

Contribution to the knowledge of Pselaphinae (Coleoptera: Staphylinidae) from Kazakhstan

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Abstract. Two new species of Pselaphinae, *Euplectus baizakovi* sp. nov. (Euplectini) and *Aphiliops asiaticus* sp. nov. (Trichonychini: Trimiina) from Kazakhstan are described and illustrated. Their systematic position is discussed and the key to the Palearctic genera of the subtribe Trimiina is provided. *Trissemus melinus* (Solsky, 1861) and *Brachygluta iranica* (Saulcy, 1876) are recorded and their aedeagi illustrated. *Brachygluta iranica* is recorded for the first time from Kazakhstan.

Key words. Coleoptera, Staphylinidae, Pselaphinae, Euplectini, Trichonychini, Trimiina, new species, new records, taxonomy, Kazakhstan, Palearctic Region

Introduction

Our knowledge on Pselaphinae of Kazakhstan is very poor. Only two species of *Trissemus* Jeannel, 1949, *T. melinus* (Solsky, 1861) and *T. akinini* (Reitter, 1891) are so far known from this huge country (LÖBL & BESUCHET 2004). During the collecting trip to Kazakhstan by the second author in 2013, a small lot of interesting Pselaphinae was collected. Two of them proved to be new species belonging to the supertribe Euplectitae and both are described in this contribution. Additionally two more species are recorded; one of them, *Brachygluta iranica* (Saulcy, 1876), is reported as a new species for the country.

Materials and methods

Specimens prepared for the morphological study were examined with a Leica S8APO stereomicroscope with diffuse lighting at magnifications up to 128×. The head length was measured from the occipital constriction to the anterior margin of the frontal rostrum; the head width was measured across the eyes; the elytral length was measured along the suture. Width refers to the maximum width of each body part. The body length is the combined length of the head, pronotum, elytra, and abdomen.

The terminology applied here follows CHANDLER (2001), except we use “ventrite” instead of “sternite” when discussing the thoracic structures.

The material is deposited in the collection of the National Museum, Prague, Czech Republic (NMPC) and in the private collections of the authors, Peter Hlaváč (CPH) and Oto Nakládal (CON). All type specimens were provided with the following red printed label: “HOLOTYPE [or PARATYPE], name of the taxon n. sp., P. Hlaváč det., 2013”.

Taxonomy

Euplectus Leach, 1817

Euplectus Leach, 1817: 82. Type species: *Euplectus reichenbachii* Leach, 1817, by monotypy.

Euplectus: RAFFRAY (1910a): 179 (revision); RAFFRAY (1910b): 365 (revision); JEANNEL (1950): 100 (revision of French species); KARAMAN (1962): 155 (species of ex-Yugoslavia); BESUCHET (1974): 317 (key to Central European species); BOWESTEAD & ECCLES (1987): XXX (characters distinguishing *E. karsteni* and *E. bonvouloiri rosae* with scanning electron microscope pictures).

Euplectus baizakovi sp. nov.

(Figs 1–13)

Type locality. Eastern Kazakhstan, Almaty reg., Talgar env.

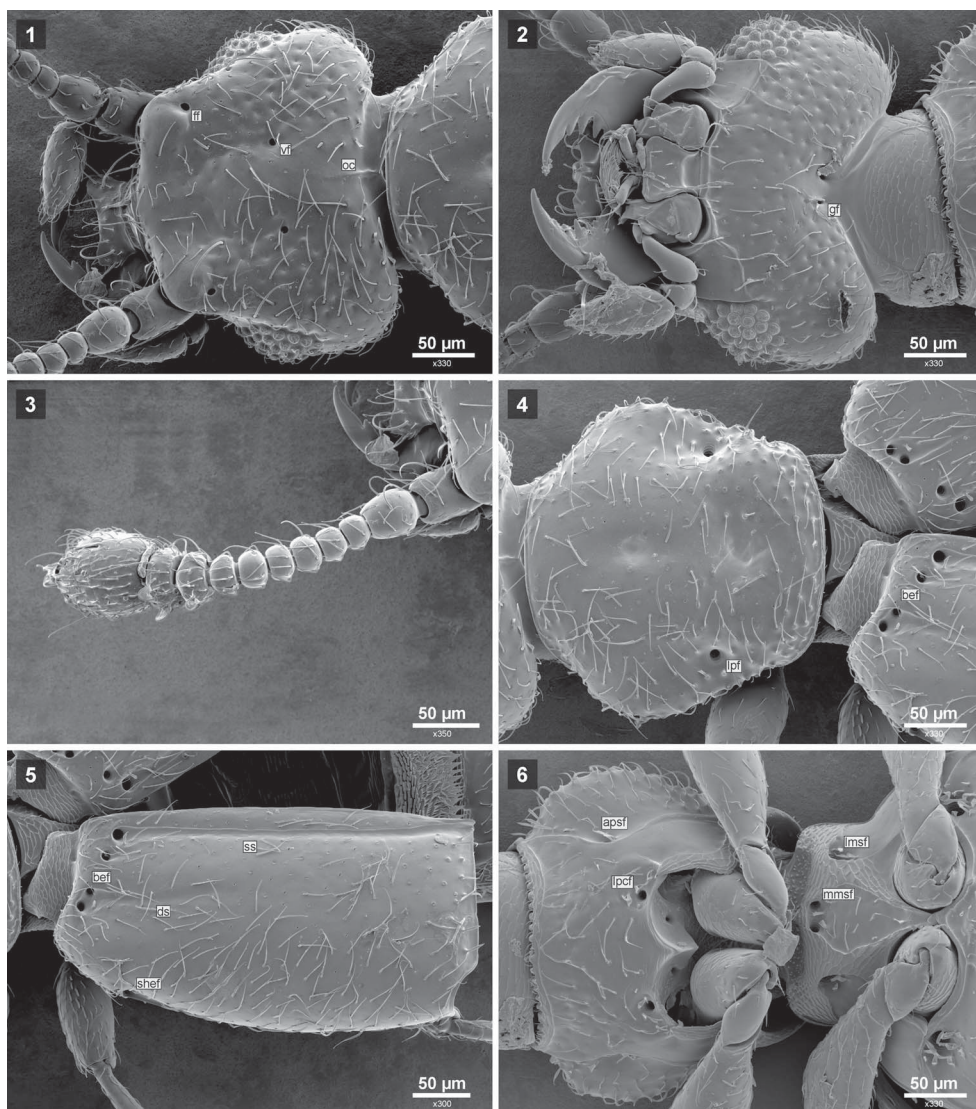
Type material. HOLOTYPE: ♂ (NMPC), KAZAKHSTAN or.: Almaty reg., Talgar env. Kazstroy, 5-7.V.2013, GPS N43.291295, E77.308041, sifted from old *Populus*, Oto Nakládal leg. PARATYPES: 10 ♂♂ 15 ♀♀, same data as holotype (NMPC, CPH, CON); 2 ♂♂ 1 ♀, same data as holotype, but collected 4.V.2013 (CPH).

Description. Body shiny, sub-parallel, light reddish-brown, maxillary palpi, antennae and legs slightly lighter, yellow, length: 1.13–1.16 mm, maximal body width 0.35–0.36 mm, body covered with long, sparse uneven pubescence.

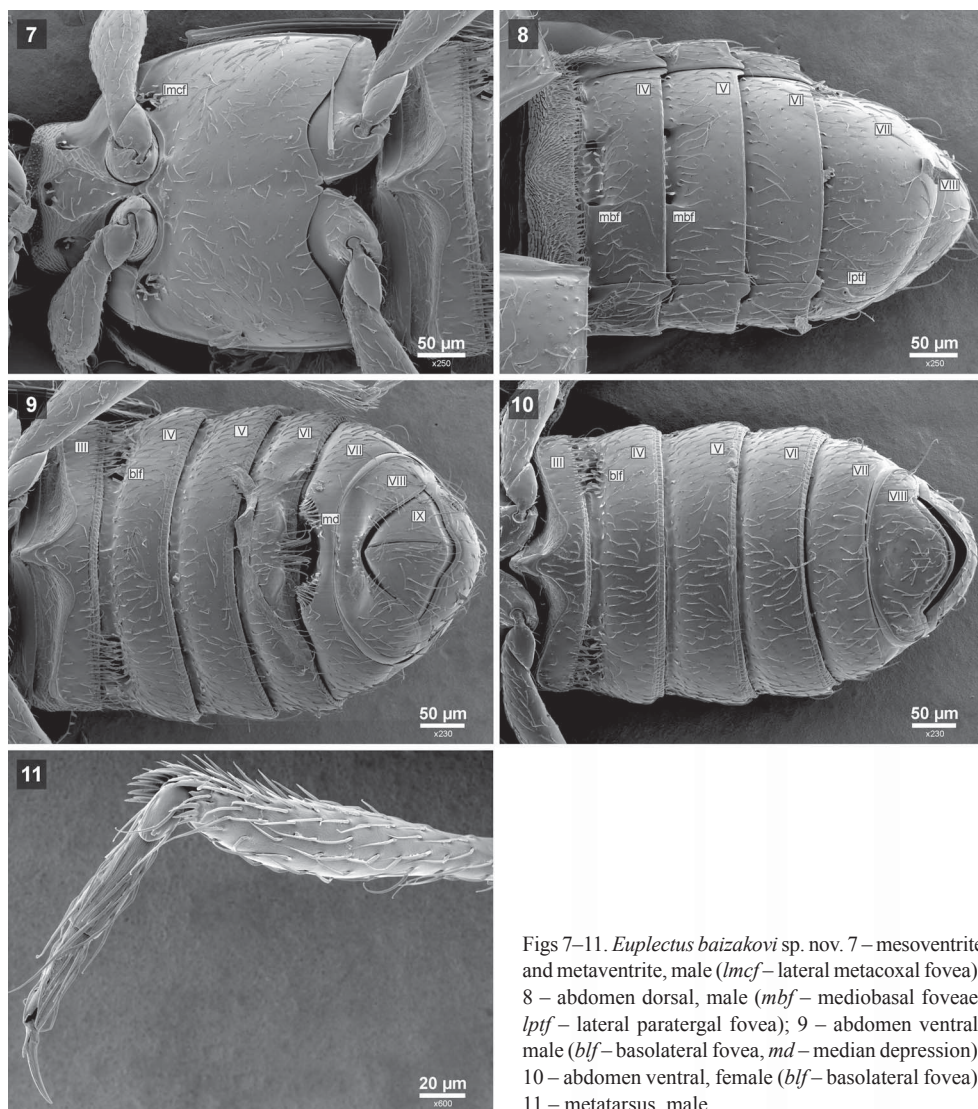
Head (Figs 1–2) slightly rhombic, about 1.40–1.60 times as wide as long, surface smooth, sides strongly punctured, with well-defined, asetose frontal (*ff*) and vertexal (*vf*) foveae, frontal foveae located on sides, close to antennal tubercles which are only slightly defined and largely separated, all foveae of same size, frons slightly convex, with shallow U-shaped impression, posterior arms almost indistinct, eyes large, temples rounded, posterior lateral part of head lobe-like, frontal rostrum large, truncate, with short occipital carina (*oc*) that merges into neck region. Venter (Fig. 2) with sparse setation, with two well-separated gular foveae (*gf*), gula and submentum fused, gular carinae absent, neck region shagreened.

Antennae (Fig. 3) short, about 0.38 mm long, scape cylindrical, slightly longer than wide and 1.20 times as long as pedicel, pedicel 1.10 times as long as wide, antennomeres III–X transverse, about same length, VIII slightly shorter, X slightly longer, III–VIII subequal in size, IX twice as wide as long, X about 2.20 times as wide as long, terminal antennomere about twice as long as wide, 5.20 times as long as X. Relative length of antennomeres: 2.50 / 1.00 / 1.00 / 1.00 / 1.00 / 1.00 / 1.00 / 0.75 / 1.00 / 1.25 / 6.50.

Pronotum (Fig. 4) almost as long as wide and about 1.3–1.4 times as long as head, widest in anterior third, smooth on whole surface, with sparse uneven pubescence, with two lateral foveae (*lpf*), lacking median fovea, carinae or sulci.



Figs 1–6. *Euplectus baizakovi* sp. nov., male. 1 – head dorsal (*ff* – frontal fovea, *oc* – occipital carina, *vf* – vertexal fovea), 2 – head ventral (*gf* – gular foveae), 3 – left antenna, 4 – pronotum and base of elytra (*bef* – basal elytral fovea, *lpf* – lateral pronotal fovea), 5 – left elytron (*bef* – basal elytral fovea, *ds* – discal stria, *shef* – subhumeral elytral fovea, *ss* – sutural stria), 6 – prothorax and mesothorax (*apsf* – anteroprosternal fovea, *lmsf* – lateral mesoventral fovea, *lpcf* – lateral procoxal fovea, *mmsf* – medial mesoventral fovea)



Figs 7–11. *Euplectus baizakovi* sp. nov. 7 – mesoventrite and metaventrite, male (*lmc* – lateral metacoxal fovea); 8 – abdomen dorsal, male (*mbf* – mediobasal foveae, *lpf* – lateral paratergal fovea); 9 – abdomen ventral, male (*blf* – basolateral fovea, *md* – median depression); 10 – abdomen ventral, female (*blf* – basolateral fovea); 11 – metatarsus, male.

Elytra (Fig. 5) about 1.10–1.20 times as wide as long, with four basal subequal asetose foveae (*bef*) and one subhumeral fovea (*shcf*), discal stria (*ds*) weak, only in basal third, sutural stria (*ss*) entire.

Prothorax (Fig. 6) with anterior margin toothed like a gear wheel, lateral procoxal (*lpcf*) and anteroprosternal foveae (*apsf*) present, median procoxal foveae absent.

Mesoventrite (Fig. 6) shagreened with median pentagonal smooth surface, with two median (*mmvf*) and two lateral (*lmvf*) mesoventral foveae, mesocoxae separated, mesoventral process

acute, longer than anterior triangular metaventral process. Metaventrite (Fig. 7) smooth, with sparse uneven setation, about twice as long as mesoventrite, with lateral mesocoxal foveae (*lmcf*) only, posterior metaventral process wide, triangular, with two small lobes in middle.

Abdomen (Fig. 8) 1.15–1.30 times as long as elytra and about as wide as elytra, parallel sided, with tergites IV–VI equal in length, IV and V with pair of mediobasal foveae (*mbf*), tergite VII about 1.50 times as long as VI, with minute lateral paratergal foveae (*lptf*). Venter in males (Fig. 9), ventrites IV–VI subequal in length, IV with basolateral fovea (*blf*), VI with median bunch of setae, VII with wide median depression with bunch of setae on each side, VIII with six short stout median setae on posterior margin, ventrite IX longitudinally divided into two subequal halves (tribal character).

Legs short, with enlarged tibiae in apical half, tarsi (Fig. 11) with tarsomere II longest.

Aedeagus (Figs 12–13) with basal bulb ovoid in dorsal view, dorsal diaphragm larger, round, parameres fused, about as long as basal bulb, with some setae on lateral view.

Sexual dimorphism. Females dorsally very similar to males, dorsally indistinguishable, ventrally easily separated from males by completely different structure of all visible ventrites as described above (see Fig. 9 vs. Fig. 10). Venter in females (Fig. 10), ventrites VI–VII subequal in length, IV with basolateral fovea (*blf*), other ventrites unmodified.

Differential diagnosis. *Euplectus* is one of largest genera of Pselaphinae with 120 described species with world-wide distribution. So far, 58 species have been described from the Palearctic Region (NEWTON, pers. database; LÖBL & BESUCHET 2004). The relation of species within the genus is unclear; many characters used to separate species may be homoplasies (LÖBL & MATTILA 2010), not giving any information on their relationships. *Euplectus baizakovi* sp. nov. belongs to the *E. karsteni* (Reichenbach, 1816) species group characterized by the following combination of characters: 1) body small, 1.10–1.40 mm long, 2) posterior margin of head lacking triangular depression, 3) carinae of first and/or second (IV–V) visible tergites absent, short if present, not reaching half of tergite length, 4) frontal U-shaped sulcus weakly defined, longitudinal branches shallow, almost indistinct, 5) pronotum and elytra smooth or only with fine, uneven punctures. BESUCHET (1974) attributed following species to this group: *E. bonvouloiri* Reitter, 1881, *E. frater* Besuchet, 1964 and *E. karsteni* (Reichenbach, 1816). *Euplectus baizakovi* differs from all by the unique structure of ventrites in males and by the shape of the aedeagus.

Etymology. Patronymic, dedicated to Professor Sabit Baizakov, member of the National Academy of Science of the Kazakhstan Republic, for his assistance and friendship during the stay of O. Nakládal in Kazakhstan.

Biology. All specimens were collected by sifting of leaf litter in well-preserved old poplar alley.

Distribution. The species is known only from the type locality in Kazakhstan (Almaty Region).

Aphiliops Reitter, 1884

Philus Saulcy, 1874: 40 (preoccupied name), not Saunders, 1853 (Cerambycidae).

Aphiliops Reitter, 1884: 208. Type species: *Philus aubei* Reitter, 1881, designated by REITTER (1881).

Aphiliops: BESUCHET (1956): 367 (redescription of the genus and redescription of *A. aubei* (Reitter)); OROUSSET (1988): 371 (redescription of *A. aubei* (Reitter), biology); POGGI (1992): 141 (revision, description of two new species).

The modern redescription of the genus was provided by BESUCHET (1956). Later, the type species was redescribed by OROUSSET (1988) and the genus was revised by POGGI (1992) who also added two new species. Thus, the genus contains three species (LÖBL & BESUCHET

2004). Because of the insertion of the new species described here, the diagnosis of the genus provided by BESUCHET (1956) must be slightly modified and the genus is characterized by the following: 1) head wider than long, tetragonal, with two well-defined foveae between eyes; 2) at least anterior part of the ventral side of head with long setae; 3) antennal club formed by terminal, symmetrical antennomere only; 4) pronotum longer than wide; 5) pronotum with antebasal sulcus, with or without short longitudinal groove and with two lateral foveae, these can be rudimentary; 6) elytra with two basal foveae, sutural stria entire, discal stria reaching half of elytral length; 7) first visible tergite (IV) longer than second and third (V–VI) visible tergites combined; 8) first visible tergite (IV) with short carinae or carinae absent; 9) metacoxal cavities slightly separated; 10) fore femora clearly swollen. Four genera of Palearctic subtribe Trimiina can be separated using the following key:

Key to Palearctic genera of Trimiina

- 1 Frontal lobe large, parallel-sided, rostrum truncate, head with deep U-shaped sulcus connecting vertexal foveae. *Trimium* Aubé, 1833
- Frontal lobe constricted anteriorly, rostrum triangular, head lacking vertexal sulci. 2
- 2 Antennal club asymmetrical, antennomere X about as long as wide. *Saulecyella* Reitter, 1901
- Antennal club symmetrical, antennomere X strongly transverse. 3
- 3 Head triangular lacking foveae between eyes, pronotum slightly wider than long, median fovea well-defined, lateral foveae small, first three visible (IV–VI) tergites subequal in length, IV lacking carinae. *Zibus* Saulcy, 1874
- Head tetragonal with two foveae between eyes, pronotum slightly longer than wide, at base with short longitudinal groove and two lateral foveae, first (IV) visible tergite with short carinae, longer than second and third (V–VI) combined. *Aphiliops* Reitter, 1884

Aphiliops asiaticus sp. nov.

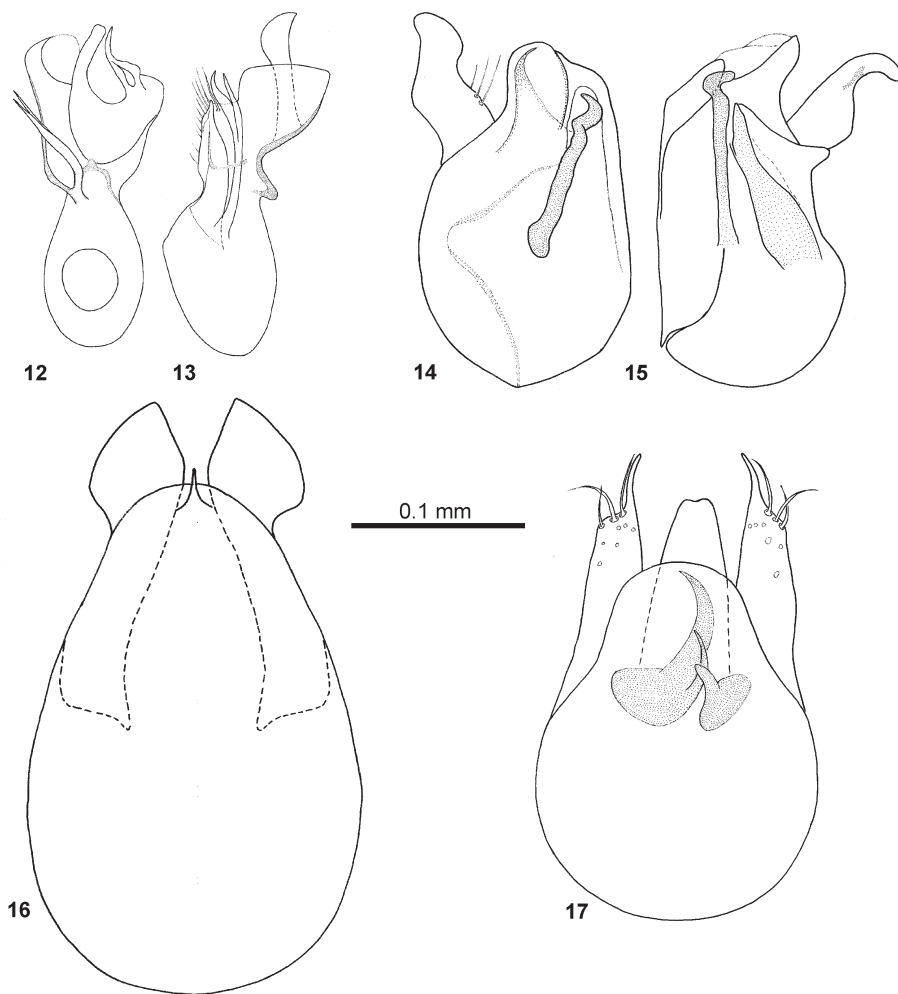
(Figs 14–15)

Type locality. Eastern Kazakhstan, Almaty reg., Talgar env.

Type material. HOLOTYPE: ♂ (NMPC), KAZAKHSTAN or.: Almaty reg., Talgar env. Kazstroy, 5.–7.v.2013, GPS N43.291295, E77.308041, sifted from old *Populus*, Oto Nakládál leg. PARATYPE: 1 ♂ (defective specimen, lacking whole body except abdomen but with identical aedeagus as holotype), same data as holotype (CPH); 1 ♂, KAZAKHSTAN: Almaty, 43°14'54"N–77°24'04"E, Talgar distr., Ak Bulak, 2700m, 10.–15.v.2014, O. Nakládál lgt (CPH); 4 spec.: KAZAKHSTAN: Almaty, 43°16'13"N–77°22'14"E, Talgar distr., Ak Bulak, 12.–15.v.2014, O. Nakládál lgt (CPH).

Description. Body shiny, yellowish-brown, maxillary palpi, antennae and legs slightly lighter, length 1.20 mm, maximal body width 0.47 mm, maximal width of elytra as wide as maximal width of abdomen, whole body with fine, short, decently dense pubescence.

Head about 1.47 times as wide as long, surface smooth, rostrum prominent, triangular, frons with fine frontal depression, frontal fovea absent, vertexal foveae well-defined situated at the level of anterior part of eyes, antennal tubercles weakly defined, eyes large, slightly prominent laterally, about as long as strongly posteriorly convergent temples. Ventral anterior side of head with few long setae.



Figs 12–17. Aedeagi. 12–13 – *Euplectus baizakovi* sp. nov. (12 – dorsal view, 13 – lateral view). 14–15 – *Aphiliops asiaticus* sp. nov. (14 – dorsal view, 15 – lateral view). 16 – *Trissemus melinus* (Solsky, 1861) (dorsal view). 17 – *Brachygluta iranica* (Saulcy, 1876) (dorsal view).

Antennae short, about 0.40 mm long, scape cylindrical, about 1.50 times as long as wide, pedicel about twice as long as wide, expanded apically, antennomere III elongate, antennomeres IV–IX about same length, IV–VII about as long as wide, VIII slightly wider than long, IX 1.5 times as wide as long, antennomere X twice as wide as long, terminal antennomere 1.70 times as long as wide, roundly pointed, antennal club from 2–3 antennomeres, not clearly separated from funiculus. Relative length of antennomeres: 2.00 / 2.50 / 1.25 / 1.00 / 1.00 / 1.00 / 1.00 / 1.00 / 1.00 / 1.50 / 6.00.

Pronotum about 1.2 times as long as wide and twice as long as head, with V-shaped transverse sulcus located in basal third of pronotum length, foveae absent.

Venter smooth, with sparse pubescence, metaventrite about twice as long as mesoventrite in middle, mesocoxae not separated, metaventrite convex, metacoxae almost contiguous, apical metaventral process slightly defined, roundly pointed, metaventrite in front of metaventral process with depression.

Elytra about 1.25 times as wide as long, smooth, with two minuscule but well-defined antebasal foveae, sutural stria almost reaching apex of elytra, discal stria shorter, reaching basal two thirds of elytral length.

Abdomen large, surface of all tergites smooth, about as long as elytra and of same maximal width, first (IV) visible tergite longest, longer than second and third (V–VI) visible tergites combined, lacking foveae, depressions or carinae, paratergites IV–VI well-developed.

Legs simple, without any modification.

Aedeagus (Figs 1–2) with basal bulb rounded, lacking dorsal diaphragm, left paramere well-developed, with three setae, right paramere short, large at apex, not visible dorsally, endophalus with one long internal apophysis.

Sexual dimorphism. Female unknown.

Differential diagnosis. Three species of the genus *Aphiliops* have been described so far, *A. aubei* (Reitter, 1881), *A. annae* Poggi, 1992 and *A. baccettii* Poggi, 1992. All are known only from Corsica or Sardinia (POGGI 1992, LÖBL & BESUCHET 2004). The new species differs from all of them by larger body (1.20 mm versus 0.94–1.16 mm), by elongate pronotum twice as long as wide, by absence of carinae on first visible tergite (IV), and by different shape of the aedeagus.

Etymology. The specific name refers to the Asian continent; adjective.

Biology. Both specimens were collected by sifting of leaf litter in well-preserved mature poplar alley.

Distribution. So far known only from the type locality in Kazakhstan.

Trissemus melinus (Solsky, 1861)

(Fig. 16)

Material examined. KAZAKHSTAN: ALMATY REGION: Bakanas env., Zheltorangy, GPS N45.06378, E75.253364, 8.–9.v.2013, 12 ♂♂ 9 ♀♀, at light, Oto Nakládál leg. (CPH, CON).

Distribution. Wide spread and common species mainly in central Asia, so far recorded from Azerbaijan, Armenia, Russia (South European Territory), Afghanistan, Kazakhstan, Tajikistan, Turkmenistan and Uzbekistan (LÖBL & BESUCHET 2004).

Brachygluta iranica (Sauley, 1876)

(Fig. 17)

Material examined. KAZAKHSTAN: ALMATY REGION: Bakanas env., Zheltorangy, GPS N45.06378, E75.253364, 8.–9.v.2013, 4 ♂♂, at light, Oto Nakládál leg. (CON, CPH).

Distribution. Iran, Tajikistan, Turkmenistan, Uzbekistan, Russia (West Siberia) (LÖBL & BESUCHET 2004). New species to Kazakhstan.

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