Additional notes to the elaterid fauna of Mongolia (Coleoptera, Elateridae)

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Abstract. The article provides some corrections and additions to the list of Elaterids of Mongolia. *Oedostethus sincerus* Gurjeva, 1975 and *Oedostethus petrenkoi* Dolin, 1992 are new for Mongolia. The announcement of *Fleutiauxellus maritimus* Curtis, 1840 for Mongolia has been revised. An identification key to the species of the genus *Oedostethus* LeConte in Mongolia is presented.

Zusammenfassung. Der Artikel ergänzt und korrigiert die kürzlich erschienene Liste der Elateriden der Mongolei. *Oedostethus sincerus* Gurjeva, 1975 und *Oedostethus petrenkoi* Dolin, 1992 sind neu für die Mongolei. Die Meldung über den Neunachweis von *Fleutiauxellus maritimus* Curtis, 1840 für die Mongolei wird revidiert. Ein Bestimmungsschlüssel der aus der Mongolei bekannten *Oedostethus*-Arten wird präsentiert.

Key Words: Coleoptera, Elateridae, Aeolosomus rossii, Agriotes soederbomi, Agriotes unicolor, Ampedus basalis, Ampedus mannerheimi, Ampedus tristis, Fleutiauxellus maritimus, Oedostethus aerarius, Oedostethus graniger, Oedostethus kaszabi, Oedostethus latissimus, Oedostethus mediocris, Oedostethus mystax, Oedostethus petrenkoi, Oedostethus sincerus, Oedostethus varians, Oedostethus, identification key, male, new record, distribution, Palearctic, Mongolia

Introduction

In a recent publication, a list of Mongolian Elaterids has been presented (Jarzabek-Müller & Neméth, 2014). This list is now revised and complemented. The revision shows that the species *Fleutiauxellus maritimus* Curtis, recorded from the province Zavakhan in Mongolia has been mistaken. The species is *Oedostethus latissimus* Tsherepanov. The confusion is based on identical traits for both genera *Fleutiauxellus* Méquignon and *Oedostethus* LeConte. It seems obvious that the current *Oedostethus* genus has to be further divided. Some species probably have to be transferred to *Fleutiauxellus*, and to other, maybe new genera. Japanese authors (Kishii 1976, 1987, Ohira 1988) described many new genera for Japanese Negastriinae, but outside Japan similar species, still are described as *Oedostethus*, despite clear distinction in their aedeagus. Beyond *Oedostethus latissimus* Tsherepanov also *Oedostethus mystax* Gurjeva from Mongolia and Sibiria or *Oedostethus submontanus* Dolin & Bessolitzina recorded from Sibiria show characteristics typical for *Fleutiauxellus*. Thus further research based on phylogenetic is required to illuminate the relationship of this complex in elaterids.

Moreover, the revision revealed a specimen determined by Gurjeva as *Oedostethus latissimus* (Jarzabek-Müller & Neméth, 2014), as a female of *Oedostethus petrenkoi* Dolin.

To facilitate the determination of the species of the genera *Oedostethus* from Mongolia under consideration of *Fleutiauxellus maritimus* a key using information from Russian, English and German literature has been developed. (Dolin 1992, Gurjeva 1968, 1969, 1975a, b, Reitter 1895, 1905, Tsherepanov 1957).

Abbreviations:	AJMR – Jarzabek-Müller coll., Riedlhütte (Germany)
	CPG – Platia coll., Gatteo (Italy)
	HNHM – Hungarian Natural History Museum, Budapest (Hungary)
	ZSM – Zoologische Staatssammlung München, Bavarian State Collection of Zoology, Munich
	(Germany)
Photos:	Andrea Jarzabek-Müller: Fig. 1, 3, 5-30, 32, 34-41, 43-48, 50, 51, 53-57, 59
	Giuseppe Platia: Fig. 4, 33, 52
	Tamás Németh: Fig. 31

Complementary notes on the list of Elateridae of Mongolia

Aeolosomus rossii Germar, 1844 subfamily Agrypninae Candèze, 1857

E. L. Gurjeva reported this species for Mongolia already in 1968 (Gurjeva 1968, 1969).

Agriotes unicolor Koenig, 1889 subfamily **Elaterinae** Candéze, 1863

On the basis of type material Agriotes soederbomi Fleutiaux, 1936 was synonymized with Agriotes unicolor Koenig, 1889 by G. Platia (2007).

Ampedus mannerheimi Suzuki, 2013 subfamily Elaterinae Candéze, 1863

W. Suzuki renamed Ampedus basalis (Mannerheim, 1852) as Ampedus mannerheimi Suzuki, 2013.

Ampedus tristis Linnaeus, 1758 subfamily Elaterinae Candéze, 1863

1915 G. G. Jacobson mentioned this species for Mongolia (Jacobson 1905-1915). However, this information has been second-guessed.

Fleutiauxellus maritimus Curtis, 1840 (Fig. 5, 16, 34, 53) subfamily **Negastriinae** Nakane & Kishii, 1956

This species has to be removed from the checklist of Mongolia.

Oedostethus petrenkoi Dolin, 1992 (Fig. 2, 31, 49) subfamily **Negastriinae** Nakane & Kishii, 1956

E. L. Gurjeva determined the specimen in Fig. 31 in 1968 as *Oedostethus latissimus* Tsherep., but it is a female of *Oedostethus petrenkoi* Dolin, a species first described in 1992 by Dolin (Dolin 1992). The females of both species are very similar, but the antennae of *Oedostethus petrenkoi* almost extend to posterior angles of pronotum, while the antennae of *Oedostethus latissimus* extend two segments past posterior angles of pronotum. The elytra of *Oed. petrenkoi* are more convex, while the elytra of *Oed. latissimus* are more flat.

<u>Material examined.</u> $1 \bigcirc -$ Mongolia, Uvs Prov., Somon Öndörchangaj, 1900 m, 11.VII.1968, Z. Kaszab leg., E. L. Gurjeva det. (as *Oed. latissimus*), vid. A. Prosvirov (Moscow), HNHM coll. Length: 3.7 - 3.9 mm (male); 4.3 - 5 mm (female), 5th abdominal segment (Fig. 2); aedeagus (Fig. 49) <u>Distribution:</u> Russia (East Siberia, Far East, West Siberia), China (Heilongjiang), Kazakhstan (Cate 2007). **First record for Mongolia.**

Oedostethus sincerus Gurjeva, 1975b (Fig. 3, 4, 15, 22, 32, 33, 50-52) subfamily **Negastriinae** Nakane & Kishii, 1956

<u>Material examined.</u> 1 ♂ - Mongolia, Zavkhan Province (Aimag), Gantsin Davaa Pass, 17 km S of Uliastai, 16.VII.1980, M. Kozlov leg., W. Dolin det. 2002, Platia coll. (Fig. 33); 2 ♂ - Mongolia, Bayankhongor Province, NW of Galuut, 2084 m a. s. l. (N46.859722° E100.113889°), 15.VII.2014, H. Bussler leg., A. Jarzabek-Müller det. 2015, A. Jarzabek-Müller coll. (Fig. 32) Length: 3 – 3.3 mm, 5th abdominal segment (Fig. 3, 4); pronotum (Fig. 22), 2nd antennal article (Fig. 15), aedeagus (Fig. 50, 51, 52) Distribution: Russia (Siberia) (Cate 2007) First record for Mongolia.

Key to known species of the genus *Oedostethus* LeConte, 1853 of Mongolia (male)

1 (12). Fifth abdominal segment (= 7^{th} sternite) abruptly sinuate more or less deep at the end, the apex is extended to a more or less tapered or rounded cusp (Fig. 1-11); body flattened or slightly convex

2 (7). Second antennal segment 1.5 - 2 times longer than wide (Fig. 14, 15)

4 (3). Fifth abdominal segment feeble sinuate at the end, the apex is extended to a rounded cusp (Fig. 2, 3, 4)

7 (2). Second antennal segment approximately as long as wide or nearly spherical (Fig. 16, 17, 18)

8 (9). Fifth abdominal segment barely perceptible sinuate at the end, the apex is wide triangular-formed (Fig. 5); body black, sometimes black-brown, more opaque; body with white pubescence; length: 4 - 5 mm; the first antennal segments as Fig. 16; aedeagus as Fig. 53.....(*Fleutiauxellus maritimus* Curtis, 1840) (Fig. 34)

9 (8). Fifth abdominal segment unbowed or slightly sinuate at the end, the apex is extended to a more or less rounded or tapered cusp (Fig. 6-11)

10 (11). General body shape more robust; elytral interstriae rugose, flat and less shiny, with rough surface (Fig. 29); apex of fifth abdominal segment with rounded or more or less tapered cusp (Fig. 6-10); body black or black-brown; body with even grey pubescence; length: 3.9 - 4.8 mm (female 4.7 - 5.9 mm); the first antennal segments as Fig. 17; aedeagus as Fig. 54......*Oedostethus latissimus* Tsherepanov, 1957 (Fig. 35, 36)

12 (1). Fifth abdominal segment regularly or slightly arcuate at the end, apex without cusp (Fig. 12, 13); body more convex

13 (16). Surface of pronotum densely granulate and more opaque, with umbilicated punctures (Fig. 23)

14 (15). Elytra with two or four yellow spots, sometimes spots are indistinct or entirely absent; second antennal segment 2 - 2.5 times longer than wide (Fig. 19); punctures of pronotum more scattered, surface of pronotum slightly shinier (Fig. 23); elytra oval (Fig. 26); body black with gleam of ore; base of antennae, legs or only tarsi yellow; body with short yellow-grey pubescence; vary in appearance; length: 3.1 - 4 mm; aedeagus as Fig. 56...... *Oedostethus varians* Gurjeva, 1968 (Fig. 38-41) 16 (13). Pronotum with simple, more or less dense unumbilicated punctures, shinier (Fig. 24, 25)

17 (18). Pronotum as long as wide; body dark ore color, black or black-brown, less shiny, antennae black, legs brownyellow, femur duller at middle, posterior angles of pronotum brighter; second antennal segment nearly two times longer than wide (Fig. 20); punctures of pronotum more dense, interstices 0.5 – 1 times larger than their diameter (Fig. 24); median longitudinal line slightly; body yellow tomentose; length: 2.6 – 3.3 mm; aedeagus as Fig. 58...... *Oedostethus aerarius* Reitter, 1895 (syn. *Oedostethus gurjevae* Dolin & Bessolitzina, 1982) (Fig. 45)

Bestimmungsschlüssel der aus der Mongolei bekannten Arten der Gattung Oedostethus LeConte, 1853 (für Männchen zutreffend)

1 (12). Fünftes Abdominalsegment (=7. Sternit) mit mehr oder weniger tiefen Einbuchtungen am Ende, der Apex ist zu einem mehr oder weniger zugespitzten oder gerundetem Zipfel ausgezogen (Fig. 1-11); Körper abgeflacht oder flach gewölbt

2 (7). Zweites Fühlerglied 1.5 – 2mal länger als breit (Fig. 14, 15)

4 (3). Fünftes Abdominalsegment mit schwacher Ausbuchtung am Ende, der Apex ist zu einem abgerundeten Zipfel ausgezogen (Fig. 2, 3, 4)

7 (2). Zweites Fühlerglied ungefähr so lang wie breit oder fast kugelförmig (Fig. 16, 17, 18)

9 (8). Fünftes Abdominalsegment gerade bis schwach eingebuchtet am Ende, der Apex zu einem mehr oder weniger gerundeten oder spitzen Zipfel geformt (Fig. 6-11)

10 (11). Körper mehr breit; Flügeldeckenzwischenräume flach und matt (Fig. 29); Apex des fünften Abdominalsegments mit einem gerundeten oder einem mehr oder weniger zugespitzten Zipfel (Fig. 6-10); Körper schwarz oder schwarz-braun; Körper mit gleichmäßiger grauer Behaarung; Größe 3.9 – 4.8 mm (Weibchen 4.7 – 5.9 mm); Fühlerbasis wie in Fig. 17; Aedeagus wie in Fig. 54......*Oedostethus latissimus* Tsherepanov, 1957 (Fig. 35, 36)

11(10). Körper schmaler; Flügeldeckenzwischenräume wenig gerunzelt und glänzender, mit wenigen kleinen Punkten besetzt, vor allem in der ersten Hälfte der Flügeldecken (Fig. 27, 28); Körper schwarz mit leichtem Bronzeschimmer, manchmal dunkelbraun; Körper grau behaart; Größe 4 – 4.5 mm; Fühlerbasis wie in Fig. 18; Aedeagus wie in Fig. 55.... *Oedostethus mystax* Gurjeva, 1971 (Fig. 37)

12 (1). Fünftes Abdominalsegment normal gerundet oder leicht eingebuchtet, das Ende nicht zu einem Zipfel geformt (Fig. 12, 13); Körper mehr konvex

13 (16). Halsschild mit dichter gekörnter und/oder genabelter Punktur (Fig. 23), etwas matt

16 (13). Halsschild mit einfachen, mehr oder weniger dichten, ungenabelten Punkten besetzt, glänzender (Fig. 24, 25)

Fig. 1: fifth abdominal segment (=7 th sternite) of <i>Oedostethus kaszabi</i> Gurjeva (♂) (in background the seventh tergite)	Fig. 2: Dolin's drawing of fifth abdominal segment of <i>Oed. petrenkoi</i> (Dolin 1992)	Fig. 3: fifth abdominal segment of <i>Oed. sincerus</i> Gurjeva (♂) (spec. from Bayankhongor Prov., Mongolia)
Fig. 4: fifth abdominal segment of <i>Oedostethus sincerus</i> Gurjeva (ථ) (spec. from Zavkhan Prov., Mongolia)	Fig. 5: fifth abdominal segment of <i>Fleutiauxellus maritimus</i> Curtis (♂)	Fig. 6: fifth abdominal segment of <i>Oed. latissimus</i> Tsherep. (♂) (spec. 1)
Fig. 7: fifth abdominal segment of <i>Oedostethus latissimus</i> Tsherep. (♂) (spec. 2)	Fig. 8: fifth abdominal segment of <i>Oed. latissimus</i> Tsherep. (♂) (spec. 3)	Fig. 9: fifth abdominal segment of <i>Oed. latissimus</i> Tsherep. (♂) (spec. 4)
Fig. 10: fifth abdominal segment of <i>Oedostethus latissimus</i> Tsherep. (ろ) (spec. 5)	Fig. 11: fifth abdominal segment of <i>Oed. mystax</i> Gurjeva (♂)	Fig. 12: fifth abdominal segment of <i>Oed. varians</i> Gurjeva (♂)

Fig. 13: fifth abdominal segment of <i>Oedostethus mediocris</i> Gurjeva (♂)	Fig. 14: the first antennal segments of <i>Oed. kaszabi</i> Gurj.	Fig. 15: the first antennal segments of <i>Oed. sincerus</i> Gurj.
Fig. 16: the first antennal segments of <i>Fleutiauxellus maritimus</i> Curt.	Fig. 17: the first antennal segments of <i>Oedostethus latissimus</i> Tsherep.	Fig. 18: the first antennal segments of <i>Oed. mystax</i> Gurj.
Fig. 19: the first antennal segments of <i>Oedostethus varians</i> Gurj	Fig. 20: the first antennal segments of <i>Oed. gurjevae</i> Dol. & Bess. (<i>=aerarius</i> Reit.)	Fig. 21: the first antennal segments of <i>Oed. mediocris</i> Gurj.
Fig. 22: pronotum of Oedostethus sincerus Gurj.	Fig. 23: punctures of pronotum of <i>Oed. varians</i> Gurj.	Fig. 24: punctures of pronotum of <i>Oed. gurjevae (=aerarius)</i> Reitt.



Fig. 30: <i>Oedostethus kaszabi</i> Gurj. (♂) Paratype, specimen from Central aimak, Ulan-Baator, Mongolia; det. Gurjeva; coll. ZSM; length: 2.9 mm	Fig. 31: <i>Oed. petrenkoi</i> Dolin (♀), specimen from Uvs Province, Mongolia; det. Prosvirov; coll. HNHM; length: 6.0 mm	Fig. 32: <i>Oed. sincerus</i> Gurj. (♂), specimen from Bayankhongor Province, Mongolia; det. Jarzabek-Müller; coll. AJMR length: 3.0 mm
Fig. 33: <i>Oedostethus sincerus</i> Gurj. (♂), specimen from Zavkhan Province, Mongolia; det. Platia; coll. CPG; length: 3.06 mm	Fig. 34: <i>Fleutiauxellus maritimus</i> Curt. (♂), specimen from Tirol, Austria; det. Leseigneur; coll. ZSM; length: 4.3 mm	Fig. 35: <i>Oed. latissimus</i> Tsherep. (♂), specimen from Zavakhan Province, Mongolia; det. Jarzabek- Müller; vid. Platia; coll. AJMR; length: 4.8 mm





gurjevae Dolin & Bessolitzina, 1982 (♀), synonym of **Oed. aerarius** Reitter, 1895, specimen from Chitinskaya Oblast, Russia; coll. ZSM; length: 3.2 mm Fig. 46: *Oed. mediocris* Gurj. (♂), specimen from Selenge Prov., Mongolia; det. Jarzabek-Müller; vid. Prosvirov; coll. AJMR; length: 2.9 mm Fig. 47: *Oed. mediocris* Gurj. (♀), specimen from Selenge Prov., Mongolia; det. Jarzabek-Müller; vid. Prosvirov; coll. AJMR; length: 3.0 mm

Fig. 48: aedeagus of Oedostethus kaszabi Gurj. in ventral view; length: 0.40 mm	Fig. 49: Dolin's drawing of aedeagus of <i>Oed. petrenkoi</i> (Dolin 1992)	Fig. 50: aedeagus of <i>Oed. sincerus</i> Gurj. in ventral view (spec. 1); length: 0.70 mm	Fig. 51: aedeagus of <i>Oed. sincerus</i> Gurj. in dorsal view (spec. 1); length: 0.70 mm
Fig. 52: aedeagus of <i>Oed. sincerus</i> Gurj. in dorsal view (spec. 2); length: 0.77 mm	Fig. 53: aedeagus of Fleutiauxellus maritimus Curt. in ventral view; length: 0.95 mm	Fig. 54: aedeagus of <i>Oed. latissimus</i> Tsherep. in ventral view; length: 0.98 mm	Fig. 55: aedeagus of <i>Oed. mystax</i> Gurj. in ventral view; length: 0.90 mm
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Fig. 56: aedeagus of <i>Oed. varians</i> Gurj. in ventral view; length: 0.70 mm	Fig. 57: aedeagus of <i>Oed. graniger</i> Tsherep. in ventral view; length: 0.70 mm	Fig. 58: Dolin & Bessolitzina's drawing of aedeagus of <i>Oed. gurjevae</i> (<i>=Oed. aerarius</i>) (Dolin & Bessolitzina, 1982)	Fig. 59: aedeagus of <i>Oed. mediocris</i> Gurj. in ventral view; length: 0.70 mm

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