To the knowledge of Helopini (Coleoptera: Tenebrionidae) of Morocco
К познанию Helopini (Coleoptera: Tenebrionidae) Марокко

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Abstract. Four species of genera *Helopelius* Reitter, 1922, *Nesotes* Allard, 1876 and *Catomus* Allard, 1876 of the tribe Helopini (Tenebrionidae) were collected in Souss-Massa-Drâa Region of Morocco. *Catomus dlusskyi* **sp. n.** is described from western part of High Atlas (Imouzzer). The new species is most similar to *Catomus thamii* Antoine, 1955, but differs by straight anterior clypeal margin (*C. thamii* has strongly emarginated anterior margin and deeply depressed surface of clypeus), not beaded margins of pronotum (*C. thamii* has beaded base and posterior angles of pronotum) and absence of even weak metallic shades of integument. Images, new data on distribution and bionomics are given for all collected species.

Резюме. В Марокко (регион Souss-Massa-Drâa) собраны 4 вида трибы Helopini (Tenebrionidae) из родов *Helopelius* Reitter, 1922, *Nesotes* Allard, 1876 и *Catomus* Allard, 1876. *Catomus dlusskyi* **sp. n.** описан из западной части Высокого Атласа (Imouzzer). Новый вид наиболее сходен с *Catomus thamii* Antoine, 1955, от которого отличается прямым передним краем наличника (*C. thamii* имеет сильно выемчатый передний край и глубоко вдавленную поверхность наличника), полностью не окаймленными краями переднеспинки (*C. thamii* имеет окаймленное основание и задние углы переднеспинки) и отсутствием даже слабого металлического оттенка покровов. Для всех видов даются изображения, новые данные по распространению и экологии.

Darkling beetles of the tribe Helopini are well studied in Morocco. The greatest contribution to the knowledge of Moroccan representatives of this group was made by Antoine [1937, 1949, 1951, 1954, 1955 etc.] and Español [1943, 1952, 1953, 1963 etc.]. Although Antoine gave information about bionomics of some groups [Antoine, 1937, 1949], ecology of Moroccan Helopini is still little studied.

In February 2015 entomologists from Rostov branch of Russian Entomological Society (A.E. Abramov, M.V. Nabozhenko and I.V. Shokhin) conducted field studies in Souss-Massa-Drâa Region of Morocco. As a result 4 species (including new species of *Catomus* Allard, 1876) of the tribe Helopini were collected. New data about bionomics, geographic and landscape distribution and also images of collected species of genera *Helopelius* Reitter, 1922, *Nesotes* Allard, 1876 and *Catomus* are given below.

Material is deposited in collections of M.V. Nabozhenko (CN), Zoological department of Ege University (ZDEU, Bornova – Izmir, Turkey) and Zoological Institute of Russian Academy of Sciences (ZIN, St. Petersburg, Russia).

Helopelius verrucosus (Vauloger, 1900)
(Figs 1, 2)

Material. Morocco, Agadir (city), 30°18′23.2″N / 09°30′30.1″W, 27.02.2015 (leg. M.V. Nabozhenko, I.V. Shokhin), 2♂, 1♀ (CN), 1♂, 2♀ (ZDEU).

Distribution. Algeria (Oran), Portugal [Reitter, 1922], Morocco (Saidia, Safi, Mogador, Agadir, El Mers, Assaka; Anti-Atlas: Talaint) [Antoine, 1949].

Bionomics. The species was found on small foliose lichens on Tamarix sp. on sand (Fig. 11).

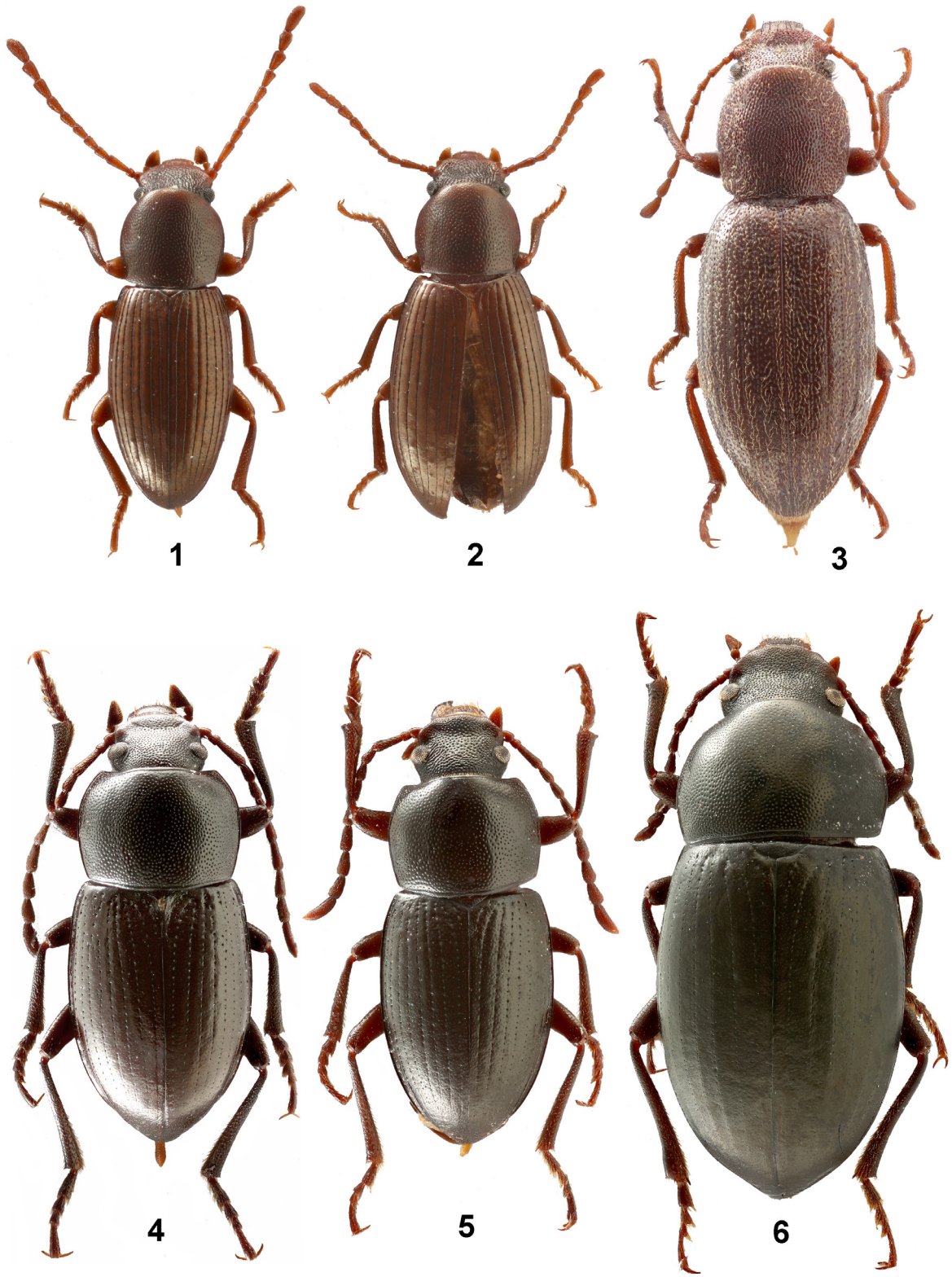
Notes. Reitter [1922] included this species in the genus *Helopelius*. Antoine [1949] noted that Moroccan *Helopelius* must be considered near genera *Stenohelops* Reitter, 1922 and *Gunarus* Des Gozis, 1886. He used Reitter's characters for differences of two first genera: prohypomera with wrinkles (*Helopelius*) or with punctures (*Stenohelops*). Additionally, the acute form of apical piece in male genitalia of *Helopelius* was used.

Helopelius verrucosus has rugose prohypomera only in basal half (near procoxae), the other surface has sparse and very fine punctation. So, this character cannot be used for generic level. Form of parameres is also variable in these 3 genera (from acute to rounded). Some representatives of the subgenus *Stenomaleis* Español, 1957 (the genus *Stenomax* Allard, 1876) and the genus *Gunarus* also have tubercles on elytral intervals 3, 5 and 7 as Moroccan species *H. verrucosus* and *H. zaianus* Antoine, 1949 [Nabozhenko, Keskin, 2009]. Type species of the genus *Helopelius* (*Stenomax aeneipennis* Allard, 1876) and similar species *H. disgregus* (Reitter, 1922) were described from Rhodes [Allard, 1876; Reitter, 1922]. Other species are widespread in Algeria, Morocco, Spain and Portugal. It is highly disjunct for two parts of distribution of this small genus. We must study the type species of the genus *Helopelius* for establishing of systematic position of North African and West European species of the genus.

Catomus (s. str.) *dlusskyi* **sp. n.**
(Fig. 3)

Material. Holotype, ♀: Morocco, Souss-Massa-Drâa Region, Agadir-Ida Ou Tanane Prefecture, above Imouzzer, 1400 m, 30°48′17.5″N / 07°55′16.7″W, 14.02.2015 (leg. M.V. Nabozhenko) (ZIN).

Description. Body brown, shine, without metallic sheen, completely covered with short recumbent light hairs. Anterior margin of clypeus straight, surface of clypeus weakly depressed. Head widest at eye level. Eyes small, transverse. Ratio of head width at level of eyes to distance between eyes 1.38. Genae angled, anterior 2/3 of margin straight. Outer margin of head between genae and clypeus very weakly widely sinuate. Temples not convex,



Figs 1–6. Species of the tribe Helopini from Morocco.

1 – *Helopelius verrucosus*, male; 2 – the same, female; 3 – *Catomus dlusskyi* **sp. n.**, female; 4–6 – *Nesotes catomoides bibersoni*: 4 – male from Agadir, 5 – male from Draa River valley, 6 – female.

Рис. 1–6. Виды трибы Helopini из Марокко.

1 – *Helopelius verrucosus*, самец; 2 – то же, самка; 3 – *Catomus dlusskyi* **sp. n.**, самка; 4–6 – *Nesotes catomoides bibersoni*: 4 – самец из Агадира, 5 – самец из долины реки Драа, 6 – самка.

with strong long dark erect hairs. Dorsal and ventral surface of head with light recumbent hairs. Punctation of head coarse and dense (puncture diameter 2 times as long as distance between punctures), punctures round. Punctures on ventral side of head transverse, sometimes connected. Antennae short, with 2 apical antennomeres shortly extending beyond base of pronotum. Antennomeres thin, elongate; antennomere 11 strongly elongate, asymmetric, widened to rounded apex.

Pronotum weakly longitudinal (1.03 times as long as wide), widest a little before middle, 1.25 times as wide as head. Lateral margins of pronotum weakly rounded, almost straight from widest place to base. Anterior and posterior angles widely rounded. All margins of pronotum not beaded. Disc of pronotum transversely convex. Punctation of disc coarse and dense (puncture diameter 2–3 times as long as distance between punctures), punctures longitudinally elongate, often merged. Prosternum with coarse, dense, transverse, sometimes merged punctation and pubescence of long erected light hairs. Prothoracic hypomera with coarse punctation of longitudinally elongated punctures and recumbent short hairs. Prosternal process not convex.

Elytra elongate (1.63 times as long as wide), oval, widest in middle, 1.7 times as wide as head, 1.35 times as wide and 2.13 times as long as pronotum. Punctures in striae round, deep, not merged in entire furrows. Punctation of intervals coarse and dense (puncture diameter on average 1.5 times as long as distance between punctures), punctures round, deep, a little less than in striae. Each elytral interval with 2 lines of punctures. Epipleura with recumbent pubescence, gradually narrowing, not reaching elytral apex. Epypleural carina very narrow and not visible dorsally.

Mesoventrite process between mesocoxae very narrow, with elevated coarse bead. All ventral side (including mesocoxae and inner part of metacoxae) with coarse and dense punctation (metaventrite more coarsely punctated) and recumbent pubescence. Abdominal ventrite 5 with smaller punctures and long erect hairs.

Trochanters with several recumbent hairs and 1 long erect seta. Femora with erect hairs in base of inner side and simple recumbent pubescence on other surface. Tibiae straight, tarsi not widened, tarsomeres longitudinal, only 3 and 4 protarsomeres with equal width and length. Outer tibial apex abducted.

Body length 8.2 mm, width 2.9 mm.

Bionomics. The species was found under stone. It probably inhabits Quercus ilex rotundifolia and Juniperus sp. in natural landscapes. Unfortunately, large trees of Juniperus and Quercus around Imouzzer are burned and young trees are used for charcoal.

Diagnosis. *Catomus dlusskyi* **sp. n.** close to *C. thamii* Antoine, 1955 from Ait Lahcen, Middle Atlas, which also has simple pubescence of short recumbent hairs. The new species differs from it by straight anterior clypeal margin (*C. thamii* has strongly emarginate anterior clypeal margin and deeply depressed surface of clypeus), not beaded margins of pronotum (*C. thamii* has beaded base and posterior angles of pronotum) and absence of even weak metallic shine.

Etymology. The species is named after Gennady Mikhailovich Dlussky.

Nesotes catomoides bibersoni Antoine, 1954
(Figs 4–6)

Material. Morocco, Souss-Massa-Drâa Region, Tan-Tan Province, valley of Draa River near Tan-Tan, 10.02.2015, 65 m, 28°33′08.47″N / 10°57′24.12″W (leg. M.V. Nabozhenko, I.V. Shokhin, A.E. Abramov), 1♂, 4♀ (CN), 1♂, 2♀ in ethanol (ZDEU); Morocco, Souss-Massa-Drâa Region, Agadir (city), 30°18′23.2″N / 09°30′30.1″W, 27.02.2015 (leg. M.V. Nabozhenko), 1♂ (CN).

Bionomics. The subspecies inhabits sandstone desert near Draa River and feeds on fruticose lichens (Figs 12, 13). Diurnal activity: night from 20:00 to 21:00 (February). One male from Agadir was found on foliose lichens on large trunks of Tamarix sp. on sand (Fig. 11). Diurnal activity: night, 21:00 (February). Rare subspecies.

Notes. The specimen from Agadir differs from typical form by more shine elytra and more wide body.

Nesotes tuberculipennis villarubai (Español, 1943)
(Figs 8, 9)

Material. Morocco, Sidi Ifni Province, pass between Guelmim and Sidi Ifni, 550–600 m, 29°09′58.0″N / 10°05′30.9″W (leg. M.V. Nabozhenko, I.V. Shokhin), 4♂, 8♀ (CN), 6 specimens in ethanol (ZDEU); Morocco, Sidi Ifni Province, near Lakhssas, 823 m, 29°23′01.1″N / 09°47′49.4″W (leg. M.V. Nabozhenko, I.V. Shokhin, A.E. Abramov), 4♂, 9♀ (CN), 12 specimens in ethanol (ZDEU); Morocco, Chtouka-Aït Baha Province, way between Tanalt and Agadir, 640 m, 29°50′56.3″N / 09°14′33.1″W, 13.02.2015 (leg. M.V. Nabozhenko, I.V. Shokhin), 1♂, 1♀. One dry destroyed specimen: near Tanalt, 29°45′N / 09°09′W, ~1000 m, 13.02.2015 (leg. M.V. Nabozhenko).

Distribution (Fig. 7). Morocco, Anti-Atlas. The species was known from Tiznit (type locality), Talainte (near Agadir), Guelmine and Lakhssas [Antoine, 1949].

Bionomics. The species inhabits open woodlands of Argania spinosa from 550 to 1000 m and feeds on fruticose lichens on argan (Fig. 10). Diurnal activity: night from 19:30 to 22:00 in February.

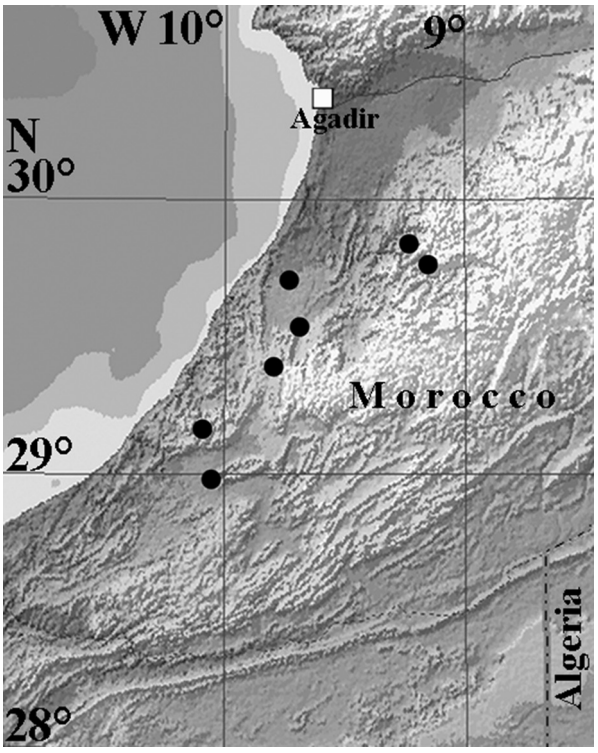
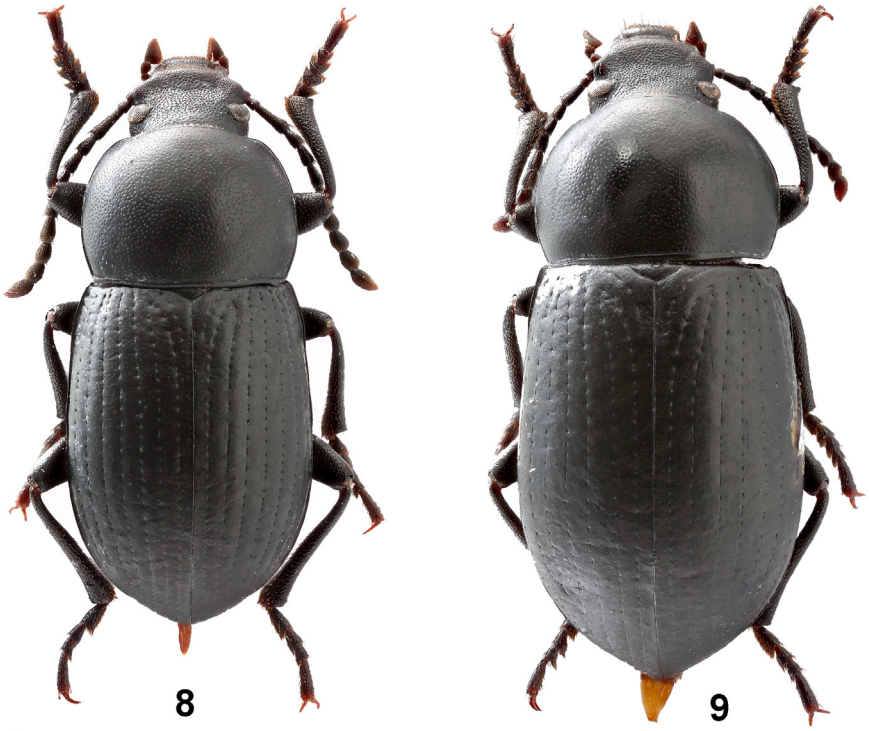
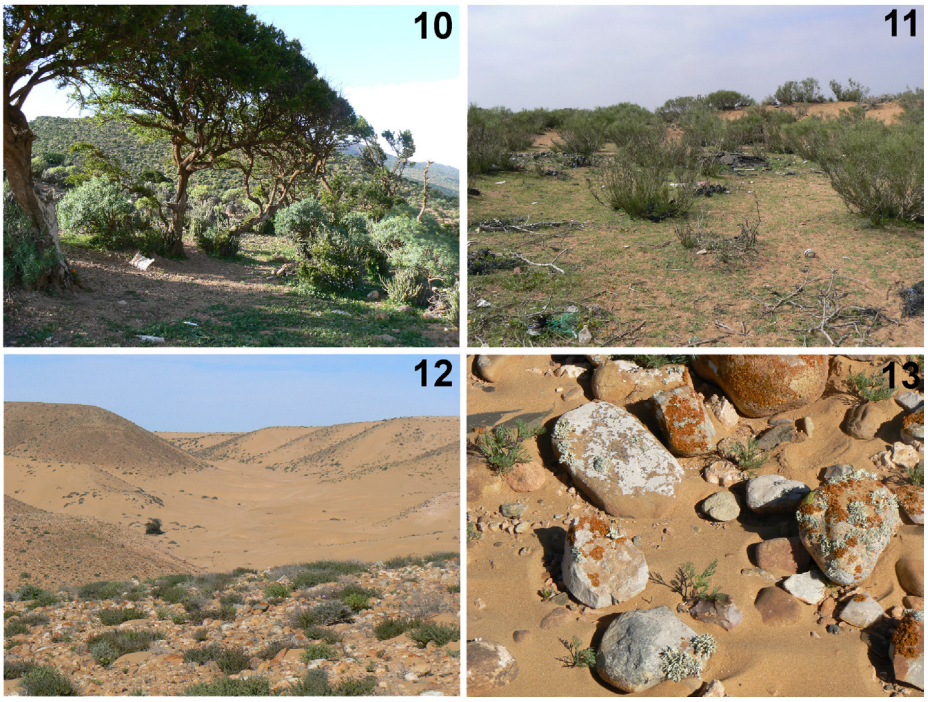


Fig. 7. Distribution of *Nesotes tuberculipennis villarubai*.
Рис. 7. Распространение *Nesotes tuberculipennis villarubai*.





Figs 8–13. Helopini from Morocco and their biotopes.

8 – *Nesotes tuberculipennis villarubai*, male; 9 – the same, female; 10 – biotope of *Nesotes tuberculipennis villarubai*, pass between Guelmim and Sidi Ifni; 11 – biotope of *Helopelius verrucosus* and *Nesotes catomoides bibersoni*, Agadir; 12 – biotope of *Nesotes catomoides bibersoni*, Draa River valley; 13 – the same, fruticose lichens on stones, nutrition for imago of *N. c. bibersoni*.

Рис. 8–13. Helopini из Марокко и их биотопы.

8 – *Nesotes tuberculipennis villarubai*, самец; 9 – то же, самка; 10 – биотоп *Nesotes tuberculipennis villarubai*, перевал между Гуэльмимом и Сиди Ифни; 11 – биотоп *Helopelius verrucosus* и *Nesotes catomoides bibersoni*, Агадир; 12 – биотоп *Nesotes catomoides bibersoni*, долина реки Драа; 13 – то же, кустистые лишайники на камнях, пищевой ресурс для имаго *N. c. bibersoni*.

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