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Click-Beetles collected in Iran by the expeditions of the Naturkundemuseum Erfurt with description of two new species (Insecta: Coleoptera: Elateridae)

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Abstract

In this paper 37 species of click-beetles collected in Iran in the years 2008, 2010 and 2012 by the expeditions of members of the furtherance society of Naturkundemuseum Erfurt are listed. The five species *Athous haemorrhoidalis* (Fabricius, 1801); *Hemicrepidius agajewi* Platia, 2008; *Adrastus limbatus* (Fabricius, 1777), *Zorochros mesasiaticus* (Dolin, 1995) and *Zorochros nanus* (Gurjeva, 1963) are new to Iran. Two species are described as new for science: *Ampedus weigeli* n. sp. and *Melanotus karajensis* n. sp. and an updated check list of click-beetles from Iran is given.

Zusammenfassung

In vorliegender Arbeit werden Funde von 37 Schnellkäferarten, die auf Expeditionen von Mitgliedern des Fördervereins des Naturkundemuseums Erfurt in den Jahren 2008, 2010 und 2012 in Iran gesammelt wurden, vorgestellt. Fünf Arten davon sind neu für die Fauna Irans: *Athous haemorrhoidalis* (Fabricius, 1801); *Hemicrepidius agajewi* Platia, 2008; *Adrastus limbatus* (Fabricius, 1777), *Zorochros mesasiaticus* (Dolin, 1995) und *Zorochros nanus* (Gurjeva, 1963). Zwei weitere Arten – *Ampedus weigeli* n. sp. und *Melanotus karajensis* n. sp. – werden als neu für die Wissenschaft beschrieben und abgebildet, sowie eine aktuelle Checkliste der Schnellkäfer Irans vorgestellt.

Key words: Coleoptera, Elateridae, new species, new records, *Ampedus*, *Melanotus*, Iran

Introduction

The last important contribution to the knowledge of the click-beetles of Iran with a checklist of the known species was published by Cate et al. (2002). In this paper were treated a list of 70 species of which 13 new and other 32 as new records. Since this publication other papers (Platia et al. 2002, Platia & Gudenzi 2005, 2006, Mertlik & Dusanek 2006, Platia 2008, 2010b & 2012, Nasserzadeh et al. 2008, Mardjanian & Barimani 2011, Platia & Nemeth 2011) have enriched the fauna of the country with the descriptions of many species and the new records of other collectors. The present paper gives a further small contribution to the knowledge of this fauna with the descriptions of two new species and the new records of other four. An updated checklist of the elaterids from Iran including 189 species is given. All records are results of three scientific expeditions of the Naturkundemuseum Erfurt, respectivly of members of the furtherance society of the museum. This expeditions were supported by Prof. Alirezah Saboori and his team from the University of Karaj/Tehran. For more informations about routes, localities and habitats see the paper of Weigel et al. (in prep.) in the present volume.

Material and Methods

Body measurements: Body length is measured along the midline from the anterior margin of the frons to the apex of the elytra, body width across the broadest part of the beetle.

Pronotal measurements: Pronotal length is measured along the midline, pronotal width across the broadest part which is usually at the hind angles.

Tribal placement of genera and species listed below follows Bouchard et al. (2011) except for the subfamily Aplastinae. The abbreviations of countries, given by "distribution" follows Cate (2007).

Abbreviations

The names of institutions, museums and collections containing the material studied, to which we are deeply indebted, are abbreviated as follows:

CAB – Collection Andrzej Lasoń (Bialystok, Poland)
CASH – Collection André Skale (Hof/Saale, Germany)
CAWW – Collection Andreas Weigel (Wernburg, Germany)
CDFS – Collection Dirk Frenzel (Sonneberg, Germany)
CGPG – Collection Giuseppe Platia (Gatteo, Italy)
CJWP – Collection Jörg Weipert (Plaue, Germany)
CKK – Collection R. Krolik (Kluczborka, Poland)
CSRG – Collection Sergio Riese (Genova, Italy)
NME – Naturkundemuseum Erfurt, Germany (M. Hartmann).
spm. – specimen(s)

The species

Subfamily Agrypninae Candèze, 1857

Tribe Agrypnini, 1857

***Lacon unicolor* (Candèze, 1874)**
Material examined. 1 spm. ♂ – Iran: Fars prov., vic. Qualat (29°48’13”N, 52°19’11”E), 2000–2150 m, 28.IV.2010, D. Frenzel (CDFS).
Distribution. A: IN, Turkey (Mertlik & Platia 2008).

Tribe Oophorini Gistel, 1856

***Aeoloides figuratus* (Germar, 1844)**
Material examined. 2 spm. ♂ – Iran: Gilan Prov., Astaneh, Safid Rud (37°15’32”N, 49°55’27”E), 3.V.2012, D. Frenzel (NME, CDFS).
Distribution. E: AB AR GG ST A: AF IQ IN KI KU KZ PA QA SA SY TD TM TR UZ „Palestine“

***Drasterius bimaculatus* (Rossi, 1790)**
Material examined. 25 spm. (♂ ♀) – Iran: Mazandaran Prov., Tonekabon, Ramezan Chil (36°48’20”N, 50°51’44”E), 12 m, 3.V.2012, J. Weipert; Mazandaran Prov., N Elburz, Now Shahr (36°36’17”N, 51°38’23”E), 1–5.VI.2008, D. Frenzel; Teheran prov., Karaj university of agriculture (35°47’97”N, 51°00’25”E), 1360 m, 26.V.2008, J. Weipert; Teheran prov., Karaj university of agriculture (35°47’97”N, 51°00’25”E), 1360 m, 30.IV.2010, A. Skale; Karaj university of agriculture (35°47’59”N, 51°00’02”E), 1360 m, 29.IV.-12.V.2012, D. Frenzel; Teheran Prov., Najmaabad (35°49’56”N, 50°28’15”E), 1170 m, 7.V.2012, J. Weipert, D. Frenzel; Teheran Prov., S Elburz, Agasht (36°00’20”N, 50°52’84”E), 1600-1700 m, 27.V.2008, D. Frenzel; Gilan Prov., Astaneh, Safid Rud (37°15’32”N, 49°55’27”E), 5 m, 3.V.2012, J. Weipert, D. Frenzel; Cahar Prov., Mahali-o-Bakhtiyari, Chadegan, E, Abadchi Tal (32°45’58”N, 50°45’01”E), 2160 m, 11.V.2012, J. Weipert; Isfahan prov., Quamsar (33°44’58”N, 51°24’12”E), 2070 m NN, 12.V.2012, D. Frenzel; Isfahan prov., Quamsar , 10 km SW Kamoo (33°39’37”N, 51°16’04”E), 2650 m, 12.V.2012, D. Frenzel; Qom prov., Neyzar, 30 km N Deljian, Rud-e-Qom (34°16’59”N, 50°31’33”E), 1300 m, 8.V.2012, D. Frenzel (CDFS, CASH, CJWP, NME).
Distribution. E: AB AL AR AU BE BH BU CR CT CZ FR GE GG GR HU IT MA MC MD PL PT RO SK SL SP ST SZ UK YU N: AG CI (Lanzarote) EG LB MO TU A: AF CY IN IQ IS JO KI KZ SY TM TR UZ.

Tribe Dendrometrini Gistel, 1856

***Athous haemorrhoidalis* (Fabricius, 1801)**
Fig. 4, 4a, 12.
Material examined. 1 spm. ♂ – Iran: Teheran Prov., Naimaabad, W, Salzwüste (35°49’56”N, 50°28’15”E), 1170 m, 7.V.2012, J. Weipert (CJWP).
Aedeagus as in fig. 4, 4a.
Distribution. E: AL AR AU AZ BE BU BY CR CT CZ DE EN FI FR GB GE GR HU IR IT LA LS LT LU MC MD NL NR PL PT RO SK SL SP ST SV SZ TR UK YU A: CY KZ TR.
New to Iran.

***Hemicrepidius agajewi* Platia, 2008** Fig. 3, 3a, 8, 11.
Material examined. 1 spm. ♂ – Iran: Mazandaran Prov., N Elburz, Dohesar-Road, River (36°40’00”N, 50°49’57”E), 460 m, 1.VI.2008, A. Skale (NME).
Aedeagus as in fig. 3, 3a.
Distribution. Azerbadjan. **New to Iran.**

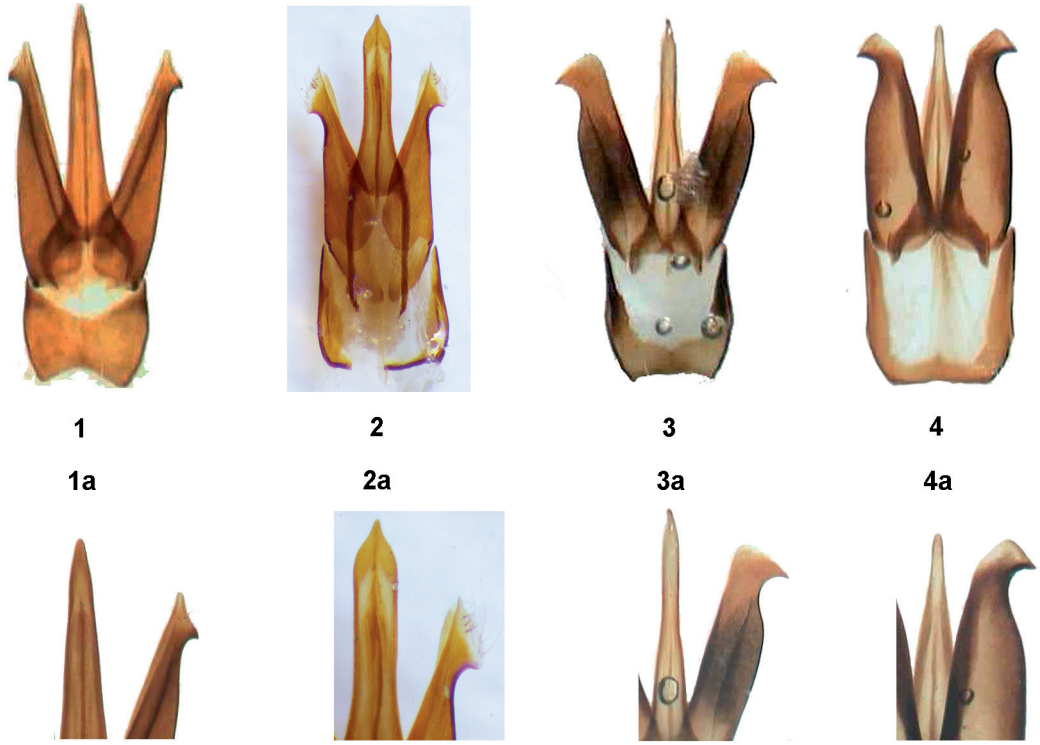


Figure 1–4. Male genitalia in dorsal view. **1, 1a**. *Ampedus weigeli* n. sp.; **2, 2a**. *Melanotus karajensis* n. sp.; **3, 3a**. *Hemicrepidius agajewi* Platia; **4, 4a**. *Athous* (s. str.) *haemorrhoidalis* (F.).

***Megathous menetriesi* (Reitter, 1890)**
Material examined. 3 spm. (♂ ♀) – Iran: Mazandaran prov., N Elburz, SW Now Shahr (36°35'20''N, 51°34'05''E), 500 m, 3.VI.2008, A. Skale, D. Frenzel (CDFS, CASH, NME).
Ecological note. Collected in primary forest.
Distribution. E: AB A: IN.

***Pleurathous hyrcanicus* Nasserzadeh, Platia & Barimani, 2008**
Material examined. 2 spm. (♂ ♀) – Iran: Mazandaran Prov., NW Elburz, Javaherdeh Rd., Doshoon Kooh (36°51'87''N, 50°30'41''E), 1460–1750 m, 2.VI.2008, D. Frenzel; Mazandaran Prov., N Elburz, Dohesar-Road, River (36°35'11''N, 50°47'67''E), 550 m, 1.VI.2008, D. Frenzel (CDFS, NME).
Distribution. Iran.

Tribe Agriotini Laporte, 1840

***Agriotes bagherii* Platia, Furlan & Gudenzi, 2002**
Material examined. 1 spm**.** ♂ – Iran: Teheran Prov., Naimaabad, W, Salzwüste (35°49'56''N, 50°28'15''E), 1170 m, 7.V.2012, D. Frenzel (CDFS).
Distribution. A: IN.

***Agriotes brevis* Candèze, 1863**
Material examined. 2 spm. ♂ – Iran: Mazandaran prov., Kodir, Bergwiese (36°26'56''N, 51°48'06''E), 1700 m, 5.V.2012, J. Weipert; Mazandaran prov., Kolijac (36°28'28''N, 51°39'35''E), 1850 m, 5.V.2012, D. Frenzel (CDFS, NME).
Distribution. E: AB AU AR AU BH BU CR CZ FR GE GG GR HU IT MD PL SK SL SP ST UK YU A: IN TM TR, Israel (Platia 2010a).

***Agriotes infuscatus* Desbrochers des Loges, 1870**

Material examined. 1 spm. ♂ – Iran: Mazandaran prov., vic. Lashak (36°23’18”N, 51°39’12”E), 1600–1700 m, 6.V.2010, D. Frenzel (CDFS).

Distribution. E: AB AR BU CR FR GG IT ST, Greece (PLATIA 2011), Bosnia-Herzegovina (PLATIA & NEMETH 2011) A: IN TR

***Agriotes lineatus* (Linnaeus, 1758)**

Material examined. 1 spm. ♂ – Iran: Ardabit prov., Namin S (38°22’16”N, 48°26’00”E), 1340 m, 2.V.2012, D. Frenzel (CDFS).

Distribution. E: AB AL AR AU BE BH BU BY CR CT CZ DE EN ES FI FR GB GE GG GR HU IR IT LA LS LT LU MC MD NL NR NT PL PT RO SK SL SP ST SV SZ TR UK YU A: ES GAN IN JIL KI KZ LE, LIA MG SY TM TR XIN, Israel (PLATIA 2010a) AURi NARi NTri

***Agriotes modestus* Kiesenwetter, 1858**

Material examined. 4 spm. (♂♀) – Iran: Teheran prov., Karaj university of agriculture (35°47’97”N, 51°00’25”E), 1360 m, 25.V.–8.VI.2008, A. Skale, D. Frenzel; Cahar Prov., Mahali-o-Bakhtiyari, Shahr-e Kord, NW Ghale Sabz. (32°30’36”N, 50°14’49”E), 2240 m, 10.V.2012, J. Weipert (CDFS, CASH, NME).

Distribution. E: AU BU CZ FR GR IT HU MD RO SK SP ST UK A: IN KZ SY, Turkmenistan (PLATIA 2010a), Morocco (PLATIA & GUDENZI 2005), Algeria (PLATIA 2011).

***Agriotes sputator* (Linnaeus, 1758)**

Material examined. 1 spm. ♀ – Iran: Ardabil prov., Heyran (38°24’25”N, 48°35’39”E), 1100–1200 m, 2.V.2012, D. Frenzel (CDFS).

Distribution. E: AB AL AR AU BE BH BU BY CR CT CZ DE EN FR GB GE GG GR HU IT LA LS LT LU MC MD NL NR NT PL RO SL SP ST SV SZ UK YU N: AG A: ES FE IN KZ MG NO SY TR WS XIN NARi

Tribe Ampedini Gistel, 1856

***Ampedus weigeli* n. sp.** Fig. 1, 1a, 5, 5a, 6, 9

Holotype ♂ – Iran: Teheran prov., Karaj university of agriculture (35°47’97”N, 51°00’25”E), 1360 m, 30.IV.2010, A. Weigel (NME); 2 Paratypes (♂♀) – same data as Ht (♂) (CGPG); Ardabil-Gilan Prov. Boarder, 30 km W Astara, 18.V.2007, A. Klimenko (♀)(CSRG); 5 Paratypes (2 ♂, 3 ♀): Azerbaijan: Yardimli rayonu, Talysh Mts., 17–23 km NE of Yardimli (38°56’N, 48°26’E), 368–450 m, 27.V., 1.–7.VI.2013, R. Krolik; A. Lasoń (CAB, CKK, CGPG).

Diagnosis. Species comparable to *Ampedus lenkoranus* (Reitter, 1889) for the general shape and colour it can be distinguished by the second article of antennae shorter compared to the third, the shape of pronotum with sides less arcuate and shorter paramera of male genitalia.

Description. Male. Bicoloured; shiny, black with red-orange elytra and brownish legs; covered with moderate blackish pubescence.

Frons convex, punctures of variable size, umbilicate with very short, variable, shiny intervals.

Antennae just reaching the apices of the posterior angles of pronotum, serrated from fourth article on, second article subcylindrical, as long as wide, third subconical just longer than second and nearly as long as wide, second and third taken together as long as fourth; fourth-tenth triangular, fourth a little longer than wide, the following on average as long as wide, last longer than penultimate, ellipsoidal, constricted at the apical third.

Pronotum 1,15–1,2x wider than long, widest at the apices of the posterior angles, convex, with a vestige of mid-longitudinal depression on the basal slope; sides from behind the middle very gradually converging forwards, slightly sinuate before the posterior angles, the latter not or just divergent, shortly unicarinate; puncturation rather uniformly distributed, only on the disk a little sparser, slightly umbilicate, with variable and very short shiny intervals, gradually denser towards the

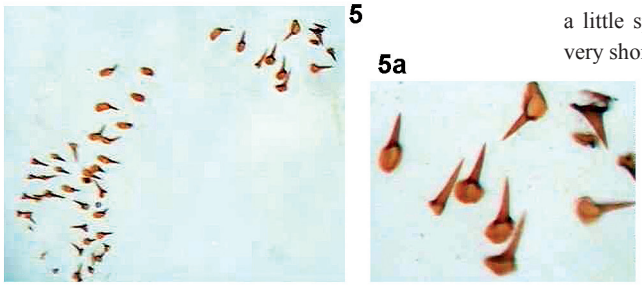


Fig. 5, 5a. Sclerites of bursa copulatrix. *Ampedus weigeli* n. sp.

sides, more clearly umbilicate and nearly contiguous at the lateral extremities.

Scutellum shield-shaped, longer than wide, slightly sinuate at sides, ridged at base, moderately convex, punctured.

Elytra 2,85–2,9x longer than pronotum and as wide as it, convex; sides subparallel from base to the middle then gradually converging to the apices; striae well marked and deeply punctured; interstriae flat with smaller punctures.

Aedeagus as in fig. 1, 1a (length 1,25 mm).

Female. Very similar to the male with shorter antennae not reaching the apices of the posterior angles and second and third antennal segments, taken together, a little longer than fourth.

Bursa copulatrix sclerified as in fig. 5, 5a.

Size. Length 8,4–9,2 mm; width 2,37–2,62 mm.

Etymology. The species is dedicated to the collector Andreas Weigel (Wernburg), specialist of Cerambycidae and xylobiontic beetles.

***Ampedus biformis* Dolin, 1970**

Material examined. 2 spm. (♂ ♀) – Iran : Mazandaran Prov., vic. Now Shar, Kheiroud Kenar forest (36°33’06”N, 51°36’47”E), 1050 m, 3.V.2010, A. Skale (NME).

Distribution. E: AB A: IN.

***Ampedus cyanicollis* Dolin, 1970**

Material examined. 3 spm. (1 ♂, 2 ♀) – Iran: Mazandaran prov., Nur, national reserve (36°34’51”N, 52°02’56”E), 8 m, 4.V.2010, A. Skale; Mazandaran Prov., vic. Koliijak, mountain slope (36°28’18 ‘’N, 51°40’14 ‘’E), 1840 m, 5.V.2010, A. Weigel, D. Frenzel; Mazandaran Prov., vic. Koliijak (36°28’28”N, 51°39’35”E), 1600-1850 m, 4–5.V.2010, D. Frenzel; Mazandaran prov., vic. Now Shahr, Kheiroud Kenar forest (36°36’35”N, 51°34’10”E), 40–200 m, 3–4.V.2010, D. Frenzel; Gilan prov., Gijan, W of Hashtpar (37°41’19”N, 48°51’17”E), 240 m, 1.V.2012, J. Weipert (CDFS, CASH, CJWP, NME).

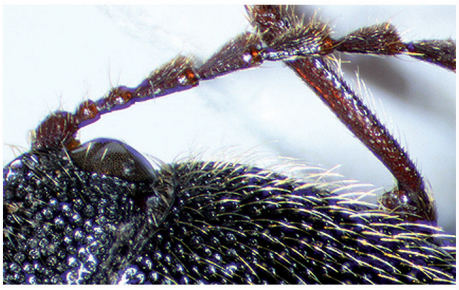
Distribution. E: AB A: IN.

***Ampedus iranicus* Gurjeva, 1972**

Material examined. 3 spm. ♀ – Iran: Mazandaran Prov., vic. Koliijak, mountain slope (36°28’18 ”N, 51° 40’ 14 ”E), 1840 m, 5.V.2010, A. Weigel; Mazandaran prov., Firooz Kola, high plain (36°23’12”N, 51°46’11”E), 1500–1600 m, 6.V.2010, A. Weigel (CJWP, NME).

Distribution. A: IN.

6



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8

Fig. 6–8. First articles of antennae. **6.** *Ampedus weigeli* n. sp. ♂; **7.** *Melanotus karajensis* n.sp. ♂; 8. *Hemicrepidius agajewi* Platia.

***Ampedus lenkoranus* (Reitter, 1889)**

Material examined. 1 spm. ♂ – Iran: Mazandaran prov., Nur, national reserve (36°34’51”N, 52°02’56”E), 8 m, 4.V.2010, A. Skale (NME).

Distribution. E: AB AR ST A: IN.

Tribe Megapenthini Gurjeva, 1973

***Megapenthes rutilipennis* Candèze, 1859**

Material examined. 4 spm. ♂ ♀ – Iran: Mazandaran prov., Nur, national reserve (36°34’51”N, 52°02’56”E), 8 m, 4.V.2010, A. Weigel, D. Frenzel; Mazandaran Prov., Now Shar, S. Kheiroud Kenar forest (36°34’24”N, 51°35’24”E), 400–900 m, 4.V.2012, J. Weipert (NME).

Distribution. E: AB ST A: IN TR.

***Procraerus tibialis* (Lacordaire, 1835)**
Material examined. 2 spm. ♀ – Iran: Mazandaran Prov., vic. Now Shar, Kheiroud Kenar forest (Gorazbon distr.) (36°31'38''N, 51°38'46''E), 880 m, 2.V.2010, A. Weigel (CJWP, NME).
Distribution. E: AU BE BH BU CR CT CZ DE FI FR GB GE GR HU IT LT LV MD NR PL RO SK SL SP SV ST SZ UK YU N: AG A: IN, Albania (Pedroni & Platia 2010) A: Turkey (Mertlik & Platia 2008).

Tribe Pomachiliini Candèze, 1859

***Betarmon bisbimaculatus* (Fabricius, 1803)**
Material examined. 6 spm. (♂♀) – Iran: Mazandaran Prov., N Elburz, Kheirud (36°37'40''N, 51°34'52''E), 2.VI.2008, D. Frenzel; Mazandaran Prov., N Elburz, Now Shahr (36°36'17''N, 51°38'23''E), 1–5.VI.2008, D. Frenzel (CDFS, NME).
Distribution. E: AB AR AU BU CR CZ FR GE GG GR HU IT PL RO SK SL SP SZ UK YU A: IN TR.

Tribe Synaptini Gistel, 1856

***Adrastus limbatus* (Fabricius, 1777)**
Material examined. 1 spm. ♂ – Iran: Teheran Prov., S Elburz, Kondor (35°50'19''N, 51°05'21''E), 1642 m, A. Skale (CASH).
Distribution. E: AL AU BE BH BU BY CR CZ FR GE GR HU IT LT LU MC MD NL PL RO SK SL SP ST SZ UK YU A: TR. **New to Iran.**

***Adrastus samedovi* Dolin & Agajew, 1974**
Material examined. 4 spm. (3 ♂, 1 ♀) – Iran: Mazandaran Prov., N Elburz, Kheirud (36°37'40''N, 51°34'52''E), 2.VI.2008, D. Frenzel (CDFS, NME).
Distribution. E: AB A: IN, Turkey (Mertlik & Platia 2008).

***Synaptus filiformis* (Fabricius, 1781)**
Material examined. 1 spm. ♂ – Iran: Gilan Prov., Astaneh, Safid Rud (37°15'32''N, 49°55'27''E), 3.V.2012, D. Frenzel (CDFS).
Distribution. E: AB AL AR AU BE BH BU BY CR CT CZ EN FR GB GE GG GR HU IT LA LS LT LU MC MD NL PL PT RO SK SL SP ST SZ UK YU A: IN KZ SY TR, Lebanon, Tadzhikistan (Platia 2010a).

Subfamily Melanotinae Candèze, 1859

***Melanotus karajensis* n. sp.** Fig. 2, 2a, 7, 10.
Holotype ♂ – Iran: Teheran prov., Karaj university of agriculture (35°47'97''N, 51°00'25''E), 1360 m, 24.V.2008, J. Weipert (NME); 5 Paratypes ♂ – same data as Ht, 24–25–26.V.2008, J. Weipert, D. Frenzel (CDFS, CGPG , CJWP, NME).
Diagnosis. The new species can be compared to *Melanotus sobrinus* (Ménétriés, 1832) for the general shape, it can be separated by the slender body, the uniform dark-brown colour and genitalia.
Description. Male. Moderately shiny; entirely dark-brown with antennae and legs lighter, brown-ferruginous; covered with dense, partially erect, yellow-golden, pubescence.
Frons flat, anterior margin moderately and regularly arcuate, slightly thickened and just protruding above the clypeus, puncturation coarse, punctures of variable diameters, strongly umbilicate with very short, shiny interstices or contiguous.
Antennae exceeding by one article the apices of posterior angles of pronotum, serrated from fourth article on; second article subcylindrical, as long as wide, third subconical, a little longer than second, taken together, as long as fourth; fourth-tenth triangular, on average 1,4x longer than wide, last longer than penultimate, subellipsoidal, constricted at the apical third.
Pronotum just wider than long, widest at the apices of posterior angles, regularly convex, sides arcuate, from the middle regularly converging forwards, just sinuate before the posterior angles, the latter short, truncate, with a short carina subparallel to the lateral margins; puncturation rather uniformly distributed, punctures on disk umbilicate, with very short, shiny intervals, gradually denser towards the sides contiguous or confluent at the lateral extremities.
Scutellum shield-shaped, ridged at base, slightly situate at sides, flat, coarsely punctured.
Elytra 2,9–3x longer than pronotum and as wide as it, convex; sides subparallel from base to behind the middle, further gradually converging to the apices; striae well marked and deeply punctured, interstriae flat with smaller and dense punctures.
Prosternal process immediately bent behind the procoxal cavities and slightly emarginate at apex.
Aedeagus as in fig. 2, 2a (length 1,34 mm).

Fig. 9–12. Habitus ♂. **9.** *Ampedus weigeli* n. sp.; **10.** *Melanotus karajensis* n. sp.; **11.** *Hemicrepidius agajewi* Platia; **12.** *Athous* (s. str.) *haemorrhoidalis* (F.).

9

10

11

12

Female unknown.
Size. Length 9,7– 11,8 mm; width 2,56–3,12 mm.
Etymology. The name of the species is derived from Karaj, locality where the species was collected.

***Melanotus admirabilis* Gurjeva, 1984**
Material examined. 1 spm. ♂ – Iran: Mazandaran prov., C-Elburz, Kandovar, Tunnel env. (36°09’61’’N, 51°19’31’’E), 2650 m, 5.VI.2008, D. Frenzel (NME).
Distribution. A: TM, IN.

***Melanotus fulvus* Reitter, 1891**
Material examined. 2 spm. ♂ – Teheran prov., Karaj university of agriculture (35°47’97’’N, 51°00’25’’E), 1360 m, 20.V.2008, A. Skale (CASH, NME).
Distribution. A: IN IQ TM, Turkey (Mertlik & Platia 2008), Israel (Platia 2010a), Syria (Platia 2011).

***Melanotus sobrinus* (Ménétriés, 1832)**
Material examined. 2 spm. ♂ – Iran: Teheran prov., Karaj university of agriculture (35°47’97’’N, 51°00’25’’E), 1360 m, 25.V–8.VI.2008, A. Skale (CASH, NME).
Distribution. E: AB AR GG ST A: IN TM.

***Melanotus villosus* (Fourcroy, 1785)**
Material examined. 5 spm. (2 ♂, 3 ♀) – Iran: Mazandaran Prov., vic. Now Shar, Kheiroud Kenar forest (Gorazbon distr.)(36°31’38’’N, 51°38’46’’E), 880 m, 2.V.2010, A. Weigel; Mazandaran Prov., vic. Now Shar, Kheiroud Kenar forest (36°34’24”N, 51°35’24”E), 400–900 m, 4.V.2012, D. Frenzel; Mazandaran Prov., NW Elburz, Javaherdeh Rd., Doshoon Kooh (36°51’87’’N, 50°30’41’’E), 1460–1750 m, 2.VI.2008, D. Frenzel (CDFS, CJWP, NME).

Distribution. E: AB AL AR AU BE BH BU BY CR CT CZ DE EN FI FR GB GE GG GR HU IR IT LA LS LT LU MD MK NL NR NT PL PT RO SK SL SP SV ST SZ TR UK YU N: AG MO A: IN TR YUN „Manchuria".

Subfamily Negastriinae Nakane & Kishii, 1956

***Zorochros mesasiaticus* (Dolin, 1995)**
Material examined. 1 spm. ♀ – Iran: Qom prov., Neyzar, 30 km N Deljian, Rud-e-Qom (34°16'59"N, 50°31'33"E), 1300 m, 8.V.2012, D. Frenzel (CDFS).
Distribution. A: KI KZ TD UZ. **New to Iran.**

***Zorochros nanus* (Gurjeva, 1963)**
Material examined. 1 spm. ♀ – Iran: Qazvin Prov., SW Elburz, Kordak, Kordak-river (36°10'70"N, 50°49'77"E), 1900 m, 28.V.2008, J. Weipert (CJWP).
Distribution. A: KI, Turkey (Mertlik & Platia 2008). **New to Iran.**

***Zorochros pilosellus* (Reitter, 1895)**
Material examined. 4 spm. (♂ ♀) – Iran: Teheran Prov., S Elburz, Kondor nr. Karaj Bachtal (35°50'19"N, 51°05'21"E), 1640 m, D. Frenzel; Isfahan prov., Quamsar, 10 km SW Kamoo (33°39'37"N, 51°16'04"E), 2650 m, 12.V.2012, D. Frenzel (NME, CDFS).
Distribution. E: AB AR GR A: IN TM TR.

Subfamily Cardiophorinae Candèze, 1860

***Cardiophorus bogatschevi* Dolin, 1985**
Material examined. 1 spm. ♀ – Iran: Ardabil Prov., S Namin (38°22'16"N, 48°26'002E), 1340 m, 2.V.2012, J. Weipert (NME).
Distribution. E: AB A: IN KZ TM, Uzbekistan (Platia 2011).

***Cardiophorus magnanii* Platia, Furlan & Gudenzi, 2002**
Material examined. 1 spm. ♀ – Iran: Fars prov., river above Qalat village (29°47'99"N, 52°19'56"E), 2240 m, 28.IV.2010, A. Skale (NME).
Distribution. A: IN.

***Cardiophorus nigratissimus* Buysson, 1891**
Material examined. 23 spm. (♂, ♀) – Iran: Teheran Prov., S Elburz, Kondor (35°50'19"N, 51°05'21"E), 1642 m, 27.V.2008, A. Skale; Teheran Prov., Najmaabad W (35°55'04"N, 50°33'18"E), 1200 m, 7.V.2012, D. Frenzel; Qazvin Prov., SW Elburz, Fashandak (36°09'82"N, 50°42'98"E), 1870 m, 28.V.2008, A. Skale, J. Weipert, D. Frenzel; Fars prov., Persepolis (29°56'07"N, 52°53'11"E), 1600 m, 27.IV.2010, D. Frenzel (CDFS, CASH, CJWP, NME).
Distribution. E: AB AR GG A: IN IQ SY TM TR.

***Cardiophorus vestigialis* Erichson, 1840**
Material examined. 37 spm. (♂, ♀♀) – Iran: Mazandaran prov., Nur, national reserve (36°34'51"N, 52°02'56"E), 8 m, 4.V.2010, A. Weigel, A. Skale, D. Frenzel; Mazandaran prov., Firooz Kola, high plain (36°23'12"N, 51°46'11"E), 1500–1600 m, 6.V.2010, J. Weipert, A. Weigel ; Mazandaran prov., 10 km W Pol-e Sefid (36°05'43"N, 52°57'20"E), 870 m, 6.V.2012, J. Weipert, D. Frenzel; Mazandaran prov., Koljiak (36°26'06"N, 51°43'58"E), 1400 m, 5.V.2010, D. Frenzel; Mazandaran prov., vic. Lashak (36°23'18"N, 51°39'12"E), 1600-1700 m, 6.V.2010, D. Frenzel; Mazandaran Prov., Dashtnazir (36°25'40"N, 51°28'54"E), 1000 m, 5.V.2012, J. Weipert; Mazandaran Prov., 15 km E Baladeh, vic. Valashid (36°12'13"N, 51°52'31"E), 1980 m, 7.V.2010, A. Weigel; Teheran prov., Karaj university of agriculture (35°47'97"N, 51°00'25"E), 1360 m, 30.IV.2010, A. Skale; Teheran Prov., C Elburz, Damavand Mt., Gosfand Sara, Larijan (35°52'64"N, 52°07'55"E), 2450-2600 m, 29.V.2008, D. Frenzel (CDFS, CASH, CAWW, CJWP, NME).
Distribution. E: AB AL AR AU BE BH BU CR CT CZ FI FR GB GE GG GR HU IT MD NR NT PL PT RO SK SL SP SV ST SZ UK YU N: AG EG LB MO TU A: CY ES FE IN KZ MG TM TR WS, Lebanon, Syria, Jordan (Platia 2010a).

***Craspedostethus permodicus* (Faldermann, 1835)**
Material examined. 15 spm. (♂, ♀) – Iran: Teheran prov., Karaj university of agriculture (35°47'97"N, 51°00'25"E), 1360 m, 25.V.–8.VI.2008, A. Skale, D. Frenzel, J. Weipert (CDFS, CASH, CJWP, NME).
E: AR ST A: IN.

Updated checklist of Elateridae from Iran

Subfamily Agrypninae Candèze, 1857

Tribe Agrypnini Candèze, 1857

Adelocera ovalis (Germar, 1824)
Agrypnus bilyi Cate, Platia & Schimmel, 2002
Agrypnus crenicollis (Ménétriés, 1832)
Agrypnus murinus (Linnaeus, 1758)
Agrypnus thibetanus (Reitter, 1913)
Lacon lepidopterus (Panzer, 1801)
Lacon mekrani (Candèze, 1889)
Lacon modestus (Boisduval, 1835)
Lacon nadaii Platia & Nemeth, 2011
Lacon unicolor (Candèze, 1874)
Lanelater arabicus (Candèze, 1874)
Lanelater bartoni (Fleutiaux, 1902)
Lanelater bipunctatus (Candèze, 1857)
Lanelater iranicus Platia, 2012
Lanelater persicus (Candèze, 1874)
Lanelater saudarabicus Chassain 1983
Octocryptus wittmeri Chassain, 1979

Tribe Hemirhipini Candèze, 1857

Calais brandti Platia & Gudenzi, 1999
Calais persicus Chassain, 1991
Calais parreysii (Steven, 1830)

Tribe Oophorini Gistel, 1856

Aeoloderma crucifer (Rossi, 1790)
Aeoloides atricapillus (Germar, 1824)
Aeoloides figuratus (Germar, 1844)
Aeoloides grisescens (Germar, 1844)
Aeoloides holzschuhi Platia & Schimmel, 1997
Aeolosomus rossii (Germar, 1844)
Conoderus productus arabicus (Chassain, 1979)
Drasterius bimaculatus (Rossi, 1790)
Heteroderes gallagheri Platia & Schimmel, 1997
Heteroderes heydeni (Reitter, 1891)

Subfamily Dendrometrinae Gistel, 1856

Tribe Dendrometrini Gistel, 1856

Athous (s. str.) *haemorrhoidalis* (Fabricius, 1801)
Athous (*Haplathous*) *subfuscus* (O.F. Müller, 1764)
Athous (*Orthathous*) *astrabadensis* Faust, 1877
Athous (*Orthathous*) *iranicus* Platia, 2004
Denticollis linearis (Linnaeus, 1758)
Hemicrepidius agajewi Platia, 2008
Hemicrepidius hirtus (Herbst, 1784)
Hemicrepidius nigritulus (Reitter, 1890)
Limoniscus wittmeri Chassain, 1998
Limonius minutus (Linnaeus, 1758)
Megathous menetriesi (Reitter, 1890)
Pleurathous rosinae (Reitter, 1889)
Pleurathous hyrcanicus Nasserzadeh & Platia, 2008
Pseudocrepidophorus flavescens (Eschscholtz, 1818)

Tribe Prosternini Gistel, 1856

Anostirus eschscholtzi (Faldermann, 1835)
Anostirus lederi (Heyden, 1878)
Anostirus saltinii Cate, Platia & Schimmel, 2002
Anostirus teheranus Binaghi, 1940
Hypoganus stepanovi Denisova, 1948
Prosternon admirabilis Gurjeva, 1984
Selatosomus pasticus (Ménétriés, 1832)

Subfamily Elaterinae Leach, 1815

Tribe Agriotini Laporte, 1840

Agriotes bagherii Platia, Furlan & Gudenzi, 2002
Agriotes brevis Candèze, 1863
Agriotes caspicus Heyden, 1883
Agriotes constrictus Reitter, 1890
Agriotes danieli Platia & Nemeth, 2011
Agriotes hivae Platia, 2008
Agriotes infuscatus Desbrochers des Loges, 1870
Agriotes iranicus Platia, Furlan & Gudenzi, 2002
Agriotes iraqensis Platia & Gudenzi, 1997
Agriotes lapicida Faldermann, 1835
Agriotes lineatus (Linnaeus, 1767)
Agriotes meticulosus Candèze, 1863
Agriotes modestus Kiesenwetter, 1858
Agriotes pilosellus (Schönherr, 1817)
Agriotes proximoides Platia, Furlan & Gudenzi, 2002
Agriotes samai Platia, Furlan & Gudenzi, 2002
Agriotes sputator (Linnaeus, 1758)
Agriotes squalidus Schwarz, 1891
Agriotes ustulatus (Schaller, 1783)

Tribe Ampedini Gistel, 1856

Ampedus biformis Dolin, 1970
Ampedus cardinalis (Schiödte, 1865)
Ampedus charbinensis Schimmel, 2006
Ampedus cinnaberinus (Eschscholtz, 1829)
Ampedus cyanicollis Dolin, 1970
Ampedus elegantulus (Schönherr, 1817)
Ampedus hjorti (Rye, 1905)
Ampedus iranicus Gurjeva, 1972
Ampedus lenkoranus (Reitter, 1889)
Ampedus ocellatus (Buysson, 1891)
Ampedus persicus Gurjeva, 1972
Ampedus pomonae (Stephens, 1830)
Ampedus rufipennis (Stephens, 1830)
Ampedus sanguineus (Linnaeus, 1758)
Ampedus sanguinolentoides Platia, Furlan & Gudenzi, 2002
Ampedus sinuatus Germar, 1844
***Ampedus weigeli* n. sp.**
Haterumelater bimaculatus Schimmel, 1998
Haterumelater fulvago (Marseul, 1868)
Reitterelater elongatus Platia, 2010

Tribe Elaterini Leach, 1815

Elater ferrugineus lenkoranus Gurjeva, 1974
Mulsanteus guillebelli (Mulsant & Godart, 1853)
Mulsanteus istvani Platia & Nemeth, 2011
Mulsanteus kalabzai Mertlik & Dusanek, 2006
Pittonotus iranicus Platia & Nemeth, 2011
Pittonotus theseus (Germar, 1817)

Tribe Megapenthini Gurjeva, 1973

Ectamenogonus montandoni (Buysson, 1888)
Megapenthes pallidulus Cate, Platia & Schimmel, 2002
Megapenthes rutilipennis Candèze, 1859
Procraerus stepanovi Khnzorian, 1959
Procraerus tibialis (Lacordaire, 1835)

Tribe Physorhinini Candèze, 1859

Chastanus rosti (Schwarz, 1897)
Ischnodes sanguinicollis (Panzer, 1793)
Podeonius bimaculatus Platia, 2008

Tribe Pomachiliini Candèze, 1859

Betarmon bisbimaculatus (Fabricius, 1803)

Tribe Synaptini Gistel, 1856

Adrastus dolini Wellschmied, 1978
Adrastus limbatus (Fabricius, 1777)
Adrastus samedovi Dolin & Agajew, 1974
Peripontius crassus (Buysson, 1906)
Synaptus filiformis (Fabricius, 1781)
Tolphorea bicolor Cate, Platia & Schimmel, 2002
Tolphorea luristanicus (Pic, 1920)
Tolphorea volans Gurjeva, 1983

Subfamily Melanotinae Candèze, 1859

Melanotus admirabilis Gurjeva, 1984
Melanotus bajulus (Erichson, 1841)
Melanotus brunnipes (Germar, 1824)
Melanotus castanipes (Paykull, 1800)
Melanotus dichroides Platia & Gudenzi, 1999
Melanotus fraseri Platia & Schimmel, 1993
Melanotus fulvus Reitter, 1891
Melanotus fusciceps (Gyllenhal, 1817)
Melanotus iranicus Platia & Gudenzi, 1999
Melanotus kalabzai Platia & Gudenzi, 2006
***Melanotus karajensis* n. sp.**
Melanotus klimenkoi Platia, 2012
Melanotus kliri Cate, Platia & Schimmel, 2002
Melanotus loudai Platia & Gudenzi, 2005
Melanotus monticola (Ménétriés, 1832)
Melanotus punctosinus Cate, Platia & Schimmel, 2002
Melanotus sobrinus (Ménétriés, 1832)
Melanotus villosus (Fourcroy, 1785)

Subfamily Negastriinae Nakane & Kishii, 1956

Quasimus minutissimus (Germar, 1817)
Zorochros araxicola (Reitter, 1905)
Zorochros freyi Dolin, 1996
Zorochros iranicus Dolin, 2002
Zorochros kopetdaghensis Dolin, 1994
Zorochros mesasiaticus (Dolin, 1995)
Zorochros nanus (Gurjeva, 1963)
Zorochros pallicrus (Desbrochers des Loges, 1875)
Zorochros pilosellus (Reitter, 1895)
Zorochros quadrinaevus (Reitter, 1895)
Zorochros recellentus Dolin, 1995

Subfamily Cardiophorinae Candèze, 1860

Cardiophorus bellus Platia & Gudenzi, 2000
Cardiophorus bioculatus Platia, 2010

Cardiophorus bogatschevi Dolin, 1985
Cardiophorus carnosus Platia & Gudenzi, 2002
Cardiophorus gianassoi Platia, 2010
Cardiophorus golestanicus Platia, 2010
Cardiophorus hauseri Schwarz, 1900
Cardiophorus jelineki Cate, Platia & Schimmel, 2002
Cardiophorus kalashiani Mardjanian & Barimani, 2011
Cardiophorus khnzoriani Mardjanian & Barimani, 2011
Cardiophorus klimenkoi Platia, 2008
Cardiophorus kryzhanovskyi Dolin & Tchantladze, 1980
Cardiophorus maculatus Cate, Platia & Schimmel, 2002
Cardiophorus magnanii Platia, Furlan & Gudenzi, 2002
Cardiophorus megathorax (Faldermann 1835)
Cardiophorus miniaticollis Candèze, 1860
Cardiophorus nigratissimus Buysson, 1891
Cardiophorus persianus Cate, Platia & Schimmel, 2002
Cardiophorus picinus Platia & Gudenzi, 2002
Cardiophorus pictus (Faldermann, 1835)
Cardiophorus pruinosus Buysson, 1902
Cardiophorus ruficruris (Brullé, 1832)
Cardiophorus sacratus Erichson, 1840
Cardiophorus syriacoides Platia & Cate, 2001
Cardiophorus terminasiani Mardjanian & Barimani, 2011
Cardiophorus trimaculatus Schwarz, 1894
Cardiophorus varandi Mardjanian & Barimani, 2011
Cardiophorus varius Cate, Platia & Schimmel, 2002
Cardiophorus vestigialis Erichson, 1840
Craspedostethus antennalis Cate, Platia & Schimmel, 2002
Craspedostethus dilutus (Erichson, 1840)
Craspedostethus iranicus Platia & Gudenzi, 1999
Craspedostethus longicornis Cate, Platia & Schimmel, 2002
Craspedostethus permodicus (Faldermann, 1835)
Craspedostethus schusteri (Schwarz, 1897)
Dicronychus desbrochersi Platia & Gudenzi, 2004
Dicronychus equiseti (Herbst, 1784)
Dicronychus fusivittatus Platia & Gudenzi, 1999
Dicronychus hoberlandti Cate, Platia & Schimmel, 2002
Dicronychus latescapulatus (Buysson, 1906)
Dicronychus mesopotamicus Platia & Gudenzi, 1999
Dicronychus nigropunctatus (Candèze, 1860)
Dicronychus quadrinaevus (Reitter, 1891)
Dicronychus rubripes (Germar, 1824)
Neocardiophorus pilicornis Platia, 2008

Subfamily Aplastinae Stibick, 1979

Tribe Aplastini Stibick, 1979

Gurjevelater iranicus Platia & Gudenzi, 2001
Lomopneus mundus Gurjeva, 1976

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BAUMBACH, H.; H. SÄNGER & M. HEINZE (Hrsg.) (2013): Bergbaufolgelandschaften Deutschlands. Geobotanische Aspekte und Rekultivierung. – Weissdorn-Verlag, Jena, 1. Auflage, 668 S., 332 überwiegend farbige Abbildungen, 114 Tabellen, Preis: 49,95 €.
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Gegliedert nach den geförderten Rohstoffen liefert das vorliegende Buch eine Zusammenstellung wissenschaftlicher Ergebnisse und praktischer Erfahrungen zu den Bergbaufolgelandschaften der wichtigsten Reviere Deutschlands. Neben einer Vorstellung der einzelnen Industriestandorte, wurden knapp die Entstehung der Rohstoffe, ihre Abbauverfahren und deren Auswirkungen auf den Naturhaushalt geschildert. Die Bergbaufolgelandschaften sind in ihren abiotischen Umweltbedingungen dargestellt und geobotanisch (Flora, Vegetation, Sukzession) beschrieben. Soweit es die Datengrundlage ermöglicht, wurden Vorkommen, räumliche und zeitliche Verbreitung der sich spontan einstellenden Flora und Vegetation sowie die verschiedenen Rekultivierungsversuche und ihre Entwicklungen wiedergegeben. Dabei wurde auch auf die Ursachen und Muster der Verteilung von Pflanzen und Pflanzengesellschaften eingegangen und, wenigstens zum Teil, auf die Ausbreitungsmechanismen, Strategietypen und Ansprüche der vorgefundenen Pflanzenarten. In den naturschutzfachlichen Bewertungen finden nicht nur Flora, Vegetation und Biotoptypen Erwähnung, sondern über den botanischen Tellerrand wird auch die Bedeutung dieser Lebensräume für die einheimische Fauna betrachtet.
Die Beteiligung eines Autorenkollektivs (insgesamt 31 Autoren) bietet den Vorteil, auch sehr spezielle Themenschwerpunkte einfließen zu lassen. So werden in den ausführlichen Beschreibungen der Rekultivierungsflächen im Braunkohlerevier der Niederrheinischen Bucht u. a. forstwirtschaftliche Aspekte wie Wüchsigkeit berücksichtigt und Ergebnisse der Ansaat-Versuche zur Etablierung artenreicher Grünlandbestände vorgestellt.
Leider beeinträchtigt die unterschiedliche Herangehensweise jedoch die Vergleichbarkeit der vorgestellten Ergebnisse, da die Detailschärfe der Beschreibungen voneinander abweicht. Auch leidet der strukturelle Aufbau darunter, wenn die Grundlagen der Ausbreitung relativ unmethodisch über die einzelnen Kapitel verstreut sind und beispielsweise allgemeine Besiedlungsfaktoren erst im letzten Drittel des Buches erscheinen. Insgesamt stellt das Buch jedoch eine gut fundierte Informationsquelle für Wissenschaftler und Fachleute verschiedener Bereiche dar und bietet sich durch die meist gute Lesbarkeit auch für einen weiteren interessierten Publikumskreis an.

Yvonne Schneemann