E, 2150 m, near stream, sifted, 10.VII.2016, V. Assing / Holotypus ♂ *Atheta abscisa* sp. n. det. V. Assing 2017" (cAss). **Paratypes:** 5♂♂, 13♀♀: same data as holotype (cAss); 10♂♂, 7♀♀: same data, but leg. Schülke (MNB, cVog); 4♂♂, 3♀♀: "ARMENIA [9] - S Martuni, Sulema Pass, 39°57'58"N, 45°14'13"E, 2340 m, near stream, 29.VI.2016, V. Assing" (cAss, cVog); 1♀: same data, but leg. Schülke (MNB); 2♂♂: "ARMENIA [10] - S Martuni, Sulema Pass, 39°58'N, 45°14'E, 2340 m, road margin, 29.VI.2016, V. Assing" (MNB, cAss); 1♀: "ARMENIA [11b] - 50 km NW Sisian, Jermuk, 39°50'02"N, 45°40'21"E, 2110 m, oak forest, 12.VII.2016, V. Assing" (cAss); 4♂♂: "ARMENIA [19] - 35 km NW Sisian, 39°40'59"N, 45°46'50"E, 2070 m, stream valley, sifted 3.VII.2016, V. Assing" (cAss); 1♂: "ARMENIA [20] - 35 km NW Sisian, 39°41'01"N, 45°46'46"E, 2080 m, swampy meadow, 3.VII.2016, V. Assing" (cAss); 1♀: "ARMENIA [20a] - 35 km NW Sisian, 39°41'01"N, 45°46'46"E, 2080 m, bushes nr. stream sifted, 3.VII.2016, V. Assing" (cAss).

**Etymology:** The specific epithet is the past participle of the Latin verb *abscidere* (to cut off) and alludes to the shape of the proximal end of the spermathecal capsule.

**Description:** Externally indistinguishable from *A. altiviva*.

♂: posterior margin of tergite VIII weakly convex, not projecting in the middle (Fig. 85); sternite VIII (Fig. 86) with strongly convex posterior margin; median lobe of aedeagus (Figs 87-90) of similar size as in *A. semialba*, 0.30-0.35 mm long, but with broad ventral process (ventral view); parameres 0.38-0.40 mm long.

♀: tergite VIII with convex posterior margin (Fig. 91); sternite VIII (Fig. 92) with convex posterior margin; spermatheca of highly variable shape (Figs 93-99), proximal portion nearly straight to distinctly curved.

**Comparative notes:** Among the Armenian representatives of the *A. altiviva* group, *A. abscisa* is characterized by a regularly convex posterior margin of the male tergite VIII (shared only with *A. brevitheca*), a small median lobe of the aedeagus with a broad ventral process in ventral view, and a variable spermatheca with a rather short proximal portion.

**Distribution and natural history:** The specimens were collected in several localities in North and South Armenia by sifting litter, debris, and grass roots in grassland, bush habitats, and near streams at altitudes of 2070-2340 m, partly together with *A. altiviva*, *A. semialba*, and/or *A. brevitheca*.

***Atheta (Oreostiba) brevitheca* nov.sp.** (Figs 100-107)

**Type material:** Holotype ♂: "ARMENIA [9] - S Martuni, Sulema Pass, 39°57'58"N, 45°14'13"E 2340 m, near stream, 29.VI.2016, V. Assing / Holotypus ♂ *Atheta brevitheca* sp. n. det. V. Assing 2017" (cAss). Paratypes: 6 ♀ ♀: same data as holotype (cAss, cVog); 4 ♂ ♂, 1 ♀: same data, but leg. Schülke (MNB, cVog); 2 ♂ ♂, 2 ♀ ♀: "ARMENIA [AR16-05] N Yerevan, NW Hrazdan, 40°40'07"N, 44°28'22"E, 2100 m, grassy W-slope with bushes, litter and grass roots sifted, 26.VI.2016, Schülke" (MNB, cAss, cVog); 2 ♀ ♀: "ARMENIA [39] - 25 km SW Kapan, 39°04'01"N, 46°16'10"E, 2150 m, near stream, sifted, 10.VII.2016, V. Assing" (cAss); 2 ♀ ♀: same data, but leg. Schülke (MNB); 1 ♂: "ARMENIA, above Jermuk, sifting of plant leavings near snow residues, 2400 m, 39.839053N, 45.693496E, 21.V.2015, M. Kocian lgt." (cKoc); 1 ♀: "ARMENIA - Aragazotn, Mt. Aragats, 40°25'57"N, 44°14'01"E, 2680 m, 26.V.2016, leg. A. & J. Müller" (cAss).

**Etymology:** The specific epithet is a noun in apposition composed of the Latin verb *brevis* (short) and the Greek noun *theca*. It alludes to the conspicuously short spermathecal capsule.

**Description:** Externally indistinguishable from *A. altiviva*.

♂: tergite VIII (Fig. 100) strongly transverse, posterior margin weakly convex, not projecting in the middle; sternite VIII (Fig. 101) with strongly convex posterior margin, much longer than tergite VIII; median lobe of aedeagus (Figs 102-103) large in relation to body size, larger than in other Armenian species of the *A. altiviva* group, approximately 0.5 mm long, with pronounced crista apicalis, and with basally broad and apically very acute ventral process (ventral view); parameres very large, 0.65 mm long, and with strongly developed velum.

♀: tergite VIII (Fig. 104) obtusely pointed posteriorly; sternite VIII (Fig. 105) with broadly convex posterior margin; spermatheca (Figs 106-107) minute, comma-shaped, with very short proximal portion, proximally truncate.

**Comparative notes:** Among the Armenian representatives of the *A. altiviva* group, *A. brevitheca* is characterized by the shape of the male tergite VIII, a larger and distinctively shaped median lobe of the aedeagus, conspicuously large parameres, a posteriorly obtusely pointed female tergite VIII, and a short and comma-shaped spermatheca.

**Distribution and natural history:** This species was found in five localities in North and South Armenia. The specimens were sifted from debris, litter, and roots in grasslands and bush habitats, near streams and near snowfields, at altitudes of 2100-2680 m, partly together with *A. altiviva*, *A. semialba*, and/or *A. absca*.

***Liogluta armeniaca* nov.sp.** (Figs 108-121)

**Type material:** Holotype ♂: "ARMENIA [39] - 25 km SW Kapan, 39°04'01"N, 46°16'10"E, 2150 m, near stream, sifted, 10.VII.2016, V. Assing / Holotypus ♂ *Liogluta armeniaca* sp. n. det. V. Assing 2017" (cAss). Paratypes: 7 ♂ ♂, 3 ♀ ♀: same data as holotype (cAss, cVog, MNB); 1 ♀: same data as holotype, but leg. Schülke (MNB); 1 ♀: "ARMENIA [9] - S Martuni, Sulema Pass, 39°57'58"N, 45°14'13"E, 2340 m, near stream, 29.VI.2016, V. Assing (cAss); 2 ♂ ♂: "ARMENIA [22] - 20 km SSE Goris, Shurnukh, 39°21'38"N, 46°24'33"E, 1720 m,

forest, sifted, 5.VII.2016, V. Assing" (cAss); 2♂♂, 1♀: same data, but leg. Schülke (MNB, cVog); 8♂♂, 2♀♀: "ARMENIA [23] - WSW Kapan, Meghri Pass, 39°07'00"N, 46°09'38"E, 2520 m, litter & roots, 6.VII.2016, V. Assing" (cAss, MNB); 7♂♂, 3♀♀: "ARMENIA [28] - WSW Kapan, S Meghri Pass, 39°06'10"N, 46°10'47"E, 2310 m, oak litter, 6.VII.2016, V. Assing" (cAss, MNB); 1♀: "ARMENIA [28a] - WSW Kapan, S Meghri Pass, 39°06'10"N, 46°10'47"E, 2310 m, *Formica* nest, 6.VII.2016, V. Assing" (cAss); 1♀: "ARMENIA [32] - WSW Kapan, S Meghri Pass, 39°05'20"N, 46°10'35"E, 2170 m, forest margin, 8.VII.2016, V. Assing" (cAss); 1♂: same data, but leg. Schülke (MNB); 1♂: "ARMENIA [AR16-33] WSW Kapan, S Meghri Pass, 39°05'56"N, 46°09'47"E, 2090 m, stream valley, litter near stream sifted, 8.VII.2016, leg. M. Schülke" (MNB); 1♂: "ARMENIA [40] - 25 km SW Kapan, 39°03'04"N, 46°15'16"E, 1890 m, stream valley, sifted, 10.VII.2016, V. Assing" (cAss).

**E t y m o l o g y :** The specific epithet (adjective) alludes to the currently known distribution, which is confined to several localities in Armenia.

**D e s c r i p t i o n :** Body length 4.2-5.3 mm; length of forebody 1.8-2.2 mm. Coloration: body black, with the elytra usually slightly paler, dark-brown to blackish-brown; legs with brown femora, reddish to pale-brown tibiae, and pale-reddish tarsi; antennae blackish; maxillary palpi blackish with pale-yellowish palpomere IV.

Head (Fig. 108) weakly transverse or as long as broad; shape, punctation, and microsculpture subject to sexual dimorphism; microsculpture composed of isodiametric meshes. Eyes on average approximately as long as distance from posterior margin of eye to posterior constriction of head. Antenna (Fig. 109) slender, approximately 1.5 mm long; antennomeres II and III of subequal length and very slender, IV weakly oblong, V indistinctly oblong or as long as broad, VI-X of slightly increasing width and increasingly transverse, X less than 1.5 times as broad as long, and XI noticeably longer than the combined length of IX and X.

Pronotum (Figs 108, 110) 1.15-1.20 times as broad as long and 1.25-1.30 times as broad as head, with weak sexual dimorphism; punctation moderately fine and moderately dense, interstices on average approximately as broad as punctures; microsculpture composed of isodiametric meshes; pubescence directed posteriad along midline and predominantly diagonally postero-laterad in lateral portions (type II).

Elytra (Fig. 1) 0.91-0.96 times as long as pronotum; punctation dense and fine; interstices with pronounced isodiametric microreticulation. Hind wings fully developed.

Abdomen narrower than elytra; tergites III-V with, tergite VI without anterior transverse impressions; punctation moderately dense and moderately fine on anterior tergites, gradually becoming sparser and finer towards posterior tergites; microsculpture distinct and predominantly composed of transverse meshes, on tergite VIII and in posterior portion of tergite VII of isodiametric meshes (Fig. 117); posterior margin of tergite VII with palisade fringe; tergite VIII subject to pronounced sexual dimorphism.

♂: head flattened or even shallowly impressed dorsally, with rather coarse punctation and shallow microsculpture, glossy; pronotum usually with shallow and extensive impression in postero-median portion; tergite VIII with dense and coarse granules, posteriorly somewhat produced, this projection obtusely angled in the middle and laterally delimited by carinae (Figs 111, 117); sternite VIII (Fig. 112) longer than tergite VIII and with strongly convex posterior margin; median lobe of aedeagus (Figs 113-114) approximately 0.55 mm long; ventral process with very slender and acute apex in lateral view.

♀: head with weakly convex dorsal surface (cross-section), punctation usually finer and

microreticulation more pronounced than in male; pronotum without impression; tergite VIII (Fig. 115) without granules, posteriorly convexly produced in the middle; sternite VIII (Fig. 116) strongly transverse, only indistinctly longer than tergite VIII, posterior margin with pronounced median excision (Fig. 118); spermatheca (Figs 119-121) with very slender distal portion and long, weakly sclerotized, coiled, and proximally twisted proximal portion.

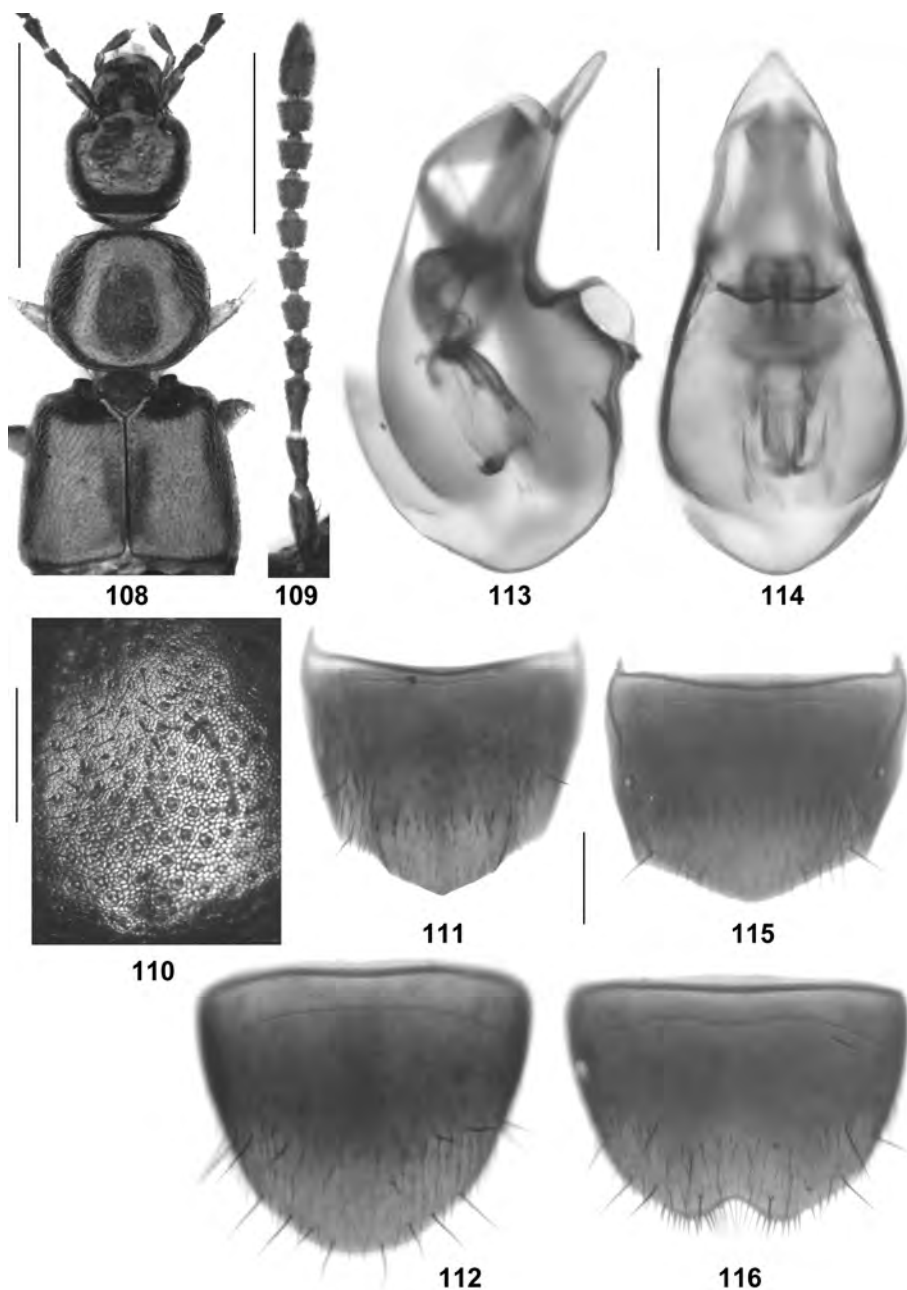
**Comparative notes:** As can be inferred from the similar sexual dimorphism and modifications of the head, the pronotum, tergite VIII, and sternite VIII, *L. armeniaca* is undoubtedly closely allied to the widespread *L. granigera* (KIESENWETTER, 1850). It differs from this species by distinctly darker coloration (*L. granigera*: pronotum, abdomen, basal antennomeres, and maxillary palpomeres I-III predominantly brown to dark-brown; legs uniformly yellowish to pale-brown), more pronounced microreticulation of the head, by the morphology of the aedeagus (*L. granigera*: ventral process much broader in ventral view), and by the shape of the spermatheca (*L. granigera*: distal portion less slender; proximal portion not twisted, straight, stouter, and more strongly sclerotized). From the common, widespread, and similar *L. longiuscula* (GRAVENHORST, 1802), the new species is distinguished by darker elytra (*L. longiuscula*: usually with a yellowish band extending diagonally from the humeral angle to the postero-sutural portion), by the flattened or impressed male head and pronotum, the absence of a median elevation on the male tergite III, the presence of pronounced postero-lateral carinae on the male tergite VIII (weakly pronounced at most in *L. longiuscula*), the posteriorly more strongly produced female tergite VIII, the pronounced median excision of the posterior margin of the female sternite VIII, a distinctly larger and differently shaped median lobe of the aedeagus, and a spermatheca with a much more slender distal and a much longer and differently shaped proximal portion. For illustrations of the primary sexual characters of *L. granigera* and *L. longiuscula* see figures 58V, L, S and 61V, L, S, respectively, in STRAND & VIK (1964).

**Distribution and natural history:** The specimens were collected in several localities in Central and South Armenia. They were sifted from litter, debris, and roots near streams, in shrub habitats, and deciduous forests (*Quercus*, *Carpinus*, *Salix*). One specimen was collected from a nest of wood ants. The altitudes range from 1720 to 2340 m.

### ***Liogluta granigera* (KIESENWETTER, 1850)**

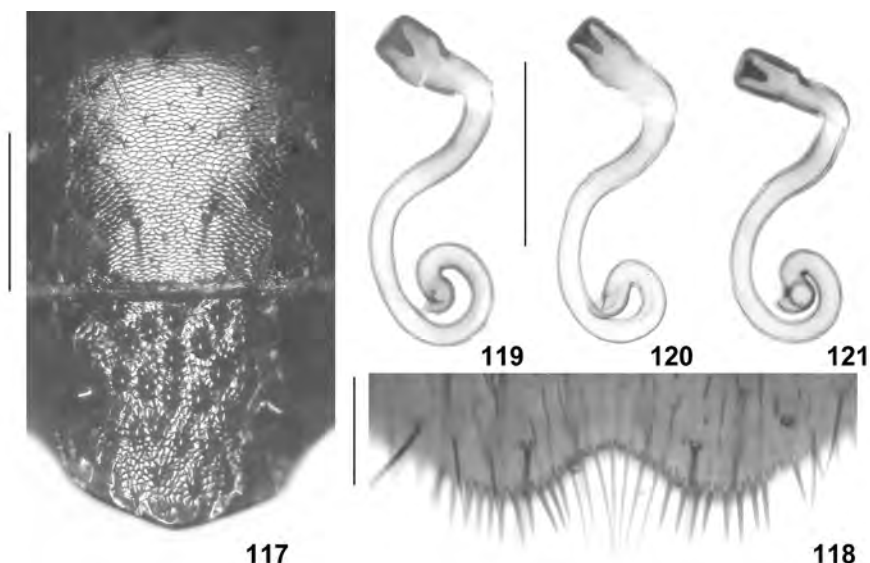
*Homalota (Liogluta) trigemina* EPPELSHEIM, 1880: 459 f.; **nov.syn.**

**Type material examined:** Lectotype ♂, present designation: "Kaukas, Leder, Ach Bulach / *sexnotata* Thoms. Op. ent. 1872, p. 375. - J. Sahlb. En. Brach. Fenn. 1876. p. 134 / Lectotypus ♂ *Homalota trigemina* Eppelsheim, desig. V. Assing 2017 / *Liogluta granigera* (Kiesenwetter), det. V. Assing 2017" (NHMW). Paratypes: 1 ♂, 2 ♀ ♀: originally on same pin as lectotype (NHMW).



**Figs 108-116:** *Liogluta armeniaca*: (108) forebody; (109) antenna; (110) postero-median portion of pronotum; (111) male tergite VIII; (112) male sternite VIII; (113-114) median lobe of aedeagus in lateral and in ventral view; (115) female tergite VIII; (116) female sternite VIII. Scale bars: 108: 1.0 mm; 109: 0.5 mm; 110-116: 0.2 mm.





**Figs 117-121:** *Liogluta armeniaca*: (117) median portions of male tergites VII-VIII; (118) postero-medial portion of female sternite VIII; (119-121) spermatheca. Scale bars: 117, 119-121: 0.2 mm; 118: 0.1 mm.

**Additional material examined:** Caucasus region: Armenia: 5 exs., Ayrum env., Zikatar Environmental Center, 41°08'N, 44°55'E, 1250 m, 19.V.2016, leg. A. & J. Müller (cAss); 1 ex., Teghut env. (Akhtala), 41.091°N, 44.813°E, 1020 m, 20.V.2016, leg. A. & J. Müller (cAss). Georgia: 1 ex., Algeti National Park, Manglisi, 41°42'N, 44°23'E, 1190 m, 12.VII.2015, leg. Brachat & Meybohm (cAss); 1 ex., same data, but 13.VII.2015 (cAss); 3 exs., Central Caucasus, Shatili-Gudani, 42°32'N, 45°01'E, 1960 m, 16.VII.2015, leg. Brachat & Meybohm (cAss); 2 exs., Central Caucasus, Gudani, 42°32'N, 44°58'E, 1620 m, 18.VII.2015, leg. Brachat & Meybohm (cAss); 1 ex., Central Caucasus, Kvesheti, 42°26'N, 44°32'E, 1440 m, 22.VII.2015, leg. Brachat & Meybohm (cAss); 1 ex., Shida Kartli, 8 km SW Surami, 42°02'N, 43°30'E, 960 m, 14.V.2016, leg. Brachat & Meybohm (cAss); 6 exs., Ratcha, 10 km W Lentekhi, 42°48'N, 42°38'E, 1100 m, 20.V.2016, leg. Brachat & Meybohm (cAss); 4 exs., Zemo Svaneti, Mestia Ughviri Pass, 43°02'N, 42°50'E, 1900 m, 27.VII.2016, leg. Meybohm (cAss); 2 exs., Zemo Svaneti, 4 km N Mazeri, 43°06'N, 42°36'E, 1690 m, 28.VII.2016, leg. Meybohm (cAss); 2 exs., Zemo Svaneti, 2 km N Ipari, 43°01'N, 42°50'E, 1670 m, 29.VII.2016, leg. Meybohm (cAss); 1 ex., Zemo Svaneti, 3 km S Koruldashi, 42°53'N, 43°09'E, 1790 m, 1.VIII.2016, leg. Meybohm (cAss); 1 ex., Zemo Svaneti, Mestia Hatsvali, 43°01'N, 43°45'E, 2350 m, 26.VII.2016, leg. Meybohm (cAss); 9 exs., Saguramo reserve, 29.V.2006, leg. Chaladze (cAss); 1 ex., Svanetia, locality illegible, leg. Leder (NHMW). Russia: 3 exs., W-Caucasus, 4 km NNW Krasnaya Polyana, Atchishkho Mt., 43°42'N, 40°11'E, 1000 m, chestnut forest with beech and maple, leaf litter and bark sifted, 18.VII.2011, leg. Assing (cAss); 18 exs., W-Caucasus, Karachayevo-Cherkesskaya Respublika, 13 km SW Teberda, 43°20'N, 41°40'E, 1450 m, moist spruce forest with scattered beech, litter, moss, and dead wood sifted, 22.VII.2011, leg. Assing (cAss); 46 exs., W-Caucasus, Karachayevo-Cherkesskaya Respublika, 20 km SW Teberda, Dombai, 43°18'N, 41°39'E, 2160 m, subalpine birch forest, litter sifted, 23.VII.2011, leg. Assing (cAss); 11 exs., W-Caucasus, Karachayevo-Cherkesskaya Respublika, 20 km SW Teberda, above Dombai, 43°17'N, 41°38'E, 1950 m, mixed forest (fir, spruce, beech), leaf litter sifted, 25.VII.2011, leg. Assing (cAss); 23 exs., W-Caucasus, Karachayevo-Cherkesskaya Respublika, 9 km SW Teberda, Teberdinski range, Baduk river valley, 43°23'N, 41°40'E, 2000 m, subalpine forest (maple, birch, with rhododendron) near lakeshore, litter sifted, 26.VII.2011, leg. Assing (cAss). Locality not specified: 6 exs., "Kaukas."/"Cauc" / "Typus" / "Cotypus" (NHMW).

Other regions: material from Spain, Germany, Czech Republic, Slovakia, Slovenia, Italy, Croatia, Macedonia, Greece, and Turkey examined.

**C o m m e n t :** The original description of *L. trigemina* is based on an unspecified number of syntypes received "Von Leder mit der Ortsbezeichnung 'Ach-Bulach'" (EPPELSHEIM 1880).

The material sent to us by Harald Schillhammer (NHMW) is composed of six specimens labelled as "Typus" or "Cotypus" and "Cauc" or "Kaukas", one specimen from "Svanetien" (locality illegible), and four specimens (originally on one pin) without type labels, but with the locality label "Ach Bulach". Only the latter four specimens can be considered syntypes, even though they did not have type labels attached to the pin. Instead they had subsequently been identified by Eppelsheim as *Liogluta sexnotata* THOMSON, 1871, today a junior synonym of *Liogluta granigera*. It appears that Eppelsheim subsequently realized that *L. trigemina* was conspecific with the species today referred to as *L. granigera* (without ever publishing this).

According to SCHÜLKE & SMETANA (2015), *L. trigemina* has been recorded only from (the type locality in) Armenia. An examination of the type material of *L. trigemina* and of additional material from various localities in the Caucasus region sensu lato and from other regions revealed that the secondary sexual characters and the shapes of the aedeagus and of the spermatheca are practically identical throughout the distribution range of *L. granigera*. Interestingly, however, the size of the aedeagus tends to be somewhat larger (approximately 0.7 mm) in males from the Caucasus region than in males from other regions (usually approximately 0.55-0.60 mm). Moreover, the material from the Caucasus is distinguished from other populations by a seemingly somewhat less slender abdomen and by relatively shorter elytra (0.80-0.92 versus 0.95-1.00 times as long as pronotum). Nevertheless, in view of the otherwise highly similar external and sexual characters, these differences are interpreted as intraspecific variation and *L. trigemina* is placed in synonymy with *L. granigera*.

### ***Liogluta funesta* EPPELSHEIM, 1890**

*Liogluta funesta* EPPELSHEIM, 1890: 218 f.

*Liogluta nigrobusta* ASSING, 2016a: 272 f.; **nov.syn.**

**Type material examined:** Holotype ♂: "Caucasus. Reitter. Leder. / *funesta* / *funesta* Epp, Wien. ent. Zeit. 1890. p. 218. / Collect. Eppelsh. / Typus / Holotypus *Liogluta funesta* Eppelsheim, rev. V. Assing 2017" (NHMW).

**C o m m e n t :** The original description of *L. funesta* is based on a unique holotype from "Kaukasus ohne nähere Bezeichnung der Localität" (EPPELSHEIM 1890). This species had never been recorded again since the original description (SCHÜLKE & SMETANA 2015). A study of the holotype revealed that it is conspecific with the recently described *Liogluta nigrobusta* ASSING, 2016, whose description is based on a male holotype and five female paratypes from a locality in Artvin, northeastern Anatolia (ASSING 2016a). For illustrations of the external and sexual characters of this distinctive species see the description of *L. nigrobusta*.

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We are indebted to Harald Schillhammer for his patience in dealing with successive loan requests, as well as to Michael Schülke (Berlin), Jörg Müller (Grafenau), and Matúš Kocian (Prague) for making their *Athetini* from Armenia available, to Michael Schülke also for his assistance in the transliteration of the labels of the type material of *Atheta altiviva*. Mark Kalashian and Gayane Karagyan (both Yerevan) helped organizing the field trip to Armenia (including a collecting permit), the former additionally guided Michael Schülke and me through the Khnzorian collection deposited in his private home. Benedikt Feldmann (Münster) and Michael Schülke proof-read the manuscript.

## Zusammenfassung

Neun Arten der Tribus *Athetini* aus Armenien werden beschrieben und abgebildet, acht davon neu: *Atheta (Atheta) brevapicalis* nov.sp. (Südarmenien); *A. (A.) hamulata* nov.sp. (Südarmenien); *A. (Dimetrota) bispinosa* nov.sp. (Armenien, Georgien); *A. (D.) senticollis* nov.sp. (Nordarmenien); *A. (Oreostiba) altiviva* BENICK, 1974 (in Armenien weit verbreitet); *A. (O.) semialba* nov.sp. (in Armenien weit verbreitet); *A. (O.) abscisa* nov.sp. (in Armenien weit verbreitet); *A. (O.) brevitheca* nov.sp. (in Armenien weit verbreitet); *Liogluta armeniaca* nov.sp. (Zentral- und Südarmenien). Drei Namen werden synonymisiert: *Atheta hansseni* STRAND, 1943 = *A. brachati* ASSING, 2013, nov.syn.; *Liogluta granigera* (KIESENWETTER, 1850) = *L. trigemina* (EPPELSHEIM, 1880), nov.syn.; *L. funesta* EPPELSHEIM, 1890 = *L. nigrobusta* ASSING, 2016, nov.syn. Für *Homalota trigemina* EPPELSHEIM, 1880 wird ein Lectotypus designiert.

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