New species and subspecies of *Nymphius* (Coleoptera: Chrysomelidae: Galerucinae) from Iran and Turkey

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**Abstract.** *Nymphius gianassoi* sp. nov. from Iran and *N. stylifer kadlecii* ssp. nov. from Turkey are described, illustrated, and compared with related taxa. The study is completed with a literature review and drawings of male terminal abdominal segments and aedeagi of all known species of *Nymphius* Weise, 1900.

**Key words.** Coleoptera, Chrysomelidae, Galerucinae, *Nymphius*, taxonomy, new species, Iran, Turkey

**Introduction**

The genus *Nymphius* Weise, 1900, was proposed by WEISE (1900) as a subgenus of *Luperus* Geoffroy, 1762, and raised to the generic rank by WILCOX (1973). It is characterized by a metallic green or green-blue colour, very complicated structure of the male abdomen and relatively robust aedeagus, which is quite different than in the genus *Luperus*. FOGATO (1981) included the following taxa into *Nymphius* in his revision: *N. ensifer* (Guillebeau, 1891), *N. forcipifer* (Weise, 1900) (type species), *N. lydios* (Weise, 1886), *N. pravei* (Jacobson, 1899), *N. ogloblini* (Bogachev, 1947), and *N. stylifer* (Weise, 1899). BEZDĚK (2007) downgraded *N. ogloblini* to a subspecies of *N. stylifer*.

Recently, MEDVEDEV (1996) and LOPATIN (2002, 2006) added to *Nymphius* completely yellow species from the Arabian Peninsula and Israel with a peculiar structure of the male abdomen with characteristic appendages similar to the metallic *Nymphius*. This group is not included in the present paper and includes the following taxa: *Calomicrus buettikeri* Medvedev, 1996 (Saudi Arabia), *C. emir* Lopatin, 2006 (United Arab Emirates), *C. friedmani* Lopatin, 2002 (Israel), *C. millingeni* (Pic, 1915) (Saudi Arabia), and *Luperodes artificiosus* Peyerimhoff, 1931 (Algeria). Probably due to their similarity with many species of *Calomicrus* Stephens, 1834, MEDVEDEV (1996) and LOPATIN (2002, 2006) presented *Nymphius* as a subgenus of *Calomicrus*. However, the correct generic position of the yellow species is unclear. In my opinion, they should be placed into a separate new genus.

In this paper, I provide the description of one new species from Iran and one new subspecies from Turkey of the ‘true’ *Nymphius*. 
Materials and methods

All morphological measurements were made with an ocular grid in the MBS-10 binocular microscope at 16x magnification for the body length and 32x magnification for the remaining measurements.

The material is housed in the following collections:

FKLC František Kantner collection, Lipí u Českých Budějovic, Czech Republic;
JBBC Jan Bezděk collection, Brno, Czech Republic;
JSPC Jaromír Strejček collection, Praha, Czech Republic;
JVJC Jiří Volfšek collection, Jirkov, Czech Republic;
MDVI Mauro Daccordi collection, Verona, Italy;
NMPC National Museum, Praha, Czech Republic (Jiří Hájek);
SMNS Staatliches Museum für Naturkunde, Stuttgart, Germany (Wolfgang Schawaller);
ZMHB Museum für Naturkunde der Humboldt-Universität, Berlin, Germany (Johannes Frisch, Joachim Willers).

Exact label data are cited for all type specimens; a double slash (//) divides data on different labels and a single slash (/) divides data in different rows. Type localities are cited in the original spelling. Other comments and remarks are placed in square brackets: [p] – preceding data are printed, [h] – preceding data are handwritten, and [w] – white label, x/y – number of males / number of females.

Description of new taxa

*Nymphius gianassoi* sp. nov.
(Figs. 3, 11, 17-18)

**Type locality.** Iran, Azarbayjan-e Gharbi province, 35 km W of Mahabad.


**Description.** Body length: male (holotype) 4.95 mm; females 5.00-5.85 mm.


Head as wide as anterior part of pronotum and 1.83 times as wide as interocular space. Labrum transverse, at each lateral side covered with several setigerous pores bearing pale setae, anterior margin slightly sinuate, lustrous. Anterior part of head nearly lustrous, sparsely covered with small punctures and pale setae. Frontal tubercles large, slightly elevated, subtriangular, with anterior tips separated by nasal keel, lustrous. Both tubercles separated by deep furrow;
another deep furrow separating posterior margin of each tubercle from frons. Frons slightly impressed just behind frontal tubercles, nearly lustrous, sparsely punctured at sides. Vertex semiopaque, very finely covered with microreticulation. Antennae slender, 0.77 times as long as body, length ratios of antennomeres 1-11 equal to 16-6-11-17-17-16-16-15-15-13-16.

Pronotum lustrous, glabrous, transverse, 1.53 times as broad as long, widest in middle, slightly narrowed anteriad and posteriad. Surface densely covered with very fine punctures. Lateral margin moderately rounded, anterior and posterior margins nearly straight. All margins distinctly bordered, all angles with distinct tooth bearing long pale seta. Anterior angles nearly rectangular, posterior angles obtusely angulate.

Scutellum subtriangular with widely rounded apex, lustrous, glabrous, impunctate, very indistinctly covered with microsculpture.

Elytra subparallel, very slightly divergent posteriad, with maximal width at the last third, lustrous, glabrous, apical fourth with sparse long pale hairs. Humeral calli well developed. Lateral sides of each elytron with distinct obtuse rib starting from humeral callus and disappearing before apex. Surface along rib slightly longitudinally impressed. Elytral surface covered with small and very dense confluent punctures. Epipleura distinct, gradually tapering, disappearing behind midlength of elytra. Macropterus. Elytra 0.63 times as long as body and 1.56-1.65 times as long as wide.

Legs slender, densely covered with short pale hairs. Protarsomere 1 0.93 as long as two following tarsomeres combined, length ratios of protarsomeres 1-4 equal to 14-10-5-10. Metatarsomere 1 0.94 as long as two following tarsomeres combined, length ratios of metatarsomeres 1-4 equal to 16-11-6-11. Claws with distinct basal tooth.

Ventral surface semiopaque, finely punctate and covered with microsculpture and dense pale hairs. Abdomen modified (Fig. 3): ventrites 1 and 2 simple, without modifications. Ventrite 3 prolonged posteriad to a tapered process, apex widened, posterior margin truncated, with two small indicated teeth laterally and distinct marginal angles slightly bent dorsally; posterior margin densely covered with long pale setae, lateral margins before apex with sparse setae; anterior margin with distinct round depression, middle of ventrite (at the narrowest place) with shallow longitudinal depression. Ventrite 4 robust, simple, in ventral view mostly covered by ventrite 3, thus only small lateral parts visible. Ventrite 5 prolonged into two long appendages with relatively robust bases, prolonged parts narrow; gradually narrowed in second third; last third strongly rectangularly bent ventrally.

Shape of aedeagus as in Fig. 11.

**Female.** Antennomeres 1-6 yellow, antennomeres 7 and 8 gradually darkened, antennomeres 9 to 11 black. Depression in the middle of last ventrite brownish. Head 1.58-1.66 times as wide as interocular space. Antennae 0.65 times as long as body, length ratios of antennomeres 1-11 equal to 14-7-11-15-15-14-15-15-15-15-17. Pronotum 1.46-1.53 times as broad as long, widest at anterior third. Elytra 0.70 times as long as body and 1.72-1.83 times as long as wide. Protarsomere 1 as long as two following tarsomeres combined, slightly shorter than in male, length ratios of protarsomeres 1-4 equal to 12-8-4-12. Metatarsomere 1 as long as two following tarsomeres combined, slightly slimmer than in male, length ratios of metatarsomeres 1-4 equal to 16-10-6-12. Last ventrite with shallow longitudinal depression along midline (Fig. 17). Pygidium with sharply pointed apex (Fig. 18).

**Variability.** In one female the scutellum has a brownish apical margin.
**Differential diagnosis.** *Nymphius gianassoi* sp. nov. seems to be very similar to *N. forcipifer*, which differs in the structure of male ventrites (Figs. 2 and 3): ventrite 3 is shorter, much more tapered, and the posterior margin is not truncated but forms a distinct furca. Ventrite 4 has large transverse corrugations (smooth in *N. gianassoi* sp. nov.). The appendages of ventrite 5 are more robust, shorter, and with only small ventrally bent teeth. The aedeagi of both species are also similar but in the lateral view, the aedeagus of *N. gianassoi* sp. nov. is almost straight while it is distinctly sinuated in *N. forcipifer*. In dorsal view, the subapical area of the aedeagus is somewhat extended in *N. gianassoi* sp. nov. and nearly parallel in *N. forcipifer*.

**Etymology.** Dedicated to the collector of the type series, Dr. Domenico Gianasso (Castelnuovo don Bosco, Italy), a specialist in the Buprestidae.

**Bionomics.** The specimens were collected in a hilly steppe environment with growths of *Astragalus* sp. and low bushes of *Prunus* sp., with a nearby stream with willows on the shores.
The herbaceous vegetation was varied with numerous flowers of the Asteraceae (Gianasso 2008, pers. comm.).

**Distribution.** North-western Iran, Azarbayan-e Gharbi province.

*Nymphius stylifer kadleci* ssp. nov.

(Figs. 8, 16, 19-20)

**Type locality.** Turkey, Muş province, Muş Ovasi.

**Type material.** *Holotype:* ♂, ‘TR vill. Muş 18.6.86 / Muş Ovasi 1520 m / Kadlec + Voříšek leg. [w, p] // Nymphius / stylifer Wse [h] / Voříšek det. 2001 [w, p]’ (NMPC). *Paratypes:* 1 ♂ 14 ♀♀, ‘TR vill. Muş 18.6.86 / Muş Ovasi 1520 m / Kadlec + Voříšek leg. [w, p]’ (1 PT in NMPC, 2 PT in JBBC, 12 PT in JVJC). The specimens are provided.
Description. Body length: males 4.35-4.75 mm (holotype 4.35 mm); females 4.65-5.75 mm.


Head as wide as anterior part of pronotum and 2.05 times as wide as the interocular space. Labrum transverse, at each lateral side covered with several setigerous pores bearing pale setae, anterior margin straight. Anterior part of head semiopaque, finely microsculptured, sparsely covered with small punctures and long pale setae. Frons and vertex with fine median impressed line. Vertex semiopaque, microsculptured, with indistinct wrinkles. Antennae slender, 0.90 times as long as body, length ratios of antennomeres 1-11 equal to 12-6-11-16-15-15-14-14-16-16.

Pronotum nearly lustrous, glabrous, tranverse, 1.35 times as broad as long, widest in anterior third, narrowed anteriad and posteriad. Surface densely covered with very fine punctures. Lateral margin rounded at maximal width, straight and convergent posteriad, anterior and posterior margins straight. All margins distinctly bordered. Anterior angles nearly rectangular, posterior angles obtusely angulate, each angle with distinct tooth bearing long pale seta.

Scutellum subtriangular with widely rounded apex, glabrous, impunctate, lustrous. Elytra parallel, lustrous, glabrous. Humeral calli well developed. Lateral side of each elytron with indistinct obtuse rib beginning posteriad of humeral callus and disappearing before elytral apex. Elytral surface covered with small and very dense confluent punctures. Epipleura distinct, gradually tapering, disappearing behind elytral midlength. Macropterous. Elytra 0.73 times as long as body and 1.83 times as long as wide.

Legs slender, densely covered with short pale hairs. Protarsomere 1 slightly enlarged, as long as two following tarsomeres combined, length ratios of protarsomeres 1-4 equal to 13-8-5-10. Metatarsomere 1 as long as two following tarsomeres combined, length ratios of metatarsomeres 1-4 equal to 16-10-6-11. Claws with distinct basal tooth.

Ventral surface semiopaque, finely punctate and covered with microsculpture and pale hairs. Abdomen modified (Fig. 8): ventrites 1 and 2 simple. Ventrite 3 widely prolonged posteriad to tapered process, with shortly divergently bifurcate apex, posterior margin with wide shallow incision. Ventrite 4 prolonged into two narrow parallel appendages, with apices slightly bent outwards. Ventrite 5 without appendages, simply trilobed, incisions very deep.

Shape of aedeagus as in Fig. 16.

Female. Depression in middle of last ventrite brownish. Head 0.95 times as wide as anterior part of pronotum and 1.84 times as wide as interocular space. Antennae 0.70 times as long as the body, length ratios of antennomeres 1-11 equal to 15-6-12-15-15-15-15-14-14-18. Pronotum 1.43 times as broad as long. Elytra 0.75 times as long as body and 1.86 times as long as wide. Protarsomere 1 0.80 times as long as two following tarsomeres combined,
length ratios of protarsomeres 1-4 equal to 13-10-6-9. Metatarsomere 1 0.90 times as long as two following tarsomeres combined, length ratios of metatarsomeres 1-4 equal to 16-10-5-12. Last ventrite with median depression, wide and shallow in anterior part and narrow and deeper in posterior part (Fig. 19). Lateral convergent sides of last ventrite moderately rounded, with wide and shallow emargination near midlength. Pygidium subtriangular, with apex rounded.

**Differential diagnosis.** Males of *Nymphius stylifer kadleci* ssp. nov. differ from *N. stylifer stylifer* and *N. stylifer ogloblini* in the structure of the abdominal appendages (Figs. 6-8). In *N. s. stylifer* and *N. s. ogloblini*, ventrite 3 forms two long posterior processes separated by a very deep incision, but the incision in *N. s. kadleci* ssp. nov. is very shallow and the processes therefore form only very short divergent furca. The long processes of ventrite 4 are distinctly divergent in *N. s. stylifer* and *N. s. ogloblini* (and claviform in *N. s. ogloblini*), but parallel with apices slightly bent outwards in *N. s. kadleci* ssp. nov. The aedeagus of *N. s. kadleci* ssp. nov. is similar to that of *N. s. stylifer* and *N. s. ogloblini* but the apical part is more rounded in lateral view (Figs. 14-16).

Females of all three subspecies can be separated by the shape of the pygidium and the last ventrite. The apex of the pygidium is sharply pointed in *N. s. ogloblini* and rounded in *N. s. stylifer* and *N. s. kadleci* ssp. nov. The depression on the last ventrite is shallow and parallel in *N. s. ogloblini* and *N. s. stylifer* but wide and shallow in the anterior part and narrow and deeper in the posterior part of ventrite in *N. s. kadleci* ssp. nov.

**Etymology.** Dedicated to one of the collectors of the type series, Stanislav Kadlec (Litvinov, Czech Republic), a specialist in the Cerambycidae.

**Distribution.** Eastern Turkey, Muş province.

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**Review of the genus *Nymphius***

*Nymphius* Weise, 1900

*Nymphius* Weise, 1900: 135 (subgenus of *Luperus*). Type: *Luperus* (*Nymphius*) *forscipifer* Weise, 1900, by monotypy.

*Luperus* (*Nymphius*): *Weise* (1924) (catalogue).


*Nymphius ensifer* (Guillebeau, 1891)

(Figs. 1, 9)

*Luperus* (*Luperus*) *ensifer* Guillebeau, 1891: 297.


**Type locality.** ‘Syrie, Anti-Liban, Zebedani’.


**Additional material examined** (17 spec.). **SYRIA:** Burqush env., NW of Damascus, 25.v.1998, 8 ♂♂ 9 ♀♀, S. Kadlec leg. (JBBC, FKLC).
**Distribution.** Turkey (Fogato 1981), Syria (Guillebeau 1891, Fogato 1981, this paper), Israel (Lopatin 2002, Lopatin et al. 2003, Chikatunov & Pavlíček 2005, Chikatunov et al. 2006).

*Nymphius forcipifer* (Weise, 1900)

(Figs. 2, 10)

*Luperus (Nymphius) forcipifer* Weise, 1900: 135.

*Luperus (Nymphius) forcipifer*: Weise in Bodemeyer (1900) (duplicate description), Weise (1924) (catalogue), Winkler (1930) (catalogue).

*Luperus (Luperus) forcipifer*: Ogloblin (1936).


**Type locality.** Originally described from ‘Angora, Konia’ [= Ankara, Konya] (Weise 1900). Due to the lectotype designation by Fogato (1981), the type locality is restricted to ‘Konía’.


**Bionomics.** In Turkey, Gök & Duran (2004) reported it from *Crataegus orientalis* (Rosaceae).

**Distribution.** Turkey (Weise 1900, Fogato 1981, Gök & Duran 2004, this paper).

**Comments.** I had the possibility to examine also one specimen (female) deposited in SMNS and labelled: ‘Asia minor / Burna / 15 v Bodemeyer [w, h] // TYPE [pink label, p] // Luperus / forcipifer / n. sp. Wse [w, h] // Coll. / Piesbergen [w, p]’. The identification label seems to be written by Weise. However, the specimen is not mentioned in the original description and cannot be included in the type series.

*Nymphius gianassoi* sp. nov.

(Figs. 3, 11, 17-18)

**Type material.** See above.

**Distribution.** North-western Iran, Azarbayjan-e Gharbi province (this paper).

*Nymphius lydius* (Weise, 1886)

(Figs. 4, 12)

*Luperus (Luperus) lydius* Weise, 1886: 594.

*Luperus (Nymphius) lydius*: Laboissière (1913), Winkler (1930) (catalogue).

*Luperus (Nymphius) Lydius*: Laboissière (1925) (catalogue).

*Luperus (Luperus) lydius*: Guillebeau (1891), Ogloblin (1936), Weise (1924) (catalogue), Bert & Rapilly (1973).


*Luperus lidius* [sic!]: Tomov & Gruev (1975).
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Type locality. Originally described from ‘Smyrna, Graecia ?’ (Weise 1886). Due to the lectotype designation by Fogato (1981), the type locality is restricted to ‘Smyrna’ [= Turkey, İzmir].


Bionomics. In Turkey reported from Crataegus orientalis (Rosaceae), Anagyris foetida and Robinia pseudoacacia (Fabaceae) (Gök & Duran 2004).


Comments. During my visit to SMNS I had the possibility to examine also two specimens (males) labelled: ‘Asia minor / Konia / S. v Bodemeyer [w, h] // TYPE [pink label, p] // Luperus / lydius / n. sp. Wse. [w, h] // Coll. / Piesbergen [w, p]’ and ‘Asia min. / Konia / 0.30 v Bodem. [w, h] // Asia minor / Konia / v Bodemeyer [w, p] // Coll. / Piesbergen [w, p]’. The identification label seems to be written by Weise. However, specimens from Konia are not included in the original description, and these two specimens cannot thus be included in the type series.

Nymphius pravei (Jacobson, 1899)
(Figs. 5, 13)

Luperus pravei Jacobson, 1899: 141.
Luperus (Luperus) pravei: Ogloblin (1936).
Luperus (Luperus) Pravei: Weise (1924) (catalogue).
Luperus (Nymphius) Pravei: Laboissière (1913), Laboissière (1925) (catalogue), Winkler (1930) (catalogue).

Type locality. Originally described from ‘Caucasus sept.-occid.: districtus Ejskensis provinciae Kubanensis, qui situs est ad mare Maeoticum’ [= Yeysk, Krasnodar’skiy Kray, Russia] (Jacobson 1899). Due to the neotype designation by Fogato (1981), the type locality is replaced by ‘Askania Nova Dniepr. U. Tavr. G.’ [= Askania Nova Biosphere Reserve, Kherson Oblast, Ukraine].
Type material. Not examined. The original type material is lost. The neotype was designated by FOGATO (1981) and is deposited in the Zoological Museum of the Academy of Sciences in St. Petersburg (Russia).

Additional material examined (4 spec.). RUSSIA: VOLGOGRADSKAYA obl., Sarepta, without date, 1 ♂, Merkel leg. (ZMHB); same locality, 1 ♂ 1 ♀, Bodemeyer leg. (ZMHB). STAVROPOLSKII kray, Stavropol, without additional data, 1 spec. (ZMHB).


Figs. 9-16. Aedeagus (a – dorsal view; b – lateral view). 9 – Nymphius ensifer (Guillebeau, 1891); 10 – N. forcipifer (Weise, 1900); 11 – N. gianassoi sp. nov.; 12 – N. lydius (Weise, 1886); 13 – N. pravei (Jacobson, 1899); 14 – N. stylifer stylifer (Weise, 1899); 15 – N. stylifer ogloblini (Bogachev, 1947); 16 – N. stylifer kadeci ssp. nov. Scale: 1 mm for Figs. 11, 14-16; Figs. 9-10, 12-13 redrawn from FOGATO (1981).
Nymphius stylifer stylifer (Weise, 1899)
(Figs. 6, 14)

Lyperus lydius (misidentification): Jacobson (1899).
Lyperus stylifer Weise, 1899: 380 (new name for L. lydius sensu Jacobson (1899)).
Luperus (Nymphius) stylifer: Laboissière (1913) (treated as nomen nudum under N. lydius), Weise (1924) (catalogue), Winkler (1930) (catalogue, as synonym of N. lydius), Laboissière (1925) (catalogue, as synonym of N. lydius).
Luperus (Luperus) stylifer: Ogoblin (1936).

Type locality. Originally not stated (Weise 1899). The lectotype designated by Fogato (1981) is a male without a locality label, thus the type locality is defined by the locality of the female paralectotype as ‘Cauc. Dorotschitschak’ [= ?] (Fogato 1981).

Type material. Not examined. The lectotype and the paralectotype were designated by Fogato (1981) and are deposited in the Zoological Museum of the Academy of Sciences in St. Petersburg (Russia).


Nymphius stylifer kadleci ssp. nov.
(Figs. 8, 16, 19-20)

Type material. See above.

Distribution. Turkey, Muş province (this paper).

Nymphius stylifer ogloblini (Bogachev, 1947)
(Figs. 7, 15)

Luperus (Nymphius) ogloblini Bogachev, 1947: 16.
Luperus (Nymphius) ogloblini: Bogachev (1948) (duplicate description).

Type locality. ‘Kordéstan (Iran)’.

Type material. Not examined. According to Bogachev (1948) the type material is deposited in the Zoological Institute of the Azerbaijan Academy of Sciences in Baku, Azerbaijan.


Distribution. Armenia (Bezdek 2007, this paper), Iran (Bogachev 1947, 1948; Bezdek 2007; this paper), Turkey (this paper). Lopatin et al. (2004) listed N. stylifer ogloblini also from northern Turkey but his record could refer to N. stylifer stylifer.

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