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New taxa of geophilic Entiminae (Coleoptera: Curculionidae) from the Balkan Peninsula, Caucasus, and Central Asia

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Abstract. The article presents the results of a study of some geophilic weevils of the subfamily Entiminae. For *Rhinomias caucasicus* (Stierlin, 1877) from Northern Ossetia and Abkhasia the new genus *Solarhinomias* gen.n. is established. The new genus and species *Turanomias yuliae* gen. et sp.n. is described from Turkmenistan. Also, a new genus *Eurosphalmus* gen.n. from Bulgaria and Romania is described. *Amicromias breiti* (Formánek, 1909) and *Rhinomias dieckmanni* Koštál, 1988 are transferred to this new genus. Four species from the genus *Eurosphalmus* gen.n. – *E. attilai* sp.n., *E. zerchei* sp.n., *E. hilfi* sp.n., and *E. behnei* sp.n. are described. For *E. dieckmanni* Koštál, comb.n. and *E. behnei* sp.n. the subgenus *Rhinomiamima* subgen.n. is established. A key to species of the genus *Eurosphalmus* gen.n. is given.

Key words. Geophilic weevils, Entiminae, new genera, new subgenus, new species, new combination.

1. Introduction

At the end of 19th century, when entomologists started to use special methods for collecting of the soil fauna, the number of new species descriptions of geophilic weevils started to increase. And now, in Europe investigations of the soil fauna still attract particular attention. As a result of examination of rich material collected at mountains of the Balkan Peninsula, Caucasus, and Central Asia one can conclude that the study of soil Entiminae is only beginning.

Broad-nosed weevils of the subfamily Entiminae are the largest group of the curculinoid beetles; they are distributed worldwide, mostly in tropical regions. Until now 1340 genera (ALONSO-ZARAZAGA et al. 1999) and more than 12000 species have been described. This group includes most of the forms that traditionally belong to different subfamilies of the Curculionidae Adelognathi – Otiorhynchinae, Brachyderinae, Eremninae, Tanymecinae, and Tanyrhynchinae. MORIMOTO (1962) was the first who paid attention to the division of Adelognathi into subfamilies. Several sharply different classifications of Entiminae Schoenherr, 1823 (= Polydrusinae Schoenherr, 1826) have been proposed in recent times. ZHERIKHIN & EGOROV (1990) and THOMPSON (1992) demoted the traditional subfamilies to tribes. THOMPSON included the tribes Pachyrhynchini, Ectemnorhinini, and Sitonini in the Entiminae with exception of the above-listed taxa, and gave a key to the tribes, but without discussion of the Tanymecini. MARVALDI (1997) combined all Entiminae into 5 tribes: Pachyrhynchini, Ectemnorhinini, Alophini, Sitonini, and Entimini; this classification is similar to THOMPSON's one. According to the catalogue of ALONSO-ZARAZAGA & LYAL (1999) the Entiminae comprise 55 tribes. Thus, there are many contradictions in the classification of Entiminae, which require a further analysis.

We do not plan to revise the system of Entiminae in this paper. However, according to our opinion, some tribes are evidently artificial. For example, Phyllobiini and Polydrusini are paraphyletic taxa because they are based on symplesiomorphies, while Sciaphilini, Omiini, and Holcorhinini are polyphyletic, based on similarity of a complex of correlated characters owing to the loss of wings. This complex of characters and other adaptive modifications have a small taxonomical weight and can not be used as the basic criterion for combining taxa (MAYR 1969).

A study of the geophilic Entiminae is one of the basic objectives of ecological investigations and the exploration of the biodiversity of weevils. Along with Oribatei, millipedes, and other phytosaprophilic arthropods, Entiminae play a very important role in utilizing decomposing leaves in the forests and decaying grass debris in steppes and alpine meadows.

As a result of the adaptations for inhabiting soil, Entiminae from different unrelated taxa underwent the process of body miniaturization, loss of pigmentation, modification of cover pubescence, as well as a total or partial apterous syndrome (term by ZHERIKHIN & EGOROV 1990). Adapting to new conditions they convergently acquired similar external characters of body structure, whereas only some characters remain to be an evidence of true phylogenetic relationships. Thus, establishing the systematic position and relationships of taxa of generic rank are among the most difficult aims for taxonomists who are describing Entiminae.

Because of extreme species richness there is no key to all known genera and tribes. A good key to tribes and genera of broad-nosed weevils was given by VAN EMDEN (1936, 1944) and was improved by SOLARI (1948). A key to the genera habitually similar to *Rhinomias* Reitter and *Brachysomus* Schoenherr is presented below. To avoid confusion we advisedly ignored the systematic position of the genera in the modern classification of Entiminae.

2. Methods

For the study and preparation of the specimens the binocular microscope BSM-9 was used. Genital structures were macerated in hot 10% KOH, washed in distilled water, and put in vials with glycerin. Illustrations of genital structures were made from glycerin preparations with a grid-ocular.

3. Abbreviations

ZIN	Zoological Institute RAS, Saint-Petersburg
BNHM	The Natural History Museum, London
NMP	Národní muzeum, Praha
MTMB	Magyar Természettudományi Múzeum, Budapest
DEI	Deutsches Entomologisches Institut, Müncheberg
ZMUA	Zoölogisch Museum, Universiteit van Amsterdam
Bc	collection of R. Borovec, Nechanice, Czech Republic
KUMN	Kharkov National University Museum of Nature, Ukraine

4. Key to genera

Key to west Palearctic genera of small soil Entiminae habitually similar to *Rhinomias* Reitter and *Brachysomus* Schoenherr.

1 Pterygia sharply projected from lateral contour of rostrum **2**
1' Pterygia not projected or slightly projected from lateral contour of rostrum **4**
2 (1) Body densely covered with lanceolate light scales and dark-brownish and suberected setae at the interstriae. Elytra with dark transverse bands. Rostral dorsum sharply widened from base to middle, medially as wide as 1/3 of frons, antennal scape long, if bent backwards surpass apical margin of pronotum. Male venter elongate. Body length 2.25–2.75 mm.
..... ***Solarhinomias*** gen.n.
2' (1) Body sparsely covered with light piliform or narrow bifurcate scales. Rostral dorsum parallelsided, medially 1.5–2 times narrower then frons **3**
3 (2) Rostral sides strongly longitudinally rugose. Rostral dorsum strongly convex longitudinally, separated from frons by deep transverse depression, some narrower then frons. Tegmen with at basal half parameres connate, tegminal ring narrow, smoothly confluent with parameres, apophyses 3 times shorter or as long as median lobe (*Rh. forticornis*). Ventral aspect of median lobe entirely or half sclerotized, at base membranous. Spiculum gastrale r-shaped at apex. Male pygidium at dorsal side with long invagination. Body length 1.87–3.00 mm. ..... ***Rhinomias*** Reitter
3' (2) Rostral sides distinctly finely punctate without longitudinal striae. Rostral dorsum almost flat without transverse depression at base or slightly longitudinally convex and separated from frons by weak depression, 2 times narrower then frons. Tegmen with rudiment of parameres, tegminal ring broad, apophyses of various length 3–4 times shorter or as long as median lobe. Ventral aspect of median lobe almost entirely sclerotized or entirely membranous. Spiculum gastrale T-shaped at apex. Male pyigidium without or with very short invagination. Body length 2.10–3.25 mm. ..... ***Eurosphalmus*** gen.n.
4 (1) Head behind of eyes more or less constricted, body usually densely covered with wide scales. Epistomal plate of rostrum distinctly depressed. Antennal scrobes entirely visible from above. Parameres normal, free at base, as long as median lobe. Eyes lateral, strongly hemisphericaly convex. Body length 1.70–2.60 mm.
..... ***Amicromias*** Reitter
4' (1) Head behind of eyes without constriction, body densely or sparsely covered with wide or narrow scales. Epistomal plate of rostrum not depressed. Parameres rudimentary or normally developed, they are more shorter then median lobe. **5**
5 (4) Claws appear free, connate at base only. **6**
5' (4) Claws connate in basal half. **7**
6 (5) Frons strongly flattened. Antennal funicle very thin, 7th antennomere of funicle as long as wide, club elliptic, sharply separated from funicle. Rostral dorsum narrowed apically, strongly convex longitudinally, with narrow median sulcus, distinctly separated from frons by transverse depression. Epistome strongly convex. Body scaling very dense with grayish wide lanceolate scales and erected wide curly setae. Body length 2.40–2.50 mm. ..... ***Bosporomias*** Yunakov et Korotyaev
6' (5) Frons weakly convex. Antennal funicle thin, but 7th antennomere strongly transverse, club egg-shaped. Rostral dorsum widened apically, almost flat, without median sulcus, not separated from frons by transverse depression. Epistome flat. Body scaling sparse with light piliform scales and erected thin setae. Body length 2.60–3.05 mm. ..... ***Turanomias*** gen.n.
7 (5) Upper side of body with more or less sparsely spaced scales, which usually incompletely cover the integument; if the scales entirely cover the integument, then antennae long and antennal scape slightly curved, evenly widened to apex. Interstrial setae uniformly shape and length. Body length 1.50–4.25 mm.
..... ***Brachysomus*** Schoenherr
7' (5) Upper side of body densely covered with round grey-brownish scales, which entirely cover the integument. Antennae broad, scape sharply widened apically and strongly curved. Interstrial setae obtuse at base and disk of elytra thin shorter then interstrial width, at apical descent setae longer and wider, as long as interstrial width. Body length 2.12–3.00 mm.
..... ***Archeophloeus*** Khnzorian

5. Descriptions

Genus *Solarhinomias* gen.n.

Type species: *Meira caucasica* Stierlin, 1877

Description and diagnosis. Superficially the type species of *Solarhinomias* (Figs. 1–2) resembles representatives of the genus *Rhinomias* Reitter, 1894 (Figs. 3–4). However, the new genus differs from *Rhinomias* in the following characters: dense pubescence of the body, consisting of lanceolate scales and strongly erect setae on the elytra; weakly visible transverse depression, separating the rostral dorsum from the frons; rostral dorsum in basal third narrower than frons; long and thin antennal scape, extended beyond the front margin of pronotum; weakly developed longitudinal striae of the frons; weakly mucronate male metatibiae. *Rhinomias* is characterized by a large mucro (Figs. 22, 23) and more elongate ventrites (Figs. 11, 14, 85). From *Rhinomias* the new genus differs in the absence of the sexual dimorphism in the structure of trochanters. For example, the male trochanter of *Rhinomias forticornis* (Boheman, 1843) has a spine-shaped process (Fig. 15). From *Rh. forticornis*, *R. austriacus* Reitter, 1894, and other European species of the genus *Rhinomias*, *S. caucasica* differs in the shape of the median lobe, tegmen, endophallus (Figs. 26–31), and the structure of spermatheca (Fig. 116). In the genus *Rhinomias* these organs have a sufficiently constant structure. In the *Rhinomias* species parameres connate in basal half, ring of tegmen narrow, the apophyses 3 times as short as median lobe, the basal sclerite of endophallus small, and the ventral wall of the median lobe is membranous in its basal half or basal middle third. The spermatheca of *Rh. forticornis* has a reduced collum and a very short and thick cornu (Fig. 118).

In the female genitalia, *Solarhinomias* also differs from the new genus *Turanomias* (Fig. 117), by the larger spermatheca, Collum, and ramus moderately equally strongly closing, and the cornu which is strongly falcated elongate.

Derivatio nominis. The genus name is derived from the surname of the famous Italian coleopterologist Ferdinando Solari and the generic name '*Rhinomias*'.

Distributional records. The only known species of the genus *Solarhinomias* gen.n. is found in the humid deciduous forests of the Western and Central Caucasus, as well as in the Caucasus Minor (Meskhetsky MtR.) (Fig. 32). Such distribution is typical for other weevil groups earlier studied by us, such as *Otiorhynchus (Udonedus) alexeevi* Korotyaev, 2002, and species of the genus *Otiorhynchus* subgenus *Otismotilus* Reitter, 1912 (Davidian & Yunakov 2002). This distribution pattern (despite of the number of other local endemics within this range) demonstrates close faunal links between Central Caucasus and Caucasus Minor in the past.

Solarhinomias caucasicus (Stierlin, 1877) comb.n.

(Figs. 1, 2, 8, 10, 12, 19–21, 23, 24, 26–28)

Meira caucasica Stierlin, 1877: 183; Reitter (1882: 67)
Rhinomias caucasicus; Košťál (1988: 162)
Platytarsus cruciatus Stierlin, 1879: 431
Peritelus (*Meira*) *cruciatus*; Stierlin (1883: 601)
Rhinomias cruciatus; Formánek (1905: 193); Lona (1938: 430)

Redescription. Measurements. Body length 2.25–2.75 mm, width 1.15–1.60 mm.

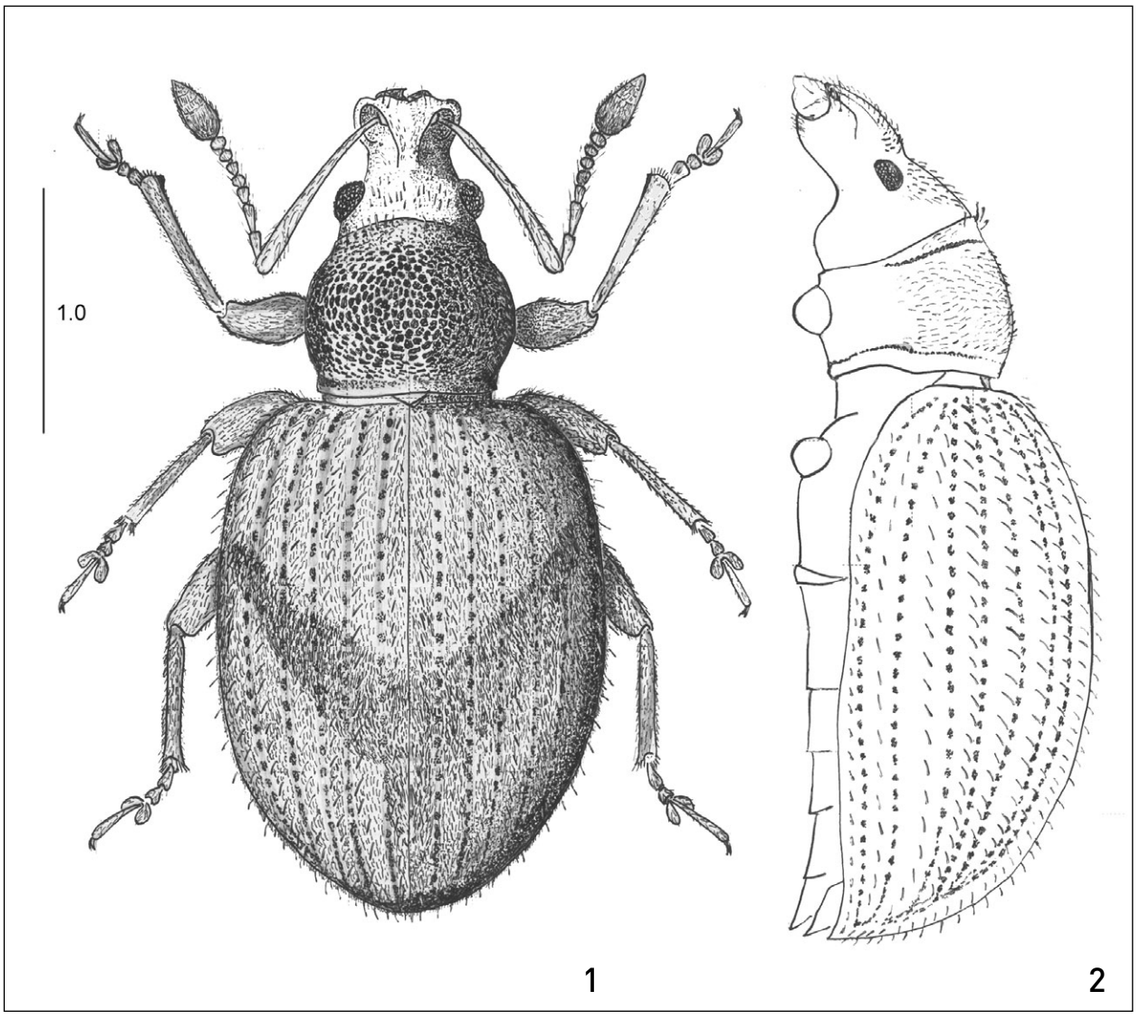
Head. Rostrum weakly narrowed to middle, as long as wide or slightly longer than width, pterygia strongly projecting from lateral rostrum contour, clearly visible from above, rostral dorsum sharply widened from base to apex, almost flat; epistomal plate shining, without dense pubescence, flat, limited by elevated lateral margins of the rostral dorsum. Rostral dorsum at base 4 times narrower than frons, its largest width two times narrower than width of frons, rostral dorsum in middle part 3 times narrower than frons. Eyes strongly hemispherical convex, their longitudinal diameter 2.5 times shorter than width of frons, almost as temple length. Frons with longitudinal punctures.

Antennae. Antennal scape thin, long, almost straight, evenly widened apically, if bent backwards greatly surpass apical margin of pronotum, 1st antennomere of funicle strongly elongate, evenly widened to apex, with straight sides, 1st segment as long as 2nd, two times as long as wide, 3–7th segments globular, 3–4th sometimes cylindrical; club spindle-shaped, widest at middle (Fig. 8).

Pronotum. Hardly transverse, sides and disk distinctly convex, apex and basal margins distinctly constricted; roughly punctured, punctures deep, weakly shining, oblong, sometimes punctures confluent with bridges making weak irregular-shaped grains. Sometimes pronotum with longitudinal middle thin keel, or only with its trace in the basal half of pronotum.

Elytra. Oval or widely oval, strongly convex from sides, disk weakly flattened. Scrobes thin with weakly separated punctures, interstriae wide, weakly convex, straight, in very sparse small punctures visible under strong magnification. Elytral intervals two times wider than striae. Scutellum distinctly visible from above.

Legs. Long and slender, femora without tooth. Protibiae not widened at external side, their external margins straight, internal margin weakly sinuate (Fig. 10). Internal apical angle of protibiae thorn-shaped, elongated, internal apical angle of male metatibiae weakly mucronate (Fig. 23). Margins of tibial apex with thin light spines.



Figs. 1–2. *Solarhinomias caucasicus* (Stierlin, 1877) comb.n., female, general view. **1**: Dorsally. **2**: Laterally.

Tarsi narrow, 2nd tarsomere weakly transverse, 4th tarsomere extending beyond lobes of 3rd for the length of the latter, claws in basal quarter connate (Figs. 19–21).

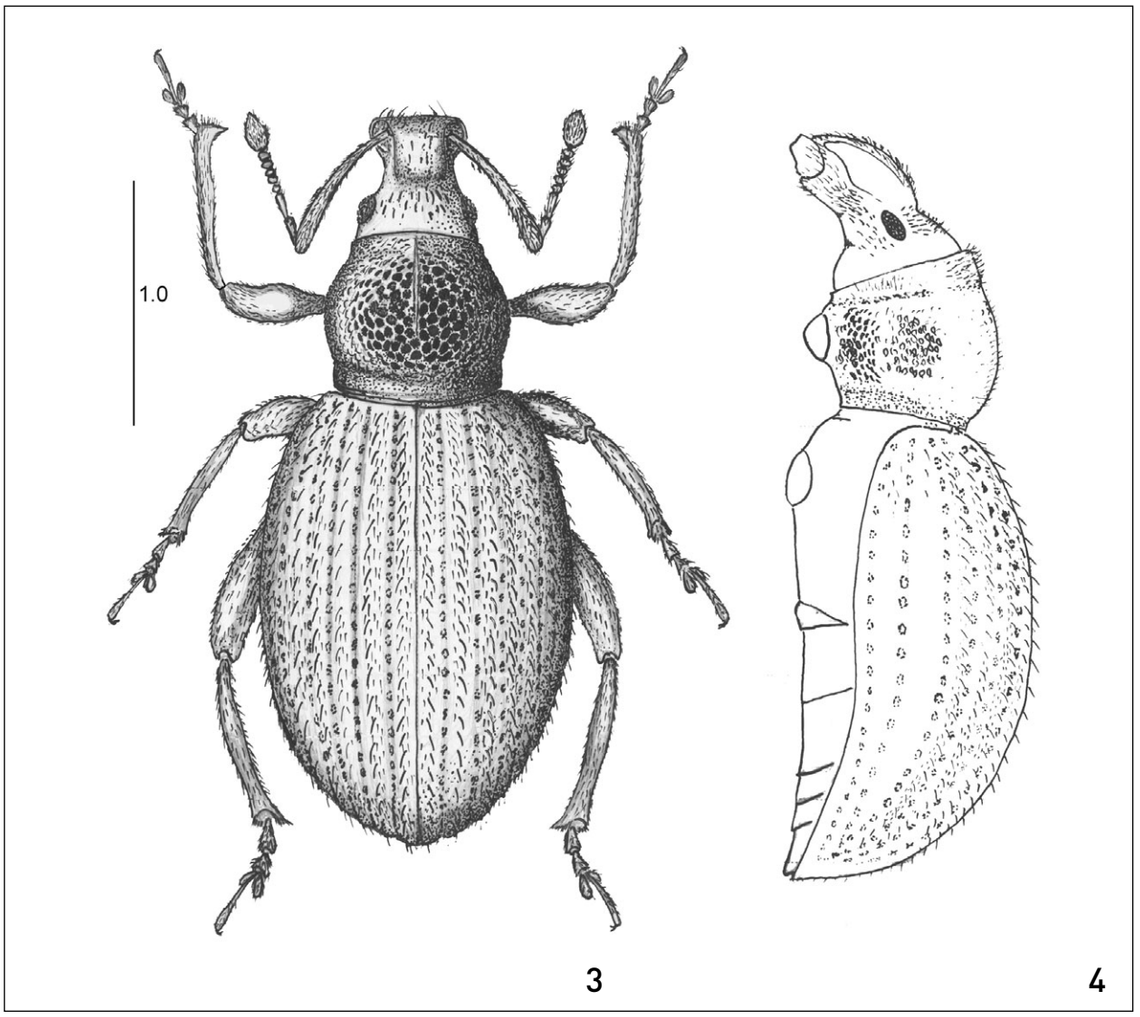
Body cover. Pronotum with pale piliform scales concentrated on sides. Interstriae with long setae, strongly bristled, distinctly enlarged and rounded at the end. Elytra with very small, dense, pale, dun (greyish-brown) lanceolate scales making diagonal striae of elytra interrupted on disk. Surface of elytra between striae covered with small lanceolate scales. Scales on elytra make spotted pattern, sometimes cruciform. Head with thin hairs and bristled setae. Antennal scape setose, funicle with thin pale hairs. Tibiae with apically widened setae, only their internal margin with thin light hairs.

Abdomen. Male anal ventrite with weak impression in apical quarter, its apical margin weakly concave (Fig. 11). Anal ventrite in female slightly convex, in apical part without impression, its apical margin strongly rounded.

Genitalia ♂. Median lobe of aedeagus strongly elongate, strongly dorso-ventrally curved, hardly shorter than apophyses, apex coracoid, weakly sharpened at the end, ventral side of median lobe strongly sclerotized, its membranous area not large, not projecting over basal third of median lobe. Parameres slightly free. Ring of tegmen wide. Endophallus walls in small dents. Basal sclerite large (Figs. 26–28).

Genitalia ♀. Spermatheca large, collum and ramus moderately equal, strongly closing. Cornu strongly falcated, elongate (Fig. 116).

Material. Russia, 15♂, 16♀, ‘North Ossetia, Kabardino-Sunzhenskiy MtR. between Vill. Kardzhin and Elkhotovo, 600 m, *Quercus* forest, 1.v.1985, S.K. Alekseev’; 1♂, 2♀, ‘North Ossetia, Fiagdon Riv. bass., S slope of Kartsinskiy (=Pastbischniy) MtR., 900 m, Quercus forest, 10.v.1985, S.K. Alekseev’; 1♀, ibid., 25.v.1985’; Georgia, 1♀, ‘Caucasus. | Rost.1895’, ’coll. Dr. van der Hoop’ (ZMUA); 1♀, ‘Miller | Caucas’ (ZMUA); 1♂, 1♀,. ‘Abchasia | Rost. <leg.> 1896’, ‘Platytarsus cruciatus’, ‘coll. G. Sievers’; 1♂, ‘Abchasia | Suchum | A. Zolotarew’; 2♂, 1♀, ‘Abkhasia, Shubara, 27, 28.vi.1973, A. Cholokava leg.’; 3♀, ‘Abkhasia, Sukhum, 28.vi.1973, A. Cholokava leg.’; 1♂, 1♀, ‘Abkhasia, Chini, 2.vii.1973, A. Cholokava leg.’; 3♂, 1♀ ‘Abkhazia, Bzybskiy MtR. lowering from Napra Mt. to Vill. Otkhara, forest, 1900 m, 17.vi.2003, G.E. Davidian’; 1♂, ‘Abkhazia, Gul’ripshi, 25.vii.1990, V. Gusarov’; 1♂, 1♀, ‘Mingrelia, Abasha Riv. valley, upper Vill. Bal’de, 500–1000 m, 9.-10.vii.1990, G.E. Davidian’; 1♂, ‘Mingrelia, Martvil’skiy Distr., Abasha Riv. valley, forest, 9.vii.1990, G.E. Davidian’; 2♂ ‘Adzharia, nr



Figs. 3–4. *Rhinomias forticornis* (Boheman, 1843), male, general view. **3**: Dorsally. **4**: Laterally.

Batumi, Zeleniy Cape, 50-100 m, *Betula-Rhododendron* forest, 8.iv.1988, D.V. Logunov'; 4♂, 'Adzharia, nr Batumi, Zeleniy Cape, 50-100 m, *Fagus* forest, 7.iv.1988, D.V. Logunov'; 7♂, 5♀, 'Caucasus <Adzharia> | Meskisches Geb. | Leder (Reitter)' (ZIN, KUMN). All specimens with the exception of 2 specimens from ZMUA in collection of ZIN.

Genus *Turanomias* gen.n.

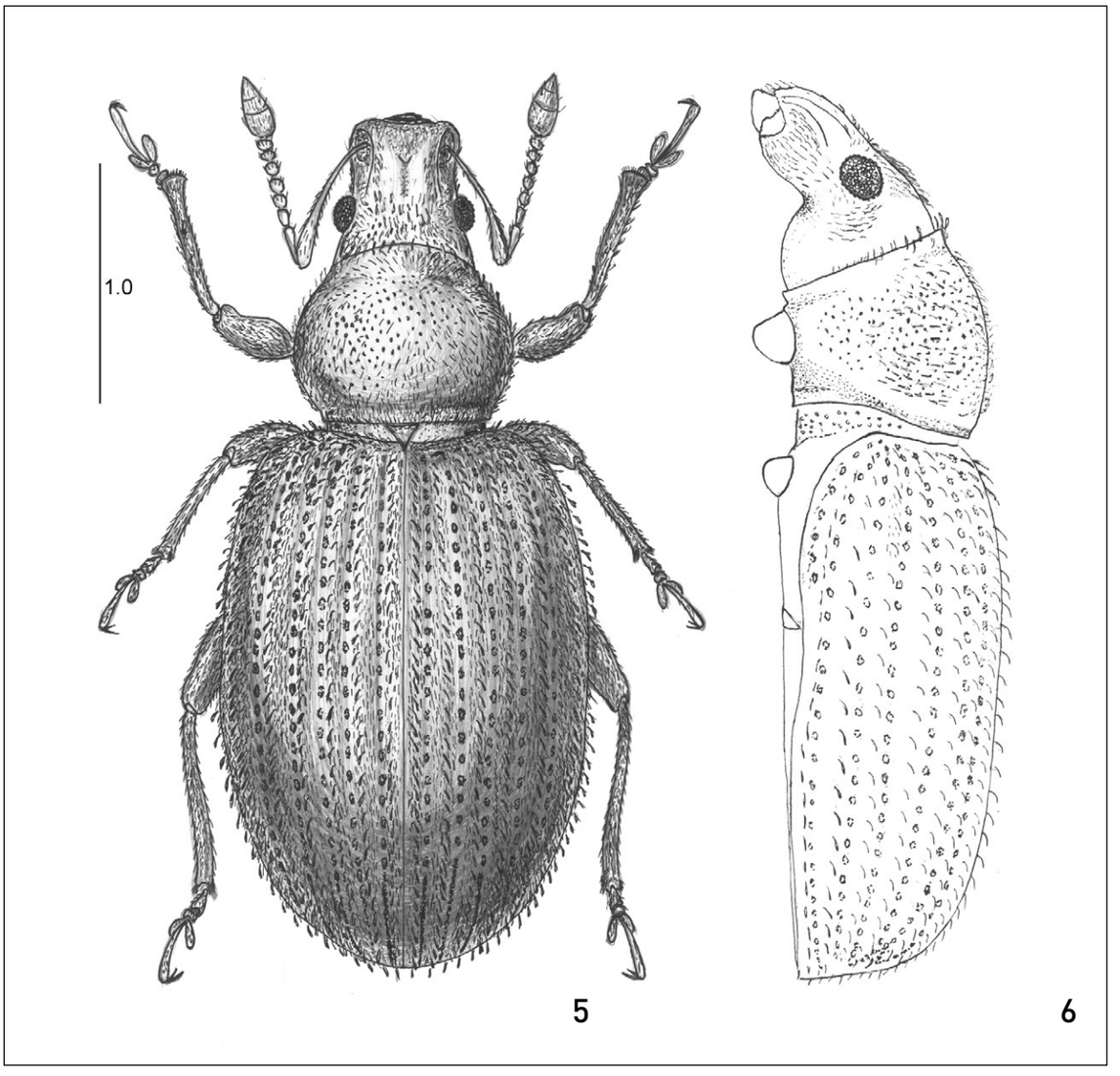
Type species: *Turanomias yuliae* sp.n.

Description. Superficially the new genus looks like the Caucasian *Solarhinomias* gen.n, but it differs well from the latter in the following features: scales on interstriae arranged more densely; antennal scape thin and short, reaching only apical margin of pronotum; feebly marked pterygia; wider rostral dorsum, which is mostly naked and having thin distinct median sulcus; sculpture and shape of pronotum, which is finely and densely punctured and distinctly transverse; disk of pronotum smooth, shining, without longitudinal keel; elytra at disk hardly convex, mesothorax not making sharp projection with elytral base, tarsal claws thin, evenly narrowed to apex, distinctly diverging, connected at base only. Ventrites wider than in *Solarhinomias* gen.n. (Figs. 12, 13) with distinctly elevated, thin long hairs, and well separated punctures.

Remarks. The differences in structure of antennae, tarsi and peculiar pubescence characterize the new genus as alpine derivate of a forest inhabiting ancestor (Figs. 5–10, 24, 25, 84, 85).

It is not possible to affiliate the new genus with the existing group of geophilic Entiminae represented in Central Asia. Also, a sistergroup relationship of *Turanomias* gen.n. and *Solarhinomias* gen.n. is indicated only preliminary (and rather conventionally), since no closer relatives of these taxa are yet discovered.

Derivatio nominis. The genus name is derived from the name of 'Irano-Turanian' biogeographic desert subregion, and the generic name '*Omias*'.



Figs. 5–6. *Turanomias yuliae* Yunakov et Nadein gen. et sp.n.; holotype, female, general view. **5**: Dorsally. **6**: Laterally.

Turanomias yuliae sp.n.

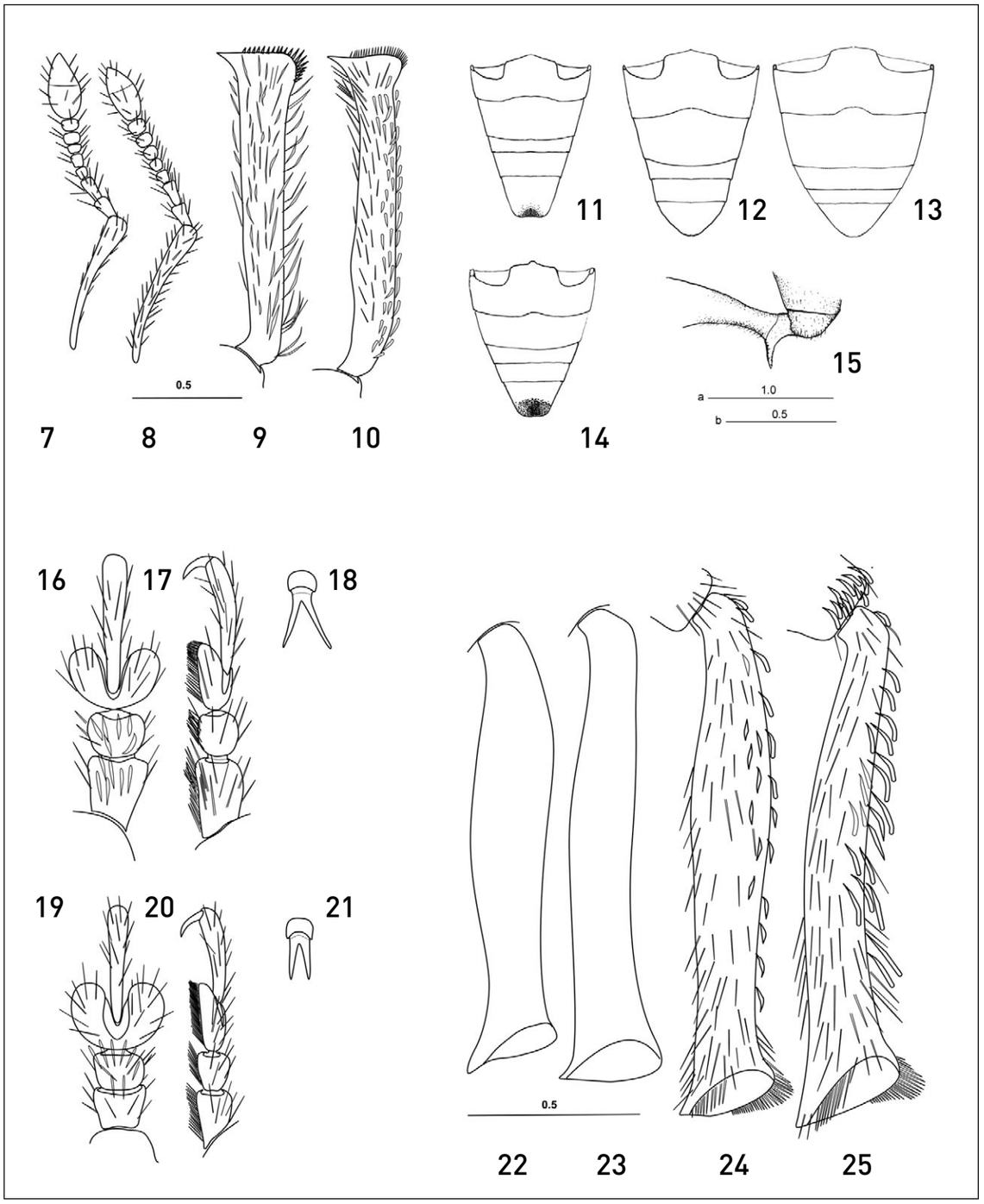
Description. Measurements. Holotype ♀ body length 2.85 mm, width 1.60 mm. Paratypes 2.6–3.05 mm and 1.40–1.65 mm, respectively.

Head. Rostrum weakly narrowed to its middle, longer or as long as wide, pterygia gently projecting over lateral contour of rostrum, well visible from above; rostral dorsum from base to the level of antennal insertion almost parallel-sided, from antennal insertion to apex moderately widened, with weak median sulcus; epistomal plate shining, without dense pubescence, flat, limited by elevated lateral margins of the rostral dorsum; eyes strongly hemispherically convex, their longitudinal diameter 2,5 times as short as width of frons and almost equal to length of temple. Frons in thin, longitudinal, wrinkled punctures.

Antennae. Antennal scape thin, reaching the apical margin of pronotum, gently arcuately curved, in apical third sharply widened, 1st antennomer of funicle strongly elongated, moderately widened to apex, with weakly rounded sides, its length twice as much as width, 2nd antennomere of funicle weakly elongated, its length 1.5 times as long as wide and 1.5 times as short as length of 1st; 3–5th antennomers spherical; 6, 7th transverse, club conical, widest at base (Fig. 7).

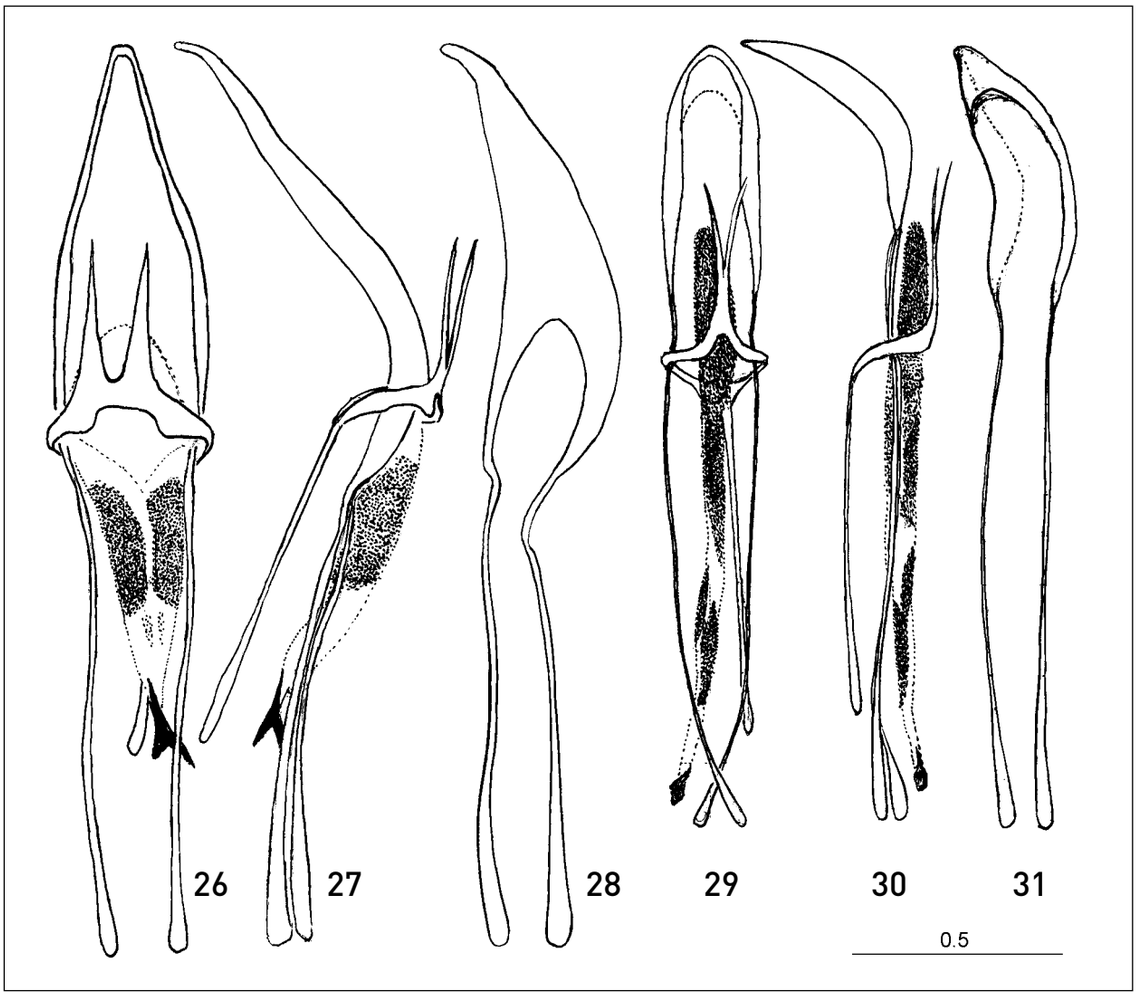
Pronotum. Transverse, its lateral sides strongly convex, disk weakly convex, densely and finely shallowly punctured; intervals between punctures shining, almost flat, moderately narrower than diameter of punctures. Pronotum hardly constricted at apex and base. Scutellum glabrous, distinctly visible from above.

Elytra. Oval, gently convex from sides, disk clearly flattened. Striae thin, its punctures clearly separated, crosspieces between punctures as long as diameter of punctures, interstriae wide, two times as wide as width of striae, almost flat, smooth, weakly shining, with very sparse micropunctures.



Figs. 7–10. 7, **8**: Right antenna. **9**, **10**: Protibia, dorsally. **7**, **9**: *Turanomias yuliae* Yunakov et Nadein gen. et sp.n., holotype, female. **8, 10**: *Solarhinomias caucasicus* (Stierlin, 1877) comb.n., female.
Figs. 11–15. 11–**14**: Ventrites, ventrally. **15**: Male trochanter, frontal view. **11**: *Solarhinomias caucasicus* (Stierlin, 1877) comb. n., male. **12**: *S. caucasicus*, female. **13**: *Turanomias yuliae* Yunakov et Nadein gen. et sp.n., female. **14**, **15**: *Rhinomias forticornis* (Boheman, 1843), male. Scale-bar (a) for Figs. 11–14, (b) for Fig. 15.
Figs. 16–25. 16, **19**: Tarsus, female, dorsally. **17**, **20**: Tarsus, female, laterally. **18**, **21**: Claws, frontal view. **22**, **23**: Right metatibia, male, laterally. **24**, **25**: Right metatibia, female, laterally. **16**–**18**, **25**: *Turanomias yuliae* Yunakov et Nadein gen. et sp.n. **19**–**21**, **23**, **24**: *Solarhinomias caucasicus* (Stierlin, 1877) comb.n. **22**: *Rhinomias forticornis* (Boheman, 1843).

Legs. Thin, long, femora without teeth. Protibiae at apex finely widened to external side, its external margin straight, internal margin weakly sinuate. Inner angle of protibiae elongated. External margin of metatibiae distinctly concave. Apex of tibiae with thin pale spines. (Figs. 9, 25). Tarsi narrow, 2nd tarsomere weakly trans-



Figs. 26–31. 26, **29**: Aedeagus, dorsally. **27**, **30**: Aedeagus, laterally. **28**, **31**: Aedeagus, ventro-laterally. **26–28**: *Solarhinomias caucasicus* (Stierlin, 1877) comb.n. **29–31**: *Rhinomias forticornis* (Boheman, 1843).

verse, 4th tarsomere extending beyond lobes of 3rd for a distance larger than length of latter; claws distinctly divergent, at base connate, thin, evenly narrowed apically (Figs. 16–18).

Body cover. Pronotum with light piliform scales, concentrated on its sides. Apical margin of pronotum and base with fringe consisting of star-form scales. Interstriae with long, strongly convex, apically distinctly widened and rounded setae. Elytra throughout with dense, piliform, greyish-brown scales. Head with thin piliform scales, on frons and basal half of rostral dorsum covered with setae. Antennal scape and funicle with light hairs. Femora and tibiae with apically widened setae, only internal margin of tibiae with thin light hairs.

Abdomen. Ventrites wide, with semierect thin long hairs, punctures well separated, anal ventrite evenly rounded at apex (Fig. 13).

Genitalia ♀. Spermatheca small. Ramus and collum widely spreaded, ramus clearly larger than collum (Fig. 117).

Male unknown.

Derivatio nominis. The species named in honour of Yulia Vladimirovna Dolgova.

Material. Holotype ♀, Turkmenistan, 'Turkmenia <Chardzhouskaya Reg.> | Kugitang-Tau <MtR> | G.S. Medvedev 22.v.[19]76' (ZIN). – Paratypes 22♀, with the same label as holotype, 2 paratypes in DEI.

Genus *Eurosphalmus* gen.n.

Type species: *Brachysomus breiti* Formánek, 1909

This genus includes 6 species from the Balkan Peninsula, among which 4 are described as new to science. The type species of the new genus was transferred to the genus *Amicromias* Reitter, 1913 by KOŠŤÁL (1992) without any comments. Probably his identification was based on REITTER's (1912) earlier supposition that *Brachysomus breiti* Formánek, 1909 belongs to *Amicromias*. But REITTER in fact did not see this species. In the catalogue of Otiorhynchinae, LONA (1938) also listed *B. breiti* in the genus *Amicromias*. SOLARI (1948), when discussing the taxonomic position of *B. breiti*, stressed the distinct difference of this species from the rest of species of *Brachysomus* Schoenherr, 1823 in the structure of rostrum, and also pointed out its similarity with

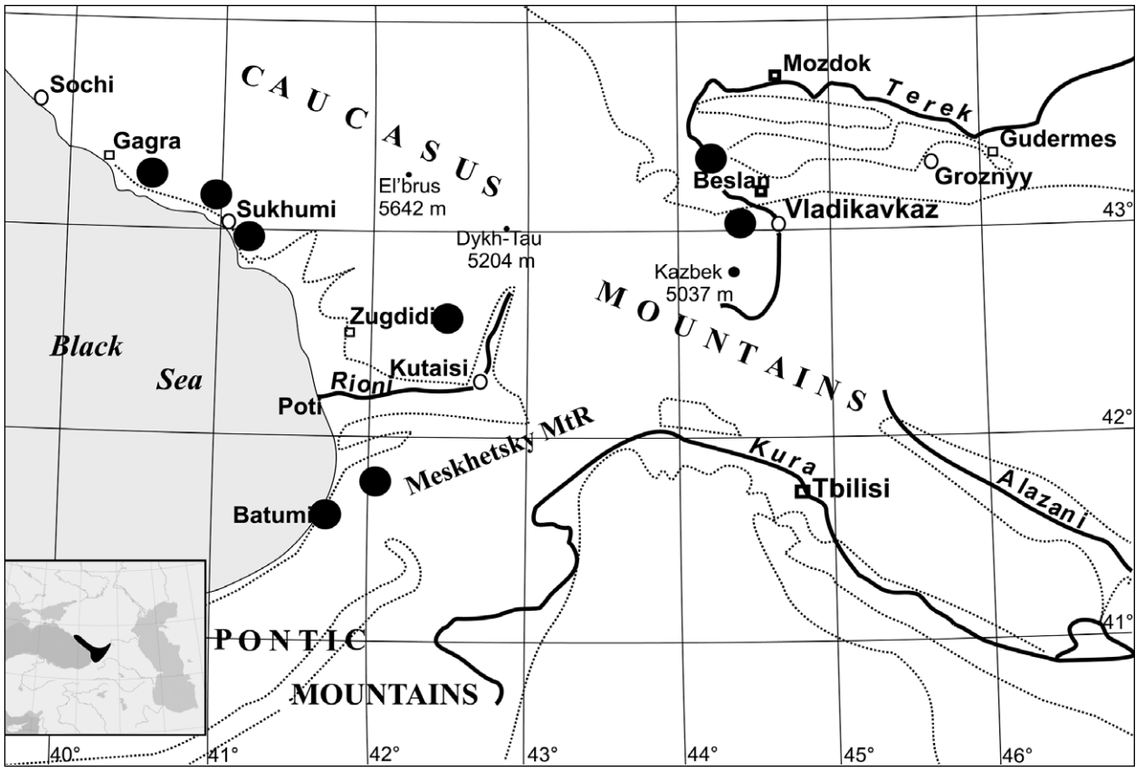


Fig. 32. Distribution of *Solarhinomias caucasicus* (Stierlin, 1877) comb.n.

Amicromias. *Brachysomus breiti* could not be included in the *Amicromias*, because it has no apomorphies of this genus: long parameres, laciniate apex of aedeagus and constriction beyond of eyes.

Description. Measurements. Body length 2.10–3.25 mm, width 1.10–1.75 mm.

Colouration. Body cover colouration from red to deep-brown, legs usually lighter than rest of the body.

Head. Rostrum narrowed anteriad or almost parallel-sided, as long as wide or longer. Pterygia projecting from lateral contour of rostrum. Rostral dorsum at almost all extension parallel-sided or sharply narrowed proximal to the pterygia, in the basal half slightly narrower than frons, gently convex, with more or less developed transverse impression. Frons flat or weakly convex. Eyes large, moderately convex, longitudinal diameter of eye more or almost equal to length of temple, upper margin of eye situated significantly lower or very close to level of frons.

Antennae. Antennal scape arcuately curved evenly or sharply widened to apex, reaching frontal margin of pronotum. 2nd antennomere of funicle longer than 3rd, 3–7th segments transverse. Club egg-shaped.

Pronotum. Transverse, strongly convex at disk and sides, constricted at apex and base, with dense large rather shallow punctures with narrow and convex intervals. At sides of disk sometimes with rather shallow impressions.

Elytra. Oval, weakly convex at disk. Punctures in scrobes deep, distinctly separated. Elytral intervals shining, weakly convex. Scutellum invisible.

Legs. Femora sharply club-shaped swollen in middle part. Fore tibiae straight externally, weakly S-shaped sinuate internally, with comb of thin light thorns at anterior margin. Male hind tibiae internally at apex more or less mucronate. Tarsi of males distinctly wider than in females. Claws connate.

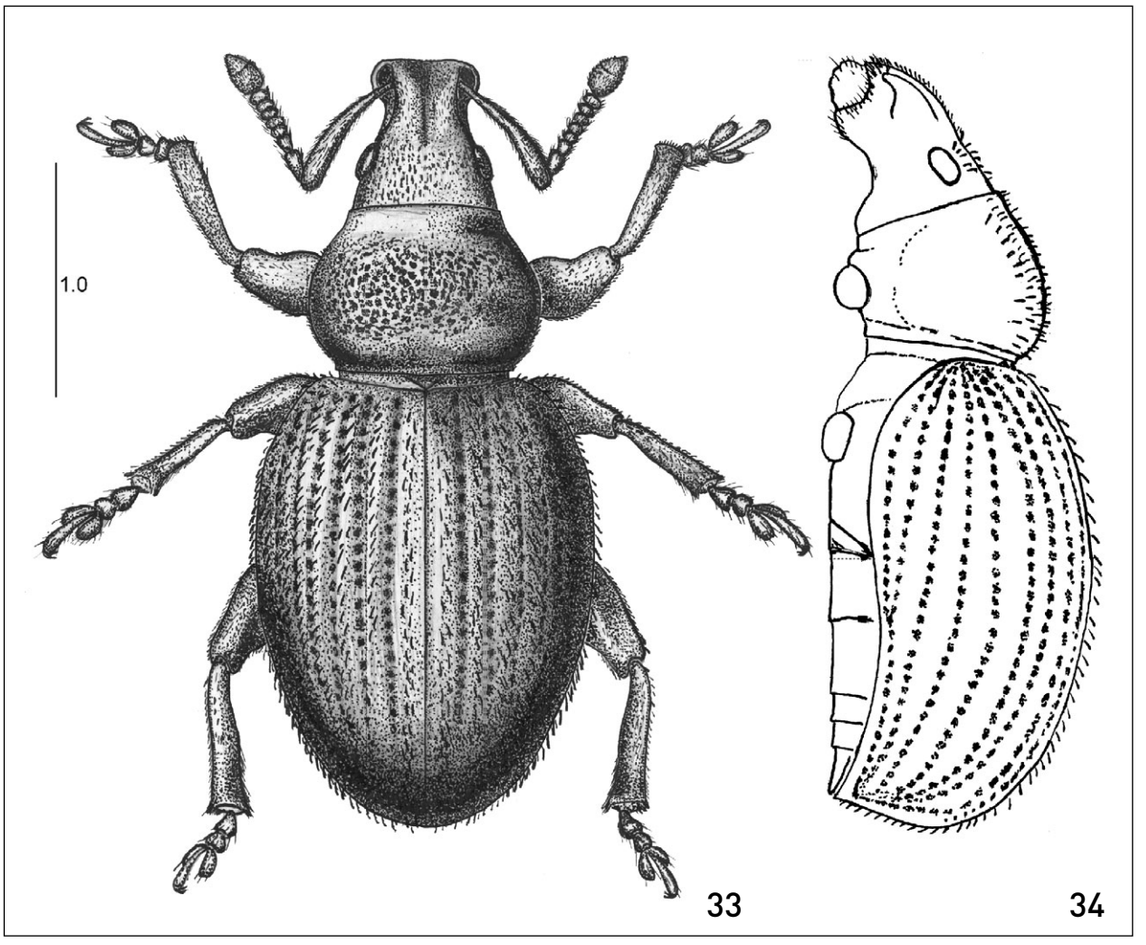
Abdomen. Male anal ventrites with impression before apex or flat. Apical margin evenly rounded, covered light hairs, evenly distributed or hairs clustered into bandles.

Body cover. Pubescence double: surface with erect setae and clustered scales, elytral intrevals with more or less strongly erected setae and with very small piliform, lanceolate or apically divided scales. Length of erected setae about 1/2 or 2/3 of width of intervals. Bottom with very thin dense piliform scales.

Genitalia ♂. Median lobe of aedeagus weakly or strongly sclerotised, sharply or evenly narrowed to apex, its apex elongated or sharpened. Ventral wall of median lobe in apical part more or less sclerotized. Apophyses two or three times as long as median lobe. Manubrium of tegmen thin or thick, sharply enlarged to apex or equally thick though all it extend, apically straight or curved. Parameres weakly developed. Internal sack with one or two large sclerites and areas of small thorns at basal half.

Genitalia ♀. Spermatheca with collum reduced to various degree, strongly elongated spindle-shaped ramus, sometimes with developed constriction; cornu thin and strongly elongate, or thick and short.

Differential diagnosis. The new genus is most close to the genus *Amicromias*, particular similarity noted in females,



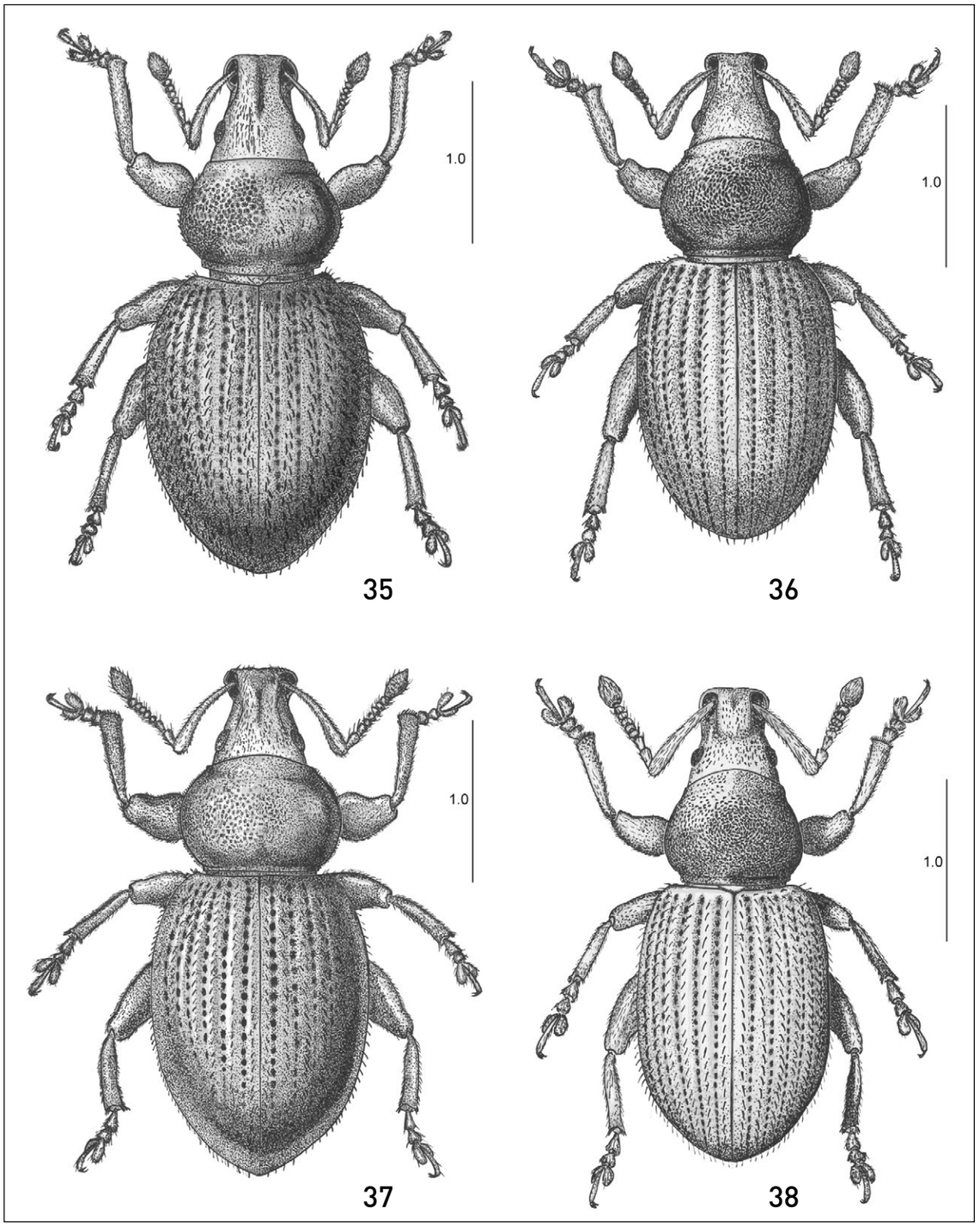
Figs. 33, 34. *Eurosphalmus breiti* (Formánek, 1909) comb.n., male, general view. **33**: Dorsally. **34**: Laterally.

but differs from the latter by the following characters: eyes more flat, large; head not constricted behind eyes; pterygia strongly projecting from lateral contour of rostrum; frons flat; pubescence of elytra sparse, femora more thick. In addition to external characters the new genus also essentially differs in the structure of the male genitalia: tegmen with reduced parameres, basal sclerite of endophallus more elongated, spiculi-formed; ligulae elongated at apex, very closely contiguous. Species of *Amicromias* have well developed parameres of tegmen, basal sclerite heart-shaped, sometimes weakly subulate elongated; ligulae at apex straight or evenly rounded, at most contiguous only.

Eurosphalmus gen.n. is also similar to the genera *Rhinomias* and *Brachysomus* (*transsylvanicus* group), and, in a number of characters, it has an intermediate position among them. *E. zerchei* sp.n., *E. attilai* sp.n. and *E. breiti* have habitual similarity with *Brachysomus* (*transsylvanicus* group), but *E. behnei* sp.n. and particularly *E. dieckmanni* – to *Rhinomias*. Above all, they differ from *Rhinomias* and *Brachysomus* (*transsylvanicus* group) in laciniate apex of median lobe of aedeagus, the armature of the internal sack, as well as in the shape of the head. From *Brachysomus* the new genus also differs in strongly developed pterygia and shape of spermatheca.

Derivatio nominis. The genus name is derived from the word 'Europe' and the generic name '*Asphalmus*'.

Distribution records. *Eurosphalmus* gen.n. is represented by two lineages of very closely related species. Three representatives of the first lineage, the subgenus *Eurosphalmus* s.str., inhabit more humid forests of the South Carpathians and the Stara Planina Range from Danube River to the source of Kamchiya River (Figs. 124–126). In the North-West the subgenus *Eurosphalmus* s.str. is represented by one species, *E. attilai* sp.n., from South Carpathians (Mekhedintsy Range), and two other species, *E. zerchei* sp.n. and *E. hilfi* sp.n., from the western part of the Stara Planina. *E. zerchei* sp.n. is distributed across this mountain range, while *E. hilfi* sp.n. is restricted to the highest and most humid part of the Stara Planina (Kaloferska Planina and Trevnenska Planina Ranges) only. In the North-East the range of the subgenus is limited by the distribution of *E. breiti* Formánek in the Dobrudja. Two species from the subgenus *Rhinomiamima* subg.n. constitute the second lineage, which inhabits more arid biotopes, namely the western coasts of the Black Sea from Dobrudja to Eminska Planina (eastern extremity of Stara Planina Range). The species of *Eurosphalmus* gen. n. inhabit the foothills and lowlands, the highest recorded altitude for them being 1045 m.

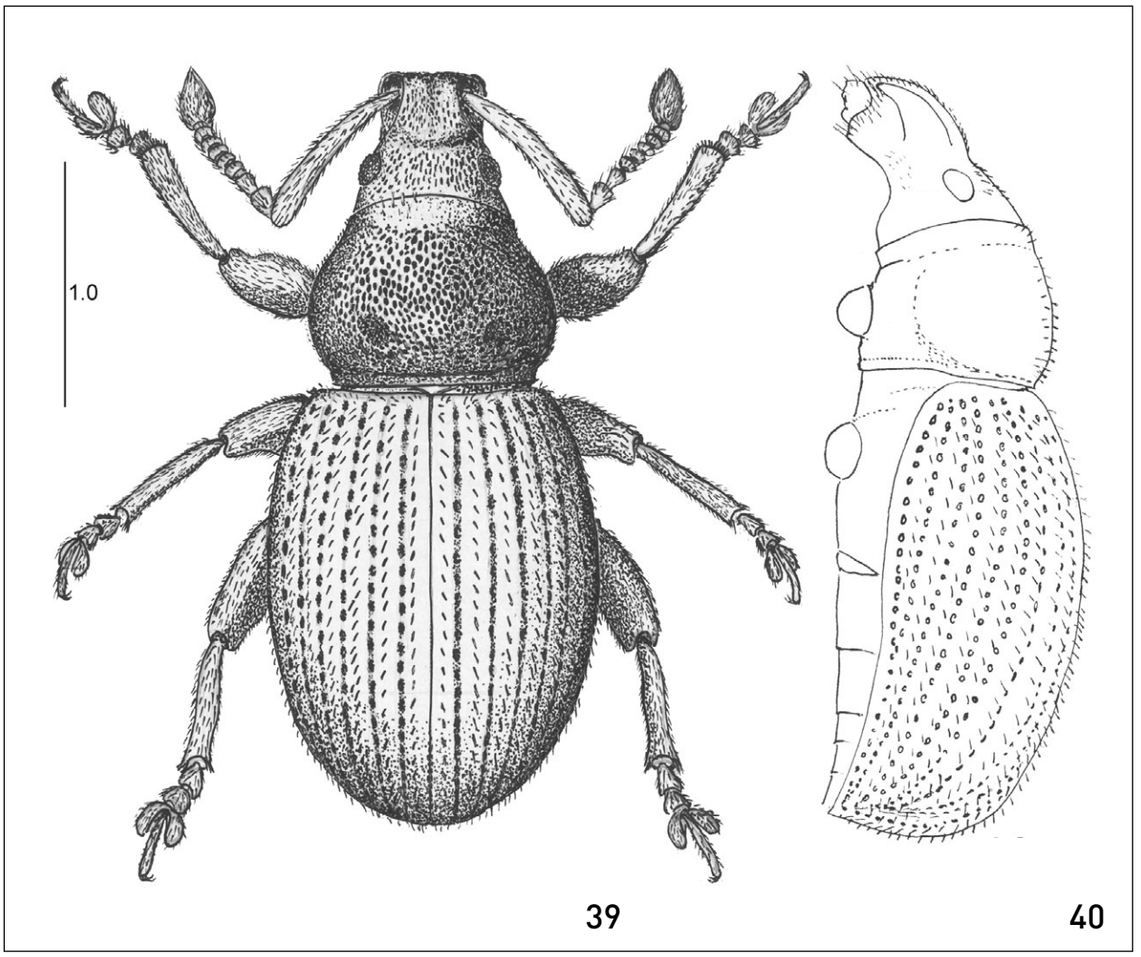


Figs. 35–38. 35. *Eurosphalmus attilai* sp.n., male, holotype, general view. **36**. *Eurosphalmus zerchei* sp.n., male, holotype, general view. **37**. *Eurosphalmus hilfi* sp.n., male, holotype, general view. **38**. *Eurosphalmus behnei* sp.n., male, holotype, general view.

***Eurosphalmus (Eurosphalmus) breiti* Formánek, 1909 comb.n.**
(Figs. 33, 34, 41, 42, 53, 59, 55, 72, 78, 90, 96, 101–103, 119)

Brachysomus breiti Formánek, 1909: 29; Reitter (1912: 17); Solari (1948: 28); Košťál (1988: 162); *Amicromias breiti*; Lona (1938: 415); Košťál (1992: 37)
The species is described from Dobrudja. The lectotype and 3 paralectotypes have been studied.

Description. Measurements. Male body length 2.75–2.90 mm, width 1.35–1.50 mm. Female body length of the single studied specimen 2.75 mm, width 1.50 mm.



Figs. 39, 40. *Eurosphalmus dieckmanni* (Koštál, 1988) comb.n., male, general view. **39**: Dorsally. **40**: Laterally.

Head. Male rostrum almost indistinctly narrowed anteriorly, as long as wide or moderately longer. Pterygia distinctly projecting from lateral contour of rostrum. Rostral dorsum parallel-sided, moderately narrower than frons, gently convex, with distinct longitudinal scrobe. Frons flat. Eyes moderately convex, large, longitudinal diameter of eyes clearly longer than temple, upper margin of eyes situated moderately lower than level of frons. Female rostrum weakly transverse, width and length ratio of rostrum about 1.26.

Antennae. Male: Antennal scape weakly arcuately curved, evenly widened towards apex. 2nd antennomere of funicle moderately longer than 3rd; 3–7th antennomeres transverse. Club egg-shaped. Female: Antennal scape hardly thinner than in male.

Pronotum. Weakly transverse, strongly convex at disk and sides, distinctly constricted at base and apex, with dense large rather shallow punctures and with narrow and convex intervals.

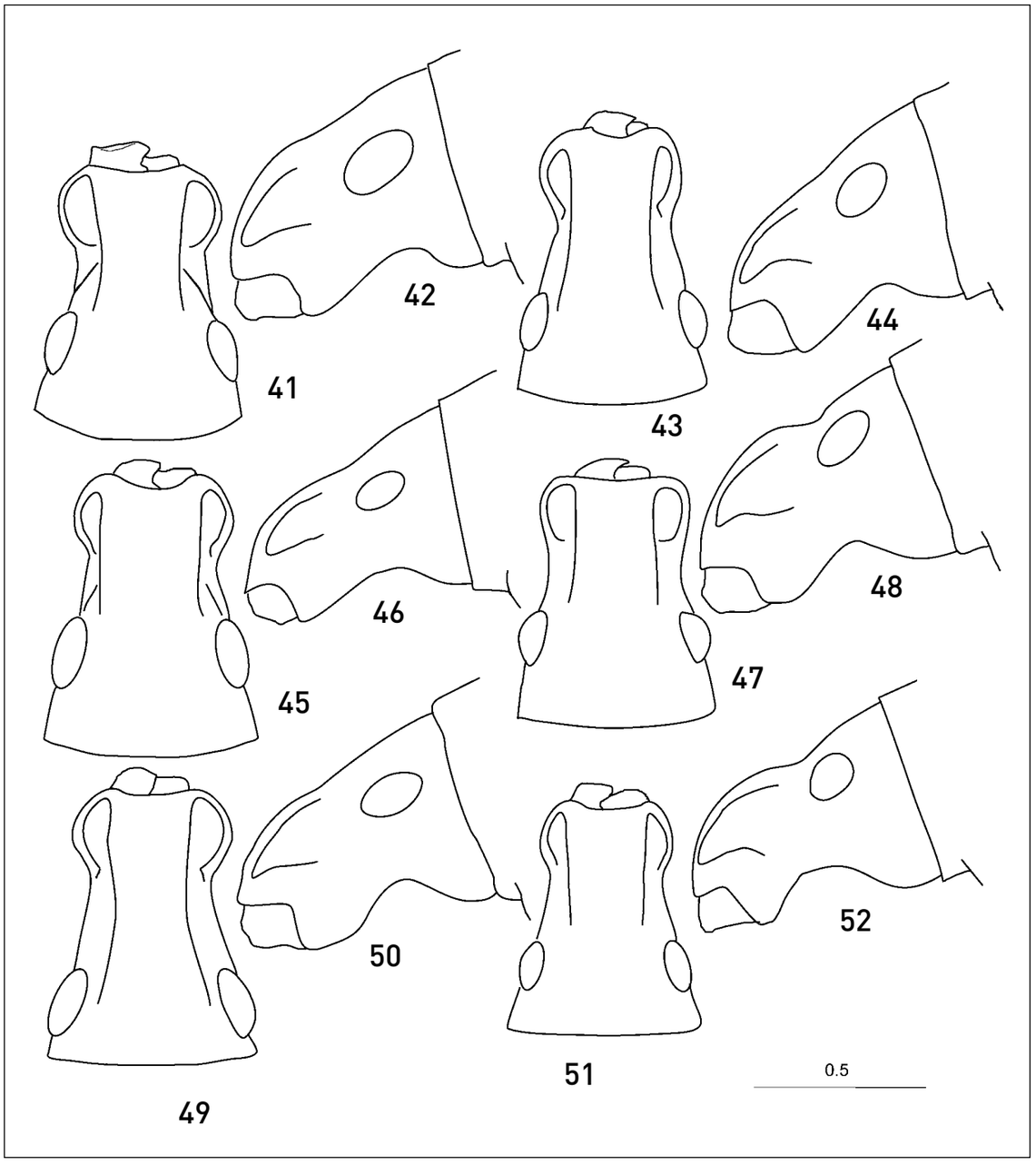
Elytra. Male: oval, weakly convex at disk. Punctures in scrobes deep, finely separated. Interstriae shining, weakly convex. Female: elytra strongly convex from above and from sides widely oval. Tarsi narrow, not longer than those in male. Pubescence double, interstriae with semierected, weakly widened dull light setae, as well as with very small piliform and deeply divided (at sides of elytra) scales. Setae as long as 1/3–1/2 of width of elytral intervals.

Legs. Femora sharply club-shaped swollen in middle part. Protibiae externally straight, internally weakly S-shaped sinuate, at apical margin with comb of thin light small thorns. Male metatibiae strongly mucronate, male tarsi strongly widened.

Abdomen. Male anal ventrite without impression, evenly rounded at apex, apical margin evenly rounded, with evenly covered pubescence by light, very thin hairs not grouped in, hairs clustered into bandles.

Genitalia ♂. Median lobe of aedeagus weakly sclerotized, sharply necked-down to apex, sides of median lobe parallel or weakly concave, weakly widened to base of its apical third, its tip elongated. Apophyses 1/3 as long as median lobe. Ligulae weakly sclerotized, ear-shaped and contiguous. Manubrium of tegmen thick, sharply enlarged to apex, curved at end. Endophallus with one large sclerite.

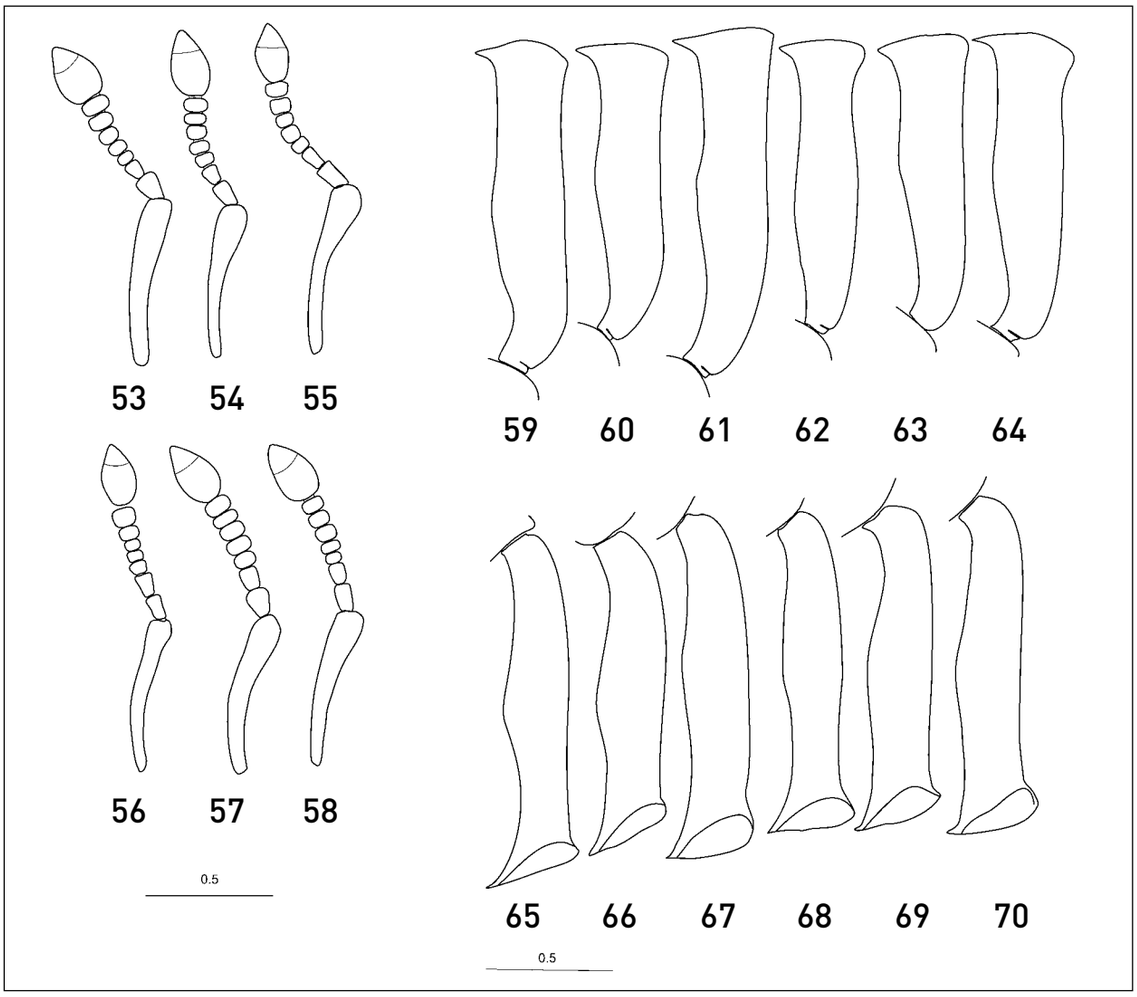
Genitalia ♀. Spermatheca with weakly developed collum, strongly elongated spindle-shaped ramus, with developed constriction.



Figs. 41–52. 41, **43**, **45**, **47**, **49**, **51**: Head, male, dorsally. **42**, **44**, **46**, **48**, **50**, **52**: Head, male, laterally. **41**, **42**: *Eurosphalmus breiti* (Formánek, 1909) comb.n. **43**, **44**: *E. attilai* sp.n. **45**, **46**: *E. zerchei* sp.n. **47**, **48**: *E. dieckmanni* (Koštál, 1988) comb.n. **49**, **50**: *E. hilfi* sp.n. **51**, **52**: *E. behnei* sp.n.

Differential diagnosis. This species is most close to *E. hilfi* sp.n., but well differs from the latter in thicker antennae (2nd antennomere as long as wide, whereas in *E. hilfi* sp.n. 2nd antennomere slightly elongate), shape of median lobe which has longer elongated apex, very narrowed to apex and elongated as mammiform process. Besides, it seems to be close to *E. attilai* sp.n., but differs in the following characters: rostral dorsum parallel-sided almost along its whole length, at level of antennal insertion apically widened, 2nd segment of funicle hardly longer than 3rd, antennal scape evenly swollen to apex and weakly curved, setae at interstriae weakly erected. Male metatibiae internally at apex with small, but distinct mucro.

Material. Lectotype, 1♂, Romania <?>, ‘Klst. Kokos | Dobrudscha, Breit’, ‘*breiti* type’ <handwritten>, ‘Lectotypus | *Brachysomus breiti* Form. | M. Koštál design. 1988’ <red, handwritten> (NMP); Paralectotypes, 1♂, 3♀, ‘Klst. Kokos | Dobrudscha, Breit’, (NMP, DEI); 1♂ (BNHM).



Figs. 53–58. Right antenna, male, dorsally. **53**: *Eurosphalmus breiti* (Formánek, 1909) comb.n. **54**: *E. zerchei* sp.n. **55**: *E. hilfi* sp.n. **56**: *E. attilai* sp.n. **57**: *E. dieckmanni* (Koštál, 1988) comb.n. **58**: *E. behnei* sp.n.
Figs. 59–70. 59–64: Right protibia, male, dorsally. **65-70**: Right metatibia, male, laterally. **59**, **65**: *Eurosphalmus breiti* (Formánek, 1909) comb.n. **60**, **66**: *E. zerchei* sp.n. **61**, **67**: *E. hilfi* sp.n. **62**, **68**: *E. attilai* sp.n. **63**, **69**: *E. behnei* sp.n. **64**, **70**: *E. dieckmanni* (Koštál, 1988) comb.n.

Eurosphalmus (Eurosphalmus) attilai sp.n.

(Figs. 35, 43, 44, 56, 62, 68, 76, 80, 89, 95, 98–100, 120)

Description. Measurements. Holotype body length 2.5 mm, width 1.4 mm, paratype 2.5 mm and 1.5 mm, respectively.

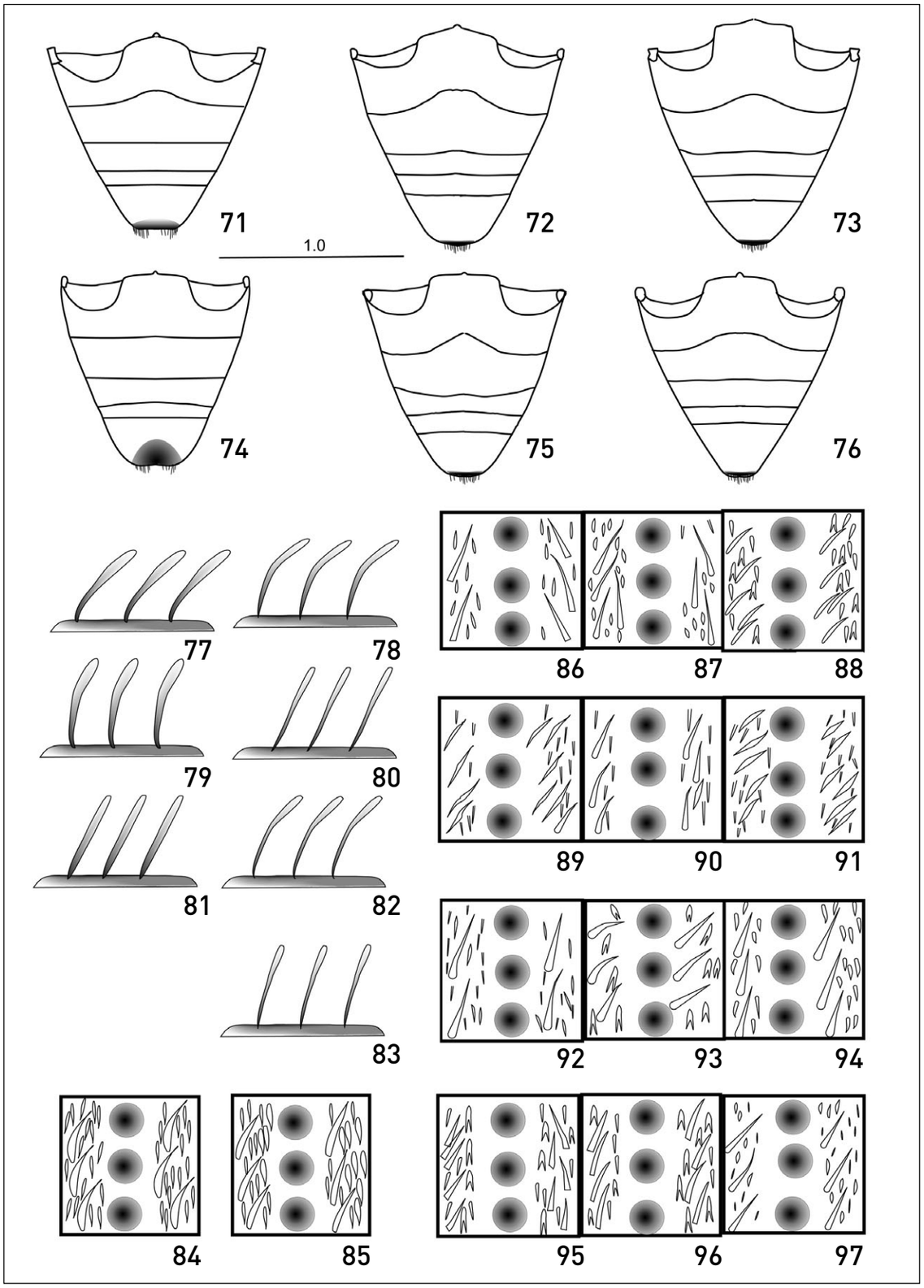
Head. Rostrum very slightly narrowed apically, moderately longer than wide. Male pterygia distinctly projecting from contour of lateral side of rostrum, pterygia of female weakly projecting. Rostral dorsum sharply narrowed from base to middle, parallel-sided from middle to apex, being, in this part, moderately narrower than frons, gently convex with distinct median sulcus. Frons flat. Eyes moderately strongly convex, large, longitudinal diameter of eye clearly longer than temple, upper margin of eye situated moderately lower than level of frons.

Antennae. Antennal scape distinctly arcuately curved and sharply swollen at apical 1/3, 2nd segment of funicle almost twice as long as3rd, 3–7th segments transverse. Club egg-shaped.

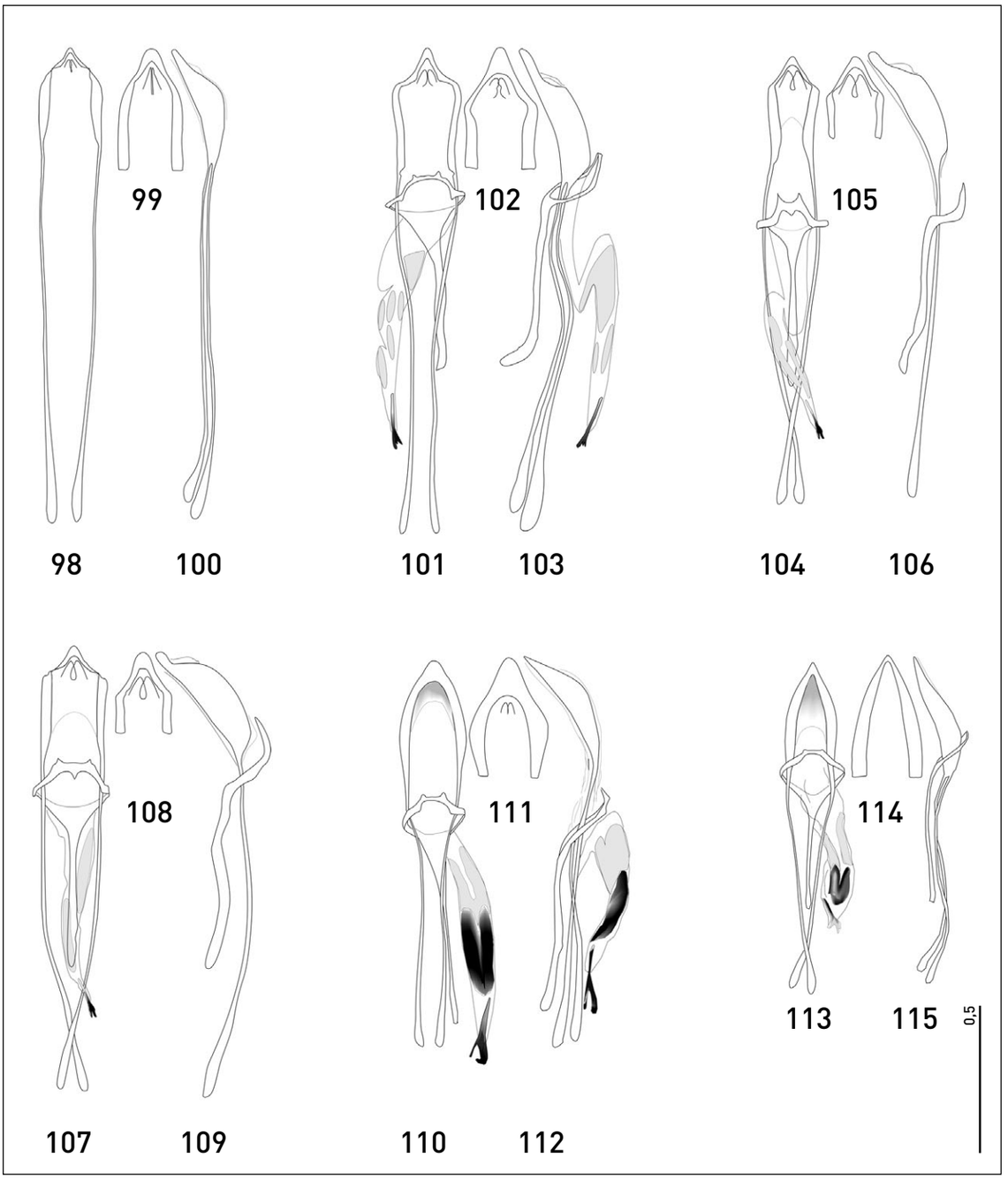
Pronotum. Weakly transverse, strongly convex at disk and sides, distinctly constricted at base and apex, widest at middle, with dense large rather shallow punctures with narrow and convex intervals.

Elytra. Oval, at disk weakly convex. Punctures in scrobes deep, distinctly separated. Interstriae shining, weakly convex. Pubescence double: interstriae with erected, apically weakly widened light dull setae, situated in one or two rows, as well as very small piliform and deeply divided (at elytra sides) scales. Setae about 1/2–2/3 as long as width of elytral intervals.

Legs. Femora sharply club-shaped swollen in middle part. Protibiae externally straight, internally distinctly S-shaped sinuate, with comb of thin light little thorns. Male metatibiae inside at apex with hardly distinct tooth. Male tarsi strongly widened.



Figs. 71–76. Ventrites, male. **71**: *Eurosphalmus dieckmanni* (Koštál, 1988) comb.n. **72**: *E. breiti* (Formánek, 1909) comb.n. **73**: *E. hilfi* sp.n. **74**: *E. behnei* sp.n. **75**: *E. zerchei* sp.n. **76**: *E. attilai* sp.n.
Figs. 77–97. 77–83: Fragments of elytral pubescence, laterally. **84–91**: Fragments of pubescence of elytral disc, dorsally. **92–97**: Fragments of pubescence of elytral sides and apical slope, dorsally. **77**, **86**, **92**: *Eurosphalmus behnei* sp.n. **78**, **90**, **96**: *E. breiti* (Formánek, 1909) comb.n. **79**, **87**, **93**: *E. zerchei* sp.n. **80**, **89**, **95**: *E. attilai* sp.n. **81**, **88**, **94**: *E. hilfi* sp.n. **83**, **91**, **97**: *E. dieckmanni* (Koštál, 1988) comb.n. **82**, **84**: *Turanomias yuliae* Yunakov et Nadein gen. et sp.n. **85**: *Solarhinomias caucasicus* (Stierlin, 1877) comb.n.



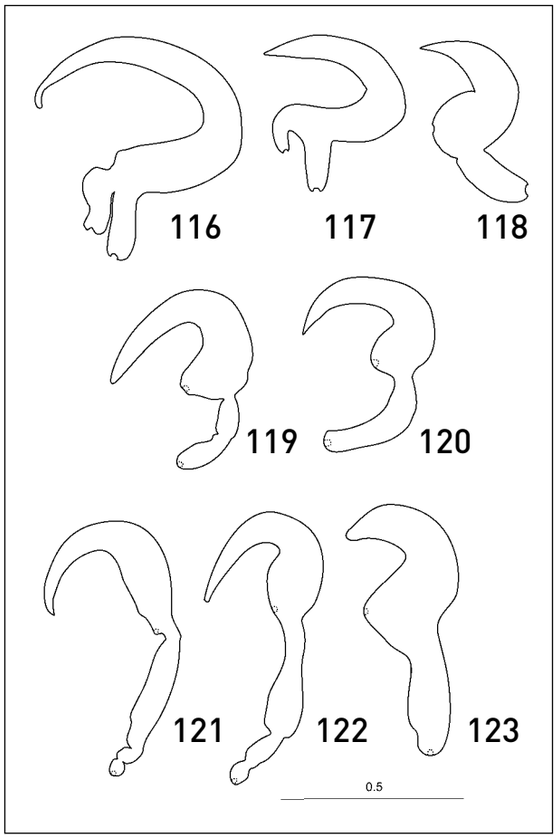
Figs. 98–115. 98, 101, 104, 107, 110, 113: Aedeagus, dorsally. **100, 103, 106, 109, 112, 115**: Aedeagus, laterally. **99, 102, 105, 108, 110, 114**: Apex of aedeagus, dorsally. **98–100**: *Eurosphalmus attilai* sp.n., holotype. **101–103**: *E. breiti* (Formánek, 1909) comb.n., paralectotype. **104–106**: *Eurosphalmus zerchei* sp.n., 'Aprilzi', **107–109**: *E. hilfi* sp.n., holotype. **110–112**: *Eurosphalmus dieckmanni* (Koštál, 1988) comb.n. **113–115**: *E. behnei* sp.n., holotype.

Abdomen. Male anal ventrite without impression evenly rounded at apex, apical margin evenly pubescent with light very thin hairs, not in bunch.

Genitalia ♂. Median lobe of aedeagus weakly sclerotized, sharply narrowed to apex, sides of median lobe parallel, its tip elongated. Apophyses 1/3 as long as median lobe. Ligulae weakly sclerotized, conical and contiguous. In the single male specimen, which we had on examination, endophallus and tegmen were found to be destroyed. Therefore these structures are not described here.

Genitalia ♀. Spermatheca with weakly developed collum, strongly elongated spindle-shaped ramus, without constriction.

Differential diagnosis. The new species is most close to *E. zerchei* sp.n., but differs from the latter in longer



Figs. 116–123. Spermatheca. **116**: *Solarhinomias caucasicus* (Stierlin, 1877) comb.n. **117**: *Turanomias yuliae* Yunakov et Nadein gen. et sp.n. **118**: *Rhinomias forticornis* (Boheman, 1843). **119**: *Eurosphalmus breiti* (Formánek, 1909) comb.n. **120**: *E. attilai* sp.n. **121**: *E. hilfi* sp.n. **122**: *E. zerchei* sp.n. **123**: *E. dieckmanni* (Koštál, 1988) comb.n.

and thin antennae (scape in basal half thin, sharply widened to apex, while antennal scape of *E. zerchei* sp.n. widened before middle); flattened eyes and wider frons; and pronotum evenly convex at sides. Besides it differs in more sinuate male metatibiae and the scaling of body (compared to *E. zerchei* sp.n., setae at elytra of *E. attilai* sp.n. distinctly wider and weakly inclined, close-fitting scales on interstriae denser.

E. attilai sp.n. is closely related to *E. breiti* and differs from the latter by next characters: rostrum upper side sharply narrowed and not widened forward from level of antennal insertion, 2nd segment of funicle significantly longer than 3rd, antennal scape sharply swollen to apex and stronger curved, setae on interstriae more erected. Protibiae in male internally distinctly S-shaped sinuate. Metatibiae in male weakly mucronate.

Derivatio nominis. The species named in honour of the collector Attila Podlussány.

Material. Holotype ♂ 'Romania | Mehedinti (m.) | Domogled', 'Ciresu | 26.v.1994 | leg. Podlussány', 'Brachysomus | sp.n. | det. A. Podlussány' (MTMB). – Paratype 1♀ (ZIN), with the same labels as holotype.

Eurosphalmus (Eurosphalmus) zerchei sp.n.

(Figs. 36, 45, 46, 54, 60, 66, 75, 79, 87, 93, 104–106, 122)

Description. Measurements. Holotype body length 2.40 mm, width 1.25 mm. Male body length 2.25–2.70 mm, width 1.20–1.45 mm, female length 2.15–3.10 mm, width 1.20-1.75 mm.

Head. Rostrum short, almost parallel-sided, almost as long as wide, in males more elongated and narrower at base than in females. Pterygia weakly projecting from lateral side of contour of rostrum. Rostral dorsum parallel-sided, in male weakly concave laterally (thus upper side seems narrower than in female). Frons flat. Eyes moderately strongly convex, large, their longitudinal diameter distinctly longer than temple, upper margin of eye situated significantly lower than level of frons.

Antennae. Antennal scape distinctly arcuately curved and sharply widened apically in its apical third. 2nd segment of funicle almost twice as long as 3rd, 3–7th segments transverse. Club egg-shaped.

Pronotum. Weakly transverse, strongly convex at disk and sides, distinctly constricted at apex, more or less at constricted base, widest at middle, with dense large rather shallow punctures with narrow and convex intervals. Female with hardly distinct impression at sides of pronotal disk.

Elytra. Oval, weakly convex at disk. Punctures in scrobes deep, distinctly separated. Interstriae shining, weakly convex. Pubescence double: elytral intervals with semi-erected weakly widened dull light setae in one or two rows in males and two rows in females, as well as with very small piliform and deeply divided (on sides of elytra) scales. Setae 1/2–2/3 as long as width of elytral intervals.

Legs. Femora sharply club-shaped swollen in middle part. Protibiae externally straight, internally weakly S-shaped sinuate, with comb of thin light little thorns. Male metatibiae internally at apex with strong mucro, internal margin S-shaped sinuate. Male tarsi strongly widened.

Abdomen. Male anal ventrite without impression, evenly rounded at apex, apical margin evenly pubescent by light very thin hairs, not in bunch.

Genitalia ♂. Median lobe of aedeagus weakly sclerotized, sharply necked-down to apex, median lobe narrow, constrained at sides, 1/3 as short as length of apophyses, apical margin strongly elongated. Ligulae weakly sclerotized, conical, at external margin weakly sharpened and cross. Manubrium of tegmen thick, sharply enlarged to apex, curved at end. Endophallus with one large sclerite and areas of teeth, basal sclerite with needle-shaped process.

Genitalia ♀. Spermatheca with almost straight cornu, strongly developed ramus and so reduced collum that its structure may be seen by ductus receptaculi opening only. Ramus unicameral or multicameral.

Differential diagnosis. The new species is close to *E. breiti* and *E. attilai* sp.n., but differs from them in the parallel-sided rostral dorsum and weakly sinuate internally metatibiae of male. From *E. breiti* it also

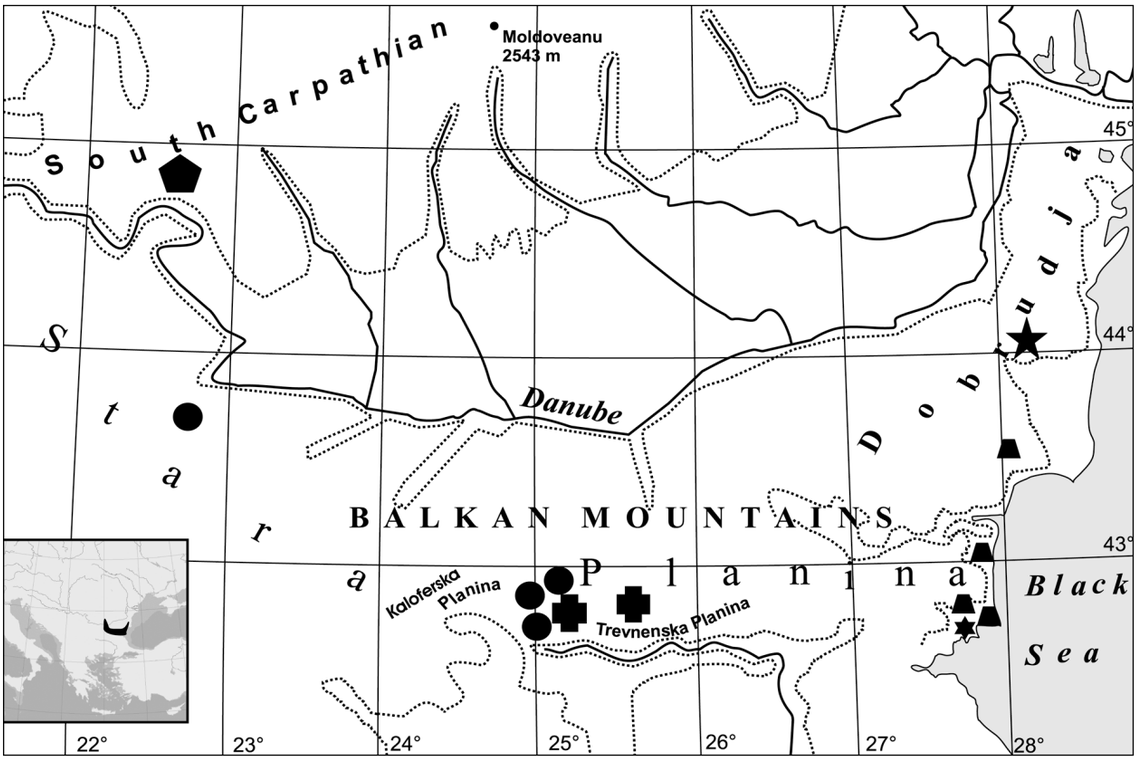


Fig. 124. Distribution of *Eurosphalmus* species.
Symbols: ⬟ *Eurosphalmus* (*Eurosphalmus*) *attilai* sp.n.; ● *E.* (*Eurosphalmus*) *zerchei* sp.n.; ✚ *E.* (*Eurosphalmus*) *hilfi* sp.n.; ★ *E.* (*Eurosphalmus*) *breiti* Form. ▲ *E.* (*Eurosphalmus*) *dieckmanni* Košťál; ✸ *E.* (*Eurosphalmus*) *behnei* sp.n.; ┈┈ Borders of mountains ranges

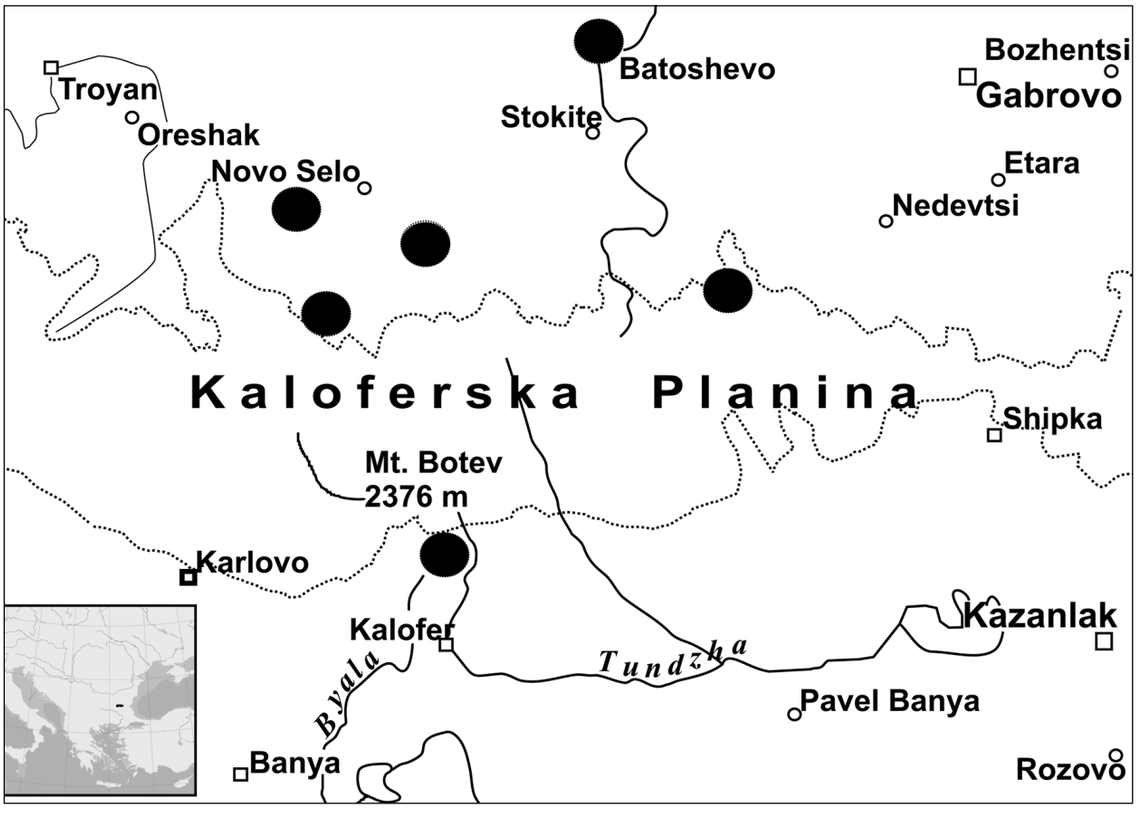


Fig. 125. Distribution of *Eurosphalmus zerchei* sp.n.

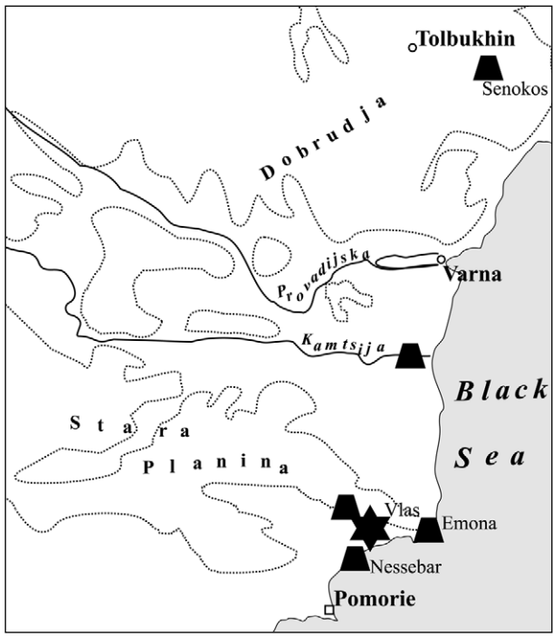


Fig. 126. Distribution of *Eurosphalmus dieckmanni* (Koštál, 1988) comb.n. and *E. behnei* sp.n. Symbols as in Fig. 124.

differs in stronger bristled setae at interstriae and, distinctly developed mucro at internal apical angle of metatibiae. From *E. attilai* sp.n. it differs in shorter and thicker antennae (antennal scape sharply enlarged to apex starting from second 1/4). Frons wider, pterygia stronger developed, eyes flattened.

Derivatio nominis. The species named in honour of Dr. L. Zerche.

Remark. One specimen from adjacent of Batoshevky Monastery was identified by us as *E. hilfi* sp.n., since it is identical with specimens from Byala River valley. Thus, we suspect that during mounting the respective labels were confused.

Material. Holotype ♂, Bulgaria 'Bulg. | Stara Pl. | 8 km N Kalofer | 800 m 6.vi.1987 | leg. Zerche & Behne', 'Amicromias | breiti Form. | Behne det. 1987'(DEI). – Paratypes 4♂, 2♀, with the same labels as holotype; 6♂, 2♀, idem, but 8.vi.1987; 5♂, 6♀, idem, but 22.vi.1989; 1♀, idem, but 24.vi.1989; 9♂, 8♀, 'BG: <Bulgaria>, Stara Planina, Aprilzi, | N Manastery, 480 m, | *Carpinus-Ulmus*-Wald, | 42°50'38"N 24°55'19"E, | 26.v.2000 leg. Behne'; 3♂, 7♀, 'BG: <Bulgaria> Stara Planina, N-Seite, | S Ostrez bei Aprilzi, 800 m. | 26.vi.1997, 42°47'44"N | 24°59'26"E, Waldgesiebe | leg. Zerche & Behne'; 8♀, 'BG: <Bulgaria> Stara Planina, N-Seite, | O Aprilzi, Kloster Batoshevsky | Monastir, 600 m', '28.vi.1997, 42°52'40"N | 25°02'16"E, Laubmischwald, | leg. Zerche & Behne'; 1♀, 'BG: <Bulgaria> Stara Planina, N-Seite, | S Kv. Vidima bei Aprilzi | 1045 m, 26.vi.1997, | 42°44'55"N 24°54'18"E | leg. Zerche & Behne'; 1♀, Serbia, 'Serbia | coll. Kraatz', 'rumelicus | det. Formánek', 'Pseudoptochus | rumelicus Apfb' <handwritten>; 1♂, 'Serb.<ia> Bukuva Tadićz <leg.> 23.vi.54' (Bc). 11 paratypes in collection of ZIN.

Eurosphalmus (Eurosphalmus) hilfi sp.n.

(Figs. 37, 49, 50, 55, 61, 67, 73, 81, 88, 94, 107–109, 121)

Description and differential diagnosis.

Measurements. Holotype body length 2.50, width 1.35 mm. Male body length 2.35–2.80 mm, width 1.25–1.50 mm, female length 2.40–3.25 mm, width 1.35–1.75 mm. This species is closely related to *E. zerchei* sp.n. and *E. breiti* sp.n. It constitutes with them a morphological row, taking in it an intermediate position. For most of the external characters *E. hilfi* sp.n. is similar with its closest relatives.

From *E. zerchei* sp.n. it differs in the larger body size, thinner antennal scape, strongly swollen pronotum at disk and sides, longer anal ventrite, brown coloration, narrower setae in one or sometimes in two rows (*E. zerchei* sp.n. with two or three rows). From *E. breiti* the new species differs in the relatively elongated 2nd segment of funicle 2nd article clearly longer than width, and weaker developed pterygia.

From *E. zerchei* sp.n. and *E. breiti* it differs in the male genitalia: median lobe of aedeagus weakly sclerotized, sharply narrowed to apex, sides of median lobe parallel, with weakly elongated tip shorter. Apophyses 1/3 as long as median lobe. Ligulae weakly sclerotized, conical, rounded at apex and contiguous. Manubrium of tegmen thick, sharply enlarged to apex, weakly at apex. Endophallus with one large sclerite.

From the same species it also differs in the female genitalia: spermatheca with curved cornu, with strongly developed ramus and reduced collum looking like small prominence. Ramus multicameral.

Derivatio nominis. The species named in honour of the collector M. Hilf.

Material. Holotype ♂. Bulgaria, 'BG: Stara Planina, N-Seite, | Bjala Reka-Tal, S Stokite, | 500 m, 28.vi.1997 | 42°49'24"N 25°03'23"E | leg. Zerche & Behne'. – Paratypes 10♂, 9♀, with the same label as holotype (DEI); 14♂, 6♀, 'BULGARIA 1912 | Trevna <Tryavna> V-VI | leg. M. Hilf | coll. O. Leonhard' (DEI); 3♂, 1♀, 'Trevna <Tryavna> | Bulgaria', 'breiti | det. Formánek' (NMP); 5 specimens. 'BULGARIA 1912 | Maglige VII-VIII | leg. M. Hilf | coll. O. Leonhard' (DEI, NMP). 11 paratypes in collection of ZIN.

Subgenus *Rhinomiamima* subgen.n.

Type species *Rhinomias dieckmanni* Koštál, 1988

Description and differential diagnosis. From *Eurosphalmus* s.str. the new subgenus differs distinctly in the structure of the male genitalia and female terminalia, as well as in some external morphological features. Median lobe of aedeagus strongly sclerotized, evenly narrowed apically and sharpened at apex, without any tracks of lobes, ligulae very small, very weakly sclerotized. Apophyses about twice as long as median lobe. Manubrium of tegmen thin or thick but always equally wide through its whole extent, uncurved. Endophallus with two very large sclerites and areas of small teeth in basal half. Spermatheca with strongly enlarged, straight, spindle-

shaped ramus, collum looking like prominence. Male anal ventrite convex, straight at apex, hairs in bunch. Eyes situated very close to frons surface (while species from the nominative subgenus have eyes significantly lower than surface of frons). Rostral dorsum significantly narrower than frons and stronger convex, distinctly separated from frons by transverse impression. Pubescence of elytral intervals without divided scales.

Externally the species of the new subgenus resemble representatives of the genus *Rhinomias*.

Derivatio nominis. The subgenus name is derived from the generic names '*Rhinomias*' and '*Omiamima*'.

Eurosphalmus (Rhinomiamima) behnei sp.n.

(Figs. 38, 51, 52, 58, 63, 69, 74, 77, 86, 92, 113–115)

The study of the type series of *Rhinomias dieckmanni* Koštál, 1988 led to the discovery of one specimen among the paratypes that in fact belongs to a new species, described below.

Description. Measurements. Holotype body length 2.1 mm, width 1.1 mm.

Head. Head capsule sharply narrowed anteriad. Rostrum slightly longer than wide. Pterygia hardly projecting from side contour of rostrum. Rostral dorsum parallel-sided, 1.5 times narrower than frons, moderately convex, separated from frons by strong transverse depression. Frons flat. Eyes moderately strongly convex, longitudinal diameter of eye almost as long as temple length and 0.44 as width of frons.

Antennae. Antennal scape moderately strongly arcuately curved, in apical third sharply widened. 3–7th segment of funicle transverse. Club egg-shaped.

Pronotum. Weakly transverse (ratio of width to length = 1.1), strongly convex at disk and sides, distinctly constricted at base and apex, with dense large rather shallow punctures with narrow and convex intervals.

Elytra. Oval, weakly convex at disk. Punctures in scrobes deep, distinctly separated. Interstriae shining, weakly convex. Pubescence double, interstriae with semierected, weakly widened dull light setae, making one row, as well as with very small piliform and deeply divided (at sides of elytra) scales. Setae 1/2–2/3 as long as width of elytral intervals.

Legs. Femora sharply club-shaped swollen in middle part. Protibiae externally straight, internally weakly S-shaped sinuate, with comb of thin light small thorns. Male metatibiae internally at apex with weak tooth. Male tarsi strongly widened.

Abdomen. Apical margin of 1st abdominal ventrite straight, 5th ventrite weakly convex, short: ratio of length to width equal 1.8.

Genitalia. Median lobe of aedeagus strongly sclerotized, evenly narrowed to apex, and sharpened at end, without any tracks of lobes. Apophyses twice as long as median lobe. Manubrium of tegmen thin, with equal width through its whole extension, without clinch. Endophallus with two very large sclerites and areas of small teeth in basal half.

Differential diagnosis. The new species is close to *E. dieckmanni*, but differs from the latter in more slender antennae; narrow rostral dorsum; narrower pronotum; straight apical margin of 1st ventrite; narrower and weakly convex 5th ventrite; median lobe of aedeagus evenly narrowed apically, with much sharpened apex.

Derivatio nominis. The species named in honour of Dr. L. Behne.

Material. Holotype ♂, 'Bulg.[aria] or. Eminska | Planina : Vlas | 12.v.1987 | leg. Behne / Heinig', 'Paratypus | Rhinomias | dieckmanni | M. Koštál det. 1987' (ZIN).

Eurosphalmus (Rhinomiamima) dieckmanni Koštál, 1988 comb.n.

(Figs. 39, 40, 47, 48, 57, 64, 70, 71, 83, 91, 97, 110–112, 123)

Rhinomias dieckmanni Koštál, 1988: 161

The species was described in the genus *Rhinomias*, being externally similar to its representatives. However, detailed comparative morphological investigations indicate that this similarity is only superficial, and is caused by similar adaptations to the soil habitat. The structure of male and female genitalia as well as external morphological features show that *Eurosphalmus dieckmanni* in fact belongs to a different group.

Description. Measurements. Male body length 2.10–2.50 mm, width 1.10–1.35 mm; female length 2.50–3.25 mm, width 1.25–1.50 mm.

Head. Head capsule sharply narrowed anteriad. Rostrum moderately longer than wide. Pterygia hardly projecting from side contour of rostrum. Rostral dorsum parallel-sided, 1.2 times as narrow as frons, moderately convex, separated from frons by weak transverse impression. Frons flat. Eyes moderately strongly convex, large, longitudinal diameter of eye almost as long as temple and half as long as width of frons.

Antennae. Antennal scape moderately arcuately curved, evenly widened to apex. 3–7th segment of funicle transverse. Club egg-shaped.

Pronotum. Transverse (ratio of width to length = 1.16–1.40), strongly convex at disk and sides, distinctly constricted at base and apex, with dense large rather shallow punctures with narrow and convex intervals.

Elytra. Oval, weakly convex at disk. Punctures in scrobes deep, distinctly separated. Interstriae shining, weakly convex. Pubescence double, interstriae with semi-erected, weakly widened dull light setae, as well as with very small piliform scales. Setae 1/2–2/3 times as long as width of elytral intervals.

Legs. Femora sharply club-shaped swollen in middle part. Protibiae externally straight, internally weakly mucronate, with comb of thin light small thorns. Male metatibiae internally at apex with weak tooth. Male tarsi strongly widened.

Abdomen. Apical margin of 1st abdominal ventrite concave, 5th ventrite strongly convex, long: ratio of length to width 2.1.

Genitalia ♂. Median lobe of aedeagus strongly sclerotized, apically narrowed and weakly sharpened at apex, without any tracks of lobes, weakly sharpened elongated tip plate-shaped. Apophyses almost twice as long as median lobe. Manubrium of tegmen thick, with equal width through its whole extent, without clinch, ligulae rounded at apex. Endophallus with two very large sclerites and areas of small teeth in basal half.

Genitalia ♀. Spermatheca with straight, strongly enlarged spindle-shaped ramus. Collum looking like prominence.

Differential diagnosis. The species is close to *E. behnei* sp.n., but differs from the latter in thicker antennae, wider rostral dorsum and wider pronotum, concave apical margin of 1st ventrite, more convex and wider 5th ventrite, shape of median lobe and armature of endophallus. Externally it is similar to *E. breiti* comb.n., but well differs in thicker antennae, wider rostral dorsum without scrobe, weakly convex pterygia, lack of divided scales on elytra, male anal ventrite straight at apex, larger aedeagus, sharply narrowed apex of median lobe and it elongated apex tip plate-shaped, weakly sharpened.

Material. Type material. Paratypes, 15♂, 4♀, Bulgaria, 'Bulg. or. Eminska | Planina : Emona | 8.v.1987 | leg. Behne / Heinig'; 94♂, 21♀, '9.v.1987 | leg. Behne / Heinig'; 88♂, 25♀, '10.v.1987 | leg. Behne / Heinig'; 11♂, '14.v.1987 | leg. Behne / Heinig'; 1♂, 'Bulg. or. Eminska | Planina : Vlas | 7.v.1987 | leg. Behne / Heinig'; 21♂, 1♀, '11.v.1987 | leg. Behne / Heinig'; 20♂, 3♀. '12.v.1987 | leg. Behne / Heinig'; 1♂, '15.v.1987 | leg. Behne / Heinig'; 1♂, 'Bulgaria or. | Eminska pl. | M. Mikat lgt.', 'Emona env. | Vlas | 5.vi.1984' (DEI). 1 paratype in collection ZIN.
Additional material. 2♀, Bulgaria, 'Bulg. or. S Warna | Kamtschija | 27, 28.vi.1989 leg. Zerche & Behne' (DEI); 9♂, 2♀, Bulgaria, 'NO Bulg. Senokos | 20 km O Tolbuchin | 19.vi–8.vii.1987 | leg. Penev' (DEI, 7 specimens in collection of ZIN); 1♂, 9♀, '8.vii–21.viii.1987 | leg. Penev'; 2♂, 3♀ '21. viii–28.x.1987 | leg. Penev' (DEI); 1♀, 'Bulgaria or. | Nesebar <Nessebar> – S.[lanchev] brjag | J. Strejček lgt. | 9.vi.1984' (ZIN).

6. Key to subgenera and species of the genus *Eurosphalmus*

1 Rostral dorsum not separated from frons by strong transverse impression. Eyes situated significantly lower than surface of frons. Elytral intervals with divided small scales. Median lobe of aedeagus weakly sclerotized, before apex with lobes or at least their tracks. Apophyses about three times as long as median lobe. Manubrium of tegmen clearly swollen and curved at apex. Endophallus with one spiculiform sclerite at apex and with areas of small thorns at almost all surface.
Subgenus ***Eurosphalmus*** **s.str.** 2
1' Rostral dorsum separated from frons by more or less strong transverse impression. Eyes situated very close to surface of frons. Elytral intervals without divided small scales. Median lobe of aedeagus strongly sclerotized and evenly narrowed to apex and sharpened at end, without any tracks of lobes. Apophyses about two times as long as median lobe. Manubrium of tegmen thin or thick but always equally wide at all extent, not curved at apex. Endophallus with very large sclerites and areas of small teeth in basal half.
Subgenus ***Rhinomiamima*** subgen.n. 5
2 (1) Median lobe of aedeagus with weak lobes before apex, it sides at apex evenly rounded, apex evenly rounded. 3
2' (1) Median lobe of aedeagus with distinct lobes before apex, apex sharply elongated. 4
3 (2) Antennae thin and long (scape at base half thin, then sharply widened to apex), eyes flattened, pronotum evenly convex at sides. Male metatibia with strong cut. Body scale cover: setae on elytra distinctly wider and stronger inclined, widened to apex, rounded at end, close-fitting scales on elytral intervals denser.
..... ***E. attilai*** sp.n.
3' (2) Antennae wider and shorter (scape widened from second 1/3), eyes strongly convex, pronotum strongly convex at sides, widest behind its middle, male metatibiae with weak cut. Body scale cover: setae on elytra short, weakly inclined, parallel-sided or weakly narrowed to apex, at end sharpened, close-fitting scales on elytral intervals rarefied. ..... ***E. zerchei*** sp.n.
4 (2) 2nd segment of funicle clearly elongate, ptrerigia weaker developed. Median lobe of aedeagus before apex with less developed lobes, spermatheca with strongly elongated worm-shapes ramus. ..... ***E. hilfi*** sp.n.
4' (2) 2nd segment of funicle short, almost as long as wide, pterygia strongly developed. Median lobe of aedeagus before apex with strongly developed lobes, spermatheca with shortened C- shaped ramus.
..... ***E. breiti*** (Form.)
5 (1) Antennae thick, scape distinctly curved. Rostral dorsum wider, separated from frons by weakly developed transverse impression. Lower surface of rostrum and gular area of head make obtuse angle. Pronotum strongly transverse (ratio of width to length = 1.16–1.40), front margin of 1st ventrite concave, male anal ventrite more convex and wider. Aedeagus larger with weakly sharpened elongated plate-shaped tip of median lobe.
..... ***E. dieckmanni*** (Koštál)
5' (1) Antennae thinner, scape almost straight. Rostral dorsum narrow, separated from frons by strong transverse lowering. Lower surface of rostrum and gular area of head make almost right angle. Pronotum weakly transverse (ratio of width to length = 1.1), front margin of 1st ventrite straight, male anal ventrite weakly convex and wide. Aedeagus smaller, with strongly sharpened elongated tip of median lobe ..... ***E. behnei*** sp.n.

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