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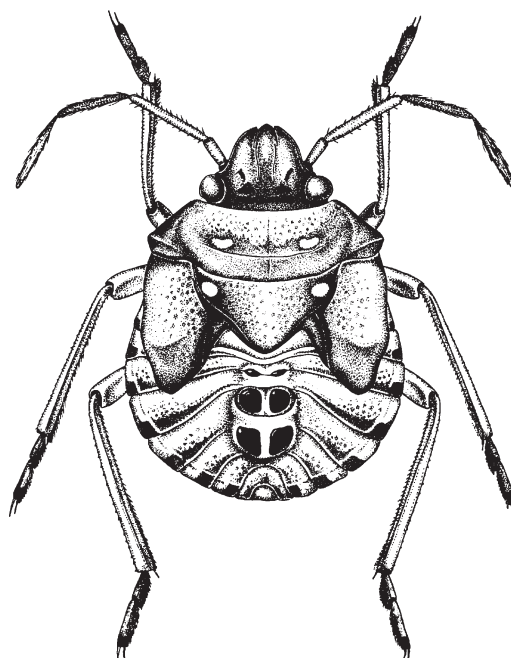


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## About composition of the genus *Myatis* Bates, 1879 (Coleoptera: Tenebrionidae: Platyscelidini)

## О составе рода *Myatis* Bates, 1879 (Coleoptera: Tenebrionidae: Platyscelidini)

L.V. Egorov  
Л.В. Егоров

Chuvash State Pedagogical University, K. Marx str., 38, Cheboksary 428000 Russia. E-mail: platyscelis@rambler.ru  
Чувашский государственный педагогический университет, ул. К. Маркса, 38, Чебоксары 428000 Россия

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**Ключевые слова:** Tenebrionidae, Platyscelidini, *Myatis*, состав рода, морфология, синонимия.

**Abstract.** A history of investigation of the genus *Myatis* Bates, 1879 and its composition is discussed on the world basis. *Bioramix* (*Leipopleura*) *nagquana* (Meng et Ren, 2005), **comb. n.** is transferred from the genus *Myatis*. A new synonym is established: *Bioramix* (*Leipopleura*) *micans* (Reitter, 1889) = *Myatis brevipilosum* Meng et Ren, 2005, **syn. n.** Lectotypes of *Myatis quadraticollis* Bates, 1879, *Myatis variabilis* Bates, 1879, *Leipopleura tenuissima* Reitter, 1896 are designated. The generic position of *Myatis* in the tribe Platyscelidini is discussed. Modern taxonomic diagnosis of the genus and characteristics of *Myatis humeralis* are discussed.

**Резюме.** Приведена история изучения рода *Myatis* Bates, 1879 и обсужден его состав в объеме мировой фауны. Один вид, ранее относимый к роду, перенесен в род *Bioramix* Bates, 1879: *Bioramix* (*Leipopleura*) *nagquana* (Meng et Ren, 2005), **comb. n.** Установлена синонимия названий: *Bioramix* (*Leipopleura*) *micans* (Reitter, 1889) = *Myatis brevipilosum* Meng et Ren, 2005, **syn. n.** Обозначены лектотипы *Myatis quadraticollis* Bates, 1879, *Myatis variabilis* Bates, 1879, *Leipopleura tenuissima* Reitter, 1896. Обсуждено положение рода в системе трибы. Приведены современный диагноз рода, подробная характеристика вида *M. humeralis*.

### Introduction

The genus *Myatis* Bates, 1879 belongs to the tribe Platyscelidini [Egorov, 1990] of the family Tenebrionidae. Its representatives are distributed in the Palearctic region in the high mountain systems of Central Asia (Tadzhikistan, Northern India, Western China).

Bates [1879] included three species in the genus *Myatis*: *M. humeralis* Bates, 1879, *M. variabilis* Bates, 1879 and *M. quadraticollis* Bates, 1879. The type species of this genus was later designated by Gebien [1938]. In 1896 the species *Leipopleura tenuissima* Reitter, 1896 was described. Later this name was placed in synonymy with *M. humeralis* Bates, 1879 [Kaszab, 1940]. The key to these three described species (made by A. Schuster) were provided in Reinig's works on the fauna of Pamir-Alai [Reinig, 1931, 1932]. New data about distribution of *M. quadraticollis* became available after studying of the material of Italian expedition in Karakorum [Gridelli, 1934]. Kaszab [1940] in his review of the world fauna of Platyscelidini included four species in *Myatis* (with the new species *M. schaeferi*).

Later Bogachev [1952] described the new species *Myatis tadzhika* Bogachev, 1952 based on the material from Darvaz ridge. Kaszab [1960] transferred this species to the genus *Trichoplatynoscelis* Kaszab, 1940. I consider this name as a junior synonym of *Trichomyatis* Schuster, 1931 [Egorov, 2004a, b]. And therefore, that species was considered in the genus *Trichomyatis* [Egorov, 2006]. In the reviews of the system of the tribe Platyscelidini [Egorov, 2004a, b], two species, *Myatis humeralis* and *M. schaeferi* are considered in the genus *Myatis*. Also, in these papers *M. variabilis* and *M. quadraticollis* are placed in synonymy to *M. humeralis*. Review of the genus *Myatis* of China and the adjacent countries is recently published [Meng, Ren, 2005]. In this work seven species are considered in the genus, two of which, *M. brevipilosum* Meng, et Ren, 2005 and *M. nagquana* Meng, et Ren, 2005, are described as new. This paper contains the figures with the details of structure for the majority of species (except *M. tadzhika*) and photographs of six species, these illustrations allowing to clearly interpret the author's concepts of the described taxa.

### Materials and methods

The study is based on the examination of material from the following institutions:

ZIN – Zoological Institute, Russian Academy of Sciences, St.-Petersburg, Russia;

ZMUM – Zoological museum of Moscow State University (collection of A.V. Bogachev), Moscow, Russia;

HNHM – Hungarian Natural History Museum (Természettudományi Múzeum), Budapest, Hungary;

ZSM – Zoologische Staatssammlung, München, Germany.

Also, private collections of I.K. Lopatin and V.A. Mikhaylov were also used. In total, more than 1400 exemplars were studied, including type specimens of the four species described in the genus.

In the morphological descriptions the following measurements of the body parts were taken (by means of binocular-micrometer MBS-10): 1) length of the antennomeres without joint parts and their maximum width; 2) length of pronotum along its middle line from anterior margin to base; 3) maximum width of pronotum; 4) length of elytra along suture from base to apex; 5) maximum width of elytra; 6) maximum width of tibia on

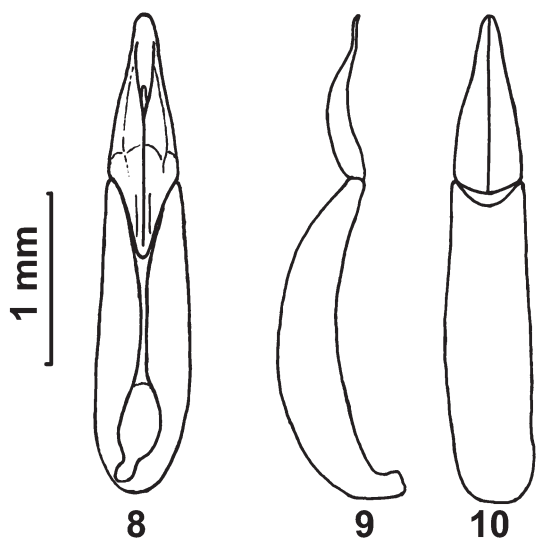


Fig. 8–10. *Myatis humeralis*, ♂, details structures.  
8 – aedeagus, ventral view; 9 – the same, lateral view; 10 – the same, dorsal view.

Рис. 8–10. *Myatis humeralis*, ♂, детали строения.  
8 – эдеагус, ventральная сторона; 9 – то же, вид сбоку; 10 – то же, дорсальная сторона.

the apex; 7) maximum width of tarsi of male; 8) maximum width and length of parameres (taken in dorsal view along middle rove) 9) length of phallobase (taken in lateral view) and general length of the aedeagus from apex of parameres to base of phallobase; 10) general length of the body from base of mandibles to apex of elytra (taken in lateral view). Density of punctuation characterized as follows:

1) dense punctuation – distance between punctures less their diameter; 2) moderately dense – distance between punctures less or equal their diameter; 3) sparse punctuation – distance between punctures exceeding their diameter.

## Discussion

As was briefly shown [Egorov, 2004], various species, described by Bates [1879] are in fact variants of the one variable species. Thus, the respective synonymy was then proposed (for details see below). I followed Kaszab [1960] in considering *M. tadhika* [Bogachev, 1952] in the genus *Trichomyatis* [Egorov, 2006]. As follows from the descriptions, the new species of *Myatis* described by Chinese authors are rather sharply different from *M. humeralis* in the structure of the anterior tarsi and tibia of males, in shape of the aedeagus, in the setation (?) of the middle tibia, and in the completely rounded prosternal process. Analysis of the description and figures of *M. brevipilosum* and *M. nasquana* reveals that these taxa belong to the subgenus *Leipopleura* Seidlitz, 1893 of the genus *Bioramix* Bates, 1879. Moreover, *M. brevipilosum* in its morphological characteristics and wide distribution is identical to *Bioramix (Leipopleura) micans* (Reitter, 1889), the latter species in characterized in Kaszab [1940] and Egorov [1990]. Therefore, the following new synonymy is established: *Bioramix (Leipopleura) micans* (Reitter, 1889) = *Myatis brevipilosum* Meng et Ren, 2005, **syn.n.** Accordingly, the name of other species should be *Bioramix (Leipopleura) nagquana* (Meng et Ren, 2005), **comb.n.**

A status of *M. schaeferi* described from Eastern Tibet requires clarification. The type specimen (female) of this

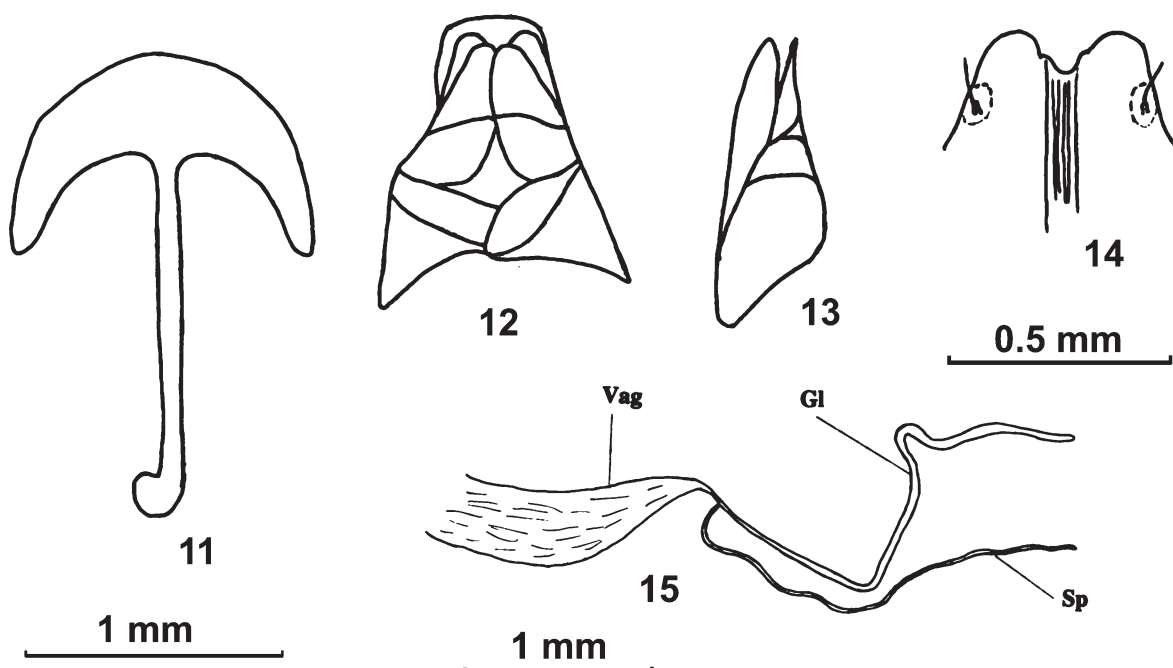


Fig. 11–15. *Myatis humeralis*, ♀, details structures.  
11 – VIII sternite of abdomen and ventral spicula; 12 – ovipositor, ventral view; 13 – the same, lateral view; 14 – apex of ovipositor, dorsal view; 15 – genital tubes (GI – gland, Sp – spermatheca, Vag – vagina).

Рис. 11–15. *Myatis humeralis*, ♀, детали строения.  
11 – VIII стернит брюшка и ventральная спикула; 12 – яйцеклад, ventральная сторона; 13 – то же, вид сбоку; 14 – вершина яйцеклада дорсально; 15 – половые протоки (GI – железа сперматеки, Sp – сперматека, Vag – вагина).

species, which I examined is identical to females of some *Bioramix*. I was unable to examine males of this species so far. Position of *M. schaeferi* in the genus *Myatis* requires verification too.

Thus, at this time only one species, *M. humeralis*, is regarded in the genus *Myatis*. Such volume of this genus corresponds to its initial concept [Bates, 1879].

#### *Myatis* Bates, 1879

*Myatis* Bates, 1879: 480; 1890: 73; Schuster in Reinig, 1931: 896; Gebien, 1938: 70; Kaszab, 1940: 899; Eropov, 2004a: 603; Egorov, 2004b: 659; Meng, Ren, 2005: 104 (part.).

Type species: *Myatis humeralis* Bates, 1879, by subsequent designation [Gebien, 1938: 70].

**Description.** Male. Body oval-elongate. Dorsal surface dark brown, elytra without dense long hairs. Anterior margin of clypeus straight. Pronotum weakly transverse, not depressed on margins, its posterior edge not margined. Punctuation near lateral margin weakly depressed, with granulated sculpture. Elytra sparsely punctuated, covered with sparse recumbent very small setae. Lateral keel of elytra not reduced. Humeri distinct, sometimes very sharp. Prosternal process projects backward beyond coxites of anterior legs. Ventral surface with recumbent hairs. Anterior femora without tubercle or dent on internal margin. 1st and 2nd abdominal sternites with longer, recumbent hairs. Anterior tibia weakly widened to apex, ventrally weakly transversally depressed before apex, it's external margin not blade shaped. Middle tibia with dense recumbent golden yellow hairs on external and ventral side. Hind tibia noticeably arcuate, with long erected hairs on internal side. Hind femora with sparse recumbent hairs on internal margin. Anterior tarsi weakly widened. Middle tarsi barely noticeably widened, it's segments 1-3 with dense yellow hair brush ventrally.

Female differs in the shorter antennae, not widened anterior and middle tarsi, not arcuate and less pubescent hind tibia, weakly pubescent abdomen.

Position of the genus *Myatis* in the system of the tribe Platyscelidini.

A preliminary analysis of the morphological structures and geographic distribution of the representatives of the tribe makes it possible to assume phylogenetic affinity of *Myatis* and *Trichomyatis* with some *Bioramix*. *Myatis* differs from the genus *Trichomyatis* in the structure of pronotum, propleura, form and pubescence of elytra, structure of anterior tarsi. *Myatis* differs from the subgenus *Leipopleura* of the genus *Bioramix* in the shape of external margin of anterior tibia which is not depressed ventrally, in the pattern of the pubescence of legs, and the structure of prosternal process. Probably, this taxon was diverged from ancestral forms comparatively recently and widely dispersed in the high-mountains of Pamir, Karakorum, North-Western Kunlun Shan and adjacent territories. It is likely that the results expected from the further studies of morphology will lead to the necessity of downgrading the status of the genus *Myatis* to the rank of subgenus in the genus *Bioramix*.

#### *Myatis humeralis* Bates, 1879 (Pic. 1-15)

- Myatis humeralis* Bates, 1879: 480;  
*Myatis quadraticollis* Bates, 1879: 481;  
*Myatis variabilis* Bates, 1879: 481;  
*Myatis quadraticollis* Bates, 1890: 73;  
*Myatis humeralis* Bates, 1890: 73, Taf. 2, fig. 18;  
*Myatis variabilis* Bates, 1890: 74;  
*Leipopleura tenuissima* Reitter, 1896: 174;  
*Myatis humeralis*: Schuster in Reinig, 1931: 896;  
*Myatis quadraticollis*: Schuster in Reinig, 1931: 896;  
*Myatis variabilis*: Schuster in Reinig, 1931: 896;  
*Myatis quadraticollis*: Gridelli, 1934: 65, Taf. 9, fig. 3;  
*Myatis humeralis*: Gebien, 1938: 70;  
*Myatis quadraticollis*: Gebien, 1938: 70;  
*Myatis variabilis*: Gebien, 1938: 70;  
*Myatis humeralis*: Kaszab, 1940: 904, fig. 149, 159 (= *tenuissima*);  
*Myatis quadraticollis*: Kaszab, 1940: 903, fig. 150, 158;  
*Myatis variabilis*: Kaszab, 1940: 901, fig. 151, 160;  
*Myatis humeralis*: Eropov, 2004: 603, 612 (= *quadraticollis*, = *variabilis*);  
*Myatis humeralis*: Egorov, 2004: 659 (= *quadraticollis*, = *variabilis*);  
*Myatis humeralis*: Meng, Ren, 2005: 105, Fig. 23-33, 59;  
*Myatis quadraticollis*: Meng, Ren, 2005: 105, Fig. 58;  
*Myatis variabilis*: Meng, Ren, 2005: 105, Fig. 12-22, 57.

Larva: Keleinikova, 1968: 217, fig. 4 (r, A) (*M. variabilis*).

Incorrect spelling – *M. quadriticollis* [Egorov, 2004: 659].

**Type material.** Syntypes of *M. humeralis* without labels [Bates, 1879], deposited in London (♂) and Munchen (♀) [Kaszab, 1940]. Lectotype of *M. quadraticollis* (♀) (designated here) with labels «Himalaya Leh Batel Stoliczka», «*Myatis quadraticollis* F. Bates type» (handwriting of Bates), «Sammlung Haag. Rutenberg» deposited in Zoologische Staatssammlung München. Male (paralectotype) with the same label deposited in London (Natural History Museum, London) [Kaszab, 1940]. Lectotype of *M. variabilis* (♂) (designated here) with labels «Himalaya Jangi Hiss. Stoliczka» and «*Myatis variabilis* type F. Bates» deposited in Zoologische Staatssammlung München. 1 paralectotype deposited in British Museum, London [Kaszab, 1940]. Lectotype of *L. tenuissima* (♀) (designated here) with labels «Taschkent Leder Reitter» and «*Leipopleura tenuissima* m. 1896» (handwriting of Bates) deposited in Hungarian Natural History Museum (Természettudományi Múzeum), Budapest.

**Material.** Tadzhikistan. Pamir (B. Grombchewsky), 52♂, 56♀ [ZIN]; Pamir, 31.07.1888, (B. Grombchewsky), 196♂, 196♀ [ZIN]; in the same place, 1.10.1888 (B. Grombchewsky), 44♂, 4♀ [ZIN]; in the same place, 26.09.1888 (B. Grombchewsky), 20♂, 23♀ [ZIN]; in the same place, 23.09.1888 (B. Grombchewsky), 60♂, 59♀ [ZIN]; in the same place, 31.03.1888 (B. Grombchewsky), 3♂, [ZMM]; Eastern Pamir, riv. Ak-Su (Oksu), Shaymak, 8.07.1960 (I.K. Lopatin), 3♂, 4♀ [ZIN]; in the same place, lake Rangkul, 29.07.1960 (I.K. Lopatin), 1♂, 1♀ [ZIN]; in the same place, 13.08.1960 (I.K. Lopatin), 2♂, 1♀ [ZIN]; in the same place («montes prope Rang-Kul»), 3900 m, mountainous desert, under stones, 1.08.1960 (A.V. Bogachev), 5♂, 5♀ [ZMM]; Chechekty, 4000 m, under stones, 25.07.1960 (I. Lindt), 2♂ 2♀ [ZIN]; in the same place, 3800-4000 m, 13.06.1965 (E.L. Gur'eva), 12♂, 13♂ [ZIN]; in the same place, ~ 4000 m, 13.07.1964, (G.S. Medvedev), 18♂, 19♀ [ZIN]; in the same place, 12.07.1964, (I.K. Lopatin), 5♂, 4♀ [ZIN]; in the same place, 2.08.1975, (V.A. Mikhaylov), 1♀ [ZIN]; Shakhdarinsky mountain-range, ~ 3100 m, 16.06.1965 (E.L. Gur'eva), 1♂ [ZIN] (label possibly inexact); Sarykolsky mountain-range, Shaymak, 3900 m, wormwood, under *Salsola* sp., 29.07.1965 (V.A. Zaslavsky), 5♂, 4♀ [ZIN]; in the same place, 3900 m, 9.07.1960 (A.V. Bogachev), 3♂, 3♀ [ZMM]; Env. Kyzyl-Rabat, 4100 m, 27.07.1960 (I. Lindt), 1♂ [ZIN]; «Pamir, Kizil Rabat», 3800 m, 14.07.1960 (A.V. Bogachev), 1♂ [ZIN]; in the same place, 4000 m, desert with *Ceratoides* sp. and Gramineae, under stones, 27.07.1960 (A.V. Bogachev), 2♂, 3♀ [ZMM]; in the same place, 16.05.1960 (A.V. Bogachev),



3♂, 3♀ [ZMM]; West slopes of Sarykolsky mountain-range near lake Kyzyl-Murun, 4000 m, 28.07.1960 (I. Lindt), 1♂, 1♀ [ZIN]; «Pamir, Yark dar» (green label), 1♂ [ZIN]. China. Kunlun Shan, mountain-range Tokhtakorun, Kokyar, 15.07.1890 (B. Grombchewsky), 4♂, 4♀ [ZIN]; in the same place, 12.08.1888, (B. Grombchewsky), 4♂, 4♀ [ZIN]; Kunlun Shan, Kanzhut, 13-20.08.1888 (B. Grombchewsky), 143♂, 144♀ [ZIN]; Kunlun Shan, «Kul», 15.08.1890 (B. Grombchewsky), 2♂, 2♀ [ZIN]; Kunlun Shan, «Raskem» (mountain-range Raskam), 30.09.1889, (B. Grombchewsky), 2♂, 2♀ [ZIN]; in the same place, 30.09.1889 (B. Grombchewsky), 1♂ [ZMM]; Kunlun Shan, Vakhdzhir, 6.08.1888 (B. Grombchewsky), 60♂, 62♀ [ZIN]; Kunlun Shan, «Lyub – durangat»(?), 12300', 17-18.08.1888 (B. Grombchewsky), 30♂, 33♀ [ZIN]; Kunlun Shan, «Arlalyn», 4.09.1890 (B. Grombchewsky), 2♂, 3♀ [ZIN]; Kunlun Shan, env. Hotan, Takhtakhan, 14.07.1890 (B. Grombchewsky), 7♂, 7♀ [ZIN]; Kunlun Shan, Ak-Tash-Rabat Aksu, 13100', 30.07.1888 (B. Grombchewsky), 20♂, 22♀ [ZIN]; Kashgariya, mountain-range Raskam, Murkhun, 13.10.1888, (B. Grombchewsky), 1♂ [ZIN]. Material without exact labels: «coll. A. Yakovlev», 2♂, 1♀ [ZIN]; «Turkestan» (green label), 2♂, 3♀ [ZIN].

**Description.** Body (ventrally) from dark brown to black, weakly shiny. Head slightly darker than pronotum and elytra. Ventral side, antennae, mouthparts (excluding mandibles) red-brown. Ventral surface of body more shining than dorsal surface.

Male. Head widest at eyes level. Ratio of head width at eyes level to distance between eyes 36/27. Labrum weakly transverse, with well developed tormae. Punctuation dense or moderately dense, uneven: transversal row of punctures on the middle and punctures on sides almost 2 times as large as other punctures. Surface of labrum pubescent with long recumbent hairs. Temples behind eyes rounded posteriorly, pubescent with recumbent hairs. External margin of genae weakly emarginated, glabrous. Greater part of genae densely punctuated, with recumbent hairs. Anterior margin of clypeus straight, with group of hairs directed anteriorly, reaching anterior margin of membrane between clypeus and labrum. Fronto-clypeal suture not depressed or weakly depressed (as thin arc-shaped line). Punctuation of clypeus fine, moderately dense. Almost all clypeal surface pubescent with small recumbent setae. Surface of other parts of head (dorsal view) pubescent with small recumbent setae. Punctuation fine, moderately dense. Head ventrally (gula, genae) with sharp transverse rugulae on each side of longitudinal medial line. Eyes moderately long, weakly emarginated anteriorly, not pubescent. 2-3 apical antennal segments extending beyond base of pronotum. 1st segment asymmetric, pyriform, its width to length ratio: 24/13. Length to width ratio of 2nd-11th antennal segments: 15/11 : 40/12 : 23/11 : 21/11 : 20/11 : 22/12 : 21/15 : 19/15 : 18/15 : 25/15, respectively. Antennal index (ratio of total length of segments to its total width) – 1.75.

Pronotum weakly transverse, 1.5 times as wide as head, widest before or in the middle. Width of pronotum 1.13-1.2 times as large as its length. Pronotum narrowed from middle to base and to anterior margin. Margins almost straight from middle to base, usually emarginated near base and arcuate from middle to anterior margin. Ratio of width of pronotum near anterior margin to its maximum width at base – 78/108/101, respectively. Disc of pronotum weakly convex in transversal direction (convexity at apex is somewhat stronger than at base), almost not convex in longitudinal direction. Pronotum weakly flattened on sides. Anterior margin almost straight (dorsal view), base weakly rounded. Anterior angles obtuse, widely rounded apically; Posterior angles rectangular or weakly obtuse, narrowly rounded apically. External margins, third of

length of anterior margin (at each side), posterior angles are finely margined. Middle of anterior margin and most part of base not margined. External margin weakly emarginate in S-shaped. Punctuation coarser than at front, dense or moderately dense; punctures rounded on disc and weakly oblong on sides, not confluent. Each puncture with microscopic seta, which are better visible at sides. Surface between punctures with fine isodiametric microsculpture. Propleura weakly depressed near external margin and pubescent with sparse recumbent hairs. Propleural sculpture not coarse, weakly longitudinally granulated and smoothed near external margin. Prosternum sharply bordered on anterior and posterior margins, pubescent with sparse hairs, directed posteriorly. Its surface without depression anteriorly, slantly sloped to anterior margin. Propleural suture sharply S-shaped. Coxal cavities rounded, located considerably closer to posterior margin than to anterior. Prosternal process rectangular or weakly acute, reaching the level of anterior coxae; ratio of its width to maximum diameter of anterior coxa – 12/27, respectively. Prosternal process weakly saddle-shaped, depressed between coxae. Mesoternum pubescent with sparse recumbent hairs, its surface finely granulated, weakly (with weak depression) slanted to anterior margin, which is almost straight, with weak emargination at middle. Mesosternal process wide, finely punctuated, bordered on sides, visibly convex before apex, lowering to the place of articulation with metasternal process. Posterior margin of mesosternal process weakly emarginated. Joint between meso- and metasternal processes located behind middle of middle coxae. Mesepisterna finely granulated, pubescent with dense recumbent hairs. Mesepimera densely punctuated, pubescent with sparse recumbent hairs. Distance between coxal cavities approximately equal to distance between posterior coxa. Metasternum finely granulated, pubescent with sparse recumbent hairs. Metasternal process almost trapeziform, its surface weakly depressed medially, posterior margin weakly emarginate. Metepisterna strongly elongate, densely punctuated, pubescent with recumbent sparse hairs. Metepimera short. Metendosternite with membrane between sharply divergent furca, with short longitudinal keel at base on ventral side.

Elytra elongate, oval, basally wider than pronotum, almost parallel-sided in basal two thirds of their length, further roundly constricting to apex, 1.61-1.67 times as long as wide, 1.3-1.33 times as wide and 2.4-2.45 as long as pronotum. Humeri sharp, sometimes with dent-shaped process. Punctuation very fine and sparse, strongly obliterate apically. Interspaces between punctures with small, mainly transverse rugae; microsculpture same as on pronotum. Each puncture of punctuation with microscopic seta (visible only with magnification over 30 times). Pubescent better visible apically. Disc of pronotum weakly convex in transverse direction and almost straight in longitudinal direction; sides and apical part steep. Elytra narrowly longitudinally depressed at apical part near lateral keel. Epipleura narrow, merged with lateral keel of elytra at the level of middle of the last visible abdominal sternite. Lateral keel of elytra (external margin of pseudoepipleura) visible only anteriorly, merged with epipleura without reaching the sutural angle. Turned up part of elytra very weakly depressed or flattened, its sculpture as on the rest

of elytra.

Abdomen weakly flattened at middle of the 1st and 2nd visible sternites, pubescence here somewhat denser and longer than at sides, consisting of recumbent yellow hairs. Surface rugosely punctated on 1st-3rd abdominal sternites and densely punctated on 4th-5th abdominal sternites. 3rd, 4th, and 5th abdominal sternites with visible basal depressions at sides. Lateral sides all of sternites and posterior margin of the last sternite finely bordered. 8th hidden sternite with wide emargination on apex and developed pheromone gland. Abdominal shielding glands rounded.

Legs relatively thin. Ratio of length to width of anterior, middle and posterior femorae – 82/25 : 90/21 : 115/22, respectively; same ratio for tibiae – 70/19 : 74/17 : 101/19, respectively; same ratio for tarsi – 50/10 : 60/7 : 72/7, respectively. Anterior coxae rounded, without trochanter, moderately projected above the level of prosternum, pubescent with recumbent hairs. Anterior femorae with sparse punctuation, pubescent with sparse recumbent hairs. Anterior tibia narrow, moderately widened to apex; its external margin with few strong setae. Internal surface pubescent with dense semirecumbent yellow hairs from middle to apex. Ventral surface sparsely granulated, with transverse depression before apex, covered with strong setae and recumbent sparse hairs. Apical margin of tibia with number of identical strong setae. Spurs unequal. Anterior tarsi widened, but narrower than corresponding tibia, pubescent with sparse hairs dorsally. Ratio of length to width of 1st-5th fore tarsal segments – 6/8 : 7/10 : 5/9 : 5/6 : 21/6, respectively. Ventral surface of 1st-3rd tarsal segments with hair brush; 4th segment with hair beam ventrally. Claws identical, evenly arcuate. Middle coxae widely oval, with distinct trochanter, pubescent with recumbent hairs. Pubescence and punctuation of middle femorae as at anterior femora. Middle tibia in apical two thirds pubescent with dense yellow semirecumbent hairs ventrally and externally. Apical margin of tibia with few identical strong setae. Spurs almost equal. Middle tarsi weakly widened, narrower than corresponding tibia, dorsally pubescent with sparse hairs. Ratio of length to width of 1st-5th middle tarsal segments – 16/7 : 9/7 : 7/6 : 7/5 : 22/6, respectively. Ventral surface of 1st-3rd tarsal segments with hair brush; 4th segment with hair beam ventrally. Claws identical, evenly arcuate. Hind coxae transverse. Hind femorae punctuated and pubescent as anterior and middle femorae, but with a few long erected hairs on internal margin ventrally. Hind tibia weakly arcuate at base, further almost straight or weakly widened to apex, pubescent (in three fourths of its length) with long erected hairs on internal side. Apical margin of hind tibia with few identical strong setae. Spurs unequal. Hind tarsi not widened. Ratio of length to width of 1st-4th hind tarsal segments – 25/7 : 12/6 : 10/6 : 24/5, respectively. Apex and ventral side of 1st-3rd tarsal segments with setae, which somewhat longer than setae of tibial apex. 4th segment pubescent with hairs and sparse setae ventrally. Claws evenly arcuate on all tarsi, Plates under claws well expressed on all of tarsi, sufficiently narrowly rounded on apex.

Length of aedeagus – 2.8-3.1 mm. Parameres 2.6-2.93 times as long as wide. Phallobase 1.86-2.05 as long as wide. Parameres with narrow transverse hollows on both sides from the middle ventrally on the base. Phallobase

moderately arcuate, without longitudinal hollow dorsally. Gastral spicula with moderately divergent and unequal branches.

Female. Antennae hardly reaching pronotal base, segment less elongate than in male. Anterior and middle tarsi not widened, without hair brush on ventral side. Pubescence of anterior tibia as in male. Hind femorae with erected hairs on internal side (as in male). Middle and posterior tibia with long erected, sparse (in contrast to male) hairs on internal side. Abdomen not flattened, evenly pubescent with sparse recumbent hairs; sternite VIII with inflated ventral spicula at apex. Duct of spermatheca short. Length of spermatheca nearly equal to length of gland. Spermatheca in dead specimens ball-shaped.

Body length of males – 6.8-9 mm, females – 7.8-9.6 mm. Body width of males 2.7-3.6 mm, females – 3.3-4 mm.

Egg widely oval (1x0.8 mm), red-brown. 9 eggs are discovered in sexual ducts of one of the revealed females.

Larva is not described in detail. However, the species (under the name *M. variabilis*) is included in the key to the larvae of the soil darkling beetles [Keleynikova, 1968], in which the diagnostic characters of larva of *M. humeralis* and the figures of the details of its structure are given.

**Taxonomic notes.** The author of description of the genus and first three species of *Myatis* already assumed that those species may be only the forms of one species [Bates, 1879]. Gridelli [1934] also doubted the separate status of the species *M. humeralis*, *M. variabilis*, and *M. quadraticollis*. The study of extensive material (about 1400 specimens), including types, confirmed the point of view of Bates [1879]. Actually, the form of humeral angle and the form of pronotum (basic diagnostic characters delimiting species in Bates [1879]) are the subject of significant variability. The form of the humeral angle of pronotum is the most variable: from the angle with clear cone-shaped dents to the one completely rounded. Moreover, this variability is sometimes observed within the series of specimens from one locality. In our opinion, small differences in the structure of parameres (see Kaszab [1940]) are not sufficient for description of separate species. Therefore, the above-indicated synonymy was earlier proposed [Egorov, 2004]. The name *M. humeralis* is selected as valid because previously it was designated as type species of the genus *Myatis* [Gebien, 1938].

**Distribution.** Tadzhikistan: Eastern Pamir. China: range Raskem, Northern Western Kunlun. India (Kashmir): Karakorum. Record from the range Ladak ("Leh") [Kaszab, 1940] requires confirmation. Records of the species for Alai range [Reitter, 1896, as *Leipopleura tenuissima* Reitt.; Kaszab, 1940; Kryzhanovsky, 1965] and for the Western Tien-Shan are erroneous. Record for Tashkent and Margilan (Ostern Uzbekistan) [Reitter, 1896] is probably based on the incorrect labeling.

**Ecology.** The species occurs in the alpine xerophytic biotopes (semi-desert, mountain steppes) at the elevation of 3000-4100 m. During the day time it is encountered under stones. It is active in June-September.

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## References

- Bates F. 1890. *Heteromera* // Scientific results of the second Yarkand Mission; based upon the collections and notes of the late Ferdinand Stoliczka, Ph. D. Coleoptera. Calcutta: Office of superintendent of government printing, India. P. 55-79.
- Bates F. 1879. Characters of the new genera and species of *Heteromera* collected by Dr. Stoliczka during the Forsyth Expedition to Kashgar in 1873-74 // *Cist. Entomol.* Vol. 2. P. 467-484.
- Bogachev A.V. 1952. [New tenebrionid beetles from USSR and adjacent countries] // *Entomol. obozr.* Vol. 32. P. 284-286 [in Russian].
- Egorov L.V. 1990. [On the systematics of tenebrionid beetles of the tribe Platyscelidini (Coleoptera, Tenebrionidae)] // *Entomol. obozr.* Vol. 69. No. 2. P. 401-412 [in Russian, with English summary].
- Egorov L.V. 2004a. [On the classification of the tenebrionid tribe Platyscelidini (Coleoptera, Tenebrionidae) of the world] // *Entomol. obozr.* Vol. 83. No. 3. P. 581-613, 765-766 [in Russian, with English summary].
- Egorov L.V. 2004b. On the classification of the tenebrionid tribe Platyscelidini (Coleoptera, Tenebrionidae) of the world // *Entomological Review.* Vol. 84. No 6. P. 641-666.
- Egorov L.V. 2006. [Review of tenebrionid beetles of the genus *Trichomyatis* Schuster, 1931 (Coleoptera, Tenebrionidae, Platyscelidini)] // *Tr. Russk. entomol. ob-va.* Vol. 77. P. 85-93 [in Russian, with English summary].
- Gebien H. 1938. Katalog der Tenebrioniden. Teil II // *Mitt. Münch. Entomol. Ges.* Bd. 28. H. 1. S. 49-80.
- Gridelli E. 1934. Materiali zoologici raccolti dalla spedizione italiana al Karakorum. Coleoptera – Tenebrionidae // *Atti Mus. Stor. Nat. Trieste.* T. 12. P. 37-68.
- Kaszab Z. 1940. Revision der Tenebrioniden-Tribus Platyscelini (Coleoptera, Tenebrionidae) // *Mitt. Münch. Entomol. Ges.* Bd. 30. H. 1. S. 119-235; Bd. 30. H. 3. S. 896-1004.
- Kaszab Z. 1960. Die Tenebrioniden Afghanistans, auf Grund der Ergebnisse der Sammelreise des Herrn J. Klapperich in den Jahren 1952/53 (Coleoptera) // *Entomol. Arb. Mus. G. Frey.* Bd. 11. H. 1. S. 1-179.
- Keleynikova S.I. 1968. [The soils larvae of tenebrionid beetles (Coleoptera, Tenebrionidae) of the fauna USSR. I] // *Sborn. tr. Zool. muz. MGU.* Vol. 11. P. 205-239 [in Russian].
- Kryzhanovsky O.L. 1965. [Composition and origin of the ground-based fauna of Central Asia]. Moscow-Leningrad: "Nauka" 420 p. [in Russian].
- Meng L., Ren G.D. 2005. A systematic study of the genus *Myatis* Bates from China and adjacent areas (Coleoptera, Tenebrionidae) // *Acta Zootaxonomica Sinica.* T. 30. No 1. P. 104-110.
- Ovchinnikov S.V. 1996. [Tenebrionidae – darkling beetles] // *Kadastr geneticheskogo fonda Kirgizstana: T. III. Nadklass Hexapoda – shestinogie (Entognatha i Insecta).* Bishkek. P. 149-157 [in Russian].
- Reinig W.F. 1931. Entomologische Ergebnisse der Deutsch-Russischen Alai-Pamir-Expedition 1928 (II). 5. Coleoptera II. Tenebrionidae // *Mitt. Zool. Mus. Berlin.* Bd. 16. H. 6. S. 865-912.
- Reinig W.F. 1932. Beiträge zur Faunistik des Pamir-Gebites // *Wissenschaftliche Ergebnisse der Alai-Pamir Expedition. Teil III.* Berlin. B. 1. S. 1-195; B. 2. S. 196-312.
- Reitter E. 1889. *Insecta Cl. G.N. Potanin in China et Mongolia novissime lecta.* XIII. Tenebrionidae // *Horae Soc. Ent. Ross.* T. 23. P. 678-710.
- Reitter E. 1896. Beitrag zur Kenntnis der Platysceliden // *Deutsche Ent. Z. T.* 40. H. 1. S. 173-176.

## References

- Bates F. 1879. Characters of the new genera and species of Heteromera collected by Dr. Stoliczka during Forsyth Expedition to Kashgar in 1873–74. *Cistula Entomologica*. 1875–1882. 2: 467–484.
- Bates F. 1890. Héteromera. In: Scientific results of the second Yarkand Mission; based upon the collections and notes of the late Ferdinand Stoliczka, Ph. D. Coleoptera. Calcutta: Office of Superintendent of Government Printing: 55–79.
- Bogachev A.V. 1952. New tenebrionid beetles from the USSR and adjacent countries. *Entomologicheskoe obozrenie*. 32: 284–286 (in Russian).
- Egorov L.V. 1990. On the systematics of tenebrionid beetles of the tribe Platyscelidini (Coleoptera, Tenebrionidae). *Entomological Review*. 69(6): 137–150.
- Egorov L.V. 2004. On the classification of the tenebrionid tribe Platyscelidini (Coleoptera, Tenebrionidae) of the world. *Entomologicheskoe obozrenie*. 83(3): 581–613, 765–766 (in Russian).
- Egorov L.V. 2004. On the classification of the tenebrionid tribe Platyscelidini (Coleoptera, Tenebrionidae) of the world. *Entomological Review*. 84(6): 641–666.
- Egorov L.V. 2006. Review of tenebrionid beetles of the genus *Trichomyatis* Schuster, 1931 (Coleoptera, Tenebrionidae, Platyscelidini). In: Trudy Russkogo entomologicheskogo obshchestva [Proceedings of Russian entomological society]. Vol. 77. St. Petersburg: Zoological Institute RAS: 85–93 (in Russian).
- Gebien H. 1938. Katalog der Tenebrioniden. Teil. 2. *Mitteilungen der Münchner Entomologischen Gesellschaft*. 28: 283–314 (402–433), 397–428 (434–465).
- Gridelli E. 1934. Materiali zoologici raccolti dalla spedizione italiana al Karakorum. Coleoptera – Tenebrionidae. *Atti del museo civico di storia naturale di Trieste*. 12: 37–68.
- Kaszab Z. 1940. Revision der Tenebrioniden-Tribus Platyscelini (Coleoptera, Tenebrionidae) *Mitteilungen der Münchner Entomologischen Gesellschaft*. 30(1): 119–235.
- Kaszab Z. 1940. Revision der Tenebrioniden-Tribus Platyscelini (Coleoptera, Tenebrionidae) *Mitteilungen der Münchner Entomologischen Gesellschaft*. 30(3): 896–1004.
- Kaszab Z. 1960. Die Tenebrioniden Afghanistans, auf Grund der Ergebnisse der Sammelreise des Herrn J. Klapperich in den Jahren 1952/53 (Coleoptera). *Entomologische Arbeiten aus dem Museum G. Frey Tutzing bei München*. 11(1): 1–179.
- Keleynikova S.I. 1968. Soil larvae of tenebrionid beetles (Coleoptera, Tenebrionidae) of the fauna the USSR. I. In: Sbornik trudov Zoologicheskogo muzeya MGU [Collection of works of Zoological Museum of MSU]. Vol. 11. Moscow: Moscow State University: 205–239 (in Russian).
- Kryzhanovsky O.L. 1965. Composition and origin of the terrestrial fauna of the Middle Asia. Moscow – Leningrad: Nauka. 420 p. (in Russian).
- Meng L., Ren G.D. 2005. A systematic study of the genus *Myatis* Bates from China and adjacent areas (Coleoptera, Tenebrionidae). *Acta Zootaxonomica Sinica*. 30(1): 104–110.
- Ovchinnikov S.V. 1996. Tenebrionidae – darkling beetles. In: Kadastr geneticheskogo fonda Kyrgyzstana: T. 3. Nadklass Hexapoda – shestinogie (Entognatha i Insecta) [Cadastr of genetic fund of Kyrgyz Republic. Vol. 3. Superclass Hexapoda (Entognatha and Insecta)]. Bishkek: Institute of Biology and Pedology of Kyrgyz Academy of Sciences: 149–157 (in Russian).
- Reinig W.F. 1931. Entomologische Ergebnisse der Deutsch-Russischen Alai-Pamir-Expedition 1928 (II). 5. Coleoptera II. Tenebrionidae. *Mitteilungen aus dem Museum für Naturkunde in Berlin*. 16(6): 865–912.
- Reinig W.F. 1932. Beiträge zur Faunistik des Pamir-Gebites. In: Wissenschaftliche Ergebnisse der Alai-Pamir Expedition. Teil III. Band I. Berlin: Reimer: 1–195.
- Reitter E. 1889. Insecta Cl. G.N. Potanin in China et Mongolia novissime lecta. XIII. Tenebrionidae. *Horae Societatis Entomologicae Rossicae*. 23: 678–710.
- Reitter E. 1896. Beitrag zur Kenntnis der Platysceliden. *Deutsche entomologische Zeitschrift*. 40(1): 173–176.