

# To the Knowledge of the Genus *Omocestus* I. Bolívar, 1878 (Orthoptera, Acrididae)

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**Abstract**—The taxonomic problems associated with the validity of the subgeneric names in the genus *Omocestus* I. Bolívar, 1878 are discussed. The subgeneric names *Haplomocestus* Tarbinsky, 1940 and *Dreuxius* Defaut, 1988 proposed after 1930 are unavailable, according to Articles 13.1 and 13.3 of the International Code of Zoological Nomenclature (ICZN, 1999). Here the genus is divided into three subgenera, namely *Omocestus* s. str. [type species *Omocestus viridulus* (Linnaeus, 1758), by subsequent designation (Kirby, 1910)], *Dirshius* Harz, 1975, **stat. resurr.** [type species *Omocestus haemorrhoidalis* (Charpentier, 1825), by original designation], and *Tarbinskius* **subgen. n.** [type species *Omocestus bolivari* Chopard, 1939, designated here]. A brief diagnosis and the species composition are given for each subgenus.

**Keywords:** Orthoptera, grasshoppers, Stenobothrini, *Omocestus*, taxonomy, unavailable names, new subgenus

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I. Bolívar established the subgenus *Omocestus* in the genus *Gomphocerus* Thunberg, 1815 and included 8 species in it (Bolívar, 1878). *Omocestus* was considered subsequently as a subgenus of the genus *Stenobothrus* Fischer, 1853 (Brunner-Wattenwyl, 1882; Jacobson, 1905). Later, W.F. Kirby (1910) gave it the genus status and designated *Gryllus viridulus* Linnaeus, 1758 as its type species. Currently, the genus includes 49 Palearctic species of 3 conventional subgenera: *Omocestus* s. str., *Haplomocestus* Tarbinsky, 1940, and *Dreuxius* Defaut, 1988 (Tarbinsky, 1940; Mishchenko, 1951; Harz, 1975; Ragge, 1986; Defaut, 1988; Otte, 1995; Massa et al., 2012; Zheng et al., 2013; Cigliano et al., 2023). However, the two latter names (*Haplomocestus* and *Dreuxius*) were found to be unavailable because no type species were designated for them. Therefore, the names of the subgenera, the correlation of these names with certain species, and, consequently, the diagnoses of the subgenera and their species composition need to be clarified, which is the subject of the present paper.

## TAXONOMY

Family **ACRIDIDAE** MacLeay, 1821

Subfamily **Gomphocerinae** Fieber, 1853

Genus **OMOCESTUS** I. Bolívar, 1878

*Omocestus* (as a subgenus of *Gomphocerus*) Bolívar, 1878 : 427.

*Omocestus* (as a subgenus of *Stenobothrus*): Brunner-Wattenwyl, 1882 : 84, 100.

*Omocestus* (as a genus): Kirby, 1910 : 172.

Type species *Gryllus viridulus* Linnaeus, 1758, by subsequent designation (Kirby, 1910).

**Diagnosis.** Vertex short, slightly protruding beyond anterior margin of eye. Fastigial foveolae narrow and long. Antenna filiform, without club at apex. Pronotum with subparallel or strongly concave lateral carinae. Tegmina and wings well developed or shortened; ante-

rior margins of tegmina straight; precostal margin unwidened in basal part and extending far beyond middle of tegmina. Hind femur with rounded upper knee lobes. Lower spurs of hind tibia equal in size. Metasternum of both sexes with distinctly separated lophi. Openings of tympanal organ slit-shaped. Ovipositor relatively short; upper and lower ovipositor valves without tooth at bases; lower outer margin of lower valve with emargination.

**Notes.** The genus is known from the Palaearctic Region and is subdivided into 3 subgenera for which brief diagnoses and species composition are given below.

#### Subgenus *Omocestus* s. str.

*Omocestus* (as a nominotypical subgenus): Tarbinsky, 1940 : 24.

**Diagnosis.** Eyes relatively small; vertical eye diameter 1.2–1.3 times length of subocular sulcus in male and 1.00–1.15 times that in female. Apex of vertex with a clear median keel reaching anterior margin of eye. Tegmina and wings well developed in both sexes, reaching or extending beyond hind knees at rest. Tegmen of male with wide radial area width of which at apex of median area considerably exceeding the greatest width of subcostal area. Ovipositor with relatively long valves; emargination of lower outer margin of lower valve shallow and situated in apical third of ovipositor (Ragge, 1986 : fig. 2).

**Composition of the subgenus.** Only the type species subdivided into 2 subspecies: the nominotypical *Omocestus viridulus viridulus* and *O. v. kaestneri* Harz, 1972.

**Notes.** *Omocestus viridulus* essentially differs from all the other representatives of the genus in the characters mentioned above and undoubtedly deserves to be distinguished in a distinct subgenus.

#### Subgenus *Dirshius* Harz, 1975, stat. resurrect.

*Haplomocestus* (as a subgenus in the genus *Omocestus*) Tarbinsky, 1940 (Tarbinsky, 1940 : 25). This name is unavailable since no description of the subgenus is given and no type species is designated.

*Dirshius* (as a subgenus of *Omocestus*) Harz, 1975 : 710. Synonymized under *Omocestus* s. str. (Ragge, 1986 : 221).

Type species: *Omocestus haemorrhoidalis* (Charpentier, 1825), by subsequent designation.

**Diagnosis.** Eyes large, vertical diameter of eye 1.6–2.1 times length of subocular sulcus in male, and 1.3–1.8 times length of subocular sulcus in female. Apex of vertex without median keel. Tegmina and wings in both sexes well developed, reaching or extending beyond hind knees at rest; tegmina 3.0–4.0 times as long as pronotum. Tegmen of male with narrow radial area width of which at apex of medial area subequal to the greatest width of subcostal area. Ovipositor with relatively short valves; emargination of lower outer margin of its lower valve deep and situated in middle of valve (Ragge, 1986 : fig. 3).

**Species included.** *Omocestus* (*D.*) *haemorrhoidalis* (subdivided into 4 subspecies: the nominotypical one, *O. h. ciscaucasicus* Mistshenko, 1951, *O. h. fantinus* Fruhstorfer, 1921, and *O. h. sjostedti* Ramme, 1952), *O. (D.) africanus* Harz, 1970, *O. (D.) avellaeusitibia* Zheng, Dong et Xu, 2013, *O. (D.) defaulti* Sardet et Braud, 2007, *O. (D.) helanshanensis* Zheng, Zeng, Zhang, Tao et Su, 2012, *O. (D.) heymonsii* (Ramme, 1926), *O. (D.) lucasii* (Brisout de Barneville, 1850), *O. (D.) minutus* (Brullé, 1832), *O. (D.) nadigi* Harz, 1987, *O. (D.) nanus* Uvarov, 1934, *O. (D.) nigrifibialis* Zheng, Zeng, Zhang, Tao et Su, 2012, *O. (D.) nigripennis* Zheng, 1993, *O. (D.) nigrifibialis* Zheng, Huang et Zhou, 2008, *O. (D.) peliopteroides* Zheng, Dong et Xu, 2011, *O. (D.) petraeus* (Brisout de Barneville, 1856), *O. (D.) pinanensis* Zheng et Xie, 2001, *O. (D.) qinghaihuensis* Zheng et Xie, 2001, *O. (D.) raymondi* (Yersin, 1863), *O. (D.) rufipes* (Zetterstedt, 1821), *O. (D.) simonyi* (Krauss, 1892), *O. (D.) tzendsureni* Günther, 1971, *O. (D.) uvarovi* Zanon, 1926, *O. (D.) xinjiangensis* Liu, 1995, *O. (D.) zhenglanensis* Zheng et Han, 1998, and *O. (D.) znojkoii* Mistshenko, 1951. A total of 25 Palaearctic species are known in the territory from the Atlantic to the Pacific oceans.

**Note.** Initially, K. Harz placed in this subgenus the species with strongly curved lateral carinae of the pronotum, and in the nominotypical subgenus, those with parallel or weakly curved carinae (Harz, 1975). Later, D.R. Ragge showed that this character could not be used

to distinguish subgenera and downgraded *Dirshius* to synonyms of *Omocestus* s. str. (Ragge, 1988). However, we consider that the species-group closely related to *O. haemorrhoidalis* deserves to be distinguished in a distinct subgenus which is characterized by the features listed in the diagnosis. S.P. Tarbinsky proposed the name *Haplomocestus* for 2 species occurring in Azerbaijan (Tarbinsky, 1940), but there was no description of the subgenus, and the type species was not designated. According to Articles 13.1 and 13.3 of the International Code of Zoological Nomenclature (ICZN, 1999), *Haplomocestus* is an unavailable name, although it is mentioned as a valid name in Otte's (1995) catalog and in the Orthoptera Species File (Cigliano et al., 2023).

#### Subgenus *Tarbinskius*

Storozhenko et Lapteva, subgen. n.

<https://zoobank.org/F4A9B5B0-FCAA-42B0-A29E-2ADC50656900>

*Dreuxius* (as a subgenus of *Omocestus*) Default, 1988 : 11. This is unavailable name, as the type species of the subgenus has not been designated.

Type species: *Omocestus bolivari* Chopard, 1939, designated here.

**Diagnosis.** Eyes large; vertical diameter of eye 1.4–2.0 times length of subocular sulcus in male, and 1.3–1.5 times length of subocular sulcus in female. Apex of vertex without median keel. Tegmina and wings in both sexes shortened; those in male far not reaching hind knees at rest; those in female usually lateral, lobiform, reaching abdominal tergite IV or elongate, but even then not reaching hind knees; tegmina 1.3–3.0 times as long as pronotum. Tegmina of male with narrow radial area width of which at apex of medial area subequal to the greatest width of subcostal area. Ovipositor very short; lower outer margin of lower ovipositor valve with shallow emargination or almost straight (Ragge 1986 : figs. 4, 5).

**Species included.** The type species and also *Omocestus (T.) alluaudi* Uvarov, 1927, *O. (T.) antigai antigai* (Bolívar, 1897), *O. (T.) antigai bellmanni* Puisant, 2008, *O. (T.) aymonissabaudiae* Salfi, 1934, *O. (T.) cuonaensis* Yin, 1984, *O. (T.) enitor* Uvarov, 1925, *O. (T.) femoralis* Bolívar, 1908, *O. (T.) fontanai* Massa, 2004, *O. (T.) gonggarensis* Zheng et Chen, 1995,

*O. (T.) harzi* Nadig, 1988, *O. (T.) hingstoni* Uvarov, 1925, *O. (T.) hubeiensis* Wang et Li, 1994, *O. (T.) laojunshanensis* Mao et Xu, 2004, *O. (T.) lecerfi* Chopard, 1937, *O. (T.) lepineyi* Chopard, 1937, *O. (T.) lopadusae* La Greca, 1973, *O. (T.) maershanensis* Mao et Xu, 2004, *O. (T.) megaoculus* Yin, 1984, *O. (T.) minutissimus* (Brullé, 1832), *O. (T.) motuoensis* Yin, 1984, *O. (T.) nyalamus* Xia, 1981, *O. (T.) tibetanus* Uvarov, 1939, *O. (T.) uhagonii* (Bolívar, 1876). A total of 23 species mainly distributed in the mountainous areas of the Palaearctic Region (from Spain and Morocco to the Himalayas and China) are known.

**Notes.** The name *Dreuxius* was proposed for 14 short-winged species of the genus *Omocestus* distributed in the southern part of West Europe and North Africa (Default, 1988) without designating the type species of the subgenus. Therefore, according to Articles 13.1 and 13.3 of the International Code of Zoological Nomenclature (ICZN, 1999), *Dreuxius* is an unavailable name.

**Etymology.** The subgenus is named after the Soviet orthopterologist Sergei Petrovich Tarbinsky (1902–1942) who first proposed to divide the genus *Omocestus* into subgenera.

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#### CONFLICT OF INTEREST

The authors of this work declare that they have no conflicts of interest.

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